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INCREASING RESERVE COMPONENT
NURSE ACCESSION AND RETENTION
RATES

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Almost 70 percent of DoD's wartime requirement for nurses – a requirement now estimated at 59,000 – are to be provided by the reserve components of the Military Services. By attracting more nurses to reserve military service in peacetime and by better retaining the nurses who are already members of the reserve components until their normal retirement dates, DoD can build up the supply of nursing professionals prepared for deployment in time of emergency. The approach of this study is based on the premise that the more we know about nurses, the better able we are to design and execute successful recruiting plans for nurses, and the better able we will be to retain the nurses who are already members through their retirement years. This report displays personal and military characteristics data on the approximately 25,000 nurses who are now members of the reserve components, and it compares that population (using personal characteristics) with all civilian nurses and (using military characteristics) with all reserve component military officers.					
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In addition, report chapters analyze the environment (educational, family, and work) in which recruiting and retention activities occur and review the three principal market populations (student nurses, civilian registered nurses, and active force military nurses who are leaving active duty) that are the targets of recruiting efforts. Present recruiting and retention policies and efforts are described critically. Finally, the migrations and personnel turbulence of the reserve nurse population are described and analyzed over a 6-year period.

Eleven recommendations for increasing accession and retention rates for reserve military nurses are presented. Over 100 related studies and other works are reviewed in the annotated bibliography that accompanies this report.

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Executive Summary

INCREASING RESERVE COMPONENT NURSE ACCESSION AND RETENTION RATES

The Department of Defense may be unable to satisfy its wartime needs for nurses, now estimated at 59,000. A continuing shortage of civilian nurses makes the picture even more bleak.

Almost 70 percent of the projected mobilization requirement — about 45,000 nurses — is to be provided by the reserve components. By attracting more nurses to reserve¹ military service in peacetime and by better retaining the nurses who are already members of the reserve components until their normal retirement dates, DoD can build up the supply of nursing professionals prepared for deployment in time of emergency.

The Defense Department's recruiting of nurses for the reserve components has been successful: the number of nurses in the Selected Reserve alone rose 68 percent between 1982 and 1988. But by taking several specific recruiting actions, reserve military nurse accession rates can be improved:

- *Fill all Selected Reserve nursing positions within 5 years.*

Over the past several years (even though inventory levels have risen steadily), the Selected Reserve has experienced a persistent shortage of about 2,500 nurses. We believe that all authorized positions can be filled through more vigorous and focused recruiting efforts. An important first step is the assignment of higher recruiting goals for the recruiting force.

- *Establish standard exit briefings for military nurses in the active forces who are about to leave active duty. Enforce exit interview requirements and follow each discharged military nurse by notifying the reserve recruiting staff (all reserve components) in the nurse's new residence area.*

Much of the content of these briefings will come from a newly established information clearinghouse suggested elsewhere in this report. The exit

¹The separate term "reserve," in lower case type, is generic, including both the National Guard and Military Department Reserve Forces.

interview is a very important activity, and it occurs at the point at which the reserve components now lose many promising nurse recruits.

- *Increase recruiting efforts directed toward nursing groups that have shown a special attraction to reserve nursing.*

Male nurses, nurses with three or more dependents, student nurses needing financial help, single nurses, and black nurses continue to show unusually high membership proportions in the nursing staffs of our reserve forces; they deserve special recruiting attention because they may be more easily attracted to reserve service than some of their colleagues.

If the Military Services are successful in filling every nursing position in the Selected Reserve, they will still be far short (as many as 29,000 nurses) of having enough reserve military nurses to meet projected requirements. Additional recruiting is necessary, buttressed by stronger incentives:

- *Increase the recruiting of nurses to the Individual Ready Reserve of the Army, where it exists, and establish such an effort in the other Services, where it does not.*

The Military Services have all been unable to establish enough peacetime paid positions to accommodate the number of nurses required. Therefore, they must continue to look to their respective Individual Ready Reserves to provide the bulk of the nurses required for war.

- *Increase the number and types of alternative training opportunities for nurses in the Selected Reserve and the Individual Ready Reserve. Provide many new training opportunities for members of the Individual Ready Reserve.*

The Military Services offer several excellent examples of these kinds of arrangements, particularly in the Army Reserve and the Naval Reserve. Flexible training options — such as special work in hospitals or attending nursing seminars for training credit — constitute both a great recruiting inducement to civilian nurses and a morale booster for those nurses now serving in the reserve forces. Expansion of these opportunities in the Selected Reserve and the Individual Ready Reserve is essential, especially since they are apt to increase retention as well.

Finally, actions must be taken to provide new nursing candidates with more — and more accurate — information:

- *Establish an integrated, DoD-wide military nurse information clearinghouse and communications program to provide accurate information about opportunities, duty requirements, and benefits of reserve service in all reserve components.*

from (LPH)

At the present time the arrays of requirements, practices, and opportunities of the several Services with respect to their reserve nurses are complex, and they differ sharply from one another. Candidates for membership need to be able to assess the relative strengths and weaknesses of the nursing programs in order to reach the best personal decisions. This arrangement implies that reserve component recruiters should receive some reward or recognition for guiding candidates to membership in other reserve components, should candidates choose to go there.

- *Work aggressively to resolve the wartime nursing requirements issue so that recruiting counseling can be made more effective and concrete.*

Current estimates of wartime requests for nurses are not widely accepted. As a result, some Military Service recruiting and retention efforts may be less than wholehearted. At the present time, some reserve component leaders can lose sight of the goal of increasing the total number of nurses ready for war by considering only their own component's Selected Reserve and its narrower set of objectives.



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CHAPTER 1

INTRODUCTION

BACKGROUND

Throughout the United States today, there is rising concern over the present and future supply of nursing professionals to meet the nation's health care needs. Within DoD that concern is expressed not only with respect to present military institutional health care needs but also over the projected health care personnel requirements of any major war. Much of the supply of nurses intended to meet any future wartime surge in nursing demand is assigned by military leaders to the five military reserve components to which nurses are assigned.¹

As the leaders of these components have reviewed their respective nursing supply-and-demand situations, the same important questions arise: Just how serious is the present situation and – since we obviously must recruit more nurses while improving the retention rates of the nurses we already have – what actions should we take to increase the number of nurses?

This report answers those questions. Our approach is based on the premise that the more we know about nurses, the better we will be able to design and execute successful recruiting plans for nurses, and the better we will be able to retain the nurses we already have through their retirement years.

The report presents information on present and prospective reserve² military nurses. From that knowledge base, we are able to recommend specific actions aimed carefully at increasing nurse accession and retention rates. The underlying objective of the project, of course, is to increase the total number of nurses – and to improve the mix of nurses – available for future conflict.

¹The Army National Guard (ARNG), the U.S. Army Reserve (USAR), the U.S. Naval Reserve (USNR), the Air National Guard (ANG), and the U.S. Air Force Reserve (USAFR). Nursing requirements of the U.S. Marine Corps are met by the nurses assigned to the Navy; hence, the U.S. Marine Corps Reserve (USMCR) has no nurses.

²The separate term "reserve," in lower case type, is generic, including both National Guard and Military Department Reserves.

In Chapter 2, we summarize our conclusions and recommendations. The remaining chapters and the appendices support those conclusions and recommendations. Chapter 3 covers the environment in which recruiting and retention activities are carried out; in it, we describe the civilian work environments of registered nurses, the family environment of registered nurses, the educational environment of student nurses, and the military work environments of registered nurses. In Chapter 4, we treat the three principal market populations – student nurses, civilian registered nurses, and active force military nurses – that are the targets of reserve nurse recruiting efforts. We describe these target populations in terms of such things as their aspirations, values, and satisfactions and of more concrete factors such as age, race, and family status.

Chapter 5 presents information on the 25,000 military nurses now assigned to one of four reserve categories in five reserve components. Those nurses are the ones toward whom DoD must direct its retention activities. In addition to the nurses' values and aspirations, their personal and military characteristics are examined, as are their experiences and motivations. Chapter 6 is a review and comparison of present recruiting and retention policies and practices. They represent the platform upon which any recommended actions are to be based. Finally, Chapter 7 contains a discussion of reserve military nurse gains, losses, and transfers. Grouped into discussions of migrations and turbulence, we examine the magnitude, frequency, and potential impact of these personnel actions on leaders – and on other nurses. Comparisons with these activities among other reserve officers are offered.

We have prepared appendices to this report. They contain important information that augments and supports the information presented in the main body of the report. Appendix A contains tables and figures of component-specific data supporting similar displays of aggregated data in the body of the report. Appendix B is a bibliography of recent works on subjects related directly to this study. The bibliography has been annotated from the perspectives of this study team and this project. Appendix C explores the changes occurring in the makeup of the reserve nurse population during the period from 1982 to 1988, a time of significant growth.

THE SHORTAGE

According to present projections, the United States would face a shortage of as many as 30,000 military nurses in the event of a major war. While planning actions

have distributed these wartime shortages among the Military Departments, nearly all deficiencies would appear in the reserve components, which are scheduled to provide more than 75 percent of the nurses in case of war.³

Complicating any attempt to attract more nurses to Military Service at this time is a concurrent national shortage of nurses that is "real, widespread, and of significant magnitude."⁴ While the national shortage includes all specialty areas, it is most serious in critical care, medical-surgical care, and nurse management positions. The national shortage has been caused by a number of factors: (1) increased hospital demand, (2) increased demands for nurses in other health care settings, and (3) declines in admissions to – and graduations from – nursing educational programs.⁵

At the same time, the current supply of qualified, registered nurses is at an all-time high, approaching 2 million within the United States. Of these, 1.6 million are now employed in nursing, a labor force participation rate of 78.7 percent, also an all-time high for the profession.⁶

The military forces will need 59,000 nurses in wartime according to a DoD study completed in 1986. These personnel requirements are now undergoing a review that is scheduled to be completed early in 1990.⁷ In the meantime, the 59,000 total is used throughout DoD for wartime planning. To meet this challenge, approximately 14,000 nurses are to be provided by the active forces, while 45,000 nurses are to be provided by the reserve components.

About 16,000 of these 45,000 reserve nurses are to come from the Selected Reserve (SELRES), with the 29,000 other nurses from the Individual Ready Reserve

³Defense Manpower Requirements Report to the Congress, Medical Manpower Annex, FY90, p. 5, hereafter referred to as DMRR.

⁴U.S. Department of Health and Human Services (USDHHS). *Interim Report of the Secretary's Commission on Nursing*. July 1988, p. iii. This is also Volume III of the Commission's final report. Hereafter called "Secretary's Commission."

⁵Ibid., pp. iv – vi.

⁶Ibid., p. vi.

⁷DMRR, p. 5.

(IRR), Standby Reserve (SBR), and the Retired Reserve.⁸ These nurses would be used to expand units in the active and reserve force structure, to man new units that are not now programmed, and to provide replacements required due to wartime casualties.

The 59,000 nurses required represent less than 3 percent of the total population of trained nurses in the United States and less than 4 percent of those now working as nurses. The SELRES requirement of 16,000 nurses represents only 1 percent of the total nurses in the labor force.

RESERVE COMPONENT CATEGORIES

In order to understand the discussions in this report involving the different categories of personnel that make up DoD's reserve forces, a working knowledge of reserve component categories is advisable. For those not familiar with these important but complex categories, we suggest a review of the pamphlet, *Reserve Component Categories of the Reserve Components of the Armed Forces*, published by the Office of the Assistant Secretary of Defense (Reserve Affairs) in October 1987.

⁸Ibid., p. 5. This allocation of a significant projected wartime shortage to the IRR, Inactive National Guard (ING), SBR, and Retired Reserve is an unusual planning action. In other cases where severe wartime shortages are anticipated early in a major emergency, the Military Services have provided peacetime billets in the reserve forces' force structure in order to assure early availability of the specialists involved.

CHAPTER 2

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

In a project of this kind, the study team almost always accumulates impressive quantities of information. Inevitably, some of that information leads to conclusions and recommendations that, while valid, are of limited importance or are not central to the main thrust of the study. In this chapter, we present only those conclusions and recommendations we believe are important and relevant to increasing reserve military nurse accession and retention rates. Other conclusions and recommendations have been included at appropriate points within the other chapters of this report.

To be sure, some of our conclusions — such as that citing notable recruiting successes since 1982 — do not lead directly to recommendations aimed at producing higher accession rates or reduced attrition. But each conclusion is both important and relevant to the overall military nurse personnel situation. The recommendations that close the chapter, if followed, will attract even more nurses to the reserve components. Several of the actions recommended will also help reduce the flow of military nurses out of the reserve components before the time of retirement. The actions recommended are not overly expensive, but they are not free. And all are designed to produce the needed results.

CONCLUSIONS

- The retention rate and the annual continuation rate of reserve military nurses compare favorably with those of all reserve officers in the long term (the 6 years covered by the study). In terms of gender, race, and ethnicity, reserve military nurses are a more diversified group than nurses in the general population. Finally, reserve military nurses are better educated and have attained higher professional levels than the nursing population at large.
- The retention of SELRES nurses is satisfactory. While some improvement in SELRES retention rates may be possible, that improvement will not produce large increases in the number of serving nurses.

- The recruiting of nurses over the 6 years covered by the study has produced steady and notable growth in nurse inventories.
- Despite continued increases in the number of reserve nurses, the increased DoD demand for these professionals will not be met at present rates of growth.
- Because much of the projected wartime shortage of nurses is expressed as aggregate quantities beyond the Services' existing force structure, initiatives will be required to increase the number of nurses in the IRR.
- Neither civilian nurses nor military nurses of the active forces know much about nursing duty in the reserve components. In addition, neither group knows much about the incentive programs and professional benefits available to reserve military nurses.
- The movements of reserve military nurses among reserve components and reserve categories (migrations) and their movement among units in the SELRES (turbulence) are not significant. Neither of these conditions has contributed to the kind of reduced morale that leads to major attrition problems.

RECOMMENDATIONS

1. *Increase the flexibility of training opportunities for SELRES nurses by expanding programs such as REFLEX/PRIMUS¹ (Navy) and NAAD² (Army), as these may be adapted and used elsewhere throughout the reserve components.*

These kinds of opportunities are popular with nurses now assigned to the Army Reserve and Naval Reserve. Perhaps more important, they are the kinds of positive and attractive experiences anticipated by many of those candidates who are seriously considering affiliation with the reserve forces.

2. *Increase the recruiting of student, civilian, and active force nurses for the IRR in the Army Reserve, and establish such practices where they do not now exist. The IRR option should be offered to those nurses and students who are likely to have insufficient time to meet unit assembly requirements or are likely to establish residence far from SELRES units.*

The present projected wartime demand for nurses will be met only if the size of the IRR nurse pool is increased substantially. Some nurses should be willing to serve as mobilization assets even though they may not have the time to devote to meeting

¹Reserve Flexibility/Physician Reservists in Medical Universities and Schools (REFLEX/PRIMUS).

²National AMEDD Augmentation Detachment (NAAD). Army Medical Department (AMEDD).

SELRES participation requirements, particularly if professional benefits for IRR service can be established.

- 2a. *When recruiting nurses, emphasize IRR participation as a way of maintaining professional competence at a tolerable pace or tempo.*

Professional competence can be maintained only if many more military training and continuing professional education experiences are made available to IRR members.

- 2b. *Make sure that IRR affiliation is offered to all active force nurses approaching discharge as a "no-hassle" alternative to absolute severance of military relationships.*

Whatever the valid reasons for each nurse's discharge from active duty, most are still motivated by patriotism, pride in the uniform, and authority recognition as an officer. While the number of successful exit interview recruiting efforts may not be large, the technique offers promise if pursued diligently and systematically.

- 2c. *For IRR nurses establish and maintain programs offering appreciable levels of voluntary training and experience (probably through programmed man-days of training) with military hospitals and with active and reserve force units having nurse shortages.*

These voluntary training programs would form the core of the incentives offered to nurses in return for IRR participation. The number and nature of programs offered to these individual nurses must be orchestrated carefully along with similar training arrangements for SELRES unit personnel.

3. *Establish an integrated, DoD-wide military nurse information clearing-house and communications program to provide accurate information about opportunities, duty requirements, and benefits of reserve service. The target audiences of this effort are student nurses, civilian registered nurses (RNs), and active force nurses.*

This effort, which requires the cooperation of the Reserve Affairs and Health Affairs parts of the OSD organization, must maintain timely information on the differing practices and procedures of the Military Services as well as information on regulatory and other policy-based rules and requirements for incentive programs and training regimens. One implication of this communications program is the ability of the knowledgeable candidate to choose the most attractive set of incentives from among the different offerings of the Services.

4. *Review the Health Professionals Loan Repayment Program as implemented in all reserve components from the viewpoint of cost versus effectiveness.*

Early work on this study showed that strictures within the loan repayment program made it unpopular among nurses. The program, as administered, produced some confusion and negative reactions. We now know (although we do not display

any data in substantiation) that (1) the rules for participation in the program have been relaxed somewhat, and (2) many more reserve nurses are taking advantage of this opportunity than were reported as participants in mid-1989. For example, no National Guard nurses were thought to be participating in the loan repayment program some 6 months ago. Now, upwards of 50 ARNG and ANG nurses are participating. Still, a careful review of the program will discover whether it constitutes an adequately attractive incentive — among several others — to reserve forces affiliation. If it does, it should be continued. If not, the money can be better used elsewhere.

5. *Work aggressively to resolve the wartime nursing requirements issue so that recruiting counseling can be made more specific and concrete.*

The doubts and questions that surround the present projected wartime need for nurses have inevitably penetrated the recruiter population, including those units that recruit their own nurses. Recruiting counseling is surely affected by the uncertainties involved. Resolution of this important planning goal will make the conversations between recruiter and candidate more specific, and therefore more productive.

6. *Enforce the provisions of Department of Defense Directive (DoDD) 1215.4, Medical Training in the Reserve Components, calling for frequent participation by nurses in equivalent medical training and continuing health education experiences for full military training credit.*

The action recommended here accomplishes two major goals. First, it fulfills the expectations of civilian nurses who have been attracted to the reserve forces in the past (and who have approached reserve recruiters partially because of those expectations). Second, it fosters potential in-service relationships of the type given very high value among experienced reserve nurses: collegial, professional friendships with nursing peers. Thus, this single action attracts recruits while contributing to high morale and retention. Members of the IRR should have some reasonable expectation of participating in one of these experiences at least once every 2 or 3 years.

7. *Establish standard exit briefings for use with active force nurses about to leave active duty. Enforce exit interview requirements and follow each discharged military nurse by notifying the reserve recruiting staff in the nurse's new residence area. Inform all reserve component recruiters in the area, not merely those affiliated with the original parent Service.*

The exit briefings should contain complete and accurate information. They should be prepared by the organization suggested in Recommendation 3. We believe the commanders and chief nurses now responsible for exit interviews and briefings do not know the importance of these actions. The Air Force now does the best job of following discharged Service members to their new homes for recruitment into the Air Reserve Forces. All Services can gain from such a system.

8. *Establish recruiting goals designed to do away with all remaining SELRES nursing shortages within 5 years.*

The recruiting successes of the past 6 years, coupled with current and suggested incentives for nurses, should result in the SELRES force structure being fully manned soon. Recruiting missions in the field should acknowledge and strive to attain that objective.

9. *Establish several internal educational programs that are (1) designed to meet the most urgent military needs – shortages of nurse-anesthetists and operating room nurses for example – and (2) available to SELRES nurses in return for additional obligated service.*

These in-service programs will impede resignations and, when anticipated by reserve nurse candidates, will constitute a powerful affiliation incentive. The increase in civilian salary that accompanies graduation from the suggested sample programs will improve the marketability of program participants in their civilian jobs.

10. *Improve recruiting effectiveness by focusing on nursing groups that seem to be especially attracted to reserve nursing positions.*

While other groups may react favorably to normal recruiter activities, the following groups seem to be especially attracted to reserve nursing. They are represented in the reserve nurse population in disproportionately high percentages:

- Males
- Nurses with three or more dependents
- Student nurses needing financial help
- Single nurses
- Black nurses.

11. *Enforce the DoDD 1235.9 on use of the Standby Reserve (SBR). The Navy and Air Force should revise their policies of assigning to the SBR nurses unable to meet unit training assembly requirements. They should assign some of those nurses to the IRR where continuing (although occasional) opportunities for training and experience in military hospitals and units will increase the number of nurses available upon mobilization.*

We believe that until very recently the staffs of the Navy and the Air Force were not sensitively attuned to the very large wartime shortages in nurses now expected. As SELRES unit members became unable to participate satisfactorily in training assemblies, they were transferred to the IRR and thence (quickly) to the SBR. The transferred nurses included both those with portions of their military service obligation (MSO) remaining and those who had completed that obligation.

Present DoD guidance establishes the IRR as the appropriate reserve category for this kind of pretrained individual manpower. Efforts should be made to save such people for possible service in any major conflict.

CHAPTER 3

THE ENVIRONMENT

Strategies for recruiting and retaining RNs in the reserve forces are successful largely in proportion to the consideration given to the environment in which these efforts take place. Four aspects of the environment are especially influential:

- Civilian RN work environment
- Family environment
- Educational environment
- Military RN work environment.

This chapter discusses these four aspects and identifies problems within each that need to be considered when planning to increase the number of reserve military nurses.

CIVILIAN RN WORK ENVIRONMENT

Supply and Demand

The current work environment for nurses is one of shortages. Too few nurses are available nationally to meet communities' continuing demand for nursing professionals in most specialties.

In 1987, widespread concern about nursing shortages led Congress to require the Secretary of the U.S. Department of Health and Human Services (USDHHS) to

Establish a special advisory committee to develop a comprehensive plan which specifies long-term solutions to the problems experienced by hospitals and other health care institutions in recruiting and retaining professional nurses.¹

¹U.S. Congress. *The Nursing Shortage Reduction Act of 1987*. 100th Cong., S.1402, 1987, p. 2.

That advisory committee, a 25-member Commission on Nursing, was established and met during 1988, hearing testimony and examining evidence about nursing shortages and practices. It reached the following conclusion:

The Commission has no doubt that the reported shortage of RNs is real, widespread, and of significant magnitude. There is evidence to support the conclusion that the current shortage cuts across all health care delivery settings and all nursing practice areas.²

The Commission estimated that in 1987 approximately 117,000 additional full-time RNs were required to fill hospital vacancies and 21,000 more nurses were needed to meet the demand of nursing homes.³ This would require an increase of between 11 and 12 percent in the work force of nurses now employed in the United States.

As of March 1988, an estimated 2 million individuals in the United States were licensed to practice as RNs. Eighty percent of these persons were employed in nursing positions, and 54 percent (1.1 million) were working full time.⁴ As can be seen in Figure 3-1, these numbers mark steady and continual growth since 1977.

Distribution of Nurse Population and Nurse Vacancies

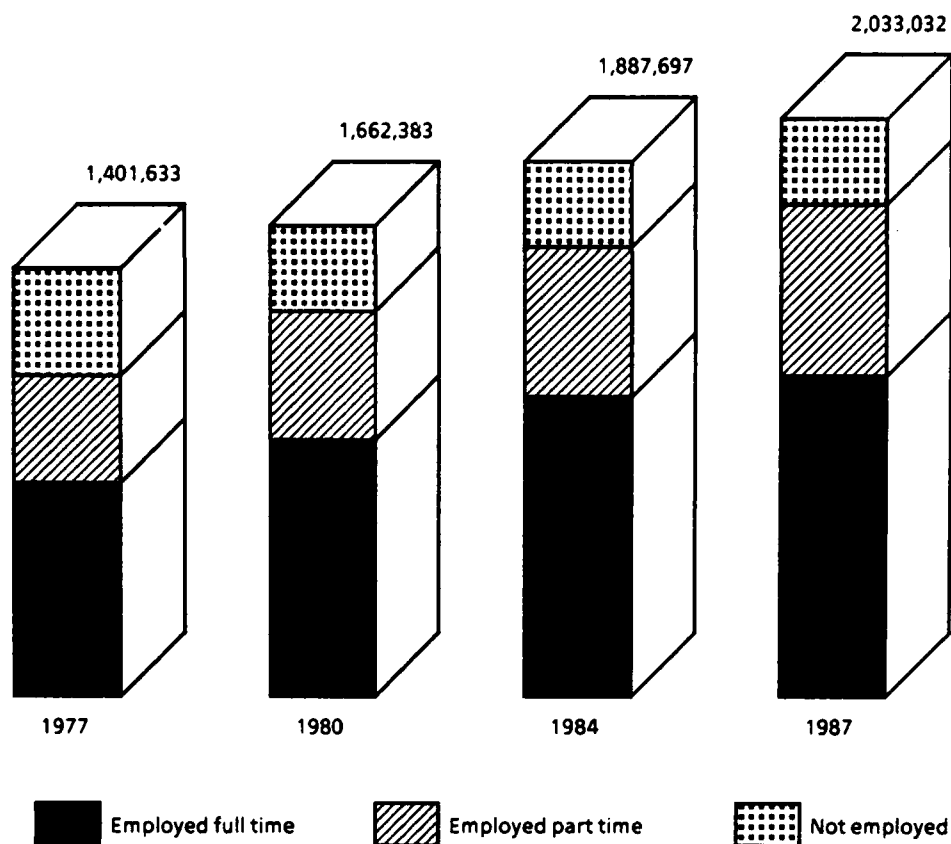
When we look at the number of RNs employed per 100,000 population in each state, we see that wide variations exist (see Figure 3-2). The ratios were lowest in the South and highest in the Northeast, ranging from 441 in Louisiana to 1,166 in Massachusetts and 1,653 in Washington, D.C. Nationwide in 1988, 668 RNs were employed per 100,000 population.

More than two-thirds of employed RNs (67.9 percent) were working in hospitals. In comparison, 1.1 percent were employed in the public/community health arena, and 6.6 percent in nursing homes.

²Secretary's Commission, p. iii.

³Ibid., p. III-8.

⁴Moses, Evelyn B. *Selected Findings from the 1988 Sample Survey of Registered Nurses*. Washington, DC: USDHHS, Division of Nursing, 1989, pp. 1 - 4.

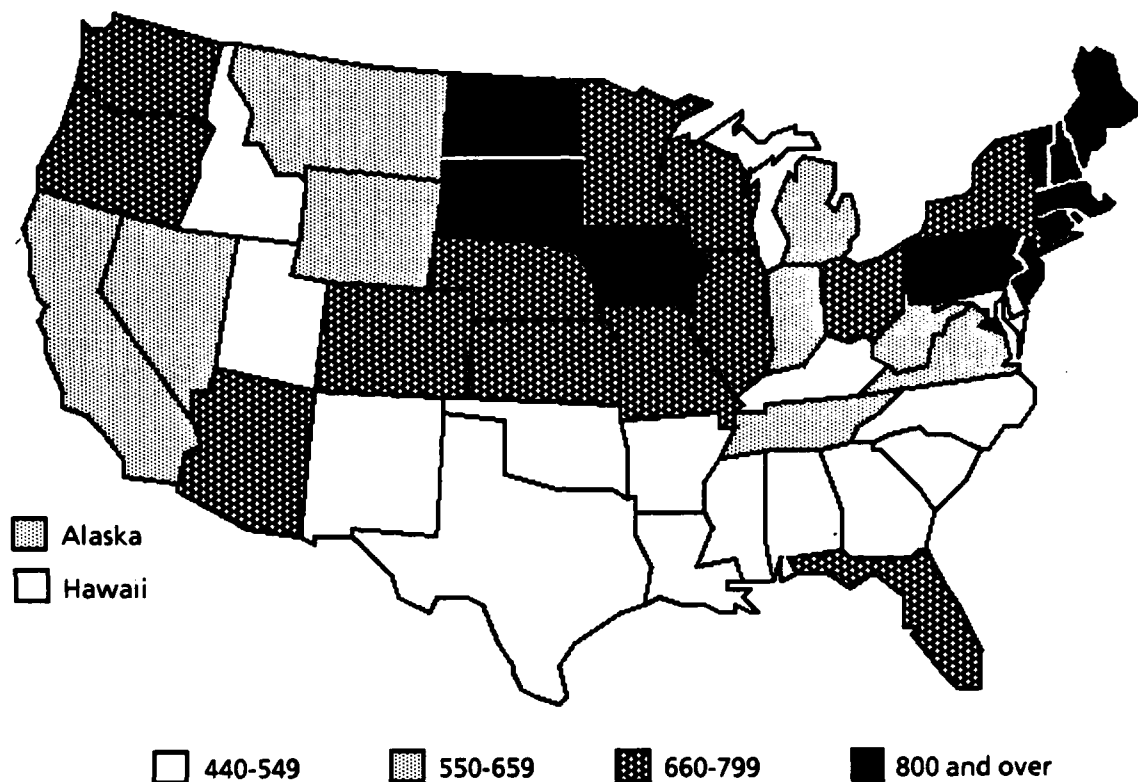


Source: Moses, 1989.

FIG. 3-1. REGISTERED NURSE POPULATION
(By nursing employment status)

In 1984, the latest year in which we examined data about nurses who were not employed in nursing, 21 percent or 400,000 individuals with current licenses to practice as RNs were not working as nurses.⁵ Of these, 36,000 were actively seeking employment as nurses and approximately 87,000 were working in other fields. The remaining 270,000 were inactive.

⁵Moses, Evelyn B. "Current Data on Nurse Supply." *Nursing Shortage: Strategies for Nursing Practice and Education: A Report of the National Invitational Workshop*. Washington, DC: USDHHS, 22 – 24 February 1988, pp. 41 – 50.



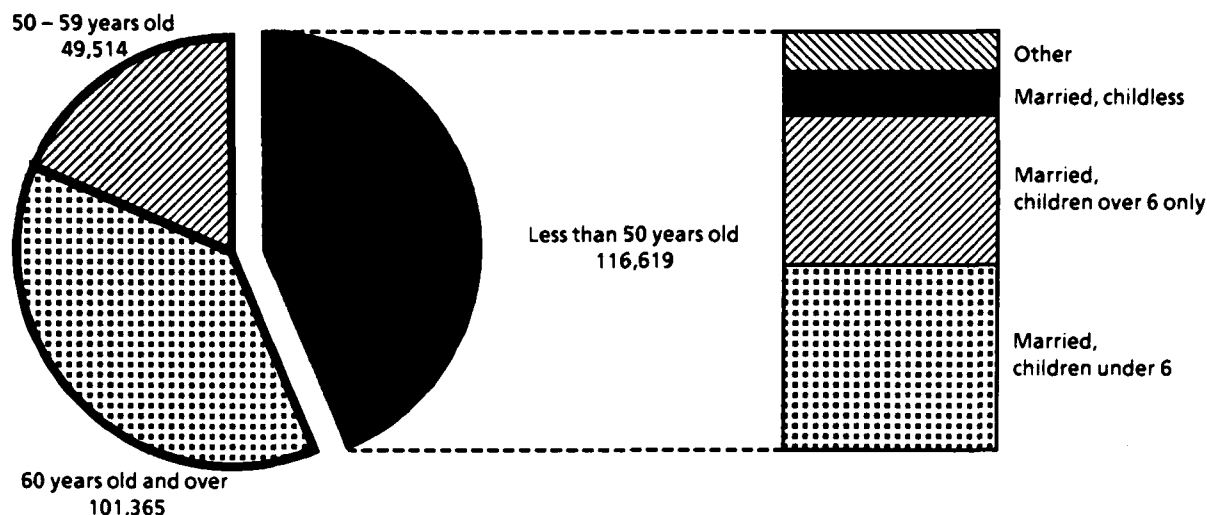
Source: Moses, 1989.

FIG. 3-2. EMPLOYED RNs PER 100,000 POPULATION, 1988

As can be seen in Figure 3-3, more than half the inactive nurses were 50 years of age or older and more than a third were 60 years or older. Of those under 50 years old, over 40 percent had children under 6 years of age.

Registered nurse vacancy rates were highest in hospitals, the largest employer of nurses. The American Hospital Association (AHA) reports that the average RN vacancy rate rose from 4.4 percent in 1983 to 11.3 percent in 1987.⁶ Over three-quarters of hospitals report nurse shortages, and 19 percent claim the problem is severe.

⁶AHA. *The Nursing Shortage: The Facts, Figures, and Feelings*. Chicago, IL: 1987.



Source: Moses, 1988.

FIG. 3-3. DISTRIBUTION OF INACTIVE RNs, 1984

Although large hospitals and those in large urban areas report the most serious problem, hospitals of all sizes in urban and rural areas have been affected by the nurse shortage. About 30 percent of the urban hospitals and 15 percent of those in rural settings have had to close hospital beds temporarily due to nurse vacancies.

Vacant nurse positions are especially difficult to fill in critical care, medical-surgical nursing, and nurse management specialties. In 1987, more than 90 percent of all hospitals reported they were recruiting RNs for medical-surgical staff positions, while almost 80 percent were seeking staff nurses for critical care — intensive and cardiac care units (ICU/CCU). Two-thirds of the hospitals recruiting medical-surgical nurses and 87 percent of those seeking ICU/CCU nurses reported that they spent more than 60 days recruiting to fill these posts. Indeed, 53 percent of the hospitals reported that it takes over 3 months to recruit a critical care nurse. Nurses with graduate degrees also are in short supply, and over 60 percent of the reporting hospitals have vacancies in head nurse positions.⁷

More than one-third of nursing homes report severe nursing shortages, and 51 percent report that it takes more than 90 days to replace staff RNs.⁸ Over half

⁷Ibid.

⁸American Health Care Association. *RN Manpower Survey*. 1987.

(56 percent) of all home-care agencies are experiencing difficulty in recruiting and retaining nurses, and 40 percent report being understaffed.⁹

Retention

Reports vary as to the number of nurses who leave their civilian positions each year. Most estimates claim, however, that between 35 and 60 percent of hospital nurses turn over yearly.¹⁰ In 1987, the AHA survey found that 49 percent of the hospitals queried reported that between 11 and 30 percent of the full-time RNs were on staff for less than 1 year, while 52 percent reported that 11 to 30 percent of full-time nurses were employed at their facilities for 1 to 2 years.¹¹ Reasons given for civilian nurse turnover are poor working conditions; inflexible work schedules; dissatisfaction with working relationships and support from nursing administration and physicians; lack of career advancement opportunities, professional autonomy, authority, and input into decisions made; and inadequate pay and benefits.¹² RN replacement costs about \$20,000 per nurse.¹³

Salaries

Salaries have a major influence on nurse shortages. Although nurses' salaries increased 7.1 to 11.4 percent during 1988, experienced nurses' wages remain low.¹⁴ Starting salaries for nurses, \$21,000 per year, are now comparable to those of other professionals. However, the maximum salary that experienced RNs can expect is only \$7,000 to \$9,000 per year higher than their starting salaries. Table 3-1 shows

⁹Secretary's Commission, p. III-6.

¹⁰Seybolt, John W., Cynthia Pavett, and Diane D. Walker. "Turnover Among Nurses: It Can Be Managed." *The Journal of Nursing Administration* 8. September 1978, pp. 4-9.

¹¹AHA. *Report of the Hospital Nursing Personnel Survey*. Chicago, IL: 1987.

¹²See for example: Huey, Florence L. and Susan Hartley. "What Keeps Nurses in Nursing." *American Journal of Nursing* 88. February 1988, pp. 181-188; Weisman, C. S. "Recruit from Within: Hospital Nurse Retention in the 1980's." *The Journal of Nursing Administration* 12. May 1983, pp. 24-31; and Prescott, Patricia A. and Sally A. Bowen. "Controlling Nursing Turnover." *Nursing Management* 18. June 1987, pp. 60-66.

¹³Secretary's Commission, p. IV-18.

¹⁴Cole, Ben S. and Matt Sizing. "Cole Nurse Compensation." *Modern Health Care* 18. 2 December 1988, pp. 24-47.

the average starting and maximum salaries of staff nurses in comparison with other occupations.¹⁵

TABLE 3-1
COMPARATIVE STARTING AND MAXIMUM ANNUAL SALARIES
BY SELECTED OCCUPATIONS, 1987

Occupation	Average starting	Average maximum	Progression (percent)
Accountant	\$21,024	\$61,546	193
Buyer	21,242	41,304	94
Computer programmer	20,832	42,934	106
Personnel clerk	14,193	23,702	67
Secretary	16,326	28,051	72
Staff nurse	20,964	29,088	39

Source: Secretary's Commission, p. iv-16.

Table 3-2 presents data on nurses' base salaries for several kinds of positions and their average increases in pay reported in 1988. The salaries do not necessarily reflect increasing levels of responsibility.

Table 3-3 shows the median annual salaries of nurses by type of position and specialty. Salaries of those in different specialties, regardless of shortages, vary little. Promotions within each specialty, however, result in approximately \$3,000 salary increases per step.

¹⁵U.S. Department of Labor, Bureau of Statistics. *Industry Wage Survey: Nursing and Personal Care Facilities, September, 1985*. Washington, DC: Bulletin 2213, March 1987; and U.S. Department of Labor, Bureau of Labor Statistics. *National Survey of Professional, Administrative, Technical and Clerical Pay*. Washington, DC: Bulletin 2290, March 1987.

TABLE 3-2
REGISTERED NURSE BASE SALARY AND SALARY INCREASES BY POSITION
(1988 means)

Position	Base salary	Annual percentage increase in salary
Director, Nursing Services	\$51,600	9.2
Assistant Director, Nursing Services	41,700	9.1
Nurse Supervisor	33,400	8.9
Director, Medical-Surgical Nursing	37,100	9.8
Head Nurse, Medical-Surgical Nursing	33,900	11.4
Charge Nurse, Medical-Surgical Nursing	29,000	7.1
Staff Nurse, Medical-Surgical Nursing	26,200	8.0
Nurse Practitioner	3,100	10.8
Certified Nurse-Anesthetist	45,400	NA

Source: Cole, 1988.

Note: NA = Not available.

TABLE 3-3
ANNUAL SALARIES FOR SELECTED NURSE POSITIONS AND SPECIALTIES
(1988 medians)

Specialty	Position		
	Staff Nurse	Charge Nurse	Head Nurse
Critical care	\$26,800	\$29,400	\$34,500
Medical-surgical	26,200	29,000	33,900
Emergency room	27,400	29,500	33,200
Operating room	28,100	31,300	34,500
Recovery room	28,300	30,900	34,500

Source: Cole, 1988.

Recruitment and Retention Incentive Programs

To increase nurse recruitment and retention success, hospitals have initiated such incentive programs as the following:¹⁶

- Bonuses for recruiting new nurses
- Full pay for shortened, hard-to-fill work hours (e.g., work 24-hour weekends, paid for 40 hours)
- Retention bonuses
- Flexible schedules
- Tuition remission for basic and advanced nurse education
- Child care centers
- Subsidized housing
- Relocation assistance
- Uniform allowances
- Secure parking
- Hospital discounts
- Malpractice insurance coverage
- Payment of professional association dues and conference attendance
- Generous benefit and retirement packages.

Current and Future Demand

The USDHHS Secretary's Commission on Nursing reports that, despite the increase in the supply of RNs, the current shortage of nurses arose primarily because

¹⁶See for example: Griswold, Richard H. *A Study of Civilian Registered Nurse Recruitment at Madigan Army Medical Center, Tacoma, Washington*. Waco, TX: Baylor University research project, June 1982; AHA. *Surviving the Nursing Shortage: Strategies for Recruitment and Retention of Hospital Nurses*. Chicago, IL: 1987; and American Academy of Nursing Task Force on Nursing Practice in Hospitals. *Magnet Hospitals: Attraction and Retention of Professional Nurses*. Kansas City, MO: American Nurses' Association, 1983.

demand for RNs has increased even more rapidly. The demand has increased dramatically during this decade for the following reasons:

- The severity of patient illness has increased the use of complex technologies requiring the services of highly skilled professionals.
- The use of licensed practical nurses and nursing aides has decreased because of increased reliance on RNs.
- A decrease in the length of hospital stays has caused patients still needing professional service to enter nursing homes and home-care agencies.
- The increased size of the elderly population has increased demand for health services.
- The high turnover of nurses among health care facilities has created recurring demand.¹⁷

This demand is not expected to decrease. Moreover, the future supply of nurses is projected to lessen. Student enrollments in, and graduations from, nursing educational programs have declined during the past 5 years. This downward trend is expected to continue since the number of college-age youth and the amount of direct financial aid have both decreased while other career opportunities for women have increased.

The Commission's assessment for the future is as follows:

Projections for the future are not encouraging. In the short term, the quantity of care provided by the existing pool of RNs will be difficult to increase. Furthermore in the long term, the Commission believes that the future supply of RNs will not be adequate to meet anticipated demand. There is considerable evidence to suggest that the demand for RNs will continue to increase, but that there will not be a commensurate expansion of supply.¹⁸

FAMILY ENVIRONMENT

A discussion of the environmental influences on reserve military nurse recruitment and retention is not complete without considering the nurse's family. Employment in, and commitment to, the nursing profession — predominantly a woman's

¹⁷Secretary's Commission, pp. IV-1 — IV-22.

¹⁸Ibid., p. VI-1.

occupation — have been found to be affected by the nurse's family responsibilities.¹⁹ In addition, Troyer found that chief nurses in the Air National Guard believe that the primary reason that nurses leave the National Guard is the conflict that occurs with family demands.²⁰

Table 3-4 presents data on 1984 nurse employment patterns by marital status and parenthood.

TABLE 3-4
1984 NURSE EMPLOYMENT BY MARITAL STATUS AND PARENTHOOD

Family	Nurses in each category		Nursing full time (percent)	Nursing part time (percent)	Not working as nurse (percent)
	Number	Percent			
Married	1,331,004	70.5	44.6	32.0	19.2
Never married	258,198	13.6	78.2	10.9	10.8
Widowed/divorced/separated	281,706	14.9	64.0	14.6	21.4
With children < 6 years	243,308	12.9	35.3	45.5	19.2
With children ≥ 6 years	496,381	26.2	45.9	33.1	20.9
With children in both groups	152,083	8.1	34.7	43.6	21.6
No children at home	429,225	22.7	52.3	19.6	28.2
All nurses ^a	1,887,697	100.0	52.1	26.5	21.3

Source: Adapted from: American Nurses' Association. *Facts About Nursing, 86-87*. Kansas City, MO: 1987, p. 11.

^a Data in columns are adaptations. They do not add to totals.

As can be seen, marital status and parenthood do not appear to be important influences on the decision to work as a nurse, but they do seem to affect the decision whether to seek full-time employment. As family responsibilities increase, the percentage of nurses working only part time also increases.

¹⁹Nichols, Glenadee A. "Job Satisfaction and Nurses' Intentions to Remain with or Leave an Organization." *Nursing Research* 20. May/June 1970, pp. 218-228; and Porter, Lyman W. and Richard M. Steers. "Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism." *Psychological Bulletin* 8. 1973, pp. 151-176.

²⁰Troyer, Susan J. *Factors Affecting Recruiting and Retention in the Air National Guard Nurse Corps*. Maxwell Air Force Base, AL: Air Command and Staff College, March 1984.

While the percentage of married nurses in the active military forces (approximately 55 percent) is smaller than that of the overall nurse population (70.5 percent), married reserve military nurses feel that their spouses support their military careers (see Table 3-5).

TABLE 3-5
NURSES' MARITAL STATUS AND FAMILY SUPPORT

Family situation	Nichols ^a (Active Air Force nurses)	Frelin ^b (Active Army nurses)	French ^c	
			Civilian nurses	Army Reserve nurses
Married	53.0%	58.0%	82%	44%
Spouse in armed forces	43.3%	36.6%		
Spouse in reserve forces			8%	27%
Spouse supports military service			- 2.19 ^d	0.53 ^d
Apt to comply with spouse's wishes			2.67 ^e	1.87 ^e
Military service interferes with family			1.50 ^f	- .42 ^f

^a Nichols, John C. *Turnover Among Air Force Nurses*. Salt Lake City, UT: University of Utah, Master's thesis, March 1987.

^b Frelin, A. J., T. R. Misener, and H. F. Mechanic. *Army Nurse Corps Personnel Management Practices*. Fort Sam Houston, TX: U.S. Army Health Care Studies and Clinical Investigation Activity, September 1984.

^c French, Diana Gail. *An Investigation of the Beliefs of Registered Nurses Towards Service in the Army Nurse Corps Reserves*. Toledo, OH: University of Toledo, Doctoral dissertation, 1986.

^d Mean scores [range from + 3 (strongly supportive) to - 3 (strongly negative)].

^e Mean scores [range from + 3 (comply) to 0 (not comply)].

^f Mean scores [range from + 3 (extremely likely) to - 3 (extremely unlikely)].

Table 3-5 also shows that, compared with civilian nurses, married military nurses tend to be married to persons in military service. In contrast, the study that compared civilian and reserve nurses (French) found that civilian nurses feel that their spouses would be negative toward their being in military service. Moreover, they are more apt to comply with their spouses' wishes than are their reserve military nurse counterparts. In addition, civilian nurses believe that reserve military service would interfere with their families, whereas reserve military nurses do not.

When military nurses were asked for reasons that would cause them to leave military service, a California National Guard study²¹ found that 23 percent of those in the Army National Guard claimed they would separate because of family responsibilities and a University of Utah study²² showed that 18.8 percent in the Air Force Nurse Corps would do the same. In contrast, a study at the University of Toledo²³ found that Army Reserve nurses did not believe their military responsibilities interfered with meeting family demands.

In light of this discussion, it is interesting that we have found the number of nurses with three or more dependents is increasing at a more rapid rate than that of the Selected Reserve nurse inventory (see Table C-3).

EDUCATIONAL ENVIRONMENT

Three basic types of educational programs prepare nurses for licensure as RNs: associate (AD), diploma (DI), and baccalaureate (BS) degree programs. While the number of AD and BS programs has steadily increased since 1978, the number of DI programs has declined. Nearly half of the remaining DI programs in the United States are located in the North Atlantic states and one-third are in the Midwest; the South has the largest total number of basic RN programs (481), while the West has the fewest (205).²⁴

Over two-thirds of all basic programs are publicly financed; 88 percent of AD programs, 50 percent of BS programs, and 12 percent of DI programs. Table 3-6 presents information about the types of nursing educational programs, the regions of the country in which they are located, and their sources of financial support.

Admissions, Enrollments, and Graduations

Figure 3-4 and Figure 3-5 present data for selected years about admissions to, and graduations from, the three basic types of nursing educational programs. A

²¹Brenner, Sally A. *An Analysis of Factors Which Influence Recruitment and Retention: California Army National Guard Medical and Nurse Corps Survey*. Sacramento, CA: Office of the Adjutant General, State of California, Unpublished paper, February 1987.

²²Nichols, 1987.

²³French, 1986.

²⁴All school and student data are derived from: Rosenfeld, Peri. *Nursing Student Census with Policy Implications, 1988*. New York: National League for Nursing, 1989.

TABLE 3-6

**TYPES OF NURSING EDUCATIONAL PROGRAMS, REGIONS,
AND PRIMARY SOURCE OF FUNDING SUPPORT**

Type of program	1978	1983	1987	1987 regional location (percent of programs, by type)				1987 source of funding support (percent)	
				North Atlantic states	Mid- west	South	West	Public	Private
Associate	666	764	789	18.6	26.5	36.0	18.9	88.5	11.5
Diploma	344	281	209	46.8	34.0	18.7	0.5	17.7	82.3
Baccalaureate	348	421	467	23.6	30.8	33.8	11.8	50.3	49.7
Number all programs	1,358	1,466	1,465	355	424	481	205	97.0	49.5

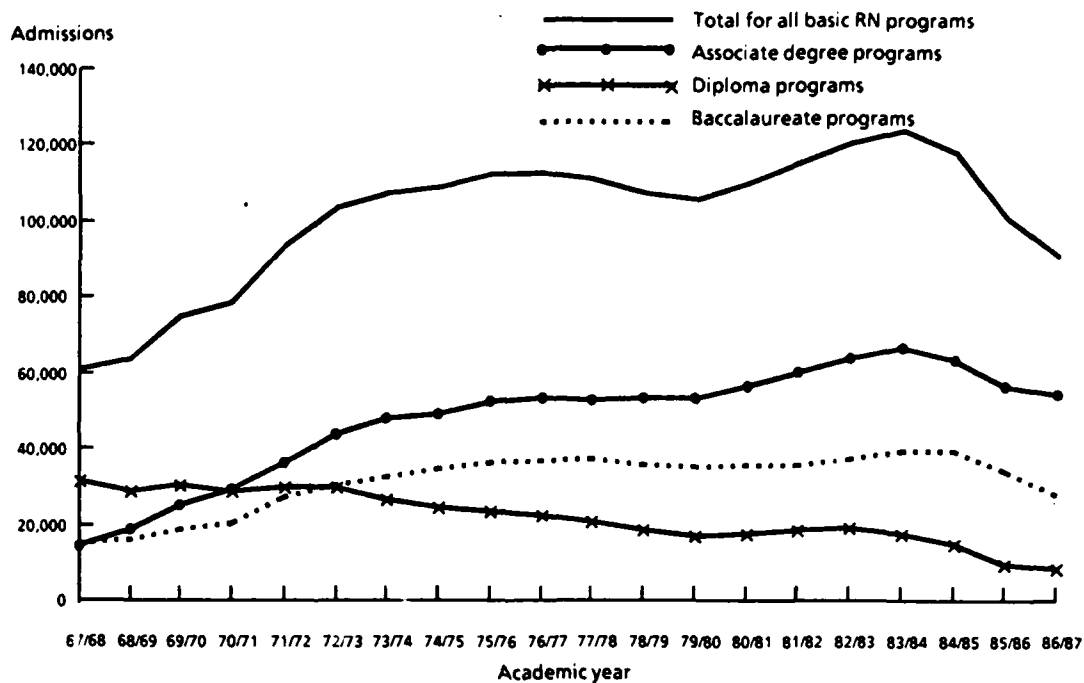
Source: Rosenfeld, pp. 5-20

review of total student population shows that, over the past 20 years, the number of students admitted to basic nursing programs has increased (+49.5 percent), the number enrolled in these programs has increased (+27 percent), and the number graduated from schools of nursing has increased (+71.1 percent). This growth has not been steady over 20 years and shows periods of stability and two periods of decline.

From 1967/1968 to 1975/1976 student admissions, enrollments, and graduations increased. Between 1977/1978 and 1979/1980 slight declines occurred. These declines were more than offset, however, by a growth spurt from 1980/1981 through 1983/1984. Today's concern over declining enrollments results from the 27 percent decrease in student admissions and enrollments that has occurred since 1984/1985.

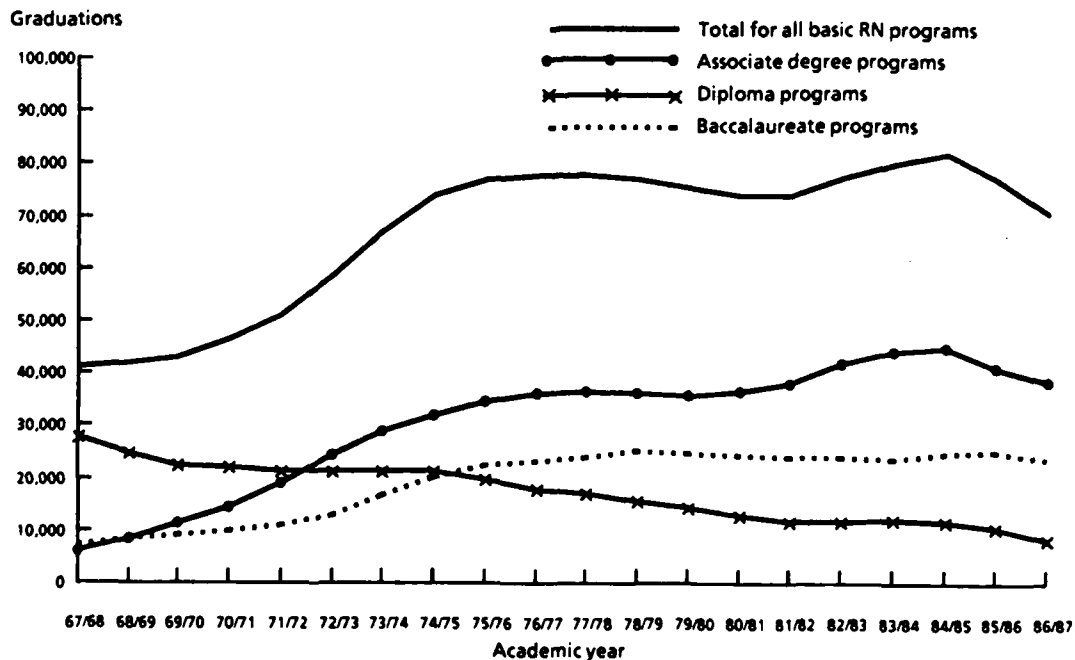
Associate degree program growth has been the most dramatic. The 20-year period has witnessed admission increases of 273 percent, enrollment increases of 235 percent, and graduation increases of 525 percent. Unlike admissions into BS programs, admissions into AD programs have increased steadily.

In contrast, diploma programs have shown a steady decline since 1967/1968, with the exception of a brief respite from 1981/1982 to 1983/1984. Over the 20-year period, admissions, enrollments, and graduations have decreased significantly. Prior



Source: Rosenfeld, p. 22.

FIG. 3-4. ANNUAL ADMISSIONS TO BASIC RN PROGRAMS: 1967/1968 TO 1986/1987



Source: Rosenfeld, p. 39.

FIG. 3-5. GRADUATIONS FROM BASIC RN PROGRAMS: 1967/1968 TO 1986/1987

to the 1970s, the vast majority of RNs were graduates of DI programs. Table 3-7 demonstrates how the percentages of graduates from the three types of programs have shifted during the 20-year period 1967 to 1987.

TABLE 3-7
PERCENTAGE OF GRADUATES FROM EACH TYPE OF NURSING EDUCATIONAL PROGRAM
(1967/1968 and 1986/1987)

Type of program	1967/1968 (percent)	1986/1987 (percent)
Associate	14.9	54.6
Diploma	67.8	11.7
Baccalaureate	17.3	33.7

Source: Rosenfeld, p. 39.

Males and Ethnic/Racial Minorities

Data from approximately 80 percent of all existing programs regarding admissions of men and other minorities into schools of nursing were reported in the National League for Nursing census for the academic years 1978 to 1987. That information is presented in Table 3-8 and Table 3-9. Although the separate 1987 data are available on the percentages of admissions of blacks (10.9 percent), Hispanics (2.9 percent), Asians (2.0 percent), and American Indians (7 percent), Table 3-9 combines these into a single minority category.

The 10-year statistics indicate the number of males admitted to nursing programs fell 16.6 percent. The largest group (7,971) was admitted in 1984, but male admissions have dropped each year since then (in 1987, 5,302 were admitted, a drop of 33.5 percent from 1984). While the largest number of males historically have entered AD programs, and while the 10-year trend shows an increase of 5.0 percent, male admissions have declined by 30.2 percent since the peak year (1984). The diploma program, with the smallest admission of males, shows a 10-year decline of 56.0 percent. The baccalaureate degree program shows large declines over the 10-year period (29.1 percent) and since 1984 (34.6 percent).

TABLE 3-8

MALE ADMISSIONS TO NURSING PROGRAMS IN SELECTED YEARS, 1978 - 1987

Type of program		1978	1981	1984	1985	1986	1987	Percent change	
								1978 - 1987	1984 - 1987
Associate	N	3,133	3,677	4,712	3,540	3,432	3,290	+ 5.0	- 30.2
	%	6.8 ^a	7.9	8.0	6.5	7.1	7.6		
Diploma	N	1,027	862	875	832	498	452	- 56.0	- 48.3
	%	5.3	5.6	5.1	5.9	5.3	5.9		
Baccalaureate	N	2,199	1,959	2,384	1,972	1,783	1,560	- 29.1	- 38.1
	%	6.2	7.3	6.4	5.9	6.0	7.1		
Total	N	6,359	6,498	7,971	6,344	5,715	5,302	- 16.6	- 33.5
	%	6.3	7.3	7.0	6.3	6.6	7.2		

Source: Adapted from Rosenfeld, p. 53.

Note: The data in this table are adaptations and do not necessarily add to totals shown.

^a Indicates the percentage of all associate degree program entries represented by the "N" (3,133) in this cell.

TABLE 3-9

MINORITY ADMISSIONS TO NURSING PROGRAMS IN SELECTED YEARS, 1978 - 1987

Type of program		1978	1981	1984	1985	1986	1987	Percent change	
								1978 - 1987	1984 - 1987
Associate	N	5,141	6,832	7,779	7,620	7,397	7,685	+ 49.5	- 1.2
	%	11.1 ^a	15.4	13.2	14.1	15.4	17.7		
Diploma	N	1,331	1,416	1,384	1,387	1,085	1,028	- 22.8	- 25.7
	%	6.9	9.5	7.9	9.8	11.5	13.4		
Baccalaureate	N	3,841	4,057	5,484	3,855	4,195	3,396	- 11.6	- 38.1
	%	10.9	16.3	14.6	11.5	14.3	15.4		
Total	N	10,313	12,575	14,647	12,862	12,677	12,109	+ 17.4	- 17.3
	%	10.3	14.7	12.9	12.7	14.6	16.5		

Source: Adapted from Rosenfeld, p. 53.

Note: The data in this table are adaptations and do not necessarily add to totals shown.

^a Indicates the percentage of all associate degree program entries represented by the "N" (5,141) in this cell.

The percentage of minorities admitted to nursing programs has increased each year, with slight variation, for a 10-year increase of 17.4 percent. Since 1984, however, the actual number of minority admissions has decreased from 14,647 to 12,109.

The most stable minority enrollment has occurred in the AD program, the program entered by 63.5 percent of minorities. Over the 10-year period, the number of minorities in AD programs has grown by 49.5 percent, and while the number peaked at 7,779 in 1984 it decreased only to 7,685 by 1987, a 1.2 percent decline.

Diploma enrollments have shown a steady decline of 22.8 percent over the 10-year period. Still in 1987, 1,028 minority students (11.8 percent of all minority students admitted to nursing programs in 1987) were enrolled in DI programs. Baccalaureate degree programs, while showing increases in the *percentage* of minorities (1987=15.4 percent), have experienced decreases in the *number* of minority admissions during the 10-year period (11.6 percent); the decline was most pronounced from 1984 to 1987 (38.1 percent).

The Future

The Division of Nursing, USDHHS, in its 1988 report to the President and Congress on health personnel, presented data on the projected number of graduates from basic nursing educational programs from the years 1985/1986 to 2019/2020.²⁵ These data were derived using two projection methods. One assumed the continuation of trends, the other assumed a constrained trend in baccalaureate nursing programs and continuation of trends in AD and DI programs. Both methods of projection proved optimistic for the academic years 1985/1986 and 1986/1987. For example, the actual decrease in the number of graduates reported in 1986/1987 was not expected until 1995 to 2001. The projections do show, however, that a decrease is expected in the number of graduates throughout the 34-year period. Moreover, it is expected that AD programs will be producing 59 to 67 percent of the graduates by the early 21st century.

²⁵USDHHS, Division of Nursing. *Nursing—Sixth Report to the President and Congress on the Status of Health Personnel in the United States*. Washington, DC: June 1988.

Reasons for Decline

The Secretary's Commission on Nursing did not foresee a reversal of the present decline in numbers of student nurse admissions and enrollments.²⁶ An article in *American Demographics* agreed with the negative assessment.²⁷ The article reported statistics from the 1986 freshmen survey of full-time students in 2- and 4-year colleges and universities sponsored by UCLA's Cooperative Institutional Research Program (the program has conducted this annual survey since 1966).

The article offers five major reasons to explain the expected continued decline in the number of future RNs. First, the condition of the national economy affects interest in a nursing career. Interest in nursing increased during the recession years 1974 and 1983 when students were concerned with job security. During better times, students are sensitive to long-term promises of career and salary advancement. (Hixon also notes that the number of entrants to schools of nursing is positively related to nurses' salaries and to salaries in similar fields.²⁸)

Second, the population of 18 year-olds began to decline in 1978 and will continue to decrease until 1992. The Secretary's Commission reports that the number of high school graduates peaked at 3.2 million in 1977; by 1986, that number had fallen by another 16 percent to 2.7 million. By 1992, the number is expected to decrease further to 2.4 million.²⁹ [Hixon finds that a 13 percent decline in the number of women (aged 18 to 25 years) is associated with sharp declines in the number of nursing school entrants.]

Third, interest in a nursing career has diminished with the expansion of other career opportunities for women. Green reports that the proportion of freshmen women who planned a nursing career fell 50 percent between 1974 and 1986. The proportion fell by one-third from 1983 to 1986, from 8.3 to 5.1 percent. Indeed, in the fall of 1986, the number of aspiring women physicians (25,000) among the nation's freshmen in 4-year colleges surpassed the number of aspiring nurses (19,800) for the

²⁶Secretary's Commission, Chapter IV.

²⁷Green, Kenneth C. "Who Wants To Be a Nurse?" *American Demographics* 61. January 1988, pp. 46-48, 61.

²⁸Hixon, Jesse S. *The Recurrent Shortage of Registered Nurses: New Look at the Issues*. Hyattsville, MD: USDHHS, Bureau of Health Professions, September 1981.

²⁹Secretary's Commission, p. IV-15.

first time.³⁰ In contrast to the 5.1 percent interested in nursing, the proportion of women interested in a business career was 22 percent in 1986 (up from 10 percent in 1975).

Fourth, retention rates in nursing educational programs (60 to 70 percent) are not expected to improve. Scholastic Aptitude Test scores of aspiring nurses are below national averages, and UCLA studies indicate that high school grade point averages are lower for nursing students than for other freshmen. Green notes that the proportion of minorities interested in a nursing career has increased significantly between 1980 and 1986. Yet these students sometimes enter college with poor academic preparation and have high attrition rates once admitted.

Fifth, inadequate financial aid affects nursing school admissions and graduations. The National League for Nursing reports that the mean annual tuition in 1987/1988 ranged from \$1,292 in publicly funded AD programs to \$6,150 in private BS programs (the mean for publicly supported BS programs was \$4,738).³¹ This amount, however, does not include costs for uniforms, books, housing, and living expenses. Since 1980, the preponderance of Federal support for nursing students shifted from scholarships to loans. The Federal scholarship program for exceptionally needy full-time nursing students began in 1968 and terminated in 1980. Moreover, the amount of money available for loans has decreased. Since 1983, no new Federal loan money has been appropriated. Schools of nursing now can offer Federal loans only from a revolving fund of repaid previous loans. As a result, students must rely heavily on funds from private or state sources.

This loan emphasis affects lower income and minority nurse aspirants. The Secretary's Commission on Nursing reports that debt considerations affect both the choice of educational program and the choice of whether higher education will be sought at all. Hensen reports that AD programs characteristically attract older, minority, and male students. Over half those students are married, many are parents and heads of households, and 75 percent work while attending school.³²

³⁰Green, p. 46.

³¹Rosenfeld, p. 15.

³²Hensen, Gerry. "Student Retention in Associate Degree Nursing Education." *Nursing Shortage: Strategies for Nursing Practice and Education: A Report of the National Invitational Workshop*. Washington, DC: USDHHS, 22-24 February 1988, pp. 99-103.

MILITARY RN WORK ENVIRONMENT

An Army, Navy, and Air Force nurse task force, appointed by the leader of the several military nurse corps, participated as members of the Secretary's Commission on Nursing. The task force prepared a report that addressed the shortage, recruitment, and retention of registered nurses in the Military Departments. Most of the information presented in this section was obtained from that report.³³

The Military Services maintain more than 500 worldwide medical treatment facilities (including 168 hospitals) and report shortages of RNs in all components. These shortages include civilian, active component, and reserve military nurses.

A shortage of civilian nurses at military hospitals has been a persistent problem, especially for the Army. Consistent with civilian hospitals, the Army reports a 15 to 16 percent position vacancy rate. Vacancies in medical-surgical, mental health, obstetrics, critical care, operating room, and anesthetist specialties are particularly difficult to fill. The reasons given for recruitment and retention problems are entry level wage deficiencies, overall pay and benefit structure, lack of incentives, and prolonged processing and selection time.

Since 1981, the Military Services have not had significant difficulty meeting their active force recruiting goals. In FY88, however, active forces accession goals were not met by either the Army or the Navy. The Army was 30 to 50 nurses short of its goal and had a 15 percent vacancy rate in authorized positions (which total only 91.5 percent of 100 percent manning levels). While the Air Force was able to meet its total accession goal, it has been unable for several years to fill anesthetist and other specialty positions.³⁴

Military nurse recruiters are finding that they are spending large amounts of time and effort to attract and process applicants with lower qualifications than those attracted in the past. Those specialties that present the most difficulties are nurse-anesthetists, operating room nurses, and intensive care unit nurses.

Retention of nurses on extended active duty is a problem, as evidenced by decreased average longevity. The Army's chief nurse, General Clara Adams-Ender

³³Military Nurses Task Force. "Report on the Military Nursing Shortage." *Final Report of the Secretary's Commission on Nursing*. Washington, DC: USDHHS, December 1988, Volume VI-A.

³⁴Willis, Grant. "Nurse Anesthetist Bonus Asked." *Army Times*. 6 February 1989, p. 8.

claims that, to maintain Army equilibrium, 80 percent of its nurses must remain in active service after fulfilling their initial active duty obligations; unfortunately, only 70 percent are staying. Three years ago, 96 percent of the nurses who had completed 12 years of service were remaining on active duty; by 1988, only 78 percent were staying.³⁵ Among other factors, the task force attributes the shortages to:

- Inadequate administrative and clinical support
- Physical plant deficiencies
- Demands on nurses to work long hours, shifts, and weekends and to undertake nonnursing activities
- Decreased attractiveness of military career paths for women
- Inadequate military salaries.

Military nurses have traditionally earned more than nurses in the civilian sector in recognition of extra work hours, training, and responsibility. Current military salaries, however, are losing their competitive edge. For example, a new second lieutenant/ensign earns \$21,830 annually in pay and benefits, compared with an average civilian nurse who, in 1988, earned \$22,176. Wage disparities are expected to worsen: military pay increased only 3 percent in 1988, whereas civilian salaries increased 7 percent.

Higher pay grade advantages also are eroding. A captain/lieutenant senior grade with 7 to 8 years' experience earned \$38,835 in 1988 compared to a \$32,160 salary of a civilian nurse with similar experience, a difference of \$6,675. In 1985, that difference had been \$9,241. Civilian nurse-anesthetists, with 12 years' experience can expect to earn about \$53,000 annually, whereas the 12-year military nurse-anesthetist will make only \$48,000.

The demand for RNs in the Military Services continues to increase. Even if the overall military force structure were stabilized, the beneficiary population continues to grow, especially among those over 65 years of age. There are indications that patient illness seriousness and complexity of care have increased. In addition, there has been an expansion of the services that nurses perform. For example, nurses are now involved extensively with both the screening and education efforts associated

³⁵Roth, Margaret. "Nurse Shortage Fuels Attack on Pay, Work Conditions." *Army Times*. 13 February 1989, p. 8.

with drug and alcohol abuse and with the epidemic of acquired immunodeficiency syndrome (AIDS). They also participate in reviews of quality of service, appropriateness of procedures and practices, and evaluation of peers.

The nursing shortage has eroded the quality of military medical services in several ways. These include:

- An increased reliance on contract and temporary nursing care
- The closing of hospital beds
- Suspension of patient admissions to certain units
- Twelve-hour nursing shifts
- Increases in the use of civilian facilities under Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

CHAPTER 4

RECRUITING MARKETS FOR RESERVE MILITARY NURSES

There are three major target populations for DoD's efforts to recruit reserve military nurses:

- Student nurses
- Civilian registered nurses
- Active forces military nurses.

In this chapter, we examine each of these groups as other researchers have written about them. We review the following important perspectives:

- Demographic characteristics
- Work experiences
- Career motivations
- Career satisfactions
- Attitudes about military service.

STUDENT NURSES

Four studies, all conducted during the 1970s, examined student nurse backgrounds, career aspirations, and plans. The largest of the four focuses on students attending the three basic types of nursing programs in 1977 and 1978.¹ Researchers visited 23 racially integrated schools of nursing in 12 states and distributed questionnaires that were completed by 3,002 students. Selected demographic and work experience characteristics of these students are presented in Table 4-1.

As can be seen, associate degree programs are more racially integrated. They attract students who are older, married, and parents, and have lower high school class rankings than do students in diploma and baccalaureate degree programs.

¹Feldbaum, Eleanor G. and Morris J. Levitt. *Nurses and the Educational Process: A Report to Nurse Educators*. College Park, MD: Bureau of Governmental Research, University of Maryland, 1980.

TABLE 4-1

**DEMOGRAPHIC AND WORK EXPERIENCE CHARACTERISTICS OF STUDENT NURSES
IN THREE TYPES OF EDUCATIONAL PROGRAMS**

(Percentages reported, unless specified)

Characteristics	Associate	Diploma	Baccalaureate
Median age (years)	28	22	22
Females	92.5	90.8	93.9
Race - White	68.4	82.6	88.9
Married	64.8	31.9	27.4
Have children	52.0	17.6	13.3
High school rank top quarter	39.0	47.8	62.6
Volunteer work in health field	14.4	28.1	33.3
Work experience in health field	60.5	56.3	57.4
Nurses aide	33.8	33.5	39.4
Practical nurse	22.5	7.1	3.1
Other	4.2	15.7	14.9
Work for pay while in school	59.7	70.9	73.1
Nurses aide	27.5	46.4	34.1
Practical nurse	32.2	9.3	3.8
Other	0.0	15.2	35.2
Number of nurses	817	881	1,304

Source: Feldbaum, Eleanor G. and Brenda J. D. Rowe. *The Implications of Professional Socialization on Responsiveness to Patients*. Phoenix, AZ: A paper delivered to the 1978 National Conference of the American Society for Public Administration, April 1978.

While more than half the students have work experience in the health care field prior to attending school, associate degree students are most likely to have been trained and to have worked as practical nurses. It is interesting to note that 70.9 percent of diploma and 73.1 percent of baccalaureate degree students hold paid positions while attending school, as compared to 59.3 percent of those in associate degree programs.

The reasons students gave for selecting their programs and schools varied widely. Many associate degree students were influenced by financial considerations, the concentrated nature of the program of study, and the school's proximity to home. Diploma students' choices were influenced by a desire for extensive clinical and practical experiences, as well as their respective school's reputation. Baccalaureate

degree students chose their programs and schools because they desired the status accompanying a college degree. They felt that college graduates had more career opportunities, and they knew that their chosen college offered a broad educational curriculum and enjoyed a good reputation.

Financial Aid

Tables 4-2 and 4-3 present data about financial aid for student nurses in 1986.² The Federal Government provides assistance to the largest proportion of students. Over half the students receive Federal grants, loans, or both. The largest Federal programs for student nurses are Pell grants and the Guaranteed Student Loan (Stafford) program. While the states aid 17.3 percent of the students, and institutions assist 18.0 percent of them, that aid is usually given as grants-in-aid.

An examination of Table 4-2 and Table 4-3 indicates that persons that might be expected to need financial aid are not necessarily the ones receiving it. For example, a larger proportion of students in private schools and in baccalaureate programs are receiving financial assistance of all types than are those in public, associate degree programs. Moreover, smaller percentages of older, married, and part-time students living off campus are receiving aid than are their full-time, younger, single classmates who live in school-owned housing.

A recent study by the American Association of Colleges of Nursing found, in nine sample schools of nursing, that student nurses rely heavily on loans to pay educational costs.³ Over half the students borrow an average of \$10,000 (public college) to \$13,000 (private college) while in school. Although these students are eligible for the Nursing Student Loan Program (NSLP) administered by USDHHS, few schools (2 of 9) participate in the program because of stringent delinquency monitoring requirements. Instead, most rely on the Guaranteed Student Loan (Stafford) program. The American Association of Colleges of Nursing study also indicated that nursing students incur more education-related expenses (between \$438 and \$547 per year) than students from other majors. These funds cover such

²U.S. Department of Education, Office of Educational Research and Improvement. Special computer run from unpublished statistics, 1989.

³Bednash, Geraldine, et al. *The Economic Investment in Nursing Education: Student, Institutional, and Clinical Perspectives*. Washington, DC: American Association of Colleges of Nursing, 1989.

TABLE 4-2
SOURCE OF FINANCIAL AID FOR STUDENT NURSES BY CHARACTERISTICS OF SCHOOL
AND UNDERGRADUATE STUDENTS, 1987
(Percent reported, unless specified)

Characteristics	Total students ^a	Nonaided	Any aid	Federal aid	State aid	Inst. aid	Other aid
Characteristics of school							
Public	279,204	53.5	46.5	34.9	14.1	12.2	8.1
4-year doctoral	69,620	45.6	54.4	42.2	14.0	17.5	8.3
Other 4-year	47,905	44.0	56.0	40.0	19.7	12.9	15.2
2-year	157,006	61.2	38.8	28.5	10.9	9.7	6.0
Less than 2-year	4,673						
Private, not-for-profit	83,376	29.6	70.4	53.3	28.0	37.2	16.8
4-year doctoral	16,714	39.9	60.1	42.5	15.5	32.9	18.1
Other 4-year	45,655	28.7	71.3	56.3	29.4	43.4	17.3
2-year	20,757	23.2	76.8	55.4	35.0	27.4	14.8
Characteristics of student							
Sex	363,063	48.0	52.0	39.2	17.3	18.0	10.1
Male	23,967	47.4	52.6	42.3	14.8	13.5	4.7
Female	339,096	48.0	52.0	39.0	17.4	18.3	10.5
Race	363,063	48.0	52.0	39.2	17.3	18.0	10.1
American Indian	6,741		55.9				
Asian American	12,648	57.8	42.2	40.6	22.0	10.3	7.1
Black, Non-Hispanic	39,788	40.3	59.7	52.0	24.9	18.3	5.3
Hispanic	18,001	49.1	50.9	56.4	17.0	8.5	11.1
White, Non-Hispanic	285,885	48.6	51.4	36.5	15.9	18.7	11.1
Age	363,063	48.0	52.0	39.2	17.3	18.0	10.1
23 or younger	160,345	40.6	59.4	47.6	22.2	24.2	10.9
24 - 29	76,190	56.7	43.3	31.1	13.4	15.0	8.8
30 or older	126,529	52.1	47.9	33.4	13.3	11.9	9.9
Marital Status	363,063	48.0	52.0	39.2	17.3	18.0	10.1
Married	134,142	54.1	45.9	32.4	12.0	14.4	9.9
Not married	228,922	44.4	55.6	43.2	20.3	20.1	10.3
Attendance status	363,023	48.0	52.0	39.2	17.3	18.0	10.1
Full time	212,749	32.0	68.0	55.1	26.3	25.6	10.8
Part time	150,314	70.6	29.4	16.6	4.4	7.2	9.2
Dependency status	363,063	48.0	52.0	39.2	17.3	18.0	10.1
Dependent	178,191	51.7	48.3	35.7	17.8	79.7	10.0
Independent	184,872	44.4	55.6	42.5	16.7	16.3	10.2
Housing status	363,063	48.0	52.0	39.2	17.3	18.0	10.1
School-owned	52,163	20.3	79.7	60.3	33.2	40.8	15.2
Off-campus	228,743	50.1	49.9	38.3	15.0	14.4	10.0
With parents	82,157	59.8	40.2	29.0	13.3	13.4	7.2
Total	363,063	48.0	52.0	39.2	17.3	18.0	10.1

Source: U.S. Department of Education, Office of Educational Research and Improvement. Special computer run from unpublished statistics, 1989.

^a The numbers shown reflect self-reported data and do not necessarily add to the totals shown. Where student numbers appear to be excessively large, it may be because: (1) students can receive more than one type of aid and would be counted in the total for each type received and (2) all students with declared nursing majors are counted (including those who have not yet taken any nursing courses).

TABLE 4-3
TYPES OF FINANCIAL AID FOR STUDENT NURSES BY CHARACTERISTICS OF SCHOOL
AND UNDERGRADUATE STUDENTS, 1987
(Percent reported, unless specified)

Characteristics	Total number ^a	Any grant aid	Federal grant aid	Non-Federal grant aid	Any loan aid	Federal loan aid	Non-Federal loan aid	Any work aid	Federal work aid	Non-Federal work aid
Characteristics of school										
Public	279,204	38.8	26.6	28.0	22.7	21.4	2.4	5.3	4.6	0.9
4-year doctoral	69,620	41.5	26.2	28.8	38.9	37.8	3.9	4.9	4.2	1.2
Other 4-year	47,905	46.3	28.4	35.9	28.3	27.0	2.5	7.9	6.7	1.8
2-year	157,006	33.8	24.2	24.2	13.0	11.7	1.4	4.8	4.2	0.6
Less than 2-year	4,673									
Private, not-for-profit	83,376	61.6	33.6	57.1	44.1	42.8	3.6	10.6	7.4	4.8
4-year doctoral	16,714	53.4	22.0	46.8	37.5	35.2	7.2	11.7	8.2	3.5
Other 4-year	45,655	63.6	39.4	60.8	47.7	46.3	3.3	14.8	10.2	7.4
2-year	20,757	63.9	34.5	57.1	42.2	41.8	1.4	0.7	0.7	0.0
Characteristics of student										
Sex	363,063	44.0	28.2	34.7	27.7	23.4	2.7	6.5	5.2	1.8
Male	23,967	44.2	32.4	26.4	32.1	31.0	1.4	3.1	1.1	1.9
Female	339,096	44.0	27.9	35.2	27.4	26.0	2.8	6.8	5.5	1.8
Race	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
American Indian	6,740									
Asian American	12,648	39.5	30.0	33.9	27.2	27.2	0.0	2.4	2.4	0.0
Black, Non-Hispanic	39,788	49.5	42.8	36.6	38.4	35.9	4.0	12.6	12.3	1.7
Hispanic	18,001	47.2	39.2	24.8	17.5	15.8	1.7	12.2	11.3	0.9
White, Non-Hispanic	285,885	43.1	24.8	34.8	26.8	25.6	2.8	5.3	3.7	2.0
Age	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
23 or younger	160,345	51.3	34.2	40.8	37.4	35.4	3.0	9.4	7.5	3.1
24 - 29	76,190	36.2	23.4	28.4	21.6	20.1	3.8	5.0	4.3	0.9
30 or older	126,529	39.5	23.4	30.7	19.0	18.7	1.6	3.8	3.0	0.8
Marital Status	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
Married	134,142	37.4	22.5	28.5	21.3	19.9	2.7	3.7	3.3	0.5
Not married	228,922	47.9	31.5	38.2	31.4	30.1	2.7	8.2	6.4	2.6
Attendance status	363,023	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
Full time	212,749	59.2	41.3	46.6	37.1	35.9	3.4	10.4	8.2	3.1
Part time	150,314	22.5	9.5	17.8	14.3	12.8	1.8	1.0	1.0	0.0
Dependency status	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
Dependent	178,191	40.7	24.0	34.6	29.6	27.9	2.7	7.7	6.2	2.4
Independent	184,872	47.2	32.0	34.7	25.9	24.9	2.7	5.4	4.3	1.2
Housing status	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8
School-owned	52,163	70.0	42.4	61.1	53.4	51.0	3.9	18.5	15.2	6.4
Off-campus	228,743	41.1	27.4	31.8	24.2	23.2	2.6	5.4	4.4	1.1
With parents	82,157	33.3	21.3	25.7	21.0	19.4	2.2	2.0	1.2	0.8
Total	363,063	44.0	28.2	34.7	27.7	26.4	2.7	6.5	5.2	1.8

Source: U.S. Department of Education, Office of Educational Research and Improvement. Special computer run from unpublished statistics, 1989

^a The numbers shown reflect self-reported data and do not necessarily add to the totals shown. Where student numbers appear to be excessively large, it may be because (1) students can receive more than one type of aid and would be counted in the total for each type received and (2) all students with declared nursing majors are counted (including those who have not yet taken any nursing courses).

items as uniforms, medical equipment, and transportation to and from clinical practice sites.

Career Expectations

A 1971 Veterans Administration study of 585 senior student nurses attending 85 associate, diploma, and baccalaureate nursing programs identified the following job factors as among the most important when seeking a first nursing job:⁴

- Institutional practices of progressive patient care (64 percent)
- Educational opportunities (50 percent)
- Ability to select nursing clinical specialty (43 percent)
- Availability of advancement opportunities (31 percent)
- Salary (30 percent)
- Hours — tour of duty (25 percent)
- Geographic location (21 percent)
- Fringe benefits (18 percent)
- Status of position (10 percent).

Opinion Research Corporation conducted a study of practicing physicians and students (including 217 seniors in 3- and 4-year programs) attending a variety of health professions schools.⁵ The student nurses were asked what aspects of a nursing career were most important. Table 4-4 presents the responses in order of importance to the students. The table also shows whether the respondents believed these aspects are more characteristic of military or of civilian nursing practice.

The rank order indicates that students often aspire to positions that afford them variety, challenge, fulfillment, professional growth, and status. At a second level, material rewards are important. The only difference between 3- and 4-year students is that 3-year students are more concerned about relations with patients and freedom to select communities in which to live.

⁴Tichenor, Robert W. *Factors Graduating Student Nurses Consider When Seeking Their First Employment*. Washington, DC: Veterans Administration, 1971.

⁵Opinion Research Corporation. *Study of the Recruitment of Medical Professionals for the Military Services*. Princeton, NJ: April 1976.

TABLE 4-4**IMPORTANCE OF CAREER ASPECTS TO SENIOR NURSING STUDENTS
AND PERCEPTIONS OF CIVILIAN AND MILITARY WORK**

Career aspects	Rank of importance	Military does this better (percent agreeing)	Civilian does this better (percent agreeing)
Accomplishing something worthwhile	1	19	9
Chance to continue education and training	2	60	2
Receive respect and consideration from others	3	21	10
Varied and challenging practice	4	35	14
Associated with professionals you respect	5	21	15
Job that allows choice of area of residence	6	11	54
Develop meaningful, continued relationship with patients	7	13	12
Good income	8	43	9
Good retirement program	9	72	0
Modern, up-to-date medical equipment	10	37	3
Opportunity to advance or get promoted	11	48	4
Able to attend professional conferences	12	30	3
Opportunity to travel	13	66	3
Able to take a month's vacation	14	55	1
Position respected in community	15	11	12
Work a 40-hour week	16	12	3
Able to retire at early age	17	26	0

Source: Opinion Research Corporation.

As can be seen in Table 4-4, for all aspects but two, the students feel that the military work arena offers more than the civilian sector. That belief is quite strong about the retirement program and opportunities for travel, education, and lengthy vacations. Freedom to choose one's living area and community respect are the two areas in which the civilian work arena scored higher. Three-year students also felt that patient relationships would be better in civilian employment, whereas 4-year seniors rated civilian work as offering more opportunity to work with respected professionals.

Students and Military Service

The Opinion Research Corporation gauged whether senior students felt favorable toward military service and asked about their probability of entering military practice.⁶ In addition, students were asked their reasons for selecting or not selecting military service. These findings are presented in Table 4-5. As can be seen, approximately two-thirds of the students claim to have considered military service. However, only around one-quarter rated the probability of their actually joining at 50 percent or greater.

The major attractions of a military practice were the opportunities to travel; to continue one's education; and to receive good salary, benefits, and experience. The major detractors of a military career were "not being my own boss," the (then) 2-year commitment, moving one's residence, and interference with family life. Almost one-fifth of the 4-year students claimed to be "antimilitary." In addition, large percentages of students had inaccurate information about the Military Services' retirement plan (49 percent), salary (37 percent), paid vacation (33 percent), and negotiability of initial assignment (30 percent), although approximately half felt these aspects were important.

CIVILIAN REGISTERED NURSES

The 1984 *National Sample Survey of Registered Nurses* reported a total of 1,887,697 nurses licensed to practice, 78.7 percent of whom were employed in nursing.⁷ Of those working in nursing, 66.3 percent were working full time. Hospitals employed the largest proportion of nurses (68.1 percent), and most RNs held staff positions (66.8 percent). Table 4-6 presents data about the nurses' employment.

Demographic and Education Background and Employment in Nursing

As can be seen in Table 4-7, nursing is predominantly composed of white (90.3 percent) women (97.0 percent). The median age of employed civilian nurses is 38.2 years. As expected, there is a direct relationship between age and employment.

⁶Ibid.

⁷Westat, Inc. 1984 *National Sample Survey of Registered Nurses: Summary of Results*. Rockville, MD: USDHHS, Bureau of Health Professions, April 1986.

TABLE 4-5

**SENIOR NURSING STUDENTS' BELIEFS AND CONSIDERATIONS
ABOUT POSSIBLE MILITARY PRACTICE**

(Percentages reported)

Beliefs and considerations	Three-year seniors	Four-year seniors
Considered a military practice	66	67
Reasons for considering military		
Opportunity to travel	37	52
Good benefits	44	25
Financial help for education	31	33
For the money	25	23
Patriotism	24	8
Experience	18	8
Security	10	11
Family tradition	7	5
Reasons for not considering military		
Want to be my own boss	38	47
Did not want 2-year commitment	24	11
Would interfere with family life	14	14
Did not want to move around	11	14
Antimilitary	5	19
Probability of entering military practice		
0%	27	27
10 - 20%	24	27
30 - 40%	22	22
50 - 60%	17	11
70 - 80%	6	10
90 - 100%	4	3

Source: Opinion Research Corporation, pp. V5, V7, and V30.

in nursing. Younger nurses are more apt to work in nursing and are more likely to be employed full time than are their older colleagues.

TABLE 4-6

EMPLOYED REGISTERED NURSES, EMPLOYERS, AND POSITIONS

(Percentages reported, unless specified)

Employment characteristics	Nurses
Employment status	
Percent employed in nursing	78.7
Percent employed in nursing full time	66.3
Percent employed in nursing part time	33.7
Percent not employed in nursing	21.3
Employer	
Hospital	68.1
Federal Government hospital	4.2
Nursing education	2.7
Nursing home/extended care	7.7
Public health/community	6.8
Student health service	2.9
Occupational health	1.5
Ambulatory care setting	6.6
Private duty	1.5
Other self-employed	0.6
Other	1.4
Position	
Administrator	5.2
Clinical nurse specialist	1.6
Consultant	0.8
General duty/staff nurse	66.8
Head nurse	6.3
Instructor	4.4
Certified nurse-anesthetist	1.2
Nurse clinician	1.0
Nurse midwife/practitioner	1.3
Private duty nurse	1.5
Researcher	6.0
Supervisor	0.2
Other	3.6
Number of nurses	1,887,697

Source: Westat, Inc., pp. 38, 39, and 40.

TABLE 4-7

**DEMOGRAPHIC CHARACTERISTICS OF NURSES
AND THEIR EMPLOYMENT PATTERNS, 1984**

(Percentages reported, unless specified)

Demographic characteristics	Total	Employed in nursing, 1984		Not employed in nursing
		Total	Full time	
Sex				
Male	3.0	86.8		13.2
Female	97.0	78.2		21.5
Racial/ethnic background				
White	90.3	77.9		22.1
Black	3.9	90.7		9.3
Asian/Pacific Islander	2.6	91.1		8.9
American Indian/Alaskan Native	.3	81.3		18.7
Hispanic	1.4	89.8		10.2
Age group				
Less than 25	4.8	94.9	84.2	5.1
25 - 34	33.1	87.6	65.1	12.4
35 - 49	35.2	81.8	64.6	18.2
50 - 59	15.0	73.9	69.1	26.1
60 and older	9.8	40.2	60.1	59.8
Marital status				
Married	71.0	76.7	44.6	23.3
Single	28.6	83.6	70.8	16.4
Children				
Under 6 years	18.4	80.8	35.3	19.2
6 years and older	37.6	79.0	45.9	21.0
Both age groups	11.5	78.4	34.7	21.6
No children at home	32.5	71.8	52.3	28.2
Total family income - 1984				
\$15,000 and under	6.8	51.7	24.1	48.3
\$15,001 - \$25,000	22.3	82.5	63.6	17.5
\$25,001 - \$35,000	24.5	84.3	56.4	15.7
\$35,001 - \$50,000	26.8	84.7	53.5	15.3
\$50,001 - \$75,000	14.3	82.8	55.2	17.2
\$75,001 and over	5.3	56.9	32.0	43.1
Number of nurses	1,887,697	1,485,725	1,485,725	401,971

Source: Westat, Inc., pp. 13 - 14 and 25 - 28.

Seventy-one percent of all nurses are married; married nurses are less likely to work full time — or to work in nursing at all — than those who are single. Over two-thirds of all nurses have children living at home. When children are under 6 years of age, the nurses are least likely to work full time, although large percentages are working as nurses at least part time.

Just under half (46 percent) of all nurses have a total family income above \$35,000. Employment in nursing is not related directly to income, with those in the lowest and highest income categories the least likely to work as nurses. Those same groups are also less likely to work in nursing full time.

Over half the nurses earned their basic nursing degrees from diploma programs. While many returned to college for baccalaureate and master's degrees, the percentage of nurses with these latter degrees remains small (see Table 4-8). Diploma nurses are least likely to work in nursing.

TABLE 4-8

NURSES' EDUCATIONAL CHARACTERISTICS AND EMPLOYMENT PATTERNS, 1984

(Percentages reported, unless specified)

Education	Basic nursing program	Highest degree	Employed in nursing, 1984 (by highest degree)	Not employed in nursing (by highest degree)
Basic degree				
Associate	24.7	22.8	86.7	13.3
Diploma	54.1	45.3	72.5	27.5
Baccalaureate	20.4	25.5	83.3	17.7
Masters degree		5.6	81.0	19.0
Doctorate		0.3	86.7	13.3
Unknown	0.6	0.6	0 ^a	0 ^a
Number of nurses	1,887,697	1,887,697	1,485,725	401,971

Source: Westat, Inc., pp. 16 – 19.

Note: Percentages and numbers are projections. They may not add.

^a Percentages of unknowns are so small as to be insignificant.

A large number of nurses hold specialty certifications, which may be obtained (among other ways) by earning graduate degrees with concentrations in nursing

specialties. Table 4-9 indicates these specialties for the 109,011 nurses holding masters and doctoral degrees in 1984.

TABLE 4-9
NUMBER OF NURSES WITH GRADUATE DEGREES
IN SPECIALTY AREAS, 1984

Specialty	Number of nurses
Education	29,552
Supervision/administration	21,958
Community/public health	6,295
Maternal/child health	11,309
Midwifery	1,534
Geriatrics/gerontology	1,068
Medical-surgical nursing	11,204
Psychiatric/mental health nursing	12,443
Research	1,012
Other clinical practice	6,632
Other (nonclinical)	6,004
Total	109,011

Source: Westat, Inc., p. 20.

Nurses also are eligible for certification in an advanced practice specialty area upon completion of a formal educational program beyond that required for licensure. Nurse-practitioners, nurse-midwives, and nurse-anesthetists fall in this category. Table 4-10 presents the specialty areas of the 49,073 nurses who were certified for advanced practice in 1986.

Certification is also available at the generalist level for nurses meeting a prescribed experience level requirement in a specialty area. The specialties for these 79,150 nurses (in 1986) are indicated in Table 4-11.

TABLE 4-10

NUMBER OF NURSES CERTIFIED IN ADVANCED SPECIALTY PRACTICE, 1986

(Educational program beyond licensure)

Advanced specialty	Number of nurses	Certifying organization
Nurse-anesthetist	22,937	American Association of Nurse-Anesthetists
Nurse-midwife	3,182	American College of Nurse-Midwives
Clinical specialist	3,746	American Nurses' Association (ANA)
Adult psychiatric and mental health nursing	2,756	
Child and adolescent psychiatric and mental health	317	
Medical-surgical nursing	673	
Nurse-practitioner	19,208	ANA
Adult	4,356	
Family	5,238	
Gerontological	753	
Pediatric	1,270	ANA
School	448	ANA
Neonatal	518	NAACOG Certification Corporation ^a
Obstetrics/gynecology	3,651	NAACOG Certification Corporation ^a
Pediatrics	2,974	National Board of Pediatric Nurse Practitioners
Total	49,073	

Source: ANA, 1987, p. 90.

^a NAACOG Certification Corp. = The National Association of the American College of Gynecology Certification Corporation. The title has since been changed to The National Certification Corporation.

Career Motivations

Kalisch, in his work on recruitment and retention, indicates that nurses seek the following when selecting employers:

- To be treated as professionals
- Interesting and challenging work

TABLE 4-11

NUMBER OF NURSES CERTIFIED IN ADVANCED SPECIALTY PRACTICE, 1986

(Prescribed level of experience)

Specialty	Number of nurses	Certification organization
Child and adolescent nurse	770	American Nurses' Association (ANA)
Community health nurse	2,512	ANA
Gerontological nurse	4,571	ANA
High-risk perinatal nurse	515	ANA
Maternal and child health nurse	430	ANA
Medical-surgical nurse	7,208	ANA
Nurse administrator	7,907	ANA
Psychiatric and mental health nurse	8,214	ANA
Critical-care nurse	23,454	American Assoc. Critical-Care Nurses
Emergency room nurse	13,424	Board of Certification for Emergency Nursing
Inpatient obstetric nurse	3,547	NAACOG Certification Corporation ^a
Intravenous nurse	900	National Intravenous Therapy Assoc.
Neonatal intensive care nurse	1,582	NAACOG Certification Corporation ^a
Occupational health nurse	2,150	American Board for Occupational Health Nurses
Oncology nurse	1,384	Oncology Nursing Certification Corp.
Urologic nurse	582	American Board of Urological Allied Health Professionals
Total	79,150	

Source: ANA, 1987, p. 92.

^a NAACOG Certification Corp. = The National Association of the American College of Gynecology Certification Corporation. The title has since been changed to The National Certification Corporation.

- Positive environment – cooperation of coworkers
- Independence – autonomy
- Flexibility in scheduling
- A sense of performing an important and necessary service

- Administrative responsiveness to nurses' needs
- Programs that promote socialization in the work environment.⁸

A University of Maryland study surveyed a random sample of RNs licensed in Alabama, California, Louisiana, Michigan, Missouri, and New York.⁹ The study identified and measured the following six indices of career aspiration for the 5,172 nurse respondents:

- *Material:* The importance of extrinsic rewards and benefits, including hours, parking service assignment, salary, and fringe benefits. The possible range of scores on the index was 5 through 30; the sample mean was 21.73.
- *Service:* Agreement with traditional, caring image of the bedside nurse. Nurses scored a mean of 9.50 from a possible range from 3 through 15 about the importance to them of working directly with patients.
- *Advancement:* The nurses scored a mean of 12.73 (possible range 2 through 20) on questions that asked about the relevance of promotional opportunities.
- *Expanded role aspirations:* The desire to perform functions outside the realm of bedside nursing. From the range of 0 through 25, the nurses scored a mean of 9.72.
- *Continuing education:* The desire to find employment that fosters the opportunity for advanced education. The nurses' mean score was 10.95 from the range of 4 through 20.
- *Professional activism:* Agreement with the norms of identification with and activity in nursing professional organizations. From the possible scores of 5 through 25, the nurses' mean score was 13.25.

In 1981, the Governing Council of the American Academy of Nursing appointed a task force on nursing practice in hospitals to identify a national sample of "magnet hospitals" that have little difficulty attracting and retaining staffs of qualified

⁸Kalisch, P. *Successful Organizational Strategies for Recruiting and Retaining Nurses*. Southfield, MI: Unpublished paper, 1988; as cited by Hansen, p. 100.

⁹Feldbaum, Eleanor G. *Registered Nurses at Work: A Report to Administrators of Health Facilities*. College Park, MD: Bureau of Governmental Research, University of Maryland, 1980, pp. 38-47.

nurses. The task force also sought to identify factors associated with this success.¹⁰ From staff nurses, interviewed as a group in eight regions of the country, the task force identified three categories of responses (i.e., administration, professional practice, and professional development), as important to each hospital's magnetism.

The following list highlights the factors that staff nurses believed important:

- *Administration*

- ▶ Visible and accessible nurse leadership for support and problem resolution.
- ▶ Participatory management. Staff nurses participate in decisions at the unit, department, and hospital levels.
- ▶ Strong nurse leadership and recognition as equal participants in top executive planning and policy-making activities.
- ▶ Responsibility decentralized to patient-care units.
- ▶ Budgetary control under nurse administrator with delegation to the unit level.
- ▶ Flexible work schedules designed to accommodate individual needs.
- ▶ Competitive salaries and benefit packages.
- ▶ Numerous opportunities for interaction among nurses and employees in other departments.
- ▶ Recognition programs for outstanding contributions.

- *Professional practice*

- ▶ Primary nursing practice that permits nurses to exert control and facilitates interdisciplinary planning and coordination.
- ▶ Nurse autonomy in making independent judgment and allowing freedom in implementing patient care functions.
- ▶ Involvement of nursing staff in quality assurance programs.
- ▶ Good and respectful nurse-physician relationships.

¹⁰American Academy of Nursing, Task Force on Nursing Practice in Hospitals. *Magnet Hospitals: Attraction and Retention of Professional Nurses*. Kansas City, MO: American Nurses' Association, 1983, Chapter 2.

- *Professional development*

- ▶ Good orientation program that lasts several weeks to months, contains formal instruction, and provides the new nurse opportunities to work with colleagues experienced in that specific facility.
- ▶ Inservice education programs to enhance clinical competence.
- ▶ Time and financial allowance for continuing education to foster personal and professional growth.
- ▶ Accommodation in scheduling and financial support for advanced formal education.
- ▶ Well-defined career ladder to provide opportunities for nurses to advance in recognition and salary in either management or clinical practice.

Career Satisfactions

The Secretary's Commission notes that RN job satisfaction has been surveyed and studied for decades. Despite different approaches, the findings have consistently shown the three areas of dissatisfaction (and satisfaction) are professional issues, working conditions, and salary and benefits.¹¹

The causes of professional dissatisfaction include fragmented tasks in delivery of care, lack of autonomy to make clinical decisions, little authority and influence in the employment setting, and poor physician-nurse relationships.¹² The working conditions that foster dissatisfaction are schedule inflexibility, irregular hours, lack of promotion and educational opportunities, and shortages of resources and staff. Noncompetitive salaries and benefits are a source of frustration, with health facilities slow to offer adequate and well-defined pension plans and child care programs.

Feldbaum found that nurses' service, material, and advancement aspirations were thwarted (see Table 4-12). In addition, nurses were only moderately satisfied with their patient encounters, work organization, status, and relationships with other health workers. The adequacy of resources — especially of staff — and

¹¹Secretary's Commission, p. IV-28.

¹²See for example: Prescott, Patricia A. and Sally A. Bowen. "Controlling Nursing Turnover." *Nursing Management* 18. June 1987, pp. 60–66; Lemler, S. F. and A. K. Leach. "The Effect of Job Satisfaction on Retention." *Nursing Management* 17. June 1986, pp. 66–68; Institute of Medicine. *Nursing and Nursing Education: Public Policies and Private Actions*. Washington, DC: USDHHS, 1983, Chapter 7.

opportunity for input into institutional health care decisions and to express grievances received the lowest satisfaction scores.¹³

TABLE 4-12
NURSES' ASPIRATIONAL DEPRIVATIONS AND JOB SATISFACTIONS

Deprivations and satisfactions	Possible score ^a	Mean score
Deprivations		
Service	3 - 15	10.34
Expanded role	5 - 30	13.54
Material	6 - 30	16.47
Advancement	3 - 15	9.66
Continuing education	4 - 20	7.62
Satisfactions		
Patient encounters	5 - 25	16.66
Work organization	5 - 25	16.37
Interpersonal relationships	5 - 25	16.87
Nurse input in health care decisions	5 - 25	15.36
Status afforded nurses	5 - 25	16.36
Resource adequacy	4 - 20	11.30

Source: Feldbaum, 1980, pp. 39 - 43 and 53 - 56.

^a The higher the score, the higher the level of deprivation or satisfaction.

Civilian Nurses' Attitudes About Reserve Military Service

A most interesting study was conducted at the University of Toledo with a representative sample of civilian nurses residing in urban and rural areas of Northwest and Northeast Ohio and Army Reserve nurses of the 350th Evacuation Hospital and 256th General Hospital.¹⁴ Questionnaires elicited responses regarding the backgrounds of the nurses and their beliefs about serving as a nurses in the Army Reserve.

¹³Feldbaum, 1980, Chapter 3.

¹⁴French, Diana Gail. *An Investigation of the Beliefs of Registered Nurses towards Service in the Army Nurse Corps Reserves*. Toledo, OH: University of Toledo doctoral dissertation, August 1986.

As can be seen in Table 4-13, a much higher percentage of civilian nurses were married (88 percent) than were Army Reserve nurses (44 percent). The age distributions of the nurses were similar. In addition, the two groups had similar family histories of military service: very few family members of either group had served as military officers.

Civilian nurses were negative to the favorable adjectives describing Army Reserve service although they conceded that it might be beneficial. The civilian nurses also believed that their family members, friends, coworkers, and employers would be strongly negative about the respondents serving in the Army Reserve. Moreover, these nurses said that they were very likely to comply with their respective referent group's wishes not to enter reserve service.

In contrast, reserve nurses were quite positive about military service. In addition, they believed that their families, friends, and colleagues were favorable toward their military activities. Although the reservists claimed that they would comply with their referent group's wishes, their scores revealed that they were less likely to do so than their civilian counterpart.

Table 4-14 presents data about the nurses' beliefs about the outcomes of serving in the Army Reserve and how favorably the nurses evaluated the outcomes. Of the 30 salient belief statements, responses to 19 items demonstrated statistically significant differences between civilian and reserve nurses. In addition, there were 26 significant differences in evaluation as well as interesting patterns in the way each group evaluated the outcomes of serving.

The findings presented in the table demonstrate three response patterns. First, civilian nurses believed, while reserve nurses did not, that USAR service meant involvement in a structured and regimented life; attendance at a rigorous boot camp; and interference with social obligations, work schedules, personal time, and family life. Civilian nurses evaluated each of the problems as being significantly more negative than did those in the Army Reserve. Civilian nurses thought that Reservists receive educational benefits and job security and thought these were favorable aspects of serving. Reserve nurses, in contrast, did not believe these benefits were received. However, if they were, the Reservists evaluated them as extremely positive outcomes.

TABLE 4-13
CIVILIAN AND ARMY RESERVE NURSES' FAMILY MILITARY HISTORY
AND VIEWS TOWARD RESERVE SERVICE

Status	Civilian sample (percent)	USAR sample (percent)		
Marital status				
Married	82	44		
Single	18	56		
Ever serve in military forces?				
Respondent (yes)	4	100		
Spouse (yes)	30	29		
Parents (yes)	67	67		
Siblings (yes)	28	35		
The following think I should (+ 3) or should not (- 3) serve as a nurse in the Army Reserve. I am likely to comply (+ 3) or not to comply (- 3) with their wishes about my joining the Army Reserve. (mean scores reported)				
Acquaintance group	Civilian sample		USAR sample	
	Should serve	Will comply	Should serve	Will comply
Family	- 2.14	2.45	1.26	1.93
Spouse	- 2.19	2.65	.53	1.87
Parents	- 1.87	2.14	1.23	1.66
Employers	- 1.27	2.05	.37	1.36
Friends	- 1.60	1.94	.71	1.29
Coworkers	- 1.54	1.86	.47	1.28
My service as a nurse in the Army Reserve would be: (mean scores reported)				
Evaluation	Civilian sample		USAR sample	
Good (+ 3)/Bad (- 3)	- 0.34		2.46	
Desirable (+ 3)/Undesirable (- 3)	- 1.32		2.42	
Wise (+ 3)/Foolish (- 3)	- 0.21		2.18	
Beneficial (+ 3)/Nonbeneficial (- 3)	0.11		2.57	
Number of respondents	260		75	

Adapted from: French, pp. 55, 60 — 61, and 71.

TABLE 4-14

**CIVILIAN AND ARMY RESERVE NURSES' BELIEFS ABOUT, AND EVALUATIONS OF,
THE OUTCOMES OF RESERVE SERVICE**

(Mean scores reported)

Belief statement	Civilian nurses		Army Reserve nurses	
	Belief ^a	Evaluation ^b	Belief ^a	Evaluation ^b
Opportunity to serve country	1.35 ^c	0.94 ^c	2.02	2.39
Gain additional nursing experiences	1.40	1.00 ^c	1.77	2.53
Give me extra pay	0.93 ^c	1.64 ^c	2.54	2.78
Mean living highly structured, regimented life	0.55 ^c	- 1.50 ^c	- 0.27	- 0.43
Opportunity to travel	1.18	0.51 ^c	1.42	2.07
Mean attending a rigorous boot camp	0.46 ^c	- 1.08	- 1.49	- 0.37
Require long-term commitment	0.30 ^d	- 2.03	0.95	- 0.04
Allow me to obtain retirement benefits	1.79	1.97 ^c	2.19	2.79
Give me status and prestige	0.10 ^c	0.93 ^c	1.23	2.49
Interfere with social obligations	0.83 ^c	- 1.57 ^c	- 0.22	- 0.79
Mean maintaining rigorous physical fitness standards	0.81	1.20 ^c	1.08	1.95
Give me additional education opportunities	1.60	1.82 ^c	1.64	2.59
Have little opportunity to make decisions	- 0.22	- 2.01	- 0.74	- 2.03
Allow me to network with other professionals	1.42 ^c	1.58 ^c	2.11	2.48
Interfere with school	- 0.96	- 1.54	- 0.82	- 1.67
Provide job security	0.34	1.48 ^d	- 0.39	2.18

Source: French, pp. 63 - 66.

^a Belief scores range from + 3 (extremely likely) to - 3 (extremely unlikely).

^b Evaluation scores range from + 3 (extremely good) to - 3 (extremely bad).

^c Difference between set of belief or set of evaluation scores expressed by the two groups of nurses significant at 0.001 level.

^d Significant at 0.01 level.

TABLE 4-14

**CIVILIAN AND ARMY RESERVE NURSES' BELIEFS ABOUT, AND EVALUATIONS OF,
THE OUTCOMES OF RESERVE SERVICE (Continued)**

(Mean scores reported)

Belief statement	Civilian nurses		Army Reserve nurses	
	Belief ^a	Evaluation ^b	Belief ^a	Evaluation ^b
Allow me to develop collegial relations with other nurses	1.16 ^c	1.45 ^c	2.03	2.58
Obtain inexpensive life insurance	0.78 ^c	1.44 ^c	1.82	2.37
Interfere with family	1.50 ^c	- 2.48 ^c	- 0.42	- 1.78
Allow me to learn new skills	1.65	1.96 ^c	1.75	2.77
Call to active duty for war	2.00 ^c	- 1.98 ^c	2.57	- 0.77
Interfere with work schedule	1.13 ^c	- 1.86 ^c	- 0.32	- 1.26
Opportunity for professional advancement	0.81	1.68 ^c	1.19	2.77
Give me GI benefits	1.38 ^c	1.76 ^c	- 0.16	2.51
Mean serving under command unaware of nurses' role, training, and abilities	- 0.67	- 2.46	- 0.11	- 2.20
Allow me to use leadership skills	1.34 ^c	1.88 ^c	1.99	2.78
Give sense of pride in serving country	1.46 ^c	1.53 ^c	2.32	2.55
Conflict with personal time	1.47 ^c	- 1.97 ^c	- 0.05	- 1.10
Opportunity to develop friendships	1.71 ^c	1.59 ^c	2.47	2.64
Mean periods of separation from family	2.17	- 2.29 ^c	1.81	- 1.05
Number of respondents	260		70	

Source: French, pp. 63 - 66.

^a Belief scores range from + 3 (extremely likely) to - 3 (extremely unlikely).

^b Evaluation scores range from + 3 (extremely good) to - 3 (extremely bad).

^c Difference between set of belief or set of evaluation scores expressed by the two groups of nurses significant at 0.001 level.

^d Significant at 0.01 level.

The second pattern shows that civilian nurses were less likely to believe (than were the Reservists) that outcomes of USAR service include extra pay, status and prestige, inexpensive life insurance, pride in serving the country, opportunities for advancement, networking, and collegial relationships and friendship development. In addition, each of these outcomes was evaluated most favorably by the Army Reserve nurses.

The third pattern shows that the two groups gave similar, positive scores to such outcomes as opportunities for travel, education, and development of new and leadership skills. In all instances, these opportunities were evaluated more favorably by the Army Reserve nurses. On the other hand, both groups believed that Reserve service demanded a long-time commitment and a call to active duty in wartime. While both thought these to be negative outcomes, they were less disturbing to the Reserve nurses.

ACTIVE FORCE MILITARY NURSES

The typical active duty military nurse is female, white, in her early thirties, likely to be married and be either childless or have one dependent child. She holds a baccalaureate degree, the rank of captain, and has served in a Military Service for approximately 7 years. Major differences exist between military and civilian nurses. The military nurses are younger and better educated than their civilian counterparts. In addition, a greater proportion of civilian nurses are married with children.

Another major difference between the two groups is the extent to which each is integrated by race and gender. For example, males comprise 3 percent of the civilian nurse corps, as compared to study findings of 19.1 percent in the Air Force,¹⁵ 27 percent in the Navy,¹⁶ and 30.3 percent in the Army.¹⁷ While minorities comprise 9.7 percent of all civilian nurses, the Army study shows 13.8 percent minority composition.

¹⁵Nichols, John C., 1987.

¹⁶Hilton, Thomas F. *Individual, Organizational, and Job Factors Affecting the Quality of Work Life Among Navy Nurse Corps Officers*. Bethesda, MD: Naval School of the Health Sciences, March 1987.

¹⁷Frelin, A. J., T. R. Misener, and H. F. Mechanic.

Career Motivations

To identify career aspirations, researchers have asked about career motivations, reasons to remain in military service, the most attractive aspects of military service, and the nurses' role emphasis. The rewards reported can generally be grouped into:

- *Extrinsic rewards:* Pay, benefits, security, status, and prestige
- *Intrinsic rewards:* The accomplishment of something worthwhile, independence, self-esteem, participation in goal setting, and self-fulfillment
- *Interpersonal rewards:* Friendships, collegiality, social contact, networking, and interchange of ideas with other professionals
- *Professional growth rewards:* Opportunities to learn new skills; to experience challenge; and to seek creativity, advancement, leadership, and advanced education.

The findings from four studies, arranged into the above categories, are presented in Table 4-15. As can be seen, nurses in all Military Services are least motivated by extrinsic rewards. This does not mean, however, that pay and benefits are not important. For example, Army nurses claimed that pay and allowances (81 percent), retirement (82 percent), commissary privileges (86 percent), and health and dental benefits (85 percent) were important benefits to them.¹⁸ Moreover, the same study found that 69 percent of military nurses agreed that compensation was a major factor in each career decision.

Professional growth was the greatest motivator of the nurses. In addition, intrinsic and interpersonal rewards were sought by a large proportion of military nurses.

Job Satisfaction

A number of researchers have studied job satisfaction among nurses in the active forces. Several have asked nurses about job characteristics similar to those found to be dissatisfying to civilian nurses. The responses of the nurses in each of the Military Services to these job elements are presented in Table 4-16.

¹⁸OASD(HA). *Health Professionals Special Pay Survey: Nurses*. Unpublished report, January 1989.

TABLE 4-15

MILITARY NURSES' CAREER MOTIVATIONS

(Percentages reported, unless specified)

Motivation	Nichols ^a (Air Force)	Frelin ^b (Army)	Hilton ^c (Navy)	Dann ^d (Navy)
Extrinsic rewards	4.39	17.0	3.5	20.3
Intrinsic rewards	6.01	27.0	4.7	21.6
Interpersonal rewards	6.02	18.0	4.8	21.1
Professional growth	6.19	30.0	4.9	33.0
Number of respondents	897	3,284	1,735	995

^a Means are presented; the possible range of responses are from 4 (would like having this characteristic only a moderate amount) to 10 (would like this extremely much). Nichols, John C., p. 170.

^b Percent who gave these reasons for staying in military service on an open-ended question. Frelin, et al., p. 154.

^c Means are presented; the possible range is 1 (disagree strongly) to 7 (agree strongly). Hilton, pp. 85 and 90 - 92.

^d Responses to question, "What aspects of Navy nursing are most attractive to you?" from Dann, Joyce E. *Sources of Job Satisfaction and Dissatisfaction Among Navy Nurses*. San Diego, CA: Naval Personnel and Training Research Laboratory, September 1972, p. 15.

The level of overall job satisfaction ranged from marginal in the Air Force to good in the Army. Generally, the level of nurses' autonomy, authority, influence, and work challenge was considered to be favorable, especially for those in the Army. Schedules, assignments, work conditions, and compensation and benefits also ranked as favorable. The Army nurses were dissatisfied with the promotion system and continuing education opportunities while the others were marginally satisfied. Army and Navy respondents were critical of staffing levels, although only Navy nurses considered the quality of patient care to be poor. Air Force and Army nurses were not too satisfied with the level of feedback received from supervisors, and no group of nurses rated organizational lines of authority as satisfying.

In 1988, OASD(HA) sent a questionnaire (to be completed by health professionals) to all military health facilities worldwide. Table 4-17 presents the findings for the 3,310 registered nurses who responded.

When looking at these findings, along with those of other studies, two important facts can be highlighted about active military nurses' career satisfactions. First, the findings show that there is widespread dissatisfaction among the nurses of

TABLE 4-16
CAREER AND JOB ELEMENT SATISFACTION OF MILITARY NURSES
(Percentages and arithmetic means)

Job element	Frelin ^a (Army)	Hilton ^b (Navy)	Nichols ^c (Air Force)
Overall job	82.1%	62.0%	$\bar{x} = 4.8\%$
Level of nurse autonomy	78.0	$\bar{x} = 4.7$	5.2
Authority and influence	87.1	4.7	4.8
Challenge in work	83.0	4.8	5.5
Scheduling	74.6	4.2	—
Assignment	80.8	4.9	—
Promotion system and opportunities	35.0	4.2	4.8
Continuing education opportunities	57.1	4.0	4.8
Adequacy of staffing	34.2	3.8	—
Quality of patient care	85.6	3.0	—
Salary, allowance, and benefits	81.5	5.0	4.5
Supervisor feedback	58.7	4.4	3.7
Work conditions	$\bar{x} = 2.61$	4.4	4.7
Organizational lines of authority	2.17	3.6	3.8
Number of nurses	3,209	1,735	833

Note: $\bar{x}$ indicates arithmetic mean. Percentages indicate that portion of respondents who report being satisfied with each job element.

^a When means are given, range is 1 (very satisfied) to 4 (very dissatisfied). Frelin, A. J., T. R. Misener, and H. F. Mechanic.

^b Means are based on a range from 1 (very dissatisfied) to 7 (very satisfied). Hilton.

^c Means based on range from 1 (very dissatisfied), 4 (neither satisfied nor dissatisfied), to 7 (very satisfied). Nichols, John C., 1987.

all Services about their total pay and benefit packages.¹⁹ Indeed, 68 percent felt that inadequate compensation will cause nurses to leave military service. Moreover, only 13 percent believed that the current packages would be effective in attracting nurses. This dissatisfaction was not shown in the other studies conducted between 1984 and

¹⁹Ibid.

TABLE 4-17

ACTIVE COMPONENT MILITARY NURSES' JOB SATISFACTIONS

(Percentages reported, unless specified)

Satisfaction and influence statements	Total	Army	Navy	Air Force	Service unknown
I am satisfied with:					
Available clinical support	22	18	18	31	37
Available clerical support	17	18	15	17	30
Facilities available for my practice	47	43	49	48	47
Equipment available for my practice	41	42	36	47	39
My total pay and benefits package	32	30	29	38	42
Of the following nine factors, circle four you believe to be the most influential in causing members of your provider group to leave military service:					
Lack of nurses	80	91	73	75	85
Lack of technicians	31	26	29	40	26
Lack of support personnel	41	43	41	37	42
Lack of facility support	16	19	13	16	11
Physical plant deficiencies	15	14	16	15	10
Lack of medical equipment	17	14	19	21	15
Inadequate compensation	68	70	66	59	68
Personal factors	62	60	66	67	62
Professional factors	70	63	78	70	77
Number of nurses OASD(HA)	3,310	1,085	1,300	820	105

1987. Frelin, et al., however, did show in 1984 that 85 percent of Army nurses were dismayed by the erosion of their pay, allowances, and benefits.²⁰

²⁰Frelin, A. J., T. R. Misener, and H. F. Mechanic, pp. 20 – 22.

Second, studies agree that clinical and clerical support levels are inadequate. Moreover, the shortage of military nurses was seen by 80 percent of the nurses as a major influence obstructing retention.

Attitudes About Remaining on Active Duty

A number of studies have addressed nurse retention. Most show that large proportions of active force nurses intend to continue pursuing a military career (see Table 4-18 and Table 4-19). Larger percentages of nurses in higher grades expect to remain in military service than do those in lower grades.

TABLE 4-18
ACTIVE FORCE NURSES' INTENTIONS TO REMAIN ON ACTIVE DUTY UNTIL RETIREMENT
(Percentages reported, unless specified)

Component	Army ^a	Navy ^b	Air Force ^c
Definitely stay	40.6	} 14.0	32.8
Probably stay	25.9		28.7
Undecided	18.8	20.0	22.2
Possibly leave	8.7	} 66.0	7.4
Definitely leave	6.0		14.5
Number of respondents	3,150	1,735	567

^a Frelin, A. J., T. R. Misener, and H. F. Mechanic.

^b Hilton.

^c Adkinson, Patsy C. *Comparison of Job Attitudes Between Physicians, Nurses, Other Medical Officers, and Other Air Force Officers*. Maxwell Air Force Base, AL: Air Command and Staff College, Air University, 1986.

When nurses were asked if they were satisfied with their branches of Service, large majorities from each Service gave affirmative replies. The Army nurses' responses are illustrative.²¹

- The Army Nurse Corps is an important way of serving my country 96 percent agree
- A military career is more than a job, it is a way of life 89 percent agree

²¹Ibid.

TABLE 4-19

NURSES' PLANS TO CONTINUE SERVING ON ACTIVE DUTY

(Percentages reported, unless specified)

Nurse plans	0 - 5 years	6 - 10 years	11 - 15 years	16 - 20 years	More than 20 years	Number of respondents
Number of years I plan to serve under current conditions:						
Army	31	15	4	34	17	1,085
Navy	29	16	12	25	19	1,300
Air Force	28	18	5	33	16	820
Total sample mean = 12 years						
Number of years I would serve if condi- tions were adequate:						
Army	11	5	3	28	53	1,085
Navy	12	8	3	28	49	1,300
Air Force	5	8	4	36	47	820
Total sample mean = 18 years						

Source: OASD(HA), 1989.

Note: Percentages may not total 100 percent due to rounding error.

- Duty, honor, country have meaning in today's Army 76 percent agree
- Regimentation (ritual, saluting, etc.) seem out of place 14 percent agree
- Civilian attitudes critical of the Army are unfounded 63 percent agree
- The attitude of family and friends would influence me to leave the military 19 percent agree
- I particularly like the feeling of "family" and support within the military community 76 percent agree

- I like the opportunity for travel offered by an Army career 93 percent agree
- I am proud to say I am in the Army Nurse Corps 96 percent agree.

Despite these positive attitudes, Frelin found several areas of discontent. Only 40.5 percent thought that the Army was responsive to individual needs, 35 percent were satisfied with the current promotion system, and 65 percent lacked confidence in rank seniority as the best means to assure competency.²²

Hilton shows that Navy nurses also were dissatisfied with the way promotions were determined, although they remained satisfied with the Navy. Both Army and Navy nurses were dissatisfied with efforts to counsel them about career goals and career options.²³

Nurse responses to a 1985 DoD survey of officers also indicate that nurses are generally satisfied with their jobs and pay (see Table 4-20). Nurses were not only satisfied with military life but noted that this lifestyle met their expectations. However, they did not express a great deal of satisfaction with work conditions, and the level of morale was not favorable.

Nurses felt that their spouses agreed with their military careers and did not believe that their families would be happier and more secure if they had civilian jobs. Yet the nurses were not optimistic that military pay will keep up with inflation or that future retirement benefits will be adequate.

COMPARISONS IN PERCEPTION BETWEEN MILITARY AND CIVILIAN NURSES

In a study of the Army Nurse Corps, Army nurses were asked to compare the professional nursing practice in the Army to those in the civilian sector.²⁴ Table 4-21 presents the findings. As can be seen, the Army is perceived as doing better than the civilian sector on issues such as status, autonomy, professionalism, interdisciplinary relationships, role development, and continued and advanced education opportunities. On only two issues, staffing patterns and flextime, was the civilian sector ranked better than the military. On most other issues (e.g., leadership, standards, accountability, quality assurance, and family and career) military service was

²²Frelin, A. J., T. R. Misener, and H. F. Mechanic, p. 10.

²³Hilton.

²⁴Frelin, A. J., T. R. Misener, and H. F. Mechanic.

TABLE 4-20

MILITARY NURSES' VIEWPOINTS ABOUT MILITARY SERVICE

(Percentages reported, unless specified)

Viewpoint	Total	Army	Navy	Air Force
I am satisfied with:				
Military service as a way of life	78.5	79.8	77.5	76.8
Current job	68.0	69.0	66.2	68.2
Pay and allowances	69.2	69.9	71.3	67.5
Working/environmental conditions	58.2	59.7	57.6	57.3
The morale of military personnel at my current location is somewhat-to-very high	36.3	39.0	32.9	36.2
I agree that:				
Life in military service is about what I expected	70.0	71.3	69.2	69.4
Future military personnel will not have retirement benefits as good as I have now	77.7	84.8	75.6	73.3
My military pay and benefits will not keep up with inflation	70.2	69.5	70.7	70.4
My family would be better off if I took a civilian job	24.6	24.4	26.6	23.5
Number (weighted)	10,294	3,445	2,619	4,231

Source: DoD. 1985 DoD Survey of Officer and Enlisted Personnel. Arlington, VA: Defense Manpower Data Center, Special computer printouts, 1985.

ranked somewhat better than or equal to life in the civilian sector. The OASD(HA) study showed that military nurses perceived that their income was 70 percent of what their counterparts in the civilian sector were earning.²⁵

RESERVE SERVICE

In only one study were the nurses asked whether they intend to join the reserve forces (if eligible) when they leave active duty. That study found that 44 percent of the Navy nurses intended to do so, 22 percent were uncertain, and 34 percent did not intend to join the reserve forces.²⁶

²⁵OASD(HA), 1989.

²⁶Hilton, p. 84.

TABLE 4-21

ARMY NURSES COMPARE MILITARY PROFESSIONAL PRACTICE WITH CIVILIAN PRACTICE

(Percentages reported, unless specified)

Professional practice issues	Army ahead of civilian sector	Army at least on par with civilian sector	Army behind civilian sector
Nurse autonomy	76.4	16.5	7.0
Opportunity for advanced education	70.6	19.0	10.5
Nurses' image and status on health team	70.3	21.8	7.9
Nursing professionalism	68.5	26.5	5.0
Interdisciplinary professional relationships	68.5	23.3	8.2
Opportunities for role development through career programs	62.8	22.0	15.2
Opportunities for continuing education	60.0	28.1	11.9
Quality of nursing leadership	54.3	36.0	9.7
Status of standards of nursing practice	53.5	37.6	8.8
Nursing accountability	51.8	39.9	8.2
Status of quality assurance policies	47.0	40.3	12.7
Adequacy of graduate nurse transition program	34.8	33.1	32.1
Ability to combine career and family	24.7	41.4	33.9
Floating as a normal occurrence	17.8	47.0	35.2
Staffing patterns ^a	8.0	26.0	65.3
Opportunities for flextime schedules ^a	8.0	14.0	77.6
Number of respondents	3,209		

Source: Frelin, A. J., T. R. Misener, and H. F. Mechanic.**Note:** Percentages may not total 100 percent due to rounding error.

^a Percentages reporting these responses do not approach 100 percent closely enough to be attributable to rounding error. The cause is unknown.

CHAPTER 5

RESERVE MILITARY NURSES

INTRODUCTION

In Chapter 4, we reviewed and described the nurses and nursing students who are the target populations for the recruiting activities of the Services' reserve components. This chapter focuses on those nurses who are already members of the reserve forces because they are a target population of a different sort. Taken collectively, these nurses are the group whose voluntary losses from military affiliation we wish to reduce, whose retention rates we wish to increase. If we know more about these health care professionals, we may be able to design and implement more effective retention schemes to retain them as members of the reserve components through their normal retirement process.

In this chapter, discussion of these nurses is divided into seven sections:

- Current Nurse Inventories
- Characteristics of Nurses in the Selected Reserve
- Civilian Employment
- Recruiting Influences and Experience
- Motivations for Service in the Reserve Forces
- Satisfactions of Reserve Military Service
- Retention and Intention to Remain in the Reserve Forces.

Many of the data presented in this chapter were compiled from responses to DoD's 1986 *Reserve Component Survey of Officers*. That effort surveyed a large sample of officers in all seven reserve components, and we have isolated and analyzed physician and nurse responses in the five reserve components with medical personnel. The 1986 survey sought responses from officers in the Selected Reserve only. Other studies cited in this chapter also pertain to SELRES nurses. While Slewitzke's study of Army Reserve and Army National Guard members did survey

nurses in the IRR, the responses of those nurses were not presented apart from SELRES responses.¹

CURRENT NURSE INVENTORIES

Distribution

On 30 June 1988, total U.S. military nurse inventories amounted to over 42,000 in all categories of the active and reserve forces. Table 5-1 shows the details of those inventories.

TABLE 5-1
DoD NURSE INVENTORY, 1988

Active and reserve forces	Number
Active forces	12,830 ^a
Regular officer retirees	3,474 ^a
Reserve forces ^b	
SELRES	11,811
IRR/ING	4,942
SBR	4,672
Retired Reserve	4,494 ^c
Total	42,223

Sources: Active force and regular officer retiree data: Meds Report, Defense Manpower Data Center (DMDC), interpolated for 30 June 1988. Reserve force data: RCCPDS, DMDC, 30 June 1988.

^a Active force and regular officer retiree data are shown here for inventory completeness. Active force and regular officer retiree nurses are not the subject of this study and are not discussed further.

^b No nurses are assigned to the USMCR.

^c Consists of reserve retirees in Retiree Categories 1, 2, and 3.

The nation's corps of *reserve* military nurses, on the other hand, was composed of 25,919 registered nurses as of 30 June 1988. As can be seen in Table 5-2, the Army Reserve had the largest and the Air National Guard the smallest number of nurses. Over 45 percent of all reserve military nurses were members of the SELRES. The

¹Slewtzke, Connie L. *U.S. Army Reserve and National Guard Survey*. Washington, DC: Walter Reed Army Medical Center, Nursing Research Service, Unpublished report, August 1982.

84
other 54.4 percent were about evenly divided among the Individual Ready Reserve, Standby Reserve, and Retired Reserve.

TABLE 5-2
RESERVE COMPONENT NURSE INVENTORY, BY RESERVE CATEGORY, 1988

Reserve category	Total	ARNG	USAR	USNR	ANG	USAFR
Selected Reserve	11,811	1,011	6,622	1,374	699	2,105
Individual Ready Reserve	4,942	35 ^a	3,276	712	N/A ^b	919
Standby Reserve	4,672	N/A ^b	5	727	N/A ^b	3,940
Retired Reserve	4,494	N/A ^b	1,649	1,064	N/A ^b	1,781
Total	25,919	1,046	11,552	3,877	699	8,745

Source: RCCPDS, 30 June 1988.

^a ING.

^b Not applicable. The ANG does not use an Inactive National Guard category. The ARNG and ANG do not have Standby Reserve or Retired Reserve categories.

We see a different picture, however, when we review each of the military reserve components separately. Almost all the nurses of both the Army and the Air National Guard were assigned to the SELRES.² In contrast, while 57.3 percent of Army Reserve nurses were in the SELRES, only 35.4 percent of the Navy and 24.1 percent of the Air Force Reserve nurses were in that category. More than one-quarter of the Army Reserve nurses were in the IRR, while the other Services had small proportions in the IRR category. The largest group of Air Force Reserve nurses (45.1 percent) was assigned to the Standby Reserve, a category no longer used by the Army and used only in a limited way by the Navy. More than a fourth of the Naval Reserve nurses were retired as compared with only 14.3 percent of those in the Army Reserve and 20 percent of those in the Air Force Reserve.

Although the specialty of Naval Reserve nurses could not be ascertained, Table 5-3 shows that medical-surgical nursing was the primary skill identified most often with those in the Army Reserve and Army National Guard. Neither the Air Force Reserve nor Air National Guard use the medical-surgical designation; clinical

²When members of the National Guard retire, they become members of the Retired Reserve.

nurses are their largest group. The Army also had a sizable group identified as clinical nurses.

TABLE 5-3
PRIMARY SPECIALTIES OF SELRES NURSES, BY RESERVE COMPONENT, 1988

Military specialty	Total	ARNG	USAR	USNR	ANG	USAFR
Nurse-anesthetist	475	56	314	N/A ^a	8	97
Operating room nurse	873	117	573	N/A	22	161
Medical-surgical nurse/ flight nurse	4,838	690	3,987	N/A	147 ^b	14 ^b
Clinical nurse	2,778	62	597	N/A	464	1,655
Other	1,473	86	1,151	N/A	58	178
Unknown	1,374	0	0	1,374	0	0
Total	11,811	1,011	6,622	1,374	699	2,105

Source: RCCPDS, 30 June 1988.

^a Not available. In FY87, the Navy changed its specialty coding system from Naval Officer Billet Codes (NOBC) to subspecialty designators. In the FY88 RCCPDS file, 892 nurses (of 1,374 total) had not been assigned the new subspecialty designator code. Therefore, USNR nurses cannot be classified by specialty with any assurance.

^b Flight nurses are included in the table for completeness since the USAFR and ANG do not use the medical-surgical classification.

The 1986 *Reserve Components Survey of Officers* sought information regarding active duty service. As can be seen in Table 5-4, half of all reserve nurses had served for at least 2 years in the active force. The Naval Reserve stands out for having the smallest percentage of nurses without prior active service and for having the largest group with from 2 to 11 years of active duty experience. The two National Guard components attracted the largest percentage of nurses without a history of active military service.

Growth Since 1982

The reserve component totals shown in Table 5-1 and Table 5-2 represent a force of military nurses that is considerably larger than the inventory of 1982, the base date used in this study for comparison. The number of nurses has grown in all reserve components and in all reserve categories. The SELRES nurse inventory is almost 70 percent larger than 6 years earlier, while the entire reserve component

TABLE 5-4

ACTIVE DUTY YEARS OF SELRES NURSES, BY RESERVE COMPONENT, 1986
(Percent of total respondents)

Active duty years	Total	ARNG	USAR	USNR	ANG	USAFR
0	50	54	67	8	45	62
2 - 3	22	19	13	42	23	24
4 - 6	18	17	14	26	20	7
7 - 11	8	7	4	20	9	3
12 or more	1	1	2	2	0	1
Total respondents	9,712	5,544	911	792	1,981	485

Source: DoD, 1986 Reserve Components Survey.

nurse inventory is almost 50 percent larger. Table 5-5 and Table 5-6 show the details of inventory growth by reserve category and component.

TABLE 5-5

RESERVE COMPONENT NURSE INVENTORY GROWTH, BY RESERVE CATEGORY, 1982 - 1988

Reserve category	1982	1988	Growth	
			Number	Percent
Selected Reserve	7,030	11,811	4,781	68
Individual Ready Reserve/ Inactive National Guard	2,839	4,942	2,103	62
Standby Reserve	4,399	4,672	273	6
Retired Reserve	3,375	4,494	1,119	33
Total	17,643	25,919	8,276	47

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Tables A-1, A-2, A-3, A-4, and A-5. Excludes USMCR.

TABLE 5-6

SELRES NURSE INVENTORY GROWTH, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	1982	1988	Growth	
			Number	Percent
Army National Guard	845	1,011	166	20
U.S. Army Reserve	4,107	6,622	2,515	61
U.S. Naval Reserve	398	1,374	976	245
Air National Guard	499	699	200	40
U.S. Air Force Reserve	1,181	2,105	924	78
Total	7,030	11,811	4,781	68

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

The overall growth in the number of reserve nurses is also reflected in the inventories of nurses with specialties commonly identified as critical skills, such as nurse-anesthetists, operating room nurses, medical-surgical nurses, and clinical³ nurses. The inventory of four groups of these specialists assigned to SELRES units grew at a comparable rate (65 percent) to the inventory of all SELRES nurses combined (68 percent) as shown by Table 5-7.

As the population of reserve military nurses has grown, changes have occurred in the percentages of the total population possessing certain characteristics. Those changes are discussed in detail in Appendix C.

Requirements, Authorizations, and Inventories

When considering the ability of the armed forces to field an adequate force of military nurses for wartime health care, discussions of inventories alone are inadequate. One must also take into account:

- **Requirements:** The total quantities demanded, by specialty, to meet the threat posed by potential adversaries. Requirements are derived from analyses of hostile threats, casualty projections from warfighting models,

³Care should be exercised in considering DoD shortages of any given specialty until one has determined whether the specialty bears the same title across all Military Services. The Services have differing taxonomies for the labeling of nursing specialties, and those specialty classifications differ in some cases from those in common usage in civilian life.

TABLE 5-7

GROWTH OF FOUR SELRES NURSING SPECIALTY GROUPS, 1982 - 1988

Specialty	1982	1988	Growth	
			Number	Percent
Nurse-anesthetist	282	492	210	75
Operating room nurse	447	906	459	103
Medical-surgical nurse	3,282	4,698	1,416	43
Clinical nurse	1,523	3,048	1,525	100
Total	5,534	9,144	3,610	65

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Based on data in Tables A-6, A-7, A-8, A-9, and A-10.

and planned military theater medical evacuation policy. Normally, requirements are reflected in military force structure (or organizations) distributed between the active and reserve forces. In the case of military nurses, however, a number of nurse requirements are expected to be met with other assets because there are not enough force structure billets to meet all projected requirements.

- **Authorizations:** The total quantities of positions or billets that are supported by personnel funds and marked for peacetime manning by assigned personnel of the active or reserve forces. The number of positions authorized to be filled (and therefore the focus of recruiting activity) approaches the number of positions in the military force structure, but some authorizations are restricted because of the lack of funds.⁴ This is true for both active forces and reserve forces. In some cases, however, the Military Service or reserve component will authorize selected peacetime "overstrengths" or the filling of more positions on a temporary basis than unit force structures allow.
- **Inventory:** The total number of people, by specialty, that are assigned. For units of the active forces and SELRES, these are the personnel who now fill the positions of the units, including those who have been recruited over-strength. For reserve categories such as the IRR, SBR, and Retired Reserve - categories making up pools of pretrained individual manpower.

⁴In 1988, the USAFR sought authorization and funds to add approximately 5,500 nursing positions to its peacetime force structure. This move was undertaken to provide nurses in the USAFR SELRES to meet the approximately 5,500 requirements the USAFR had allocated to its IRR. The sought-after authorization was not approved; consequently, the USAFR cannot now recruit nurses to fill those positions.

(PIM) pools – the inventories represent the individuals actually assigned to those categories. For wartime planning, the Military Services recognize that some individuals will simply not be available for wartime service. Planners routinely use “show rates” or factors that reflect the likelihood that not everyone assigned to units or to a particular PIM pool will be available as deployable assets once mobilization begins. These show rates differ among the Services and among the reserve components.⁵ The overall effect of these rates is the reduction of present inventory totals when seeking likely wartime availability personnel totals. Thus, in 1987, OASD(HA) concluded that only 15,450 of the 22,623 reserve military nurses would actually be available upon mobilization.⁶

Based on a total projected requirement of 44,750 nurses to be filled by the several reserve components, Table 5-8 shows a requirements-versus-available inventory shortage of 29,300 reserve nurses existed in 1987 after show rates had been applied. Inventories of reserve nurses have continued to increase since March 1987, and the projected shortage has been reduced proportionately.

TABLE 5-8
PROJECTED WARTIME NURSE SHORTAGE DERIVED FROM 1987 DATA
(Reserve component portion)

Supply and demand category	Number	
	For information	Demand and supply
Requirements allocated to reserve components		44,750
Peacetime authorizations for SELRES	13,900	
Inventory of reserve nurses, all categories	22,623	
Estimate of available reserve nurses		15,450
Projected reserve component nurse shortage		29,300

Source: OASD(HA). Report to the House Committee on Appropriations. Response to Testimony, 3 March 1987.

Note: Based on data in Table A-11.

⁵The “show rate” reflects the percentage of a particular group that will actually report for wartime duty. Show rate is a function of the group’s availability (few people will be available on short notice on M-day but availability will improve with time) and yield [a percentage based on the characteristics of the group; illustrative (Army) rates are: SELRES – 95 percent, IRR – 70 percent, and SBR – 50 percent]. Thus, show rate equals availability rate times yield rate.

⁶OASD(HA), 1987.

Inventories of reserve nurses have continued to increase since March 1987, and the projected shortage has been reduced proportionately. If the same show rates are applied to the 30 June 1988 nurse inventory as were used in 1987, the number of nurses reporting at mobilization will increase by 2,250, thus reducing the projected shortage to about 27,050.

Selected Reserve Inventories

The inventories of the SELRES merit special attention.⁷ This is the most intensively managed of any of the several reserve categories of personnel. The geographic locations of SELRES units – whether of the three Military Service reserves or the two National Guard components – are chosen with care, including sensitivity to recruiting potential. Filling SELRES unit vacancies is the objective of almost all of the recruiting activity that occurs on behalf of the reserve components. It is upon the SELRES that policy changes or initiatives resulting from this study are likely to have the most visible impact.

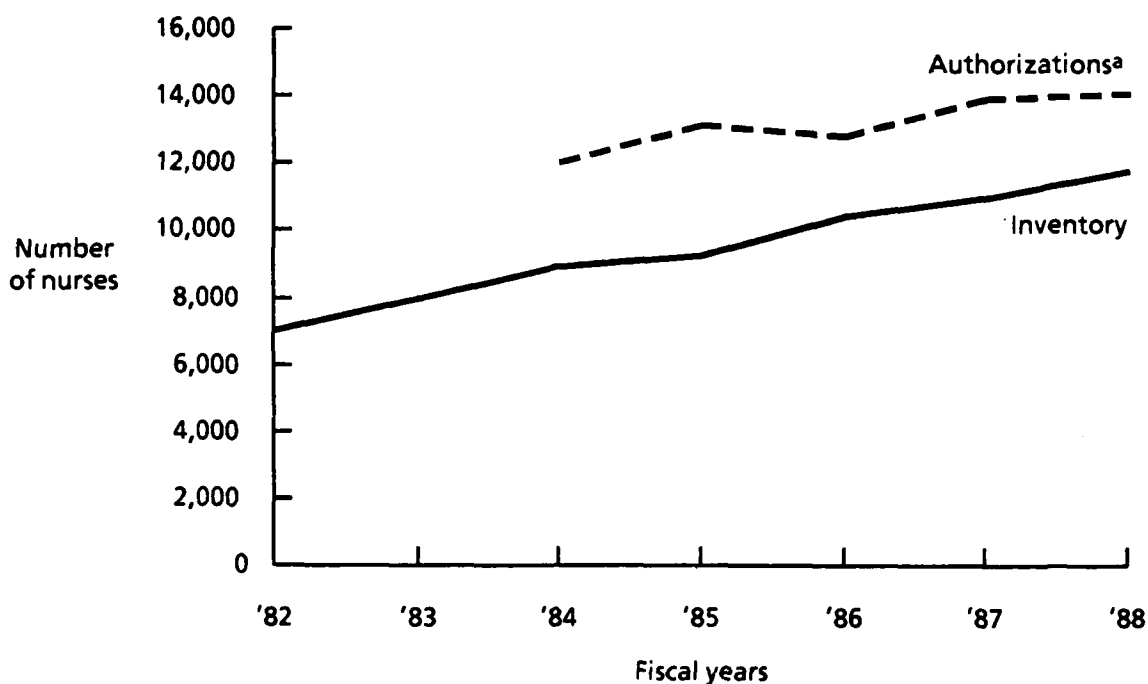
While SELRES inventories of nurses have shown marked increases over the past 6 years, unit authorizations have continued to outpace inventories but still fall short of requirements. Should both authorizations and inventories continue to grow at recent rates, a continuing SELRES inventory-versus-authorizations shortage of about 2,500 nurses will persist. Figure 5-1 shows this relationship.

The SELRES populations of nurses with critically needed specialties continue to lag authorizations as well. A review of present authorizations and inventories shows that the nurse-anesthetist population lags authorizations by as much as 50 percent, while the operating room nurse specialty is short by as much as 35 percent.

CHARACTERISTICS OF NURSES IN THE SELECTED RESERVE

This section describes the important SELRES population of nurses. Where appropriate, these nurses are compared with two related populations: all qualified nurses in the United States and all SELRES military officers in aggregate.

⁷The nurses of the SELRES consist of two groups. One group of nurses are those assigned to the organized units of the reserve forces – ARNG, USAR, USNR, ANG, or USAFR. The other group are all Individual Mobilization Augmentees (IMAs). IMAs are assigned to mobilization positions in units of the active forces, and they perform duty with those units for limited periods each year. SELRES nurses who are reserve forces unit members total about 11,200. There are presently about 600 IMA nurses in the SELRES.



Sources: Authorizations: OASD(HA), Medical Trends Data Reports.
 Inventory: RCCPDS, 30 June 1982 through 30 June 1988.
^a Authorizations data before 1984 are not available.

FIG. 5-1. SELRES NURSES - AUTHORIZATIONS VERSUS INVENTORY, 1982 - 1988

Personal Characteristics

Reserve component nurses differ in some respects from the U.S. general nurse population, and reserve nurses also differ somewhat from other officers in the SELRES. Table 5-9 displays the personal characteristics of SELRES nurses alongside similar descriptors of the entire population of SELRES officers and all U.S. nurses.

Within the general U.S. nurse population, only 3 percent of all nurses are male. In the SELRES, however, this percentage is as high as 21 percent. Among all officers in the SELRES, 88 percent are male.

The average age of SELRES nurses, 37.5 years, is almost identical with that of all reserve officers. SELRES nurses also compare favorably with the general U.S. nurse population, whose median age is 39 years. This shows that increasing the

TABLE 5-9
PERSONAL CHARACTERISTICS OF SELRES NURSES COMPARED WITH
ALL SELRES OFFICERS AND ALL U.S. NURSES

(Percentages, unless specified)

Characteristic	SELRES nurses ^a	All SELRES officers ^b	All U.S. nurses
Sex			
Male	21	88	3
Female	79	12	97
Age (years)	37.5	37.2	39.0
Race and ethnic classification			
White	83	88	90
Black	13	8	4
Hispanic	2	2	1
Asian/American Indian	2	2	2
Married	57	73	71
Dependents	57	70 ^c	47 ^d
Highest education attained			
Less than baccalaureate	24	17	68
Baccalaureate	45	46	26
Masters or more	17	27	6
Unknown	14	10	0

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: ANA, pp. 8 – 10, 11, and 24.

Note: Based on data in Tables A-12, A-13, A-14, A-15, and A-16.

^a No nurses are assigned to the USMCR SELRES.

^b Excludes USMCR.

^c This figure is based on reported data showing a large proportion – 22 percent – of “unknowns.” The 70 percent figure should, therefore, be used with care.

^d Dependents *less spouse*.

accession age limit from 35 to 47 has not yet increased the age of the military nurse population.⁸

⁸Sections 717 through 719 of *The Fiscal Years 1988 – 1989 Defense Authorization Act*, signed on 4 December 1987, raise the maximum acceptable accession age for nurses and other health care professionals with critically needed specialties to 47 years (from 35). Each Military Service has since issued separate implementing instructions to accommodate this provision.

The racial and ethnic data show that the SELRES nurse population is more racially and ethnically diverse than either the population of all SELRES officers or the general U.S. nurse population. The percentage of black SELRES nurses is more than three times that of the general U.S. nurse population and more than 1.5 times that of the general SELRES officer population.

Proportionately fewer SELRES nurses are married than is the case in the general U.S. nurse population (57 percent versus 71 percent), and a greater proportion of reserve nurses have dependents (57 percent) than in the general U.S. nurse population (47 percent).

SELRES nurses have a higher level of educational achievement than nurses in the general U.S. nurse population, with 45 percent having at least a baccalaureate compared with 26 percent of the larger U.S. nurse population. On the other hand, SELRES nurses' educational attainment is slightly lower than that of all SELRES officers.

Several interesting facts emerge when we review education and primary skills by sex, race, and ethnic classification. A higher proportion of females than males have baccalaureate or higher degrees. Black and white nurses have similar educational achievement, while Hispanic and Asian/American Indian ethnic nurses have a higher proportion of baccalaureate or higher degrees than blacks or whites. Table 5-10 presents a summary of SELRES nurse education by sex, race, and ethnic classification.

More females proportionally are represented in administrative positions, while more males proportionally are represented in the skilled positions of nurse-anesthetist and operating room nurse. Black, Hispanic, and Asian/American Indian nurses are not represented in the nurse-administrator, nurse-anesthetist, and operating room nurse specialties to the degree that their respective educational attainment levels might imply. A summary of SELRES nurse primary skills by sex, race, and ethnic classification is presented in Table 5-11.

Military Characteristics

Approximately one-third of the nurses in the SELRES are still serving their MSO, which means that for most nurses the SELRES is a voluntary relationship. The vast majority of nurses have received a direct commission instead of being

TABLE 5-10

**HIGHEST EDUCATIONAL ATTAINMENT OF SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(All reserve components)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	33	67
Female	26	74
Race and ethnic classification		
White	28	72
Black	28	72
Hispanic	24	76
Asian/American Indian	18	82

Source: RCCPDS, 30 June 1988.

Notes: Of 11,811 nurses in this inventory, the educational attainment of 1,490 (or 13 percent) is unknown. Those unknowns are not considered in this table. Based on data in Tables A-17, A-18, A-19, A-20, and A-21. No nurses are assigned to the USMCR SELRES.

commissioned through Officers Candidate School (OCS) or the Reserve Officers Training Corps (ROTC). Within the next 10 years, 28 percent of all SELRES nurses will reach their mandatory removal date, as compared with 22 percent of all SELRES officers.

When compared with all officers in the SELRES, nurses have more years of military service. On the other hand, a smaller proportion of nurses hold the more senior grades. It is widely believed — though we have not confirmed the belief in this study — that this disparity stems from the lack of senior grade positions available to nurses in military organizations. Table 5-12 shows these comparisons.

CIVILIAN EMPLOYMENT

The vast majority of nurses assigned to the SELRES, with the exception of those in the Naval Reserve, work full time in the civilian sector (see Table 5-13). Over 40 percent of all these nurses work in some kind of Government health facilities, as

TABLE 5-11

**SELECTED PRIMARY SPECIALTIES OF SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(All reserve components)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	2,480	1	13	8
Female	9,326	3	2	7
Race and ethnic classification				
White	9,814	2	5	8
Black	1,488	1	2	7
Hispanic	267	4	2	4
Asian/American Indian	174	3	0	7

Source: RCCPDS, 30 June 1988.

Notes: Based on data in Tables A-22, A-23, A-24, A-25, and A-26. No nurses are assigned to the USMCR SELRES. Any failure of data to reconcile is due to minor error rate in data coding.

TABLE 5-12

SELECTED MILITARY CHARACTERISTICS OF SELRES NURSES AND OTHER OFFICERS, 1988

(Percentages, unless specified)

Characteristic	Nurses in SELRES ^a	All officers in SELRES ^b
MSO remaining	34 ^c	42 ^d
Direct commission	91	28
Mandatory removal within 10 years	28	22
Average years of service	9.7	8.8
Grades:		
01/02	39	26
03/04	49	52
05	10	16
06	2	6

Source: RCCPDS, 30 June 1988.

Note: Based on data in Tables A-27, A-28, A-29, A-30, and A-31.

^a No nurses are assigned to the USMCR SELRES.

^b Excludes USMCR.

^c RCCPDS data reflect 5,045 "unknowns" out of 11,811 nurses.

^d RCCPDS data reflect 53,067 "unknowns" out of 163,932 officers.

compared to approximately 15 percent of the total nurse population.⁹ More than half of the SELRES nurses who are employed claim that their civilian jobs are similar to their military jobs. This congruence is particularly marked by nurses in the Naval Reserve.

TABLE 5-13
CIVILIAN EMPLOYMENT OF SELRES NURSES, BY RESERVE COMPONENT
(Percentage of total respondents)

Employment, employer, and job similarity	Total	ARNG	USAR	USNR	ANG	USAFR
Civilian employment						
Full time	76	80	80	52	79	72
Part time	9	11	7	12	10	11
In school	6	4	6	12	3	7
Unemployed	9	5	8	24	8	10
Civilian employer						
Federal Government	19	14	23	12	16	14
State and Local Government	23	27	24	16	26	21
Private company or individual	55	55	50	68	54	63
Self-employed	3	3	3	3	4	3
Civilian job similar to military job	57	50	58	65	54	56
Number of respondents	9,712	911	5,544	792	485	1,982

Source: DoD, 1986 Reserve Components Survey.

Several interesting facts come to light when we review the SELRES nurses' civilian, military, and total family income (see Table 5-14). First, nurse-anesthetists earn appreciably more from their civilian jobs than do other nurses. Second, the total family income of reserve nurses compares positively to family incomes in the United States. In 1985, for example, only 18.2 percent of families reported yearly incomes of over \$50,000 and 11.2 percent annual income between \$40,000 and

⁹Moses, Evelyn B. *The Registered Nurse Population*. Washington, D.C.: USDHHS, November 1986, p. 28.

\$49,999.¹⁰ In addition, it can be seen that the nurses' total indebtedness levels were not high (see Table 5-15).

TABLE 5-14

SELRES NURSE INCOMES (CIVILIAN, MILITARY, TOTAL FAMILY) BY RESERVE COMPONENTS
(Means)

Nurse income	Total	ARNG	USAR	USNR	ANG	USAFR
Mean civilian income						
Operating room nurses	\$24,525	NA ^a	\$26,043	\$21,465	NA ^a	\$20,505
Nurse-anesthetists	45,104	NA	44,579	67,500	NA	43,061
Other nurses	25,499	NA	25,737	17,593	NA	27,453
Mean military income						
Operating room nurses	5,082	NA	4,738	6,406	NA	5,649
Nurse-anesthetists	6,770	NA	5,545	4,968	NA	9,098
Other nurses	4,836	NA	4,513	4,927	NA	5,646
Mean total family income						
Operating room nurses	43,175	NA	42,919	35,832	NA	48,137
Nurse-anesthetists	63,360	NA	61,306	97,468	NA	62,388
Other nurses	42,700	NA	42,551	40,456	NA	43,817
Number of respondents	9,712	5,544	911	792	1,982	485

Source: DoD, 1986 Reserve Components Survey.

^aNA - data not available.

RECRUITING INFLUENCES AND EXPERIENCE

In 1982, Slewitzke surveyed SELRES and IRR nurses in the Army Reserve and SELRES and ING nurses in the Army National Guard. These nurses were asked questions about their own recruitment history and about their own - and the Army's - decision process.¹¹ When asked about the influences on their recruitment, USAR and ARNG nurses reported that recruiters and advertisements were not very influential (see Table 5-16). In contrast, good feelings about their own prior military service and reinforcement by family and friends influenced 55 percent of the nurses.

¹⁰U.S. Bureau of Census. *Statistical Abstract of United States, 1988* (108th Edition). Washington, DC: 1987, p. 429.

¹¹Slewitzke.

TABLE 5-15

TOTAL ESTIMATED FAMILY DEBT OF SELRES NURSES, BY RESERVE COMPONENT
(Percentage of total respondents)

Estimated debt	Total	ARNG	USAR	USNR	ANG	USAFR
No debt	9	6	6	19	15	12
\$1 - \$4,999	41	38	41	41	34	42
\$5,000 - \$9,999	21	20	23	18	21	21
\$10,000 - \$14,999	13	11	13	14	10	13
\$15,000 or more	16	25	17	8	20	11
Number of respondents	9,712	5,544	911	792	1,982	485

Source: DoD, 1986 Reserve Components Survey.

Other nurses, both military and civilian, were cited as being influential in the reserve affiliation decision by less than 20 percent of the nurses.

Slewitzke also sought information about in-processing procedural problems. As Table 5-16 shows, the largest in-processing annoyance was the length of time required to complete the affiliation. More than 30 percent of the nurses specified waiting for notification, orders, completion of the application form, and the physical examination as problem areas. For almost half the respondents, the total in-processing time was greater than 6 months. For more than 10 percent, the process required over a year. One-third of the nurses in the Army Reserve and 26 percent of those in the Army National Guard had no problem with in-processing.

Slewitzke also asked the nurses about factors that influenced them to select their particular component. The following list of their responses is rank-ordered from the most significant to the least significant influence:

- Close to home
- Friends in Service
- Quality of nursing
- Opportunity to travel
- Service reputation

TABLE 5-16

**INFLUENCES ON, AND TIME INVOLVED IN, THE RECRUITMENT
OF ARMY RESERVE AND ARMY NATIONAL GUARD NURSES**

(Percentages reported)

Reported influences	ARNG	USAR
Most influential for recruitment to Guard/Reserve		
Prior military service	16	32
Friends and relatives	39	23
Military nurses	7	10
Advertising	9	7
Recruiter	9	6
Civilian nurses	6	6
Promotional material influence		
Information pamphlet	7	6
Television	1	0
Newspaper	0	0
Popular magazines	0	0
Professional journal	3	5
In-processing procedures annoyances		
Length of time to complete procedure	30	26
Waiting for notification	19	14
Completing the application form	8	8
Physical examination	5	5
Waiting for orders	3	3
Initial contact with recruiter	1	2
Not bothered by process	26	33
Total time required for in-processing		
Less than 6 months	50	54
6 - 9 months	30	19
9 - 12 months	11	12
12 - 18 months	6	7
Over 18 months	4	4
Number of respondents	459	901

Source: Adapted from: Slewitzke, pp. 48, 50, 51, and 53.

- Quality of hospitals
- Former affiliation with this branch
- Faster promotion in this branch
- Avoidance of undesirable work setting.

Table 5-17 reports the factors that the nurses considered important when selecting a career in the Army Reserve or Army National Guard. Four types of factors are important. First is the convenience factor, which encompasses the amount of time obligated, location near home, and flexible hours. Second, responding nurses consider the knowledge of one's mobilization assignment important. Third and fourth are retirement benefits and pay grade.

TABLE 5-17
CAREER FACTORS CONSIDERED IMPORTANT BY USAR AND ARNG NURSES
(Percentages of all respondents)

Items considered important for reserve career	USAR	ARNG
Active duty for retirement pay/points	80.2	68.4
Pay grade applicable if on active duty	78.1	76.4
Seminars in military nursing	69.9	72.9
Active duty at one's convenience (pay/points)	63.3	61.4
Known mobilization assignment	60.6	61.6
Known mobilization near home	60.1	58.1
Maximum obligation of 2 weeks active duty	58.0	50.5
Good retirement year (minimum obligation)	51.6	52.0
Option to vary participation	50.1	50.7
Known mobilization assignment overseas	44.1	40.2
Maximum obligation: forty-eight 4-hour drill periods	36.9	28.5
Number of respondents	901	459

Adapted from: Slewitzke, p. 56.

MOTIVATIONS FOR SERVICE IN THE RESERVE FORCES

Several studies have asked reserve military nurses about factors that have influenced them to enter or remain in reserve service.¹² In order of importance for entry, the nurses cite:

- Pay and benefits
- Retirement benefits
- Patriotism/service to the country
- Professional advancement
- Job characteristics/expansion of skills.

When factors that influence retention are considered, four of these five factors are mentioned most often. However, the order changes; retirement benefits become number one and pay and benefits number two. In addition, patriotism switches places with professional advancement and development of friendships becomes a major influence.

The 1986 DoD reserve component survey asked officers to rate 14 factors as to whether they made a major, moderate, minor, or no contribution to their most recent decision to stay in the reserve components.¹³ Table 5-18 presents the percentages of reserve nurses in each component who rated each factor as being a major contributor. While the factors listed differed somewhat from those identified by other studies, there are similarities in the findings. Retirement, serving the country, and pride in accomplishments were rated the major contributors by the largest percentages of reserve military nurses in each component. Enjoyment of the reserve component, promotion opportunities, and serving with the people in the unit were also rated highly. While pay and benefits did not rank as the top five motivators, from 22 to 39 percent did note that they were influenced by money necessary for basic family expenses, for extras, or for future use.

¹²See for example: Brenner, 1987; French, 1986; Slewitzke, Ibid.; Texidor, Margaret S. and Barbara L. Hyde. *A Survey of the Army Nurse Corps Reserve Program Membership Within the 807th Medical Brigade: Education, Leadership, Membership Factors, and an Expanded Perspective on Nursing Practice*. Unpublished paper, September 1987; and Troyer, 1984.

¹³DoD, 1986 *Reserve Components Survey*.

TABLE 5-18

FACTORS INFLUENCING SELRES NURSE RETENTION, BY RESERVE COMPONENT
(Percentages of respondents)

Influence factors	Total	ARNG	USAR	USNR	ANG	USAFR
The following were major contributors to my decision to stay in the reserve forces:						
Serve the country	50	47	47	52	51	56
Use educational benefits	12	19	14	5	14	5
Obtain training in skill that would help get civilian job	7	6	7	8	12	5
Serve with people in the unit	30	27	28	34	31	34
Getting credit toward military retirement	64	56	64	69	65	66
Have promotion opportunities	31	33	30	34	34	31
Have opportunity to use military equipment	6	4	7	2	9	7
Meet challenge of military training	21	14	22	16	19	25
Need money for basic family expenses	30	26	33	39	22	23
Want extra money to use now	29	24	33	27	21	25
Save income for future	24	22	24	33	25	22
Have travel/"get away" opportunities	29	14	28	26	49	38
Just enjoy Guard/Reserve	33	33	29	38	42	42
Take pride in my accomplishments in Guard/Reserve	45	35	42	45	51	57
Number of respondents	9,712	911	5,544	792	485	1,981

Source: DoD, 1986 Reserve Components Survey of Officers.

Using a work value questionnaire designed for the civilian sector, Brenner's study of a small group of a company- and field-grade nurses in the California Army National Guard identified six nurse work values of primary importance to retention.¹⁴ The rankings of the six values are presented in Table 5-19.

The results are in agreement with the other studies that conclude that reserve military reserve nurses are motivated by salary, advancement, professional growth, recognition, and a friendly work environment.

¹⁴Brenner, 1984, p. 17.

TABLE 5-19

**WORK VALUES POSITIVELY AFFECTING RETENTION,
CALIFORNIA ARMY NATIONAL GUARD NURSES, 1987**

Work values	Company grade	Field grade
High salary and fringe benefits	1	1
Motivating job characteristics	5	2
Fair supervision and recognition	4	3
High job security	3	4
Quick promotion and recognition	2	4
Friendly coworkers	6	5
Number of respondents	28	16

Source: Brenner, 1987, p. 15.

Note: Numbers in table are rank order of work values, by group.

SATISFACTIONS OF RESERVE MILITARY SERVICE

Overview

The 1986 DoD survey of officers in the reserve components addressed individual nurse satisfaction by asking about: level of satisfaction with a list of items that included pay and benefits, training, and educational and promotional opportunities; unit morale level and overall satisfaction with reserve participation; and problems with resources, training, and participation levels. Nurse responses are presented in Tables 5-20 and 5-21.

As can be seen in Table 5-20, more than 80 percent of the nurses were satisfied with their military pay and allowances, although only two-thirds thought it enough for the amount of time they spent on reserve activities. In contrast, only 20 percent were satisfied with their commissary privileges and fewer than half were happy with other military benefits. Surprisingly, with military retirement often identified as a very important motivator, only 55 percent were happy with their retirement benefits. Nurses in the Naval Reserve and Air National Guard seemed most satisfied of all respondents.

TABLE 5-20

NURSES' SATISFACTION WITH FIFTEEN FACTORS RELATED TO RESERVE MILITARY SERVICE

(Percentages reporting being satisfied or very satisfied)

Satisfaction factors	Total	ARNG	USAR	USNR	ANG	USAFR
Satisfaction with:						
Military pay and allowances	81	81	79	89	87	80
Pay and benefits for amount of time spent on Guard/Reserve activities	66	61	66	76	72	66
Commissary privileges	20	22	21	24	16	20
Other military privileges	49	41	49	57	51	46
Military retirement benefits	55	44	57	67	60	51
Opportunities for education/training	44	52	43	41	32	49
Training received during drills	47	34	46	37	50	61
Unit activities during annual training/active duty training	67	53	71	66	59	67
Unit social activities	37	40	32	34	48	47
Acquaintances and friendships	88	84	87	87	88	90
Opportunity to serve country	83	81	81	85	86	86
Opportunity to use specialty skills during unit drills	48	38	46	28	46	68
Opportunities for promotion in unit	51	59	47	55	42	58
Overall satisfaction with participation in the Guard/Reserve	71	69	69	76	78	73
Morale of military personnel in unit (high or very high)	55	53	55	56	59	56
Number of respondents	9,712	911	5,544	792	485	1,981

Source: DoD, 1986 Reserve Components Survey.

Satisfaction with training and with educational and promotional opportunities was not high, although there were marked differences among components. Nearly two-thirds of the nurses were satisfied with their unit activities during annual training. Less than half were pleased, however, with the training received during drills. This dissatisfaction appeared related to the lack of opportunity to use specialty skills during unit drills. On these issues, Air Force Reserve nurses were more satisfied than were nurses in the Army Guard or the Naval Reserve.

Less than half the nurses were pleased with their opportunities for education and training. Satisfaction with promotional opportunities hovered around the 50 percent mark. Air National Guard nurses were most dissatisfied with all these

TABLE 5-21

**RESERVE NURSES' PERCEPTIONS OF PROBLEMS IN THEIR UNITS,
BY RESERVE COMPONENT**

(Percent considering each issue to be a moderate-to-serious problem)

Potential problem issues	Total	ARNG	USAR	USNR	ANG	USAFR
The following are problems in meeting unit training objectives:						
Outdated equipment	38	49	40	39	35	26
Poor mechanical condition of equipment	30	35	31	27	20	27
Below strength in Grades E1 - E4	17	15	16	27	18	14
Below strength in Grades E5 - E9	17	9	19	27	14	11
Not enough staff resources to plan effective training	30	32	28	45	40	24
Shortage of MOS/rating/specialty qualified personnel	21	18	20	39	18	15
Low attendance at unit drills	8	11	11	16	14	8
Low attendance at annual training	8	16	7	9	11	3
Low quality personnel in low grade drill positions	16	20	17	23	9	10
Not enough drill time to practice skills	29	27	29	21	50	29
Not enough time to plan training objectives and get all administrative paperwork done	52	41	46	71	76	59
Lack of access to good training facilities	39	44	41	56	45	24
Lack of good instruction manuals and materials	31	32	34	53	25	17
Lack of supplies	31	34	37	34	19	12
Ineffective training during annual training/active duty training	19	30	19	24	16	12
Number of respondents	9,712	911	5,544	792	485	1,981

Source: DoD, 1986 Reserve Components Survey.

opportunities, especially when their responses are compared to those of nurses of the Army National Guard.

Although friendships and acquaintances were most satisfying to all the reserve nurse respondents, not many were happy with the social activities of their units. Less than 60 percent described the morale of military personnel in their units as high. Yet high percentages of nurses in each of the reserve components claimed that, overall, they were satisfied with their participation in the reserve forces.

The degree to which unit training objectives are being met was another aspect of job satisfaction addressed. Respondents were asked to rate 15 potential problem issues that can interfere with accomplishing unit training objectives. Table 5-21 displays the military nurse responses.

Troubles with training were identified. More than half the nurses complained that there was not enough time to plan training objectives and to get all the required administrative paperwork done as well. More than 40 percent of the nurses, with the exception of those in the Air Force Reserve, noted the lack of access to good training facilities and grounds. Almost a third reported that good instructor manuals and materials were lacking. Naval Reserve and Air Guard nurses were especially critical of training resources and also noted that the staff was not large enough to plan effective training. Half the Air Guard respondents perceived that drill time was inadequate to practice skills. Annual training was not reported to be as great a problem as that experienced during unit drills.

Army Reserve and Army Guard nurses were most likely to perceive equipment problems. Few saw problems with attendance at unit drills or annual training, nor did the numbers and quality of lower grade enlisted personnel appear troublesome. Nearly 40 percent of the Naval Reserve nurses, however, did note that a shortage of specialty-qualified personnel constituted a problem.

Slewitzke's study of the Army Reserve and Army National Guard had similar findings.¹⁵ Approximately half of her USAR and ARNG respondents were satisfied with their opportunities for promotion and professional growth, and about half were satisfied with their annual training assignments. While over two-thirds of the nurses felt that the quality of enlisted personnel was good or excellent, more than 60 percent believed that the materials for teaching enlisted staff members were inadequate. Over 78 percent thought that there were insufficient opportunities for continuing education for nurses. Approximately 30 percent also were dissatisfied with the quality and accessibility of their supervisors.

Convenience and Conflict of Reserve Participation

Table 5-22 presents the responses of the nurses to questions in the 1986 DoD survey about the convenience of, conflicts over, and support for reserve participation.

¹⁵Slewitzke, pp. 69 – 73.

It was instructive to see that more than 50 percent (with the exception of the Air Force Reserve) of the reserve nurses traveled less than 40 minutes from home to their units. The Air Force Reserve stands out as the only component in which more than 30 percent of the nurses travel an hour or more to unit drills.

Although over two-thirds of the nurses were satisfied with the amount of time required at reserve activities, quite a few spent more time at their drill locations than required. Air Force Reserve and Air National Guard nurses worked more paid and unpaid hours than did the other nurses.

Fewer than half of the responding nurses (42 percent) believed that their spouses held favorable attitudes toward their reserve participation. If they did not perceive spouses' attitudes as favorable, then the perception was of neutrality. Army Reserve nurses perceived the highest level of spousal support.

Few nurses felt that their absence for weekend drills or extra time devoted to the reserve activities created problems for their families. However, over a quarter of those in the Navy and Army components believed that their annual training absence was a problem. The Army National Guard nurses were the most likely to see problems with absences because of extra time and annual training.

Over half the nurses believed that their civilian supervisors had favorable attitudes toward their reserve participation. Nurses of the two National Guard components were least likely to see supervisor support. Absence for annual training and for extra time expended were seen as problems for civilian employers. Nurses in the two National Guard components were most likely to identify these problems.

Few nurses believed that their reserve obligations caused them to miss opportunities for overtime or extra pay. Yet, with the exception of those in the Naval Reserve, over 40 percent of the reserve nurses felt that a mobilization of 30 days or longer would result in their total income being decreased.

RETENTION AND INTENTION TO REMAIN IN THE RESERVE FORCES

The DoD 1986 Reserve Components Survey asked several questions about retention. First, the nurses were asked about the total number of years they had served in the active and reserve forces. Second, they were asked about their intention to continue in the reserve forces after their military obligation was met. Third, they were asked how likely it was that they would remain in the reserve until retirement.

TABLE 5-22

**NURSES' PERCEPTIONS OF CONVENIENCE, CONFLICTS, AND SUPPORT
FOR RESERVE PARTICIPATION, BY MILITARY COMPONENT**

(Percentages of all respondents)

Convenience, conflict, and support questions	Total	ARNG	USAR	USNR	ANG	USAFR
How much time does it take to get to unit from home?						
Less than 40 minutes	51	50	57	53	56	30
40 to 59 minutes	20	18	19	25	20	21
1 to 2 hours	16	18	14	16	15	20
More than 2 hours	13	14	8	4	8	28
In 1985, how many paid "man-days" did you serve in addition to regular drill days plus annual training?						
0	65	57	70	85	43	50
1 - 5	19	21	20	3	29	18
6 - 20	12	18	8	7	22	19
21 or more	5	3	2	5	5	13
In an average month (1985), how many unpaid hours were spent at drill location?						
0	54	54	59	46	43	45
1 - 8	29	34	26	43	32	27
9 - 16	9	4	7	9	11	16
17 or more	9	7	8	2	14	12
Are you satisfied with the amount of time required at Guard/Reserve activities? (yes)	67	54	68	68	63	72
Does your spouse have a favorable attitude toward reserve participation? (yes)	42	44	63	55	42	41
Do you have a problem in your family over your:						
Absence for weekend drills? (yes)	14	15	13	15	10	15
Absence for annual training? (yes)	24	31	25	28	13	19
Absence for extra time spent at reserve center? (yes)	16	24	14	15	14	16
Does your immediate civilian supervisor have a favorable attitude toward reserve participation? (yes)	53	48	52	52	45	60
Is there a problem for your employer in your:						
Absence for weekend drills? (yes)	18	14	17	18	22	18
Absence for annual training? (yes)	36	39	34	34	46	37
Absence for extra time spent at reserve drill site? (yes)	37	47	33	26	46	45
Time spent at work on reserve activities? (yes)	24	27	21	25	21	31
Do you lose opportunity for overtime/extra pay because of reserve obligations? (yes)	25	26	22	21	37	28
If mobilized for 30 days or more, would your total income decrease? (yes)	41	50	2	13	50	41
Number of respondents	9,712	911	5,544	792	485	1,981

Source: DoD, 1986 Reserve Components Survey

The fourth and fifth questions sought to determine whether the respondents favored increases in the number of required drill hours and annual training days. The nurses' responses to these questions are presented in Table 5-23.

TABLE 5-23

**NURSES' INTENTIONS TO CONTINUE IN THE RESERVE FORCES AFTER COMPLETION
OF MILITARY SERVICE OBLIGATION OR UNTIL RETIREMENT,
BY MILITARY COMPONENT**

(Percentage of all respondents)

Retention questions	Total	ARNG	USAR	USNR	ANG	USAFR
At completion of your obligation, do you intend to continue to participate in the Guard/Reserve?						
Yes	25	18	20	15	33	46
No	3	2	3	0	0	5
Don't know	12	9	13	0	11	18
No obligation	58	70	64	85	56	29
How likely are you to stay in the Guard/Reserve until retirement?						
0 - 30%	13	19	13	5	11	13
40 - 60%	20	23	20	16	25	19
70 - 100%	67	57	67	75	57	66
If required drills were increased 2 to 4 hours/month, how likely are you to stay until retirement?						
0 - 30%	30	34	30	28	28	29
40 - 60%	23	33	24	19	20	19
70 - 100%	46	33	45	53	52	52
If annual training were increased by 5 days, how likely are you to stay until retirement?						
0 - 30%	21	30	20	19	14	24
40 - 60%	25	29	27	22	24	22
70 - 100%	53	40	54	59	61	54
Mean total service	9.8 yrs.	8.5 yrs.	9.7 yrs.	11.0 yrs.	10.9 yrs.	10.2 yrs.
Number of respondents	9,712	911	5,544	792	485	1,981

Source: DoD, 1986 Reserve Components Survey.

A review of Table 5-23 shows that the nurses' average length of service in each of the Military Services exceeds their initial 6- or 8-year obligation. In addition, over half of the nurses claimed that they had completed their service obligation. Naval

Reserve nurses showed the longest length of service and 85 percent claimed to have met their obligation. In contrast, only 25 percent of Air Force Reserve nurses believed that they had fulfilled their military service commitment although their average length of service was 10.2 years. The explanation for this finding appears to be that the Air Force routinely asks its reserve officers to agree to a series of 3-year affiliation agreements beyond the expiration of the formal MSO.

For those nurses with an MSO remaining, the majority intended to remain in the reserve forces even after that requirement is satisfied. Moreover, over two-thirds of the nurses believed that there was greater than a 70 percent likelihood that they would remain in the reserves until eligible for retirement. The nurses in the two National Guard components were slightly less likely to rate their chances of remaining as high as were the nurses in the other components.

When drill and annual training time requirements were hypothetically increased, the percentages of nurses who claimed that they are 70 to 100 percent certain that they will remain until retirement was somewhat reduced. Still, approximately half the nurses claimed that they would remain in reserve service if 5 additional annual days and 2 to 4 extra drill hours were added. The Army National Guard nurses were least likely to remain in the event of increased time requirements.

Intended "Stayers" Versus "Leavers"

Table 5-24 and Table 5-25 present the career motivations and satisfactions of the nurses who did and did not intend to remain in the reserve forces until retirement, those who were uncertain, and those who have remained past fulfillment of their MSOs. As can be seen, retirement benefits and promotion opportunities were not major motivators for those leaning toward leaving the reserve. "Leavers" were less likely to be influenced by pride in their reserve accomplishments or enjoyment in their participation than were "stayers." Money for basic family expenses and extras was important, as was the opportunity to travel or get away. The only factor more influential than money was serving one's country. It is interesting to note that when looking at demographic characteristics of those who intend to stay past their service obligation, the largest percentage responding affirmatively were married nurses with family incomes below \$10,000 per year.

The major career satisfiers for both leavers and stayers were acquaintances and friendships, opportunity to serve the country, military pay and benefits, and

TABLE 5-24

**MAJOR MOTIVATORS TO REMAIN IN THE RESERVE
AMONG "STAYERS" AND "LEAVERS"**

(Percentages of all respondents)

Major contribution to decision to stay in reserve/forces	Likelihood to remain until retirement			No MSO ^a (percent)
	70 - 100%	40 - 60%	0 - 30%	
Credit toward retirement	76	45	21	68
Serve the country	51	45	43	48
Pride in my accomplishments in Reserve/Guard	50	33	33	45
Just enjoyed Reserve/Guard	38	24	24	33
Promotion opportunities	38	21	14	30
Serve with people in unit	32	25	21	29
Need money for basic family expenses	31	27	32	31
Want extra money to use now	30	26	34	30
Save income for future	26	21	18	26
Travel/get away opportunities	30	26	31	26
Number of respondents	6,216	1,942	1,263	5,672

Source: DoD, 1986 Reserve Components Survey.

^a Percentages in this column are those of nurses answering this question who report no MSO remaining.

satisfaction with the limited time required for reserve activities. However, reported satisfaction with pay and benefits, time requirements and, especially, the pay for the amount of time spent was appreciably lower for those nurses who intended to leave the reserves. Moreover, these latter nurses expressed significantly less happiness with military retirement benefits. Intention to leave the reserve forces before retirement was significantly related to overall dissatisfaction with reserve participation and its rewards.

When we review overall satisfaction with reserve participation in light of years of service completed, we see that those with the longest tenure were the most satisfied. For example, 76 percent of the nurses with 12 to 19 years of service were

TABLE 5-25

**CAREER SATISFACTIONS OF NURSES VERSUS INTENTIONS
TO STAY IN OR LEAVE THE RESERVE FORCES**

(Percentages of respondents)

Satisfaction with	Likelihood to remain until retirement			No MSO ^a (percent)
	70 - 100%	40 - 60%	0 - 30%	
Acquaintances and friendships	88	87	78	87
Opportunity to serve country	86	75	71	83
Military pay and benefits	85	72	64	86
Pay and benefits for amount of time spent in Guard/Reserve activities	53	35	37	54
Time required at Guard/Reserve activities	80	80	70	78
Military retirement benefits	61	51	29	57
Overall participation in Guard/Reserve	58	33	29	50
Opportunities for education/training	46	35	45	43
Unit social activities	38	34	31	35
Opportunity to use specialty skills during unit drills	35	19	21	29
Number of respondents	6,216	1,942	1,263	5,672

Source: DoD, 1986 Reserve Components Survey.

^a Percentages in this column are percentages of those answering this question who report no MSO remaining.

satisfied as compared to 73 percent with 6 to 11 and 66 percent with 0 to 5 years of service.

**The Reliability of the Measures of Intention to Remain
in the Reserves Versus Actual Retention**

For several reasons, we believe that survey responses to questions about retention intentions are reliable indicators of actual retention. First, the findings of different studies are remarkably stable. For example, the level of intent to remain in the reserve forces after fulfilling one's military service requirement (79 percent) until

retirement (67 percent) reported in this study from the 1986 Reserve Components Survey is in agreement with study findings of Slewitzke¹⁶ and those of Texidor and Hyde.¹⁷ Slewitzke found that 70 percent of the nurses in the Army Reserve and Army National Guard claimed that they would probably or definitely stay in the Service until retirement. Texidor and Hyde found that 75 percent of their Army Reserve nurse sample intend to remain in the Army until retirement.

Second, the responses to the two questions reported here are consistent with the actual retention of reserve nurses. Several authors who have correlated intent to remain working in an organization and subsequent employment note that intent to remain is the best predictor of retention.¹⁸ For this study, years of service were examined in relationship to retention intentions. Table 5-26 presents the findings.

A review of the table shows that those who intended to remain in the reserve after meeting their MSOs also intended to stay until retirement. Furthermore, those who have completed that obligation intend to remain until retirement. Even more interesting, however, is the direct and positive relationship between actual years of service and likelihood that the nurses will continue in reserve service until retirement.

Third, the findings of this study team, reported in Chapter 6 of this report, show that 84 percent of all nurses in the several Selected Reserves in 1982 remained in the reserve forces in 1988. Fully 64 percent have stayed in the Selected Reserve.

¹⁶Slewitzke, p. 61.

¹⁷Texidor and Hyde, p. 18.

¹⁸See for example: Mobley, W. H. "Some Unanswered Questions in Turnover and Withdrawal Research." *Academy of Management Review*. January 1982, pp. 111-116; Bluedorn, A. C. "Structure, Environment, and Satisfaction: Toward a Causal Model of Turnover from Military Organizations." *Journal of Political and Military Sociology* 7. Fall 1979, pp. 181-207; and Lensing, Susan B. *A Model of Career Orientation for Military Nurse Corps Officers*. Monterey, CA: Naval Postgraduate School Master's thesis, December 1984.

TABLE 5-26

**NURSES' INTENTION TO REMAIN IN RESERVE FORCES PAST THEIR MILITARY SERVICE OBLIGATION,
YEARS OF SERVICE, AND INTENT TO REMAIN UNTIL RETIREMENT**

(Percentages of respondents)

Statements of service and intent	Number of respondents	Likelihood of staying until retirement		
		70 - 100%	40 - 60%	0 - 30%
Will remain in reserve forces after MSO	2,441	7	15	6
Unsure	1,192	13	54	33
Will not continue after MSO	278	7	18	75
Have completed MSO	5,670	72	16	8
Years of military service				
0 - 5 with no prior service	2,370	46	31	24
0 - 5 with prior service	345	59	25	16
6 - 11 years	2,819	75	16	9
12 - 19 years	2,824	93	5	3
Total	9,712	6,216	2,233	1,263

Source: DoD, 1986 Reserve Components Survey.

CHAPTER 6

RECRUITING AND RETENTION: POLICIES, PRACTICES, AND RESULTS

In this chapter, we examine the recruiting structure, policies, and practices of the five military reserve components as each relates to reserve nurse accessions. We discuss new policies that have been implemented as incentives to nurse recruitment and discuss the continuing results of nurse recruiting efforts. In the final section of the chapter, we outline retention policies and practices and present reserve nurse retention data for the period from 1982 through 1988. The results of recruiting efforts since 1982 are discussed as inventory growth in Chapter 5 and Appendix C.

RESERVE NURSE RECRUITING STRUCTURE

All Military Services and all reserve components have recruiting organizations that deal with nurse accessions. However, there are major differences among the components in the:

- Organization of the recruiting function
- Level responsible for nurse recruitment
- Size of the recruitment apparatus
- Personnel who actually recruit nurses.

The USAR has the largest and most complex nurse recruiting organization. The USAR recruiting activities are directed by the U.S. Army Recruiting Command (USAREC) and are conducted by recruiters assigned to five geographically distinct recruiting brigades. Approximately 50 recruiting stations are distributed among the brigades. The stations are staffed with (among others) nurse recruiters dedicated to the USAR. While all USAREC recruiters can recruit USAR members, the recruiting command now has 93 USAR recruiters dedicated solely to USAR nurse recruiting.¹

The Naval Reserve is divided into 16 geographically distinct Readiness Commands (REDCOMs) and 15 Air Sites located within the REDCOM boundaries

¹Information provided by USAREC.

but not part of their organizations. Recruiting for all Naval Reserve programs is now (since 16 February 1989) the responsibility of the Naval Reserve Recruiting Command. That command also contains a medical recruitment unit that is charged with accessing health professionals.²

The Air Force Reserve consists of three separate, numbered, and geographically overlapping Air Forces: the 4th (most of whose units are in the West), 10th (Midwest), and 14th (East). Within these three large organizations, there are 80 major medical units responsible for recruiting their own nurses. In addition, the Air Force Reserve Medical Recruiting Service has separate physician recruiters, as well as other recruiters who can assist with nurse accessions. The USAFR has applied for additional, national-level medical recruiter positions, although it has no plans for dedicated nurse recruiters.³

The state headquarters of the Army and Air National Guard and the units within each state are responsible for nurse recruitment. The ARNG has a national Army Medical Department recruiter to oversee and coordinate the states' efforts. The ANG has a health professions recruiter who supports state recruiting activities with policy and program guidance.⁴

NURSE QUALIFICATIONS

All reserve components recruit experienced, registered nurses 47 years old or younger.⁵ Alone among the reserve components, the Naval Reserve requires virtually all nurse recruits to hold a baccalaureate degree in nursing. Registered nurses who are graduates of diploma educational programs are eligible for membership in the USNR if their programs consisted of at least 108 academic weeks, as are associate degree nurses who also hold a baccalaureate in certain related fields. Fewer than 5 percent of new USNR nurse accessions, however, are diploma program graduates.

²Information provided by the Office of the Commander, Naval Reserve Forces, Code 09.

³Information provided by the Health Professions Recruiting Division, Air Force Recruiting Service.

⁴Information on the ARNG was provided by the Office of the Director; information on the ANG, by the Office of the Surgeon General, Nursing Section.

⁵As of March 1988, the Army Reserve and the Army National Guard began to accept nurse applications up to Age 52 $\frac{1}{2}$. These reserve nurses cannot yet be made retirement-eligible (with at least 20 years' service), since the maximum age for the beginning of retirement remains at 68 years.

In contrast, the USAR, the USAFR, and the National Guard components will accept experienced nurses who have graduated from associate, diploma, or baccalaureate degree nursing programs. Since March 1989, the Army Reserve and Army National Guard have required all associate degree and diploma program nurses to have completed at least 6 months' professional work experience as nurses on at least a half-time (20 hours a week) basis for the 6 months immediately preceding USAR or ARNG affiliation.⁶ The requirement had been stiffer, with at least 1 year of full-time work required.

All components report shortages based on the number of nurse positions authorized. The shortages are severe for nurse-anesthetists and perioperative nurse specialists (known in the Military Services as operating room nurses). In addition, shortages may be more prevalent in some states than in others. Army National Guard statistics are instructive.

As of 31 March 1989, the ARNG assigned nurse strength was 1,378 or 108 percent of total authorized positions. Yet in some specialties and states (see Table 6-1 and Table 6-2) there were serious shortages.

TABLE 6-1
ARNG NURSE STAFFING IN SELECTED SPECIALTIES
(31 March 1989)

Speciality	Authorized	Assigned	Percent fill
66F Nurse-anesthetist	163	97	59
66E Operating room nurse	238	191	80

Source: Internal National Guard Bureau (NGB-ARP-RRM). *Information Paper*. 20 April 1989.

ACCESSION GOALS

Each component has its own method for deriving recruitment missions or goals. The goals rarely represent total reserve nurse demand, but rather are derived from

⁶The Army does waive this work experience requirement for both USAR and ARNG applicants who: (1) take and pass the first licensure examination available after graduation from their educational programs, and (2) apply for affiliation within 6 months after graduating from their educational programs.

TABLE 6-2
ARNG NURSE STAFFING IN SELECTED STATES
(31 March 1989)

State (all specialties)	Authorized	Assigned	Percent fill
California	91	68	75
Delaware	42	16	38
Missouri	52	36	70
South Carolina	55	25	45

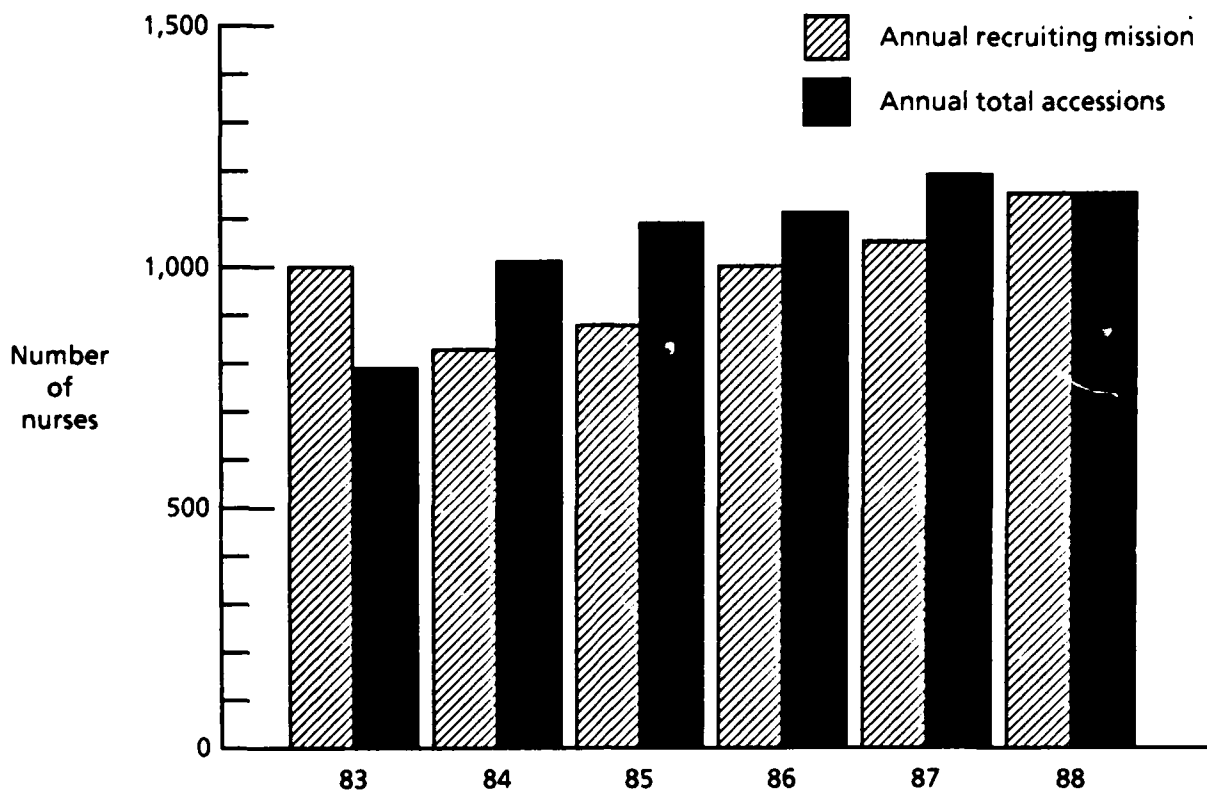
Source: Internal National Guard Bureau (NGB-ARP-RRM) Information Paper, 20 April 1989.

realistic accession expectation data and authorized funding levels. For example, as of 30 April 1989, the Naval Reserve had a shortage of 967 nurses in its SELRES. Yet realistic goal setting led to subsequent recruiting missions totaling 534 nurses. By 30 April 1989, 90 percent of that goal had been reached. The USNR has shown yearly increases in the number of accessions since 1987, with accompanying increases in the percent of authorizations filled. Credit for this success is given to a recent increase in the number of reserve medical recruiters, implementation of incentives initiated in December 1987, and increases in retention. Retention successes were attributed to educational incentives, additional drill options, increases in continuing education opportunities, improvements in the quality of training, and establishment of the position of Deputy Director of Navy Nurse Corps, Reserve Affairs.⁷

The Army Reserve has also showed increases in both recruiting goals and accessions of nurses. Figure 6-1 shows that the USAR has met or exceeded goals every year except 1983. The shortage in 1983 was a result of a mission-goal increase at midyear. By the end of FY88, nurse accession goals for that year had been achieved.

Army Reserve and Army National Guard recruiters usually do well in screening and forwarding the recruiting packets of only those nurses who will later pass a formal, structured review by a professional board appointed to review these

⁷*Mobilization Allowance Totals Versus On Board Selected Reserve Strength by Designator.* NRPC Report 4080-1020-7. April 1989.



Source: "Recruiting Operations: ANC Recruiting." USAREC briefing papers, 1988.

FIG. 6-1. ANNUAL USAR ARMY NURSE CORPS MISSION AND ACCESSIONS, FY83 - FY88

candidates. In the Army, the board is called the Accession Board. As can be seen in Table 6-3, Accession Board selection rates are high, ranging from 87 percent in FY86 and FY87 to 90 percent in FY88 (the rate was as high as 94 percent for the first quarter of FY89). The major reasons given for nonselection were poor evaluations from supervisors, poor efficiency reports during prior military service, numerous offenses, recent drug use, and adverse recommendations from recruiting counselors.

RECRUITING FOR THE INDIVIDUAL READY RESERVE

The USAR is currently the only component that recruits nurses without military experience directly into the IRR. All reserve components assign to the SELRES or the IRR officers who are released from active duty with time remaining on their military service obligation. But the Army alone recruits nurses and other health care professionals for IRR membership.

TABLE 6-3

ARNG AND USAR ACCESSION BOARD SELECTION RATES FOR NURSES, FY86 - FY89

Board activities	FY86		FY87		FY88		FY89 through 31 January 1989	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total applications to the board	1,222		1,140		1,427		439	
Selected	1,059	87	990	87	1,281	90	413	94
Not selected	163	13	150	13	146	10	26	6

Source: Department of the Army, Office of the Surgeon General.

IRR nurse recruiting is not high-volume work in the Army. It proceeds with some difficulty, and the limited recruiting now conducted may be in some jeopardy in the future because of the scarcity of funds. The primary concern of USAREC's USAR recruiters is the recruiting of nurses for assignment to USAR SELRES units. Only if the candidate nurse lives more than 50 miles from the nearest unit, only if he/she concludes that it will be impossible to attend the unit's drills, and only if the candidate then persists in seeking USAR membership in spite of these difficulties is IRR membership offered to the nurse candidate. Of all 1,600 USAR nurse accessions during FY89, only 33 nurses were recruited for the Army IRR.

THE APPLICATION PROCESS AND ITS TIME REQUIREMENTS

As was seen in Chapter 5, USAR nurses expressed dissatisfaction with the length of time required to be appointed as a commissioned reserve officer. The process is lengthy in all the reserve components. It can take up to 4 months in the USAFR from the time the nurse hands in an application until the date of commissioning. The Navy experiences some temporary delays in the activities of its professional review board when (as was the case in FY89) the number of applications exceed expectations.

The Army acknowledges that this review time can extend as long as 6 months. As an aid in explaining the application process and its time frame, the Army prepared Figure 6-2. As can be seen, as much as 60 days can pass before the

application packet is moved to the Office of the Surgeon General. Once there, up to 4 more weeks can be consumed moving the important appointment papers to each office thereafter: to Personnel Command (PERSCOM), which becomes the repository for the recruiting packet, back to USAREC, and back again to PERSCOM.

RECRUITING ACTIVITIES

The reserve components use several marketing techniques to interest nurses in reserve military service. These strategies include:

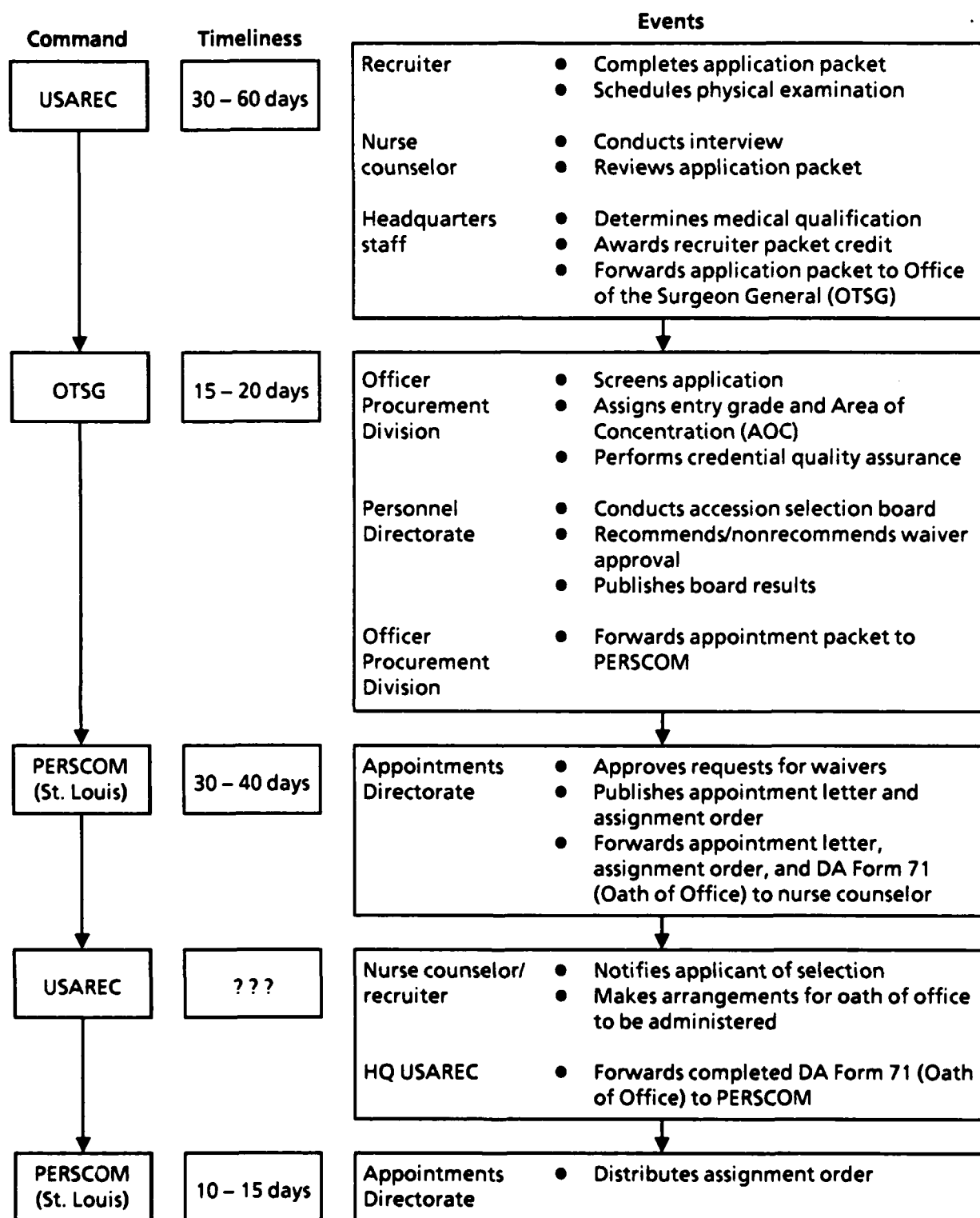
- Placing advertisements in national and local media
- Preparing articles about the reserve experience for publication in professional journals
- Mailing letters, newsletters, and brochures to target audiences
- Visiting prospective reservists
- Maintaining liaison with professional leaders and centers of influence.

The marketing effort tries to interest nurses in becoming reservists and to motivate them to seek additional information. The reserve experience is portrayed as a part-time endeavor that provides registered nurses opportunities for personal and professional growth.

Advertising

Advertising is used extensively in newspapers and in professional journals. During 1988, the Army Reserve spent \$160,000 and the Air Force Reserve \$41,000 to place ads in national nursing publications, these include:

- *Nursing 88*
- *Nursing 89 Career Directory*
- *American Journal of Nursing (AJN)*
- *AJN Guide*
- *Nursing Life*
- *RN*
- *AORN Journal (Association of Operating Room Nurses)*



Source: Department of the Army, Office of the Surgeon General.

FIG. 6-2. ARMY RESERVE APPLICATION PROCESS FOR NURSES

- *AANA Journal (American Association of Nurse-Anesthetists)*
- *Nursing World Journal*
- *Nursing World Job Guide*
- *Nursing Opportunity 1989*.⁸

Ads are designed to increase awareness of reserve opportunities, program benefits, and incentives.

Articles

In addition to advertisements, student and RN professional associations have been providing assistance in publicizing the benefits of reserve participation. Articles, interviews, and open letters have been published about reserve opportunities. Telephone numbers and addresses to contact are provided for additional information. For example, Margaret McMahon, President of the Emergency Nurses Association, wrote an article entitled "President's Message: Preserving the Freedom," that was published in the *Journal of Emergency Nursing* in the 1987 summer issue. In that article she discussed the reserve nurse shortage and her own experience as a reservist with over 21 years of experience.⁹

Mail Campaign

Direct mail campaigns were a major effort in 1988. The premier effort, "The National Awareness Program," consisted of phased mailings of individually addressed letters from the Assistant Secretary of Defense (Health Affairs) [ASD(HA)]. The mailings, which began in March 1988 and continued for 4 months, were targeted to 180,000 doctors and nurses with skills in shortage areas. Letter recipients were told about the shortages in their professional specialty; informed of opportunities, benefits, and incentives available to reserve participants; and invited to call collect to OASD(HA) or to complete and return an enclosed, postage-paid post card. Telephones were answered by reserve physicians and nurses who could respond to questions and converse with peers about reserve programs and common

⁸Information provided by OSAREC and Health Professions Recruiting Division, Air Force Reserve Medical Recruiting Service.

⁹McMahon, Margaret. "President's Message: Preserving the Freedom." *Journal of Emergency Nursing* 13. July/August 1987, pp. 194 - 196.

professional interests. The leads generated by the campaign were forwarded to the appropriate Military Department for follow-up by reserve recruiters.

It is difficult to estimate the total number of leads received because of the overlap of interest in the various components, yet all Services agree that the response was impressive. While widespread interest was generated, the number of accessions directly attributable to the campaign was disappointing to all reserve components. For example, while the Air Force Reserve followed up 800 nurse leads from the campaign, those leads resulted in only 21 accessions. The level of heightened awareness resulting from this program may, however, continue to bolster recruitment into the future.

In addition to that major direct mail effort, direct mail activities are a continuing part of nurse recruiting. These efforts range from limited, local mailings to national distributions, such as USAREC's current mailings to perioperative nurses, critical care nurses, and nurse-anesthetists.

Visits

Personal or telephone visits have long been used as effective recruiting tools by nursing recruiters. Until recently, recruiter visits to schools were limited to those with Bachelor of Science in Nursing (BSN) programs because the Naval Reserve would not accept candidates whose formal education was limited to diploma or associate degree programs and because the four Army and Air Force reserve components required a complete year of full-time nursing work experience following licensure of all diploma and associate degree nursing graduates.

All that changed in March 1989 when the Army Reserve and Army National Guard relaxed their work experience requirement.¹⁰ Since then, USAR and ARNG recruiters have actively visited diploma and associate nursing degree programs.

Recruiters continue to visit professional conferences as a means of gathering leads from conferees, but the return on that effort is indirect.¹¹ The personal visit with an interested candidate is the best single means for providing information and

¹⁰A more detailed discussion of this work experience requirement, with an accompanying description of waiver policies, is given on p. 6-3.

¹¹It often happens that a single attendance at a nursing conference produces no immediate, direct accession to the reserve forces. On the other hand, the attending recruiter may return with the names of a number of potential candidates, who then become the targets of one-on-one visits.

discerning genuine attraction of the candidate. Visits remain a very important recruiting tool.

Leadership Liaison

Under the auspices of the ASD(HA), several meetings have been held with nursing leaders from the Military Departments, major professional organizations, and the educational and employment sectors. The meetings have addressed shortages of nurses in the Military Services, especially in the reserve forces. These meetings have resulted in offers of cooperation and assistance by the civilian sector. One example of this type of cooperation was the provision of names and mailing addresses of health professionals targeted for mailings in direct mail marketing campaigns. Another has been the offer to publish articles supporting reserve participation.

Focus Groups

A recruiting activity with potential benefit for nurse recruiting is the focus group. The Military Services have used physician focus groups to develop more successful recruiting and retention messages aimed at reserve military doctors. These group sessions seek to identify reasons for entry and attrition; to compare expectations with reality; to determine awareness of, and satisfaction with, benefits; and to discover factors positively affecting retention. These sessions usually lead to the identification of important motivators and disincentives for reserve participation.¹² While certain findings from the physician meetings are applicable to nurses, many are not.

The use of focus groups of nurses has been somewhat more limited. The U.S. Army Recruiting Command's first nurse focus group was held in 1978, and several more – involving nurses from both active and reserve components as well as civilian nurses – have been conducted in the years since. Recruiters have found a valuable overlap of information provided by these groups: information provided by one component is often useful to another.

¹²See for example: Ayer, N. W. "Report for Army Reserve SGO [Surgeon General's Office] Focus Groups." *U.S. Army Reserve*. Unpublished report, November 1983; and Ayer, N. W. "A Study Among Doctors in the U.S. Army Reserve: Background for Advertising Development to Increase Recruitment into the Army Reserve Medical Corps." *U.S. Army Reserve*. Unpublished report, April 1984.

RECRUITING PRACTICES

Several studies have examined the recruiting practices of the National Guard, where recruitment is undertaken at the state and unit level. Brenner studied nurses from four units in the California Army National Guard and asked questions about recruiting strategies.¹³ She found that the most frequently used strategies were:

- Professional journal advertising
- Communications with nurses assigned to collocated Army and other active force military units
- Visits to civilian health facilities
- Television commercials.

None of the units used radio or newspaper ads or held open-house receptions. The nurses believed that visits to schools and ads in professional journals were the most effective strategies. In addition, since 40 percent of the nurse sample reported prior service, meetings with those on active duty seemed worthwhile.

Another study questioned 98 chief nurses in the Air National Guard about recruitment and retention practices.¹⁴ The study found that only 14 of the chief nurses had written recruiting plans and only 10 used their nurses to recruit. Sixty-two claimed that they do not coordinate their efforts with the Air Force recruiter in their regions, and 38 stated that they are responsible for recruiting or that they share this responsibility with their base recruiter. Twenty claimed that they have contact with Air National Guard medical recruiters at the ANG supportcenter. The most commonly used strategies, employed by 63 of the chief nurses, include:

- Visits to schools of nursing
- Newspaper, television, and radio advertisements
- Communication with nurses assigned to collocated military units
- Public open houses
- Visits to civilian health facilities.

¹³Brenner, 1987.

¹⁴Troyer.

In addition, complimentary copies of ANG brochures and publications such as the *Air Reservist* were mailed to potential recruits. Most felt that "word of mouth" best described their recruitment effort.

A Columbia University study of senior baccalaureate nursing students¹⁵ and a University of Toledo study of civilian nurses¹⁶ found that both groups held definite, and often stereotypical beliefs about and images of military nurses. The Columbia study recommends increased efforts to promote interpersonal interactions with military nurses. The need for this type of effort was reinforced by the results of the Opinion Research Corporation's study of students enrolled in 3- and 4-year educational programs.¹⁷ While approximately half the students had seen Military Service brochures and advertisements, only 28 percent had met with nurses in the Military Service and only 35 percent had received information from Services' recruiters. The recommendations of the Toledo study focused on targeting civilian beliefs through messages presented by recruiters or recruiting material. Table 6-4 presents the recommendations.

The lack of efficiency in responding to information requests has been criticized. Many USAR and ARNG nurses who participated in a Walter Reed Army Medical Center study complained about recruiters' lack of knowledge, poor advice, and disorganization in getting needed information.¹⁸ The American Medical Association's study of medical students and physicians found that only 65.8 percent of the students and 51.7 percent of the resident physicians who initiated contact with the military received the information that they requested.¹⁹

RECRUITING INCENTIVES

Stipend Programs

The National Defense Authorization Act of 1986 provided for the Health Professionals Scholarship Program for Reserve Service (stipend program). This program, seen as an incentive for serving in the reserve forces, was severely

¹⁵Smith Cassandra, Mary E. *Senior Nursing Students' Perceptions of Nurses and Nursing in the Military Service*. New York, NY: Columbia University Doctoral dissertation, 1970.

¹⁶French, 1986.

¹⁷Opinion Research Corporation.

¹⁸Slewitzke.

¹⁹Wilke, Richard J., et al. *Physicians and the Military: A Study of Contact, Awareness, and Interest*. Chicago, IL: American Medical Association, Center for Policy Research, April 1987.

TABLE 6-4

TARGET BELIEFS TO BE AFFECTED BY RECRUITING MESSAGE

Change the following beliefs

1. Requires attendance at a rigorous boot camp
2. Requires a long-time commitment
3. Interferes with family responsibilities
4. Has periods of separation from family
5. Requires living a highly structured, regimented life
6. Requires service under commanders who are unaware of nurses' role, training, and abilities
7. Interferes with work schedule
8. Conflicts with personal time
9. Interferes with social obligations

Maximize the following beliefs

1. Develops collegial relationships
2. Carries status and prestige
3. Has good retirement benefits
4. Offers inexpensive life insurance
5. Provides professional advancement
6. Offers networking with other professionals
7. Provides opportunity to serve the country
8. Provides extra pay
9. Teaches use of leadership skills
10. Results in pride in serving
11. Provides opportunity to develop friendships

Source: French, p. 113.

constrained by eligibility requirements. As a result, Congress replaced it with expanded versions in the National Defense Authorization Act for FY88 and FY89.

The stipend program provides financial assistance to nurses, among others, who are engaged in specialized training in return for service in the Ready Reserve. The law permits participation by nurses in the Selected Reserve and IRR. In addition, third and fourth year nursing students enrolled in a baccalaureate degree program may participate in the stipend program.

The USAR and ARNG call their stipend program the New Specialized Training Assistance Program (NEW STRAP). The implementation letter (DA Letter 315-89-1) was issued on 17 March 1989. Financial assistance is offered RNs who attend (on a half- to full-time basis) programs that lead to a: BSN or Bachelor of Science in Nurse Anesthesia (BSNA); Master of Science degree in nursing with a specialty in medical-surgical, adult critical care, anesthesia, or perioperative nursing; certificate-producing courses of 6 weeks or longer in adult critical care, nurse anesthesia, and perioperative nursing.

The program has two payback options. The nurses can elect to serve in the SELRES and receive a full stipend, currently just over \$700 per month, or they can receive half the stipend and serve in the IRR. Upon completion of the educational program, the nurses incur a military service obligation of 2 years for each year or partial year the stipend was received. That obligation can be served concurrently with any remaining military service obligation. The USAR has not yet implemented the BSN undergraduate option but expects to do so during FY90.

To be eligible for NEW STRAP, the nurses must be citizens, commissioned officers in the USAR or ARNG, licensed as RNs, and able to fulfill the appropriate service obligation incurred prior to their mandatory removal dates. Nurses are ineligible if they are in promotion passover status, have an active duty service commitment to the armed forces or the Public Health Service, are receiving financial assistance through the ROTC, or are participating in the loan repayment program.

The Naval Reserve's stipend program is currently limited to Naval Reservists with BSNs who are pursuing advanced educational curricula from a short list of Navy-approved programs.²⁰ The stipend program is popular, with over 120 USNR nurses now participating. Program participants must be enrolled in their educational programs on at least a half-time basis. Further, they must be members of SELRES units, attend unit drills, and attend summer training with their units. Requests for flexible training alternatives to these requirements are regularly approved.

²⁰Data about the USNR stipend and loan repayment programs were provided by the Office of the Director, Navy Nurse Corps, and Commander, Naval Reserve Force Instruction (COMNAVRESFORINST) 1100.5, 28 April 1988.

The USAFR and ANG Health Professions Scholarship Program for Reserve Service is available to student nurses and to those who are willing to obligate themselves for SELRES or IRR service.²¹ Registered nurses can receive stipends for BSN and other educational programs in specialties such as nurse anesthesia and operating room and medical-surgical nursing. The Air Force and the Army provide stipends for part-time study. Part-time students, however, can receive a stipend for no more than 2 years.

In a separate program of its own, the ARNG offers reimbursement for tuition, books, and other course essentials as well as full pay and allowances to registered nurses who have been accepted in nurse anesthesia programs accredited by the American Association of Nurse Anesthetists. The Army National Guard Anesthetist Civilian Education Program, which began on 28 April 1988, covers full-time study for 2 years for nurses who have completed a year of satisfactory service as ARNG officers and who hold the rank of captain or below. Nurses are expected to report to unit assignments during nonschool days. During FY88 and the first quarter of FY89, six ARNG nurses were enrolled in the anesthetist program.

The stipend program appears to be popular with reserve nurses. Approximately 166 nurses are currently enrolled in one of these educational programs. The Army Reserve and Army National Guard, as of 31 March 1989, had a total of 72 nurses in nurse-anesthetist and perioperative nursing courses. The other eligible educational courses and the IRR payback option were implemented on 17 March 1989, and as yet no enrollments have been reported. The Air Force Reserve was slow to implement the stipend program and currently has only five nurses enrolled (no IRR nurses had applied). As of June 1989, the Naval Reserve had 89 nurse participants enrolled in the following educational programs:

- Master's degree in nursing (21)
- Anesthesia (28)
- Medical-surgical nursing (31)
- Perioperative nursing (5)

²¹Data about the USAFR stipend and loan repayment programs were supplied by the Office of the Surgeon General, U.S. Air Force, from Air Force Regulation (AFR) 45-28 (12 May 1989) and from Air Force memo, "Loan Repayment Program for Health Professionals," (15 September 1986).

- Bachelor's degree in nursing (3)
- Doctoral degree program (1).

Although the stipend program was initiated as a recruitment incentive, several officers have commented on the program's retention merit. This type of financial aid is popular with those already serving in the reserve components, as well as with new accessions. Data provided by the Army on enrollments in nurse-anesthetist and perioperative nursing programs are illustrative. As can be seen in Table 6-5, both new nurses and nurses already serving in the reserve are likely to participate in NEW STRAP.

TABLE 6-5

**FY88 NEW STRAP PARTICIPATION FOR NURSE-ANESTHETIST
AND PERIOPERATIVE NURSING TRAINING**

Applications and program applicant status	USAR		ARNG		Total
	New accessions	Experienced USAR nurses	New accessions	Experienced ARNG nurses	
Applications boarded					
Nurse-anesthetist	42	27	5	2	76
Perioperative nursing	0	1	1	0	2
Selections					
Nurse-anesthetist	42	27	5	2	76
Perioperative nursing	0	1	1	0	2
Declinations					
Nurse-anesthetist	13	0	0	0	13
Perioperative nursing	0	0	0	0	0
Enrollments					
Nurse-anesthetist	29	27	5	2	63
Perioperative nursing	0	1	1	0	2

Source: Department of Army, Office of the Surgeon General.

Loan Repayment

The Defense Authorization Act for FY86 (Public Law 99-145), as amended by the FY88/89 Defense Authorization Act, established the student loan repayment

program. This program was originally designed to repay designated Federal educational loans²² obtained by eligible commissioned officers of the Medical Corps and Nurse Corps. For each year that a nurse satisfactorily serves in the Selected Reserve, the Services will repay portion of a Federal educational loan secured after 1 October 1975. The maximum repayment per year is \$3,000 and the total repayment will not exceed \$20,000.

Nurses who were commissioned after 1 October 1985 and before 1 October 1990 are eligible. All the Services offer repayment to SELRES nurses in the operating room and anesthetist specialties. The USAR and ARNG have included medical-surgical nurses in the program and the USNR has plans to do so.

Interest in the loan repayment program has been growing somewhat slowly. As of the end of FY89, the Naval Reserve reported that 12 nurses were having their loans repaid and the Air Force Reserve reported 8 nurse participants. The Army Guard and Army Reserve reported 112 nurse participants,²³ and 2 Air National Guard nurses were participating.

Staff officers from each of the Services outlined several early problems they had encountered in attempting to interest nurses in the loan repayment program. First, because of restricted dates of eligibility, the program applies to a restricted group of new accessions. Moreover, those nurses who enroll for loan repayment are then ineligible for the more generous stipend program. In addition, the limited amount of money that can be repaid annually was seen as a deterrent. The program repays only the principal owed, not the interest, and educational loans accumulate considerable interest costs in the long run. Because there were relatively few participants early in the program, some program administrators initially questioned the cost-effectiveness of this program. With the liberalization of rules and the increase in the program's popularity, some of those same managers are now program supporters.

Relaxation of Age Requirements

The National Defense Authorization Act for Fiscal Years 1988/89 extended the initial appointment age for reserve medical personnel (including nurses) to a

²²Since the program's inception, restrictions on the type of loan eligible for repayment have been eased. Institutional, local, and state loans as well as Federal loans now meet loan repayment criteria.

²³Data provided by the Department of the Army, Office of the Surgeon General.

maximum of 47 years and extended the retention age to 67 years. As a result, the Services have amended their own separate requirements and are optimistic that these relaxations will assist in improving nurse accessions. Since many working, civilian nurses have completed their child-rearing responsibilities by age 47, a number of nurses approaching that age can be expected to be more receptive to serving in the reserve forces on a part-time basis.

Data from the Army verify that some optimism is warranted. As can be seen in Table 6-6, the percentage of nurses over 40 years of age, especially in the reserve components, has increased dramatically since the age ceiling has been relaxed. Prior to March 1988, the Army did not accept nurses who were older than 40 years, unless they were operating room specialists, nurse-anesthetists, or unless they held advanced degrees.

TABLE 6-6
ARMY NURSE CORPS ACCESSIONS: DISTRIBUTION BY AGE

Fiscal years and component groups	Total accessions	Age categories				Accessions over 40 years	
		21-30 yrs	31-40 yrs	41-50 yrs	Over 50 years	Number	Percent
FY87							
Active component	537	414	119	4	0	4	1
Reserve components	854	261	535	57	1	58	7
Total	1,391	675	654	61	1	62	5
FY88							
Active component	478	375	99	4	0	4	1
Reserve components	1,019	277	620	118	4	122	12
Total	1,497	652	719	122	4	126	8
FY89 (through 28 February 1989)							
Active component	117	54	53	10	0	10	9
Reserve components	604	113	298	178	15	193	32
Total	721	167	351	188	15	203	28

Source: Department of the Army, Office of the Surgeon General.

The Naval Reserve reports similar increases. Table 6-7 displays the dramatic increase in older nurse accessions experienced by this reserve component between October 1983 and December 1988. In FY87, only 36 percent of those applicants over

40 years of age were accepted by the USNR. That rate compares to an 82 percent accession rate of applicants of that age during the last 6 months of 1988.²⁴

TABLE 6-7

USNR OLDER NURSE ACCESSIONS

Period of accessions	Number of months	Proportion of accessions aged 40 or older (percent)
October 1983 through September 1984	12	2
January 1987 through June 1988	18	7
July 1988 through December 1988	6	38

Constructive Credit for Professional Experience

The National Defense Authorization Act for Fiscal Years 1988/89 allows the Service Secretaries to grant military service entry grade credit to all nurses and other health professionals for already-completed professional work experience. Previously, credit for experience was limited to physicians, dentists, nurses in critically needed specialties, and nurses with advanced degrees. The regulation authorizing these changes, an updated version of DoD Directive 1312.2, *Entry Grade Credit for Health Services Officers*, was issued on 11 May 1988.

The entry grade credit is offered for professional experience gained after initial licensure. The nurse may obtain a half-year credit for each year of full-time work experience up to a maximum of 3 years' credit. The nurse who received the full 3 years' credit would enter the Service at Grade 02 rather than Grade 01. This credit may be added to the already-available 1 year credit for each year of advanced education (with some limitations) and 1 year's credit for each year's experience in a critically short specialty.

Military Service representatives are concerned about one of the implications of utilizing this authority broadly, although they recognize that offering constructive credit of this kind will surely aid in the recruitment of nurses. If large numbers of

²⁴Data from Office of Director, Navy Nurse Corps.

nurses enter Military Service with advanced officer ranks, promotion opportunities will become restricted.

The three Services differ in the maximum amount of constructive credit a nurse can earn under the terms of this directive, with the range of maximums being 7 to 14 years. The 14-year maximum is a "technical" maximum because all Military Services are constrained to award no more constructive time than that sufficient for the award of the Grade 04 (major/lieutenant commander).

Flexible Training

Although several variations to this schedule are acceptable, typical historical participation in the Selected Reserve has involved drilling with assigned units for one weekend a month (two 4-hour periods on Saturday and two on Sunday) and for about two continuous, additional weeks each year, usually in the summer. This minimum schedule generally amounted to 38 to 39 duty days a year. For those assigned to units requiring higher readiness, however, the drilling requirement has been more demanding. Fifty or sixty duty days per year are now quite common for SELRES members.

Simply meeting all the scheduled training requirements could deter busy health professionals from participation as members of the reserve forces. In 1983, DoD Directive 1215.4 set forth various programs intended to reduce wartime shortages in medical personnel. Included were several programs to develop flexible training arrangements in lieu of traditional unit training assemblies. Later, the National Defense Authorization Act for Fiscal Year 1987 directed the Secretary of Defense to conduct a study that would examine the desirability of establishing alternative participation requirements for medical personnel in the reserve forces.

The Services have responded in various ways, especially with regard to how the suggested arrangements affect reserve nurses. Although since 1980 all Services have offered nurses the opportunity to participate as Individual Mobilization Augmentees IMAs — an arrangement that may in itself be considered a flexible training option — the reserve components exhibit little similarity in other flexible program offerings.

The USNR offers four types of flexible programs to reserve nurses. Eight nurses are currently serving as IMAs — assigned to active medical treatment facility billets that must be filled at or shortly after mobilization. The Navy IMA program permits

great flexibility in performance of drills. Although a drill for pay must total 4 hours, participants can accumulate those hours on an incremental basis. Persons with IMA assignments are required to perform a period of annual active duty for training, although even that duty can be served in two increments. Credit for drill hours may be acquired by attending military or continuing education courses or professional meetings and seminars on topics that improve mobilization readiness of the individual and the Navy.

The Navy's Reserve Flexibility (REFLEX) program provides USNR nurses the opportunity to earn pay and retirement points by identifying flexible hours and places to train that are then authorized by unit commanders. Up to half of a SELRES nurse's drilling time can be spent elsewhere under these arrangements, but up to 100 percent of the alternative training hours may be substituted for credit if those hours are spent for training at an established naval hospital. Approved, mobilization-enhancing training can be undertaken instead of training at traditional, scheduled unit drills. It is instructive to look at the following examples provided by the Navy as flexible drill hour options that may be used:²⁵

- 32 drills/16 days — spanning two quarters
- 16 drills/8 days — three times a year
- 12 drills/6 days — once a quarter
- 8 drills/4 days — every other month
- 4 drills/2 days — monthly
- 2 drills/1 day — every other week
- 1 drill/ $\frac{1}{2}$ day — a week
- $\frac{1}{4}$ drill — per hour.

A new Navy program, Naval Expanded Drill Opportunity Clinical (NEDOC), provides an innovative way for USNR nurses to drill for pay at naval medical facilities for a maximum of 78 drills instead of the usual 48. The program offers an especially good way to earn money and retirement points and a good way for civilian

²⁵Naval Medical Command Instruction (NAVMEDCOMINST) 1001.1A, 2 December 1988.

nurses not employed as nurses to keep abreast of their profession.²⁶ Currently, the program is enrolling people for a pilot test at the National Naval Medical Center in Bethesda, Maryland.

The Naval Reserve is the only component that permits nurses to participate in the PRIMUS (Physician Reservists in Medical Universities and Schools) program. PRIMUS provides physicians, nurses, oral surgeons, and operating room technicians with opportunities to earn reserve pay and retirement points while performing inactive duty and active duty for training with universities and schools. Full-time graduate students (with or without enrollment in graduate degree programs) and faculty are eligible for the program, which permits 100 percent flexibility in performance of drills. Although a drill for pay must total 4 hours of activity, participants can accrue the 4 hours incrementally on an hour-for-hour basis. Drills are authorized at a variety of sites. Active duty for training also may be served incrementally. PRIMUS promotes interactions between civilian health professionals and reserve military nurses (a good recruitment mechanism), provides guidance on military medicine matters, arranges military educational opportunities, and increases flexible training opportunities. Currently, 228 USNR nurses participate in the PRIMUS program.

As of March 1989, the Army Reserve had 191 drilling and nondrilling nurse IMAs. In addition, the USAR has initiated an imaginative and extensive flexible training program to enhance both recruitment and retention. The National Army Medical Department Augmentation Detachment (NAAD) [U.S. Army Forces Command (FORSCOM) Policy Memorandum 40-88-1] permits physicians and nurses to be assigned to vacancies in USAR units without regard to geographic location.

Nurses who cannot participate in regularly scheduled drills and annual training but still desire membership in the SELRES can be attached to NAAD and assigned to a Troop Program Unit (TPU) vacancy in the nurse's Area of Concentration (AOC) for the purpose of readiness reporting and mobilization. Training in NAAD can be a combination of professional nursing work, drills, and military correspondence courses. Many TPU-assigned nurses are responsible for attending 48 training assemblies (drills) of 4 hours each per year with their units. NAAD participants can be excused from a maximum of 24 of these by NAAD

²⁶The Naval Reserve does not routinely recruit trained nurses who are not employed as nurses in civilian life, but some nurses become unemployed after joining the USNR, and a few unemployed nurses — all of whose nursing credentials are current — are recruited for the USNR from civilian life.

participation.²⁷ There are a variety of places NAAD nurses may train (e.g., military medical facility, Veterans Administration hospital, or a civilian health facility) and a variety of activities that can be undertaken (e.g., medical seminars or recruiting activities). NAAD nurses are obligated to 12 days of annual training each year although those days may be fragmented into a maximum of three segments. Once every 3 years, at a minimum, NAAD nurses are required to train at least 5 days with members of their assigned units.

Interest in NAAD has been high both among new USAR nurse accessions and among experienced reservists. Table 6-8 presents data on the status of the NAAD program participation as of 31 March 1989.

TABLE 6-8
NAAD PARTICIPATION BY USAR NURSES
(As of 31 March 1989)

Specialties and sources of commission	Assigned	Pending orders	Total
Distribution by AOC			
66E - Operating room	33	N/A	N/A
66F - Nurse-anesthetist	55	N/A	N/A
66H - Medical-surgical	83	N/A	N/A
Total	171	N/A	N/A
Distribution by source			
New Reservists	1	47	48
From IMA pool	3	1	4
From IRR pool	15	38	53
From SELRES units	4	25	29
From nurse detachments ^a	29	8	37
Total	52	119	171

Source: Department of the Army, National Army Medical Department (AMEDD) Augmentation Detachment, Fort McPherson, GA.

^a An old organization, now discontinued.

²⁷NAAD participants may perform supervised nursing duty that is considered to be of training benefit in blocks of 4 hours as a substitute for each unit training assembly of 4 hours' duration.

The Army National Guard has issued a directive [National Guard Bureau (NGB) Log 86-581] that acknowledges the States Adjutants' General responsibilities for flexible training policies in their respective states. The directive encourages the states to provide alternative training and professional development opportunities to promote maximum participation with minimum professional inconvenience. It promotes use of alternative drilling sites and times. ARNG units have been supportive of the flexible training option.

The Air Force Reserve, on the other hand, offers reserve nurses limited opportunity for flexible training. The decision to permit flexibility rests with each unit commander and is often granted to those nurses with specialties representing acute shortages. Military nurse activities in USAFR units are generally viewed as necessary for mission support. Although the principle of a REFLEX-type program has been accepted by the USAFR, nurse recruiters cannot yet offer potential Reservists flexibility as an incentive to joining. The ANG has no program for flexible training.

The opportunity to be part of the Ready Reserve with very few training requirements is offered by the several IRRs. Neither the Naval Reserve nor Air Force Reserve, however, actively seek IRR participation by potential or experienced reservists. At the present time, only the Army actively recruits members for the IRR.

RETENTION POLICIES AND PRACTICES

Retention policies and practices are more difficult to discuss than recruitment, primarily because retention actions are not directed by a central agency, command, or headquarters, but rather are the responsibility of decentralized headquarters and offices. Moreover, few officers are assigned retention-related duties.

Another reason this topic presents difficulty is that there is not an identifiable, defined retention problem – nor are retention goals set. While studies have reviewed military personnel retention and reports have cited retention problems, no quantified definition of a retention problem for military nurses exists. For example, the USAR reviewed retention data on nurses in SELRES units in 1984 and concluded that "in comparison with other [branches] the [Army Nurse Corps] ANC does not have a significant retention problem."²⁸ ANC losses from units at that time amounted to

²⁸Headquarters, Department of the Army, Office of the Surgeon General. *Retention of ANC Officers in USAR TPU's*. Washington, DC: Information Paper, June 1985 (LTC Robinson).

16 percent annually, but 73 percent of those losses were transfers to the IRR. Actual losses as deployable assets totaled less than 3 percent annually. For FY84, FORSCOM records ranked the Army Nurse Corps (at 1.6 to 1) fifth best among 23 branches reviewed for gains-versus-losses from units. ANC's 16 percent annual loss from units during FY84 was seventh best among the 23 branches reviewed.

During interviews for this project, several staff members agreed that overall nurse retention as deployable assets within the total reserve "system" may not be a problem, but they believed that individual SELRES units experience reasonably high attrition levels. The 1985 Army information paper also addressed unit retention. It noted that a significant degree of interunit turbulence existed as 31 percent of TPU nurse strength transferred between units during FY84. Therefore, an average USAR unit annually would have retained only 53 percent of its initial ANC personnel. When considering transfers in and new accessions, however, overall ANC strength for the unit would be 113 percent of starting strength. Although this movement was not seen as especially desirable from a unit training or readiness standpoint, interunit transfers were seen as an "unavoidable result of personal moves, promotions, positioning so as to qualify for promotion, and other administrative reasons." The 1985 Army paper succinctly concludes: "The actual number of moves that could be avoided is unknown."²⁹

Exit Interviews

Chief nurses of the various units within each reserve component are generally required to conduct exit interviews with departing nurses. Whether they do is not known. Troyer, in her study of the ANG, found that 75 percent of the chief nurses did conduct exit interviews.³⁰ While she did ask these nurses to calculate the reasons given for leaving, no indication was found that the Services collected or analyzed data from exit interviews. Several studies suggested that interviews be held with nurses who state that they intend to leave so that corrective actions can be taken. The prevailing feeling, however, was that the validity of exit interview responses is suspect.

Troyer's findings may be indicative of why this skepticism exists. A review of the nine reasons cited by the chief nurses as causes for separation indicates that only

²⁹Ibid.

³⁰Troyer.

two were of the type that could possibly be corrected by the unit commander. The separation reasons given were (in descending order of frequency):

- Family conflicts
- Interference with civilian employment
- Invasion of leisure time
- Lack of promotion opportunity
- Moved out of area
- Forced out at 20 years of service
- Dissatisfaction with assignment
- Work not commensurate with education/experience
- Retiring from ANG.

Counseling About Reserve Service Options

Nurses who intend to leave extended active duty are to be counseled about reserve participation options. For those nurses who want to leave the active forces or reserve forces before fulfilling their MSOs, it appears that counseling sessions do occur. For those who have satisfied their obligations, counseling may or may not take place. Moreover, there is a question as to who is responsible for the counseling. Unit personnel are to counsel reservists but many reserve units apparently do not assign this responsibility. The Services report that recruiters receive lists of departing active duty nurses so that they can be met and apprised of the merits of reserve participation. However, they may not receive the list unless they request it and the Services have no mechanism to determine whether counseling was received. The Air Force has a written policy requiring these counseling sessions and recruiters must sign that a meeting was held. The USAFR policy of requiring nurses to sign a series of Ready Reserve agreements for 3-year service obligation after completing their initial obligation also can be viewed as a retention mechanism that assures counseling sessions.

It is unlikely, however, that nurses who leave are advised about all reserve participation options. They are likely to be made aware of the SELRES and its various drilling requirements. It is also likely that Navy and Air Force nurses with time remaining in their MSOs will receive some information about service in the

IRR, but those Navy and Air Force nurses who do not want to or cannot participate in the unit drills of the SELRES may well find themselves encouraged to serve in the SBR.

Retention Incentives

As was noted above, several recent policies are encouraging nurse retention. The stipend program has been offered to reservists and many members have been accepted for participation. Flexible drilling schedules also encourage nurses to remain in reserve service.

Officers of the reserve forces have noted that the loan repayment program, because of restricted dates of reserve entrance, limits the program to new accessions. They have suggested that relaxation of the dates may stimulate retention by repaying loans incurred by reservists who entered the service prior to 1985. While it is still too early to ascertain, it is expected that relaxed mandatory age of removal also will foster reserve retention.

Studies that Examine Nurse Satisfaction

Studies that examine nurse retention usually focus on nurse satisfaction and dissatisfaction. After identifying sources of dissatisfaction, the authors of these studies offer recommendations. These suggestions have included:

- Increase continuing and military education opportunities
- Encourage flexible scheduling
- Improve unit drill training relevancy and diversity
- Encourage open communications about participation conflicts
- Improve guidance and advisement of nurses about reserve career opportunities and career progression
- Improve opportunities for social interaction at the unit level.³¹

³¹See for example: Troyer, 1984; Brenner, 1987; Slewitzke, 1982; and Brenner, Sally A. *California Army National Guard Nursing Survey*. Sacramento, CA: Office of the Adjutant General, May 1984.

RESERVE NURSE RETENTION, 1982 - 1988

General

The retention of nurses in the reserve forces was encouraging during the period from 1982 through 1988. Of 7,030 nurses in the SELRES in 1982, 6,135 or 87.3 percent were still serving in 1988 in one of the reserve categories (SELRES, IRR/ING, SBR, or Retired Reserve) and available for mobilization. This represents a continuation level of 98 percent on an annual basis. Even within the SELRES alone, retention was high. From 1982 through 1988, 4,486 of the original 7,030 remained in the SELRES, representing an overall retention rate over the 6 years of 63.8 percent. The equivalent continuation rate is a high 92.8 percent.

Compared to all officers in the SELRES, nurses remained in the SELRES at a rate of 63.8 percent to 62.7 percent over the 6 years and remained in the reserve forces in any category at a rate of 87.3 percent to 89.6 percent. Table 6-9 compares retention and continuation rates of SELRES nurses with the rates of the entire SELRES officer population.

TABLE 6-9

SELRES NURSE RETENTION AND CONTINUATION RATES, COMPARED WITH RATES
OF ALL SELRES OFFICERS, 1982 - 1988
(All reserve components)

Personnel groups	SELRES inventory (1982)	Inventory remaining in SELRES (1988)	Inventory remaining in any reserve category (1988)
SELRES nurses	7,030	4,486	6,135
Six-year retention		63.8%	87.3%
Annual continuation equivalent		92.8%	98.0%
All SELRES officers	130,313	81,712	116,814
Six-year retention		62.7%	89.6%
Annual continuation equivalent		92.5%	98.1%

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Table A-32. No nurses are assigned to the USMCR SELRES.

A review of reserve nurse retention by reserve component within the SELRES shows that the USAFR has the highest retention of any component, and the ANG has the lowest, although the rates of all components are high. Table 6-10 reflects these data for each reserve component.

TABLE 6-10

SELRES NURSE RETENTION AND CONTINUATION RATES, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)	Annual continuation rate equivalent (percent)
ARNG	845	521	62.0	92.3
USAR	4,107	2,572	63.0	92.6
USNR	398	294	74.0	95.1
ANG	499	301	60.0	91.8
USAFR	1,181	798	68.0	93.8
Total	7,030	4,486	63.8	92.8

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

For the entire IRR, however, only 23.3 percent of the nurses remained after 6 years.³² In the USNR, the large IRR reduction was caused principally by the movement of many of the members into the SELRES as the Navy expanded the list of paid billets during the period. The USAFR steadily reduces its IRR inventory by moving a substantial number of members to the SBR. Table 6-11 reflects IRR nurse retention data for all reserve components.

Retention by Sex, Race, and Ethnic Classification

Analysis of nurse retention by sex does not show any significant differences between males and females. Retention by race and ethnic classification, however, shows that minorities stayed at a higher rate than whites. These data are shown in Table 6-12.

³²The comparable 6-year retention rate for IRR officers of all specialties in all reserve components (less the USMCR) is 18.7 percent (14,063 remaining in 1988 of the 75,207 in the 1982 inventory).

TABLE 6-11

IRR NURSE RETENTION RATES, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	1982 IRR inventory	Inventory remaining in IRR in 1988	Six-year retention rate (percent)
ARNG	19 ^a	4 ^a	21.0
USAR	1,697	567	33.4
USNR	850	82	9.6
ANG	N/A ^b	N/A ^b	N/A ^b
USAFR	273	7	2.6
Total	2,839	660	23.3

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a ING.

^b Not applicable. The ANG does not maintain an ING.

TABLE 6-12

SELRES NURSE RETENTION RATES, BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

(All reserve components)

Characteristic	SELRES inventory (1982)	Inventory remaining in SELRES (1988)	Six-year retention rate (percent)
Sex			
Male	1,364	884	65
Female	5,666	3,602	64
Race and ethnic classification			
White	6,027	3,885	64
Black	745	521	70
Hispanic	139	98	71
Asian/American Indian	60	52	87

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Tables A-33, A-34, A-35, A-36, and A-37. No nurses are assigned to the USMCR SELRES.

CHAPTER 7

RESERVE NURSE MIGRATIONS AND TURBULENCE, 1982 – 1988

THE IMPORTANCE OF MIGRATIONS AND TURBULENCE

Personnel changes in organizations – particularly gains, losses, and transfers – cause management problems and affect employee morale. Personnel migrations – large, slow movements over long periods of time – can be accommodated relatively easily under normal conditions because organizations and their leaders are generally conditioned to expect these personnel movements in the mobile society of the late 20th century. Understanding the magnitude and nature of personnel migrations, on the other hand, is important to military leaders because they are concerned about a unique end product: the number and specialties of health care professionals available for future conflict.

Personnel turbulence, on the other hand, is a direct and continuing concern to small unit leaders and a concern to colleagues who serve in units experiencing turbulence. Turbulence – relatively frequent personnel departures and arrivals measured at the unit level – causes disruptions in training, in morale, and sometimes in unit readiness. If it is severe, it may cause other unit members to seek transfers or to resign to escape its problems. We need to know just how serious this problem is in the world of reserve military nurses.

RESERVE NURSE MIGRATIONS

General

This section describes the general magnitude and patterns of personnel gains, losses, and transfers by reserve military nurses into, out of, and among the reserve components and reserve categories. All these movements occurred between 30 June 1982 and 30 June 1988, which are this study's boundaries. We refer to these movements as migrations because they took place over a relatively long period of time, and our methodology is insensitive to the time distribution of these events between the outer time limits. In this section, we assume, therefore, that the migrations reported here occurred evenly throughout the period. In the next section,

we examine personnel movements against a much finer scale: a series of 15 consecutive, quarterly inventories of the status of all reserve military nurses. That device permits a time-sensitive capture of all changes, including movements among individual units. Unit leaders respond directly to these kinds of changes, which we refer to as turbulence in contrast to the more tidal, general changes we call migrations, the subject of this section.

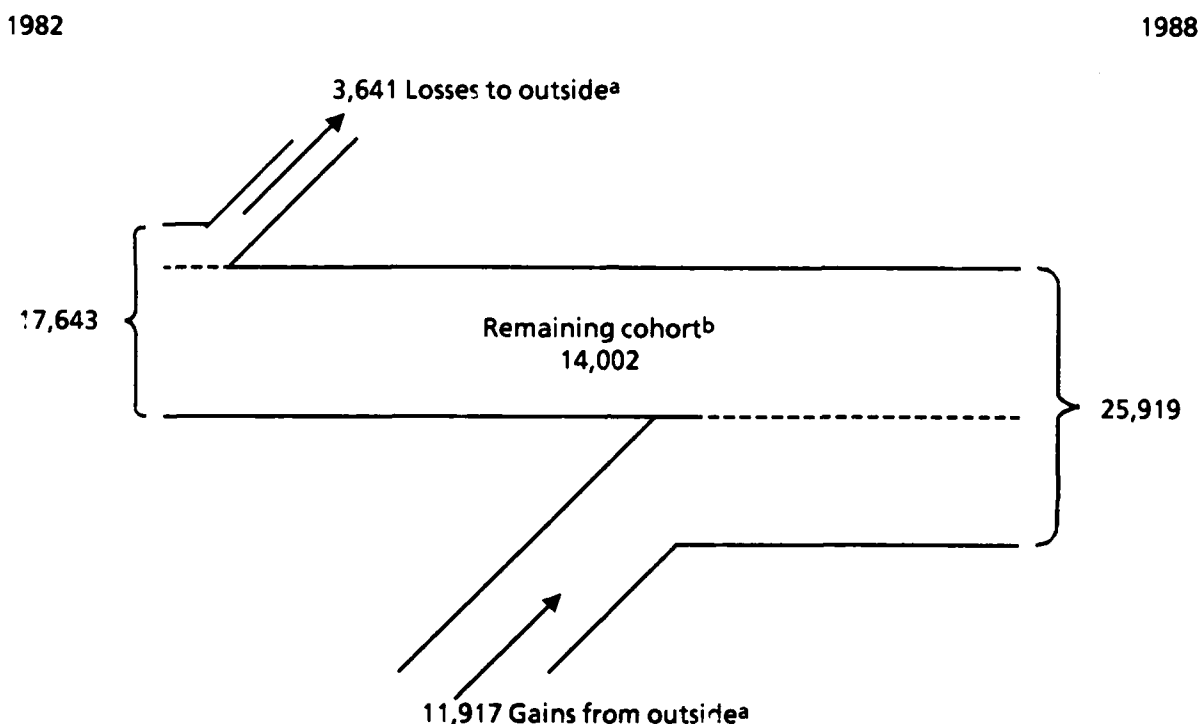
We first discuss general or aggregate migrations occurring between 1982 and 1988. Then we review migrations of nurses qualified in four important nursing specialties. Finally, we discuss briefly the differences in net gains and losses experienced by the five reserve components (specific, detailed information about the individual components is presented in Appendix A).

Aggregate Migrations

In 1982, there were 17,643 nurses in all categories of the reserve components. After losses of 3,641 from the reserve forces to civilian life, active duty and death, and after gains of 11,917 from civilian life and from prior military service, there were 25,919 nurses assigned to the reserve components in 1988. This represents an overall growth of 46.9 percent over the 6 years, or 7.8 percent growth per year. Using the 1982 inventory as a base figure, all categories of the reserve components experienced a 6-year, 67.5 percent $(11,917/17,643)$ growth while sustaining a 20.6 percent $(3,641/17,643)$ loss in the same period. When the gains and the losses are examined separately on an annual basis, the results are encouraging: 11.3 percent annual inventory growth overall while losses from the system amounted to only 3.4 percent per year. To the personnel manager and the commander, however, the impact of these personnel actions is likely to be additive: 11.3 percent *plus* 3.5 percent or almost 15 percent impact (gains plus losses) caused by migrations. Unfortunately, these data represent aggregate information, which is often of limited value when discussing the reserve personnel issues. Since an important objective of inventory growth is an increase in the number of deployable military nurses, the net growth of 46.9 percent can be seen as heartening.

Figure 7-1 shows the reserve forces' aggregate migrations as well as the 14,000-nurse residual population after 6 elapsed years. Since that figure portrays all categories of reserve service collectively, losses and gains are made to and from the "outside," or beyond the reserve system: active military service, civilian life, or

death. Unfortunately, it is not possible to determine just which of these "origins" or "destinations" is appropriate in each case. The gains and losses information available to the Defense Manpower Data Center (DMDC) in transaction files that are used in conjunction with RCCPDS show unknown destinations or origins in upwards of 50 percent of all losses and gains. The information is, therefore, useful only to show that a loss or gain has actually taken place. That portion of the transaction files is accurate.



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Based on data in Figure A-1, A-2, A-3, A-4, and A-5.

^a Beyond the reserve system of five components and four categories.

^b These nurses remained somewhere in the reserve system in 1988, but not necessarily in the same component or same category.

FIG. 7-1. MIGRATIONS OF RESERVE NURSES IN ALL RESERVE CATEGORIES, 1982 - 1988

The SELRES can be examined in the same way. That review shows that there were 7,030 nurses in the SELRES in 1982, growing to 11,811 nurses in 1988: a growth of 68 percent over the 6 years, or 11.3 percent per year. When we include personnel changes within the reserve system, however, the migration picture

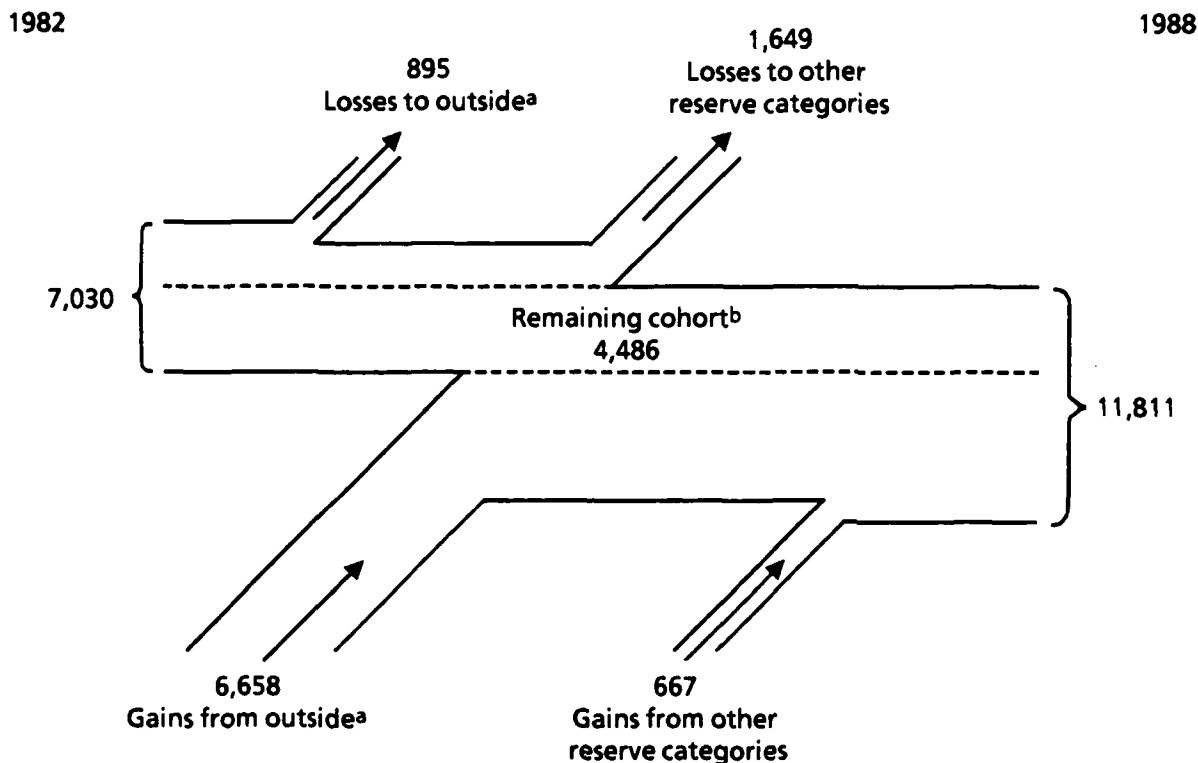
becomes more complex. Figure 7-2 shows that 895 of the nurses assigned to the SELRES in 1982 left the reserve system entirely, while 6,658 were gained from outside. In addition, 1,649 were lost from the SELRES to other reserve categories and 667 joined the SELRES from the other reserve categories. Thus, the overall growth consists of 7,325 total gains (6,658 plus 667) or 104 percent while sustaining total losses of 2,544 (895 plus 1,649), or 36.2 percent. On an annual basis, gains of 17.3 percent per year were realized against losses of 6 percent per year. As with the overall picture above, the commander of the average reserve unit would see a total migration impact rate (gains plus losses) of 23.3 percent per year (17.3 percent plus 6 percent). Since the SELRES is the category most sensitive to personnel actions, we note both a larger overall growth and more losses than we do when considering all reserve categories together.

Also reflected in Figure 7-2 is the remaining cohort of 4,486, or those nurses who, having been members of the SELRES in 1982, were still SELRES members in 1988. Overall, this residual population represents the 63.8 percent retention rate over the 6 years or an equivalent annual continuation rate of 92.8 percent, as discussed in Chapter 6.

The magnitude of nurse migrations gains perspective when compared to the migrations of other reserve component officers. Table 7-1 compares nurse migrations with those of all reserve officers, first in the SELRES and then in all reserve categories combined. Migrations are expressed as a percentage of the 1982 inventory in all cases.

These data show almost identical loss rates — by both the SELRES and all reserve categories taken collectively — for reserve nurses and the reserve officer population at large. When personnel gains are examined, however, a very different picture emerges. The all-officer inventory has grown only about 26 percent in the SELRES and 45 percent in all reserve categories. The reserve nurse inventories, on the other hand, have grown 68 percent in the SELRES while keeping pace (46.9 percent) with the all-officer growth in all reserve categories. The difference in origins of the two officer groups comprising the gains is also noticeable. A greater proportion of nurses' gains came from outside the reserve system than did the gains of all reserve officers.

All components



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Based on data in Figures A-6, A-7, A-8, A-9, and A-10.

^a Beyond the reserve system of five components and four categories.

^b Those 1982 nurses who remain in the 1988 SELRES population.

FIG. 7-2. MIGRATIONS OF SELRES RESERVE NURSES, 1982 - 1988

As a summary review of the relative gains and losses activity among the reserve components, we display component-specific information on SELRES nurses in Table 7-2 and Table 7-3. The Table 7-2 data are shown as a percentage of the 1982 inventories, while Table 7-3 presents a more limited view of gains and losses: those involving only other reserve categories. Table 7-3 shows gains and losses as concrete numbers of personnel translated into net percentages of the 1982 inventory.

The ARNG lost the highest percentage (16.1) of nurses, while the USAR lost the greatest number (609) to civilian life, the active forces, or death during the period. Conversely, the USNR recruited more than twice the number of nurses from the outside than existed in the entire USNR SELRES inventory in 1982. In reviewing

TABLE 7-1

**RESERVE COMPONENT NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Percent of 1982 inventory)

Types of gains and losses	Nurses		All reserve component officers ^a	
	SELRES	All reserve categories	SELRES	All reserve categories
Gains				
From outside	94.7	67.5	54.8	23.5
From other reserve categories	9.5	N/A ^b	8.3	N/A
Total gains	104.2	67.5	63.1	23.5
Losses				
To outside ^c	12.7	20.6	10.4	20.6
To other reserve categories	23.5	N/A	26.9	N/A
Total losses	36.2	20.6	37.3	20.6
Net gains	68.0	46.9	25.8	2.9

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Based on data in Tables A-38, A-39, A-40, A-41, and A-42.

^a Excludes USMCR.

^b Not applicable.

^c "Outside" means beyond the reserve system of five components and four categories.

the percentages shown in Table 7-2, it is important to maintain some perspective on the relative size of the nurse force of each SELRES component. To help gain that perspective, we have presented the 1982 inventory total for each component at the bottom of each column.

The migration information shown in Table 7-3 concentrates on the interplay between the SELRES and the other reserve categories. The information is generally self-explanatory. It shows clearly the Navy's practice of increasing its SELRES force of nurses by drawing upon its IRR inventory.

TABLE 7-2

SELRES NURSE MIGRATIONS, 1982 - 1988
(Percent of 1982 inventory)

Migrations	ARNG	USAR	USNR	ANG	USAFR	Total
Gains from outside	54.6%	92.5%	214.6%	75.4%	98.7%	100.8%
Gains from other reserve categories	3.4%	6.1%	56.8%	4.4%	11.9%	9.5%
Losses to outside ^a	16.1%	14.8%	7.5%	9.2%	6.3%	12.7%
Losses to other reserve categories	22.2%	22.5%	18.6%	30.5%	26.2%	23.5%
1982 inventory total	845	4,107	398	499	1,181	7,030

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a "Outside" means beyond the reserve system of five components and four categories to civilian life, the active forces, or death.

TABLE 7-3

MIGRATIONS OF NURSES BETWEEN THE SELRES AND OTHER RESERVE CATEGORIES, 1982 - 1988

Reserve component	Gains from other reserve categories to SELRES	Losses from SELRES to other reserve categories	Net change	Percent of 1982 inventory
ARNG	29	188	- 159	18.8
USAR	249	926	- 677	16.5
USNR	226	74	+ 152	38.2
ANG	22	152	- 130	26.1
USAFR	141	309	- 168	14.2
Total	667	1,649	- 982	14.0

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Migration of Important Nurse Specialties

Migrations of nurses by specialty can be examined in the same way as other groups of nurses. Table 7-4 shows the gains and losses of four important specialties of SELRES nurses. Medical-surgical nurses and clinical nurses move out of the SELRES about twice as often (over 40 percent loss) as do their nurse-anesthetist and operating room nurse counterparts (under 20 percent loss). The comparable loss figure for all SELRES officers over the same period is about 37 percent. While these losses were occurring, however, nurse inventories in these specialties were growing at rates ranging from 85 percent to about 140 percent. Do simultaneous, sizable losses and gains among medical-surgical nurses and clinical nurses constitute a genuine "revolving door" syndrome for these specialists? We have found no evidence whatsoever of morale problems associated with these migrations.

Migrations Among Reserve Components

The net gains and losses of nurses in all reserve categories, by component, displayed in Table 7-5, show the two National Guard components with net losses to other components, while the USAR and USAFR inventories have grown by similar quantities. One explanation for a portion of the National Guard losses is the continuing movement of some of those nurses into the Retired Reserve, thus changing their component. The USNR totals show no net real change resulting from inter-component gains and losses for the period.

RESERVE NURSE TURBULENCE, 1984 - 1988

General

As pointed out in our discussion of migrations in the previous section, turbulence is characterized by relatively frequent, disruptive personnel departures and arrivals that can often erode morale, training, and readiness in individual units. To permit us to study these events more carefully, DMDC created a special file of all reserve nurses consisting of 15 consecutive quarters of personnel inventory data, starting with December 1984 and ending in June 1988. That cohort file permits closer examination of the nurses' personnel changes, within both components and categories, and including gains and losses among components, categories, and units. This section presents analysis of this cohort file.

TABLE 7-4

**MIGRATIONS OF FOUR IMPORTANT SELRES NURSE SPECIALTIES AS A PERCENTAGE
OF 1982 INVENTORY, 1982 - 1988**

Types of gains and losses	Specialties			
	Nurse-anesthetist	Operating room nurse	Medical-surgical nurse	Clinical nurse
Gains				
From outside ^a	79.4%	117.5%	79.6%	130.3%
From other reserve categories	10.6%	7.8%	5.2%	12.5%
Total gains	90.0%	125.3%	84.8%	142.8%
Losses				
To outside ^a	10.3%	15.0%	15.0%	10.1%
To other reserve categories	5.3%	7.6%	26.6%	32.6%
Total losses	15.6%	22.6%	41.6%	42.7%
Net gains	74.4%	102.7%	43.2%	100.1%
1982 inventory total	282	447	1,523	3,282

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Based on data in Figures A-11, A-12, A-13, and A-14. These data do not include USNR component-specific information because of specialty coding changes by that component.

^a "Outside" means beyond the reserve system of five components and four categories.

The discussion of turbulence in this section is incremental. That is, the kinds of personnel changes or movements that produce turbulence are separated for discussion and then recombined to provide perspective on the total effect of nurse gains and losses on their commanders and their units. We first examine personnel movements among the reserve components followed by movements among reserve categories. Next, we address the frequency of gains and losses among units of the important SELRES. Finally, we discuss losses to – and gains from – the "outside" or beyond the reserve system.

TABLE 7-5

MIGRATIONS OF RESERVE NURSES AMONG COMPONENTS, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	Gains from other components	Losses to other components	Net change
ARNG	54	199	- 145
USAR	1,368	1,207	+ 161
USNR	773	774	- 1
ANG	22	152	- 130
USAFR	899	784	+ 115

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: All reserve categories.

In each part of the section, we include at least one table summarizing the personnel movements (i.e., transactions: gains or losses) that are the subject of that section. The data presented in these tables are not shown because of any special significance accompanying the information. Rather, the information is included here so the reader may see for the first time the quantity — large or small — of the personnel transactions involving reserve military nurses. The data presented describe what happened from December 1984 through June 1988, so they will be different from transaction totals shown in previous chapters and sections. The earlier information came from the 6-year time span (1982 through 1988) already discussed.

Movement Among Reserve Components

The cohort file can be used to identify all movements of nurses among the reserve components for all reserve categories over the 15 quarters. Table 7-6 shows all those movements by component. Table 7-6 considers the reserve system to be a closed system in which gains equal losses. We have deliberately (and temporarily) ignored losses beyond the boundaries of the system and gains from outside the system. Even so, when these limited, intrasystem gains are added to similarly limited losses to identify a volume of personnel transactions causing possible concern, the quantity is not trivial, especially for the ARNG and ANG (Appendix A expands the same information on a component-by-component basis). Later in this section, we

will add the outside gains and losses and consider the impact of all these transactions taken together.

TABLE 7-6

**THE MOVEMENTS OF RESERVE NURSES OF ALL RESERVE CATEGORIES AMONG
THE RESERVE COMPONENTS, 1984 - 1988**

Reserve component	Gains		Losses		Turbulence (total gains plus losses)		Net
	Number	Percent ^a	Number	Percent ^a	Number	Percent ^a	
ARNG	233	27	240	28	473	56	- 7
USAR	289	3	290	3	579	6	- 1
USNR	33	1	18	1	51	2	15
ANG	116	20	221	39	337	59	- 105
USAFR	267	4	169	2	436	6	98
Total	938	5	938	5	1,876	9	0

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

Note: Apparent arithmetic errors in percentages are the result of rounding.

^a Numbers expressed as a percentage of the 1984 inventory of nurses in this component, all categories. This is not a "true" percentage since not all gains and losses involve individuals present in the 1984 inventory. This measure does, however, reflect accurately the relative severity of impact of these transactions on components of different sizes.

Movement Among Reserve Categories

Some personnel movements among the categories of the reserve populations cause more concern than others. Some of the movement shown in Table 7-7 is significant because most personnel losses from the units of the SELRES affect readiness and all such losses trigger replacement activity. At the unit level, the loss of one or two specialists with critically needed skills can cause problems. Table 7-7 shows all SELRES losses to other reserve categories during the 15 quarters examined. The movements are quantified and are also expressed as a fictitious percentage of the December 1984 inventory for added perspective.

TABLE 7-7

**MOVEMENTS OF RESERVE NURSES FROM THE SELRES TO OTHER RESERVE CATEGORIES
IN THE SAME COMPONENT, BY RESERVE COMPONENT, 1984 - 1988**

Reserve component	IRR/ING		SBR		Retired Reserve	
	Number	Percent ^a	Number	Percent	Number	Percent
ARNG	78 ^b	9	N/A ^c	N/A	N/A	N/A
USAR	1,973	39	2	0	57	1
USNR	524	67	5	1	8	1
ANG	N/A	N/A	N/A	N/A	N/A	N/A
USAFR	625	36	95	6	56	3
Total	3,200	35	102	1	121	1

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

Note: The movement of members from one component to another (e.g., the movement of National Guard members to the Retired Reserve) is invisible in this table since the movements examined are limited to transfers within the same component.

^a Numbers expressed as a percentage of the 1984 inventory of nurses in this component, all categories. This is not a "true" percentage since not all gains and losses involve individuals present in the 1984 inventory. This measure does, however, reflect accurately the relative severity of impact of these transactions on components of different sizes.

^b ING.

^c Not applicable. The ANG does not have an ING, and the ARNG and ANG do not have an SBR or Retired Reserve.

Similarly, Table 7-8 shows changes from the IRR/ING to other categories. Such personnel movements from the "pool" categories of the reserve components are not as troubling as those from the SELRES. They are reported here for completeness. Of special note in this display is the proportionately large USNR reassignment from the IRR to the SELRES, almost offsetting that component's loss of 524 nurses from the SELRES to the IRR during the period (see Table 7-7).

Both the USNR and USAFR brought nurses from the SBR into the SELRES during this period. Table 7-9 reflects those moves. The Army has very few nurses in the SBR and does not show any movement out of the SBR into the SELRES.

Table 7-10 shows the net gains by the IRR/ING, SBR, and Retired Reserve from all categories. Overall, more nurses are reassigned to those categories than are recouped back into the SELRES. The USNR and USAFR show a net loss from the IRR to the SELRES, and both components also show large losses to the SBR.

TABLE 7-8

**MOVEMENTS OF RESERVE NURSES FROM THE IRR/ING TO OTHER RESERVE CATEGORIES
IN THE SAME COMPONENT, BY RESERVE COMPONENT, 1984 - 1988**

Reserve component	SELRES		SBR		Retired Reserve	
	Number	Percent ^a	Number	Percent	Number	Percent
ARNG	31	442 ^b	N/A ^c	N/A	N/A	N/A
USAR	1,370	58	3	42	72	3
USNR	479	78	359	59	8	1
ANG	N/A	N/A	N/A	N/A	N/A	N/A
USAFR	209	6	848	155	8	1
Total	2,089	59	1,210	34	88	2

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

Note: The movement of members from one component to another (e.g., the movement of Air Force IRR members to the ANG SELRES) is invisible in this table since the movements examined are limited to transfers within the *same component*.

^a Numbers expressed as a percentage of the 1984 inventory of nurses in this component, all categories. This is not a "true" percentage since not all gains and losses involve individuals present in the 1984 inventory. This measure does, however, reflect accurately the relative severity of impact of these transactions on components of different sizes.

^b The ARNG had only seven nurses assigned to its ING in 1984.

^c Not applicable. The ANG does not have an ING, and the ARNG and ANG do not have an SBR or Retired Reserve.

SELRES Unit Turbulence

During the period December 1984 to June 1988, the cohort file identified the number of members with changes in the units to which they were assigned. These changes can be produced by two things: (1) an individual transfer from one unit to another and (2) a change in the unit identification number by the governing reserve component. In the first instance, a straightforward personnel transfer has taken place. In the second, the unit identification code (terminology differs depending on the Military Service involved) is changed because of a reorganization or change in mission of the individual unit. These latter changes can occur frequently. In the USNR, for example, *all* units appearing in the December 1984 inventory had changed their identification codes before 30 June 1988.

To stabilize the number and organization of individual units for review of personnel gains and losses, we sought a list of those units whose codes remained

TABLE 7-9

**MOVEMENTS OF RESERVE NURSES FROM THE SBR INTO THE SELRES,
BY RESERVE COMPONENT, 1984 - 1988**

Reserve component	Number	Percent ^a
ARNG	0	0
USAR	0	0
USNR	47	8
ANG	0	0
USAFR	184	5
Total	231	5

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

^a Numbers expressed as a percentage of the 1984 inventory of nurses in this component, all categories. This is not a "true" percentage since not all gains and losses involve individuals present in the 1984 inventory. This measure does, however, reflect accurately the relative severity of impact of these transactions on components of different sizes.

TABLE 7-10

**RESERVE NURSE NET GAINS BY THE "POOL" RESERVE CATEGORIES, BY RESERVE
COMPONENT, 1984 - 1988**

Reserve component	IRR/ING	SBR	Retired Reserve
ARNG	46 ^a	N/A ^b	N/A
USAR	537	2	122
USNR	272	265	18
ANG	N/A	N/A	N/A
USAFR	- 159 ^c	402	140
Total	696	669	280

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

^a ING.

^b Not applicable. The ANG does not have an ING, and the ARNG and ANG do not have an SBR or Retired Reserve.

^c Minus sign indicates loss.

unchanged throughout the 15 quarters of the cohort review. With the exception of those in the Naval Reserve, the number of "stable" units per component was large enough to produce good analytical results. Table 7-11 shows the numerical results of this analysis.

TABLE 7-11
SELRES UNIT TURBULENCE, 1984 - 1988

Data categories	Components					Total
	ARNG	USAR	USNR	ANG	AFR	
Number of units	96	200	0	102	85	483
Nurses per unit (mean)	9	28	Unk. ^a	6	18	18
Annual turbulence per unit						
Gains (Number)	2	7	Unk.	1	4	4
(Percent)	22%	25%		17%	22%	22%
Losses (Number)	2	6	Unk.	1	4	4
(Percent)	22%	21%		17%	22%	22%

^a Unk.: Unknown. The unit identification codes of all USNR units in the unit inventory as of December 1984 had changed by the end of the study period, June 1988. The USNR personnel gains and losses per unit over the 15 quarters were therefore impossible to calculate.

With the exception of the ANG, the components showed remarkable loss consistency, about 22 percent inventory loss per year. The data also demonstrated that those losses were offset, at least over this particular 15-quarter time period, by commensurate gains in the number of nurses assigned to the units. These replacements, or gains, do cause administrative and training workloads and may produce some adjustment or socializing strains as well. But they are never as serious to the unit and its functioning as the losses are. One may be tempted occasionally to argue that turbulence equals gains *plus* losses, but that judgment is too harsh. Even though incoming personnel demand administrative attention, a unit that loses, say, five nurses without replacements during the period is in more serious condition than an identical unit that records five losses and five replacement gains.

Unfortunately, we are unable to compare reserve military nurse unit turbulence with the unit turbulence of any other group of reserve military officers because the comparative data for the other officers have never been computed.

Gains from and Losses to the "Outside"

All personnel movements between and among reserve components and reserve categories create personnel turbulence as do losses of military nurses from the entire military system to civilian life or death. The complete loss of personnel assets affects mobilization. The loss of nurses to membership in the active forces is, of course, not a loss to the armed forces, but it has the same effect upon the losing unit as if the nurse had returned to civilian life or had died.

Unit gains from outside the system — from the active forces or from civilian life — also cause several internal actions: placement, training, personal accommodation, logistics support, and administrative transactions. These gains cause the same kind of turbulence that other gains do.

As we reviewed gains and losses data from beyond the reserve system, we encountered a major data problem. As Table 7-12 shows for the SELRES, the specific origins of these gains and the destinations of these losses are largely unknown. While we are sure that all components and categories experienced 5,155 gains from outside, the origin of fully 59 percent of those gains is unknown. Similarly, we cannot account for 45 percent of the 1,043 losses to the outside known to have occurred between December 1984 and June 1988. Consequently, such high rates of unknowns make the remainder of the data useless for analysis. They are reported here only as a demonstration of the information actually reported.

Table 7-13 contains the same data array for all reserve components and all reserve categories. As can be seen, even higher rates of unknowns occur. Repeated subsequent attempts to determine the origins or destinations accompanying these gains and losses were unsuccessful.

TABLE 7-12

**SELRES NURSE GAINS FROM AND LOSSES TO THE "OUTSIDE,"
1984 - 1988**

(All reserve components)

Sources and destinations	Number	Percent
Gains from:		
Civilian life		
Nonprior service	1,401	27.2
Former military	315	6.1
Active duty	388	7.6
Unknown/other	3,051	59.2
Total	5,155	100.0
Losses to:		
Civilian life	393	37.7
Active duty	157	15.1
Death	23	2.2
Unknown/other	470	45.1
Total	1,043	100.0

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

Note: Individual percentages may not add to totals because of rounding.

TABLE 7-13

**ALL RESERVE COMPONENT NURSES GAINS FROM AND LOSSES
TO THE "OUTSIDE," 1984 - 1988**

(All reserve categories)

Sources and destinations	Number	Percent
Gains from:		
Civilian life		
Nonprior service	1,538	16.5
Former military	340	3.6
Active duty	1,283	13.6
Unknown/other	6,273	66.5
Total	9,434	100.0
Losses to:		
Civilian life	1,488	40.8
Active duty	299	8.2
Death	63	1.7
Unknown/other	1,797	49.3
Total	3,647	100.0

Source: RCCPDS, 31 December 1984 through 30 June 1988 (15 consecutive quarters).

Note: Individual percentages may not add to totals because of rounding.

APPENDIX A

COMPONENT-SPECIFIC SUPPORT DATA

This appendix contains component-specific data for many of the tables and figures in the body of the report and in Appendix C. If the data in a table or figure in the body of the report cannot be attributed to a specific component, no table or figure is included in this appendix. Each table, figure, or group of tables or figures is identified with its corresponding table or figure elsewhere in the report.

In this appendix, we use 12 acronyms. For the convenience of the reader, we define them here:

ANG	Air National Guard
ARNG	Army National Guard
ING	Inactive National Guard
MSO	Military Service Obligation
NOBC	Naval Officer Billet Code
RCCPDS	Reserve Components Common Personnel Data System
SBR	Standby Reserve
SELRES	Selected Reserve
USAFR	U.S. Air Force Reserve
USAR	U.S. Army Reserve
USMCR	U.S. Marine Corps Reserve
USNR	U.S. Naval Reserve.

TABLE A-1

ARNG NURSE INVENTORY GROWTH, BY RESERVE CATEGORY, 1982 - 1988

(Supports Table 5-5)

Reserve category	1982	1988	Growth	
			Number	Percent
SELRES	845	1,011	166	20
ING	19	35	16	84
SBR	N/A ^a	N/A	N/A	N/A
Retired Reserve	N/A ^a	N/A	N/A	N/A
Total	864	1,046	182	21

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable. The ARNG does not have SBR or Retired Reserve categories.

TABLE A-2

USAR NURSE INVENTORY GROWTH, BY RESERVE CATEGORY, 1982 - 1988

(Supports Table 5-5)

Reserve category	1982	1988	Growth	
			Number	Percent
SELRES	4,107	6,622	2,515	61
IRR	1,697	3,276	1,579	93
SBR	3	5	2	67
Retired Reserve	1,411	1,649	238	17
Total	7,218	11,552	4,334	60

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-3

USNR NURSE INVENTORY CHANGES, BY RESERVE CATEGORY, 1982 - 1988

(Supports Table 5-5)

Reserve category	1982	1988	Change	
			Number	Percent
SELRES	398	1,374	976	245
IRR	850	712	-138	-16
SBR	771	727	-44	-6
Retired Reserve	595	1,064	469	79
Total	2,614	3,877	1,263	48

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-4

ANG NURSE INVENTORY GROWTH, BY RESERVE CATEGORY, 1982 - 1988

(Supports Table 5-5)

Reserve category	1982	1988	Growth	
			Number	Percent
SELRES	499	699	200	40
ING	N/A ^a	N/A	N/A	N/A
SBR	N/A ^a	N/A	N/A	N/A
Retired Reserve	N/A ^a	N/A	N/A	N/A
Total	499	699	200	40

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable. The ANG does not use an ING category and the ANG does not have SBR and Retired Reserve categories.

TABLE A-5

USAFR NURSE INVENTORY GROWTH, BY RESERVE CATEGORY, 1982 - 1988

(Supports Table 5-5)

Reserve category	1982	1988	Growth	
			Number	Percent
SELRES	1,181	2,105	924	78
IRR	273	919	646	237
SBR	3,625	3,940	315	9
Retired Reserve	1,369	1,781	412	30
Total	6,448	8,745	2,297	36

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-6

CHANGES IN FOUR ARNG SELRES NURSING SPECIALTY GROUPS, 1982 - 1988

(Supports Table 5-7)

Specialty	1982	1988	Change	
			Number	Percent
Nurse-anesthetist	36	56	20	56
Operating room nurse	77	117	40	52
Medical-surgical nurse	608	690	82	13
Clinical nurse	70	62	- 8	- 11
Total	791	925	134	17

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-7

GROWTH OF FOUR USAR SELRES NURSING SPECIALTY GROUPS, 1982 - 1988

(Supports Table 5-7)

Specialty	1982	1988	Growth	
			Number	Percent
Nurse-anesthetist	169	314	145	86
Operating room nurse	278	573	295	106
Medical-surgical nurse	2,572	3,987	1,415	55
Clinical nurse	324	597	273	84
Total	3,343	5,471	2,128	64

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-8

GROWTH OF FOUR USNR SELRES NURSING SPECIALTY GROUPS, 1982 - 1988

(Supports Table 5-7)

Specialty	1982	1988 ^a	Growth
Nurse-anesthetist	20	N/A	N/A
Operating room nurse	19	N/A	N/A
Medical-surgical nurse	102	N/A	N/A
Clinical nurse	145	N/A	N/A
Total	286	N/A	N/A

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a In FY87, the Navy changed its specialty coding system from NOBCs to subspecialty designators. In the FY88 RCCPDS file, 892 nurses had not been assigned the new subspecialty designator code. Therefore, nurses cannot be classified by specialty for FY88.

TABLE A-9
CHANGES IN FIVE ANG SELRES NURSING SPECIALTY GROUPS, 1982 - 1988
 (Supports Table 5-7)

Specialty	1982	1988	Change	
			Number	Percent
Nurse-anesthetist	11	8	-3	-27
Operating room nurse	23	22	-1	-4
Medical-surgical nurse	N/A ^a	N/A	N/A	N/A
Clinical nurse	376	464	88	23
Flight nurse	73	147	74	101
Total	483	641	158	33

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable. Flight nurses are included in this table for completeness since the ANG does not use the medical-surgical classification.

TABLE A-10
CHANGES IN FIVE USAFR SELRES NURSING SPECIALTY GROUPS, 1982 - 1988
 (Supports Table 5-7)

Specialty	1982	1988	Change	
			Number	Percent
Nurse-anesthetist	46	97	51	111
Operating room nurse	50	161	111	222
Medical-surgical nurse	N/A ^a	N/A	N/A	N/A
Clinical nurse	608	1,655	1,047	172
Flight nurse	367	14	-353	-96
Total	1,071	1,927	856	80

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable. Flight nurses are included in this table for completeness since the USAFR does not use the medical-surgical classification.

TABLE A-11

RESERVE COMPONENT NURSE REQUIREMENTS, AUTHORIZATIONS, AND INVENTORY, 1987

(Supports Table 5-8)

Element	Army		Navy		Air Force		Total	
	For information	Demand and supply	For information	Demand and supply	For information	Demand and supply	For information	Demand and supply
Inventory of reserve nurses, all categories:								
Reserve (USAR, USNR, and USAFR)		10,714		2,915		7,407		21,036
National Guard (ARNG and ANG)		927		-		660		1,587
Total		11,641		2,915		8,067		22,623
Requirements allocated to reserve components		27,720		6,980		10,050		44,750
Peacetime authorizations for SELRES	9,000		1,800		3,100		13,900	
Estimate of available reserve nurses		N/A ^a		N/A		N/A		15,450
Projected reserve component nurse shortage		-		-		-		29,300

Source: Office of the Assistant Secretary of Defense (Health Affairs). *Report to the House Committee on Appropriations. Response to Testimony*, 3 March 1987.

^a Not available.

TABLE A-12

**PERSONAL CHARACTERISTICS OF ARNG SELRES NURSES COMPARED WITH ALL SELRES OFFICERS
AND ALL U.S. NURSES**

(Supports Table 5-9)

Characteristic	SELRES nurses	All SELRES officers	All U.S. nurses
Sex			
Male	32%	88%	3%
Female	68%	22%	97%
Age (years)	38.6	37.2	39.0
Race and ethnic classification			
White	91%	88%	90%
Black	8%	8%	4%
Hispanic	4%	2%	1%
Asian/American Indian	1%	2%	2%
Married	62%	73%	71%
Some dependents	Unknown ^a	70% ^b	47% ^c
Highest education attained			
Less than baccalaureate	33%	17%	68%
Baccalaureate	48%	46%	26%
Masters or more	20%	27%	6%

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: American Nurses' Association (ANA). *Facts About Nursing: '86 - '87*. Kansas City, MO: 1987, pp. 8 - 10, 11, and 24.

^a RCCPDS data reflect 756 out of 1,011 nurses as unknown for dependents.

^b This figure is based on reported data showing a large proportion - 22 percent - of unknowns. The 70 percent figure should, therefore, be used with care.

^c Dependents *less spouse*.

TABLE A-13

**PERSONAL CHARACTERISTICS OF USAR SELRES NURSES COMPARED WITH ALL SELRES OFFICERS
AND ALL U.S. NURSES**

(Supports Table 5-9)

Characteristic	SELRES nurses	All SELRES officers	All U.S. nurses
Sex			
Male	23%	88%	3%
Female	77%	12%	97%
Age (years)	37.9	37.2	39.0
Race and ethnic classification			
White	77%	88%	90%
Black	17%	8%	4%
Hispanic	2%	2%	1%
Asian/American Indian	2%	2%	2%
Married	57%	73%	71%
Some dependents	69%	70% ^a	47% ^b
Highest education attained			
Less than baccalaureate	23% ^c	17%	68%
Baccalaureate	53%	46%	26%
Masters or more	22%	27%	6%

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: ANA, pp. 8 – 10, 11, and 24.

^a This figure is based on reported data showing a large proportion – 22 percent – of unknowns. The 70 percent figure should, therefore, be used with care.

^b Dependents *less spouse*.

^c RCCPDS data reflect 1,207 out of 6,622 USAR nurses as unknown for education.

TABLE A-14

**PERSONAL CHARACTERISTICS OF USNR SELRES NURSES COMPARED WITH ALL SELRES OFFICERS
AND ALL U.S. NURSES**

(Supports Table 5-9)

Characteristic	SELRES nurses	All SELRES officers	All U.S. nurses
Sex			
Male	15%	88%	3%
Female	85%	12%	97%
Age (years)	35.8	37.2	39.0
Race and ethnic classification			
White	90%	88%	90%
Black	3%	8%	4%
Hispanic	2%	2%	1%
Asian/American Indian	1%	2%	2%
Married	56%	73%	71%
Some dependents	56%	70% ^a	47% ^b
Highest education attained			
Less than baccalaureate	18% ^c	17%	68%
Baccalaureate	60%	46%	26%
Masters or more	21%	27%	6%

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: ANA, pp. 8 – 10, 11, and 24.

^a This figure is based on reported data showing a large proportion – 22 percent – of unknowns. The 70 percent figure should, therefore, be used with care.

^b Dependents *less spouse*.

^c RCCPDS data reflect 276 out of 1,374 USNR nurses as unknown for education.

TABLE A-15

**PERSONAL CHARACTERISTICS OF ANG SELRES NURSES COMPARED WITH ALL SELRES OFFICERS
AND ALL U.S. NURSES**

(Supports Table 5-9)

Characteristic	SELRES nurses	All SELRES officers	All U.S. nurses
Sex			
Male	21%	88%	3%
Female	79%	12%	97%
Age (years)	36.6	37.2	39.0
Race and ethnic classification			
White	92%	88%	90%
Black	7%	8%	4%
Hispanic	2%	2%	1%
Asian/American Indian	1%	2%	2%
Married	60%	73%	71%
Some dependents	53%	70% ^a	47% ^b
Highest education attained			
Less than baccalaureate	45%	17%	68%
Baccalaureate	42%	46%	26%
Masters or more	13%	27%	6%

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: ANA, pp. 8 – 10, 11, and 24.

^a This figure is based on reported data showing a large proportion – 22 percent – of unknowns. The 70 percent figure should, therefore, be used with care.

^b Dependents *less spouse*.

TABLE A-16

**PERSONAL CHARACTERISTICS OF USAFR SELRES NURSES COMPARED WITH ALL SELRES OFFICERS
AND ALL U.S. NURSES**

(Supports Table 5-9)

Characteristic	SELRES nurses	All SELRES officers	All U.S. nurses
Sex			
Male	15%	88%	3%
Female	85%	12%	97%
Age (years)	36.7	37.2	39.0
Race and ethnic classification			
White	91%	88%	90%
Black	8%	8%	4%
Hispanic	2%	2%	1%
Asian/American Indian	2%	2%	2%
Married	56%	73%	71%
Some dependents	47%	70% ^a	47% ^b
Highest education attained			
Less than baccalaureate	32%	17%	68%
Baccalaureate	50%	46%	26%
Masters or more	19%	27%	6%

Sources: Military data: RCCPDS, 30 June 1988. Civilian data: ANA, pp. 8 – 10, 11, and 24.

^a This figure is based on reported data showing a large proportion – 22 percent – of unknowns. The 70 percent figure should, therefore, be used with care.

^b Dependents *less spouse*.

TABLE A-17

**HIGHEST EDUCATIONAL ATTAINMENT OF ARNG SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-10)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	36	64
Female	31	69
Race and ethnic classification		
White	33	67
Black	31	69
Hispanic	16	84
Asian/American Indian	10	90

Source: RCCPDS, 30 June 1988.

TABLE A-18

**HIGHEST EDUCATIONAL ATTAINMENT OF USAR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-10)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	30	70
Female	23	77
Race and ethnic classification		
White	24	76
Black	27	73
Hispanic	28	72
Asian/American Indian	16	84

Source: RCCPDS, 30 June 1988.

Note: RCCPDS data reflect 1,207 out of 6,622 nurses with unknown listed for education.

TABLE A-19

**HIGHEST EDUCATIONAL ATTAINMENT OF USNR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-10)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	16	83
Female	19	81
Race and ethnic classification		
White	19	81
Black	8	92
Hispanic	14	86
Asian/American Indian	0	100

Source: RCCPDS, 30 June 1988.

Note: RCCPDS data reflect 276 out of 1,374 nurses with unknown listed for education.

TABLE A-20

**HIGHEST EDUCATIONAL ATTAINMENT OF ANG SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-10)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	52	48
Female	44	56
Race and ethnic classification		
White	45	55
Black	50	50
Hispanic	31	69
Asian/American Indian	30	70

Source: RCCPDS, 30 June 1988.

TABLE A-21

**HIGHEST EDUCATIONAL ATTAINMENT OF USAFR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-10)

Characteristic	Less than baccalaureate (percent)	Baccalaureate or higher (percent)
Sex		
Male	40	60
Female	30	70
Race and ethnic classification		
White	32	68
Black	30	70
Hispanic	25	75
Asian/American Indian	27	73

Source: RCCPDS, 30 June 1988.

TABLE A-22

**SELECTED PRIMARY SPECIALTIES OF ARNG SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-11)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	318	3	11	10
Female	693	7	3	12
Race and ethnic classification				
White	916	6	6	12
Black	85	1	5	8
Hispanic	45	13	4	16
Asian/American Indian	10	0	10	10

Source: RCCPDS, 30 June 1988.

TABLE A-23

**SELECTED PRIMARY SPECIALTIES OF USAR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-11)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	1,501	0	15	10
Female	5,116	1	2	8
Race and ethnic classification				
White	5,113	1	6	9
Black	1,151	1	2	8
Hispanic	152	1	1	2
Asian/American Indian	105	2	0	8

Source: RCCPDS, 30 June 1988.

TABLE A-24

**SELECTED PRIMARY SPECIALTIES OF USNR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-11)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	201	0	6	2
Female	1,173	0	0	2
Race and ethnic classification				
White	1,232	0	1	2
Black	48	2	0	2
Hispanic	24	0	4	4
Asian/American Indian	19	0	0	0

Source: RCCPDS, 30 June 1988.

Note: In FY87, the Navy changed its specialty coding system from NOBCs to subspecialty designators. In the FY88 RCCPDS file, 892 nurses had not been assigned the new subspecialty designator code and, therefore, cannot be classified by specialty.

TABLE A-25

**SELECTED PRIMARY SPECIALTIES OF ANG SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-11)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	114	2	3	2
Female	555	6	1	3
Race and ethnic classification				
White	643	5	1	3
Black	46	7	2	0
Hispanic	14	2	0	0
Asian/American Indian	10	20	0	0

Source: RCCPDS, 30 June 1988.

TABLE A-26

**SELECTED PRIMARY SPECIALTIES OF USAFR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table 5-11)

Characteristic	Number	Nurse- administrator (percent)	Nurse- anesthetist (percent)	Operating room nurse (percent)
Sex				
Male	316	2	17	7
Female	1,789	5	2	8
Race and ethnic classification				
White	1,910	5	5	8
Black	158	1	4	6
Hispanic	32	3	0	3
Asian/American Indian	30	3	0	10

Source: RCCPDS, 30 June 1988.

TABLE A-27

SELECTED MILITARY CHARACTERISTICS OF ARNG SELRES NURSES AND OTHER OFFICERS, 1988

(Supports Table 5-12)

Characteristic	Nurses in SELRES	All officers in SELRES
MSO remaining	15%	42%
Direct commission	92%	28%
Mandatory removal within 10 years	30%	22%
Average years of service	10.3	8.8
Grades:		
01/02	34%	26%
03/04	55%	52%
05	8%	16%
06	2%	6%

Source: RCCPDS, 30 June 1988.

TABLE A-28

SELECTED MILITARY CHARACTERISTICS OF USAR SELRES NURSES AND OTHER OFFICERS, 1988

(Supports Table 5-12)

Characteristic	Nurses in SELRES	All officers in SELRES
MSO remaining	25%	42%
Direct commission	86%	28%
Mandatory removal within 10 years	26%	22%
Average years of service	9.1	8.8
Grades:		
01/02	44%	26%
03/04	46%	52%
05	8%	16%
06	2%	6%

Source: RCCPDS, 30 June 1988.

TABLE A-29

SELECTED MILITARY CHARACTERISTICS OF USNR SELRES NURSES AND OTHER OFFICERS, 1988

(Supports Table 5-12)

Characteristic	Nurses in SELRES	All officers in SELRES
MSO remaining	99% ^a	42%
Direct commission	98%	28%
Mandatory removal within 10 years	21%	22%
Average years of service	10.7	8.8
Grades:		
01/02	20%	26%
03/04	66%	52%
05	11%	16%
06	2%	6%

Source: RCCPDS, 30 June 1988.

^a As reported in RCCPDS. These data appear questionable.

TABLE A-30

SELECTED MILITARY CHARACTERISTICS OF ANG SELRES NURSES AND OTHER OFFICERS, 1988

(Supports Table 5-12)

Characteristic	Nurses in SELRES	All officers in SELRES
MSO remaining	33%	42%
Direct commission	98%	28%
Mandatory removal within 10 years	48%	22%
Average years of service	10.3	8.8
Grades:		
01/02	43%	26%
03/04	42%	52%
05	15%	16%
06	0%	6%

Source: RCCPDS, 30 June 1988.

TABLE A-31

SELECTED MILITARY CHARACTERISTICS OF USAFR SELRES NURSES AND OTHER OFFICERS, 1988

(Supports Table 5-12)

Characteristic	Nurses in SELRES	All officers in SELRES
MSO remaining	29%	42%
Direct commission	96%	28%
Mandatory removal within 10 years	25%	22%
Average years of service	10.6	8.8
Grades:		
01/02	38%	26%
03/04	47%	52%
05	12%	16%
06	3%	6%

Source: RCCPDS, 30 June 1988.

TABLE A-32

SELRES NURSE RETENTION AND CONTINUATION RATES, 1982 - 1988

(Supports Table 6-9)

Reserve component	1982 inventory	Remaining in SELRES	Remaining in any reserve category
ARNG	845	521	709
Six-year retention		61.7%	83.9%
Annual continuation		92.3%	97.1%
USAR	4,107	2,572	3,498
Six-year retention		62.6%	85.2%
Annual continuation		92.5%	97.4%
USNR	398	294	368
Six-year retention		73.9%	92.5%
Annual continuation		95.1%	98.7%
ANG	499	301	453
Six-year retention		60.3%	90.8%
Annual continuation		91.9%	98.4%
USAFR	1,181	798	1,107
Six-year retention		67.6%	93.7%
Annual continuation		93.7%	98.9%

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-33

ARNG SELRES NURSE RETENTION RATES BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

(Supports Table 6-12)

Characteristic	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)
Sex			
Male	199	134	67
Female	646	387	60
Race and ethnic classification			
White	745	475	64
Black	84	44	52
Hispanic	42	27	64
Asian/American Indian	5	3	60

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-34

USAR SELRES NURSE RETENTION RATES BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

(Supports Table 6-12)

Characteristic	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)
Sex			
Male	867	554	64
Female	3,240	2,018	62
Race and ethnic classification			
White	3,373	2,129	63
Black	545	394	72
Hispanic	70	51	73
Asian/American Indian	30	27	90

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-35

USNR SELRES NURSE RETENTION RATES BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

(Supports Table 6-12)

Characteristic	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)
Sex			
Male	56	43	77
Female	342	251	73
Race and ethnic classification			
White	356	269	76
Black	11	6	55
Hispanic	1	2	200
Asian/American Indian	2	5	250

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-36

ANG SELRES NURSE RETENTION RATES BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

(Supports Table 6-12)

Characteristic	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)
Sex			
Male	85	46	54
Female	414	255	62
Race and ethnic classification			
White	456	273	60
Black	32	23	72
Hispanic	13	7	54
Asian/American Indian	7	7	100

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-37

USAFR SELRES NURSE RETENTION RATES BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

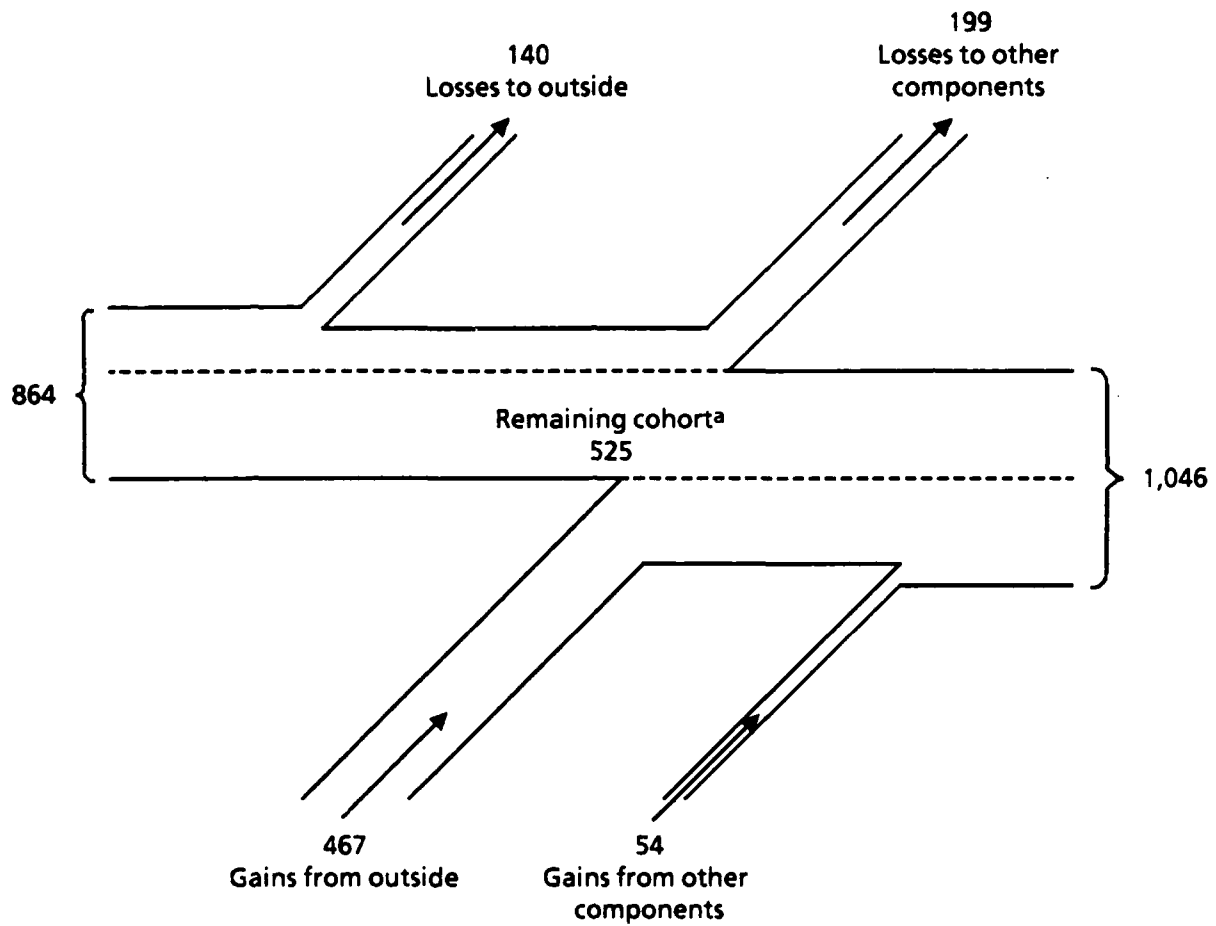
(Supports Table 6-12)

Characteristic	1982 SELRES inventory	Inventory remaining in SELRES in 1988	Six-year retention rate (percent)
Sex			
Male	157	107	68
Female	1,024	691	67
Race and ethnic classification			
White	1,088	739	68
Black	73	54	74
Hispanic	13	11	85
Asian/American Indian	16	10	63

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

1982

1988

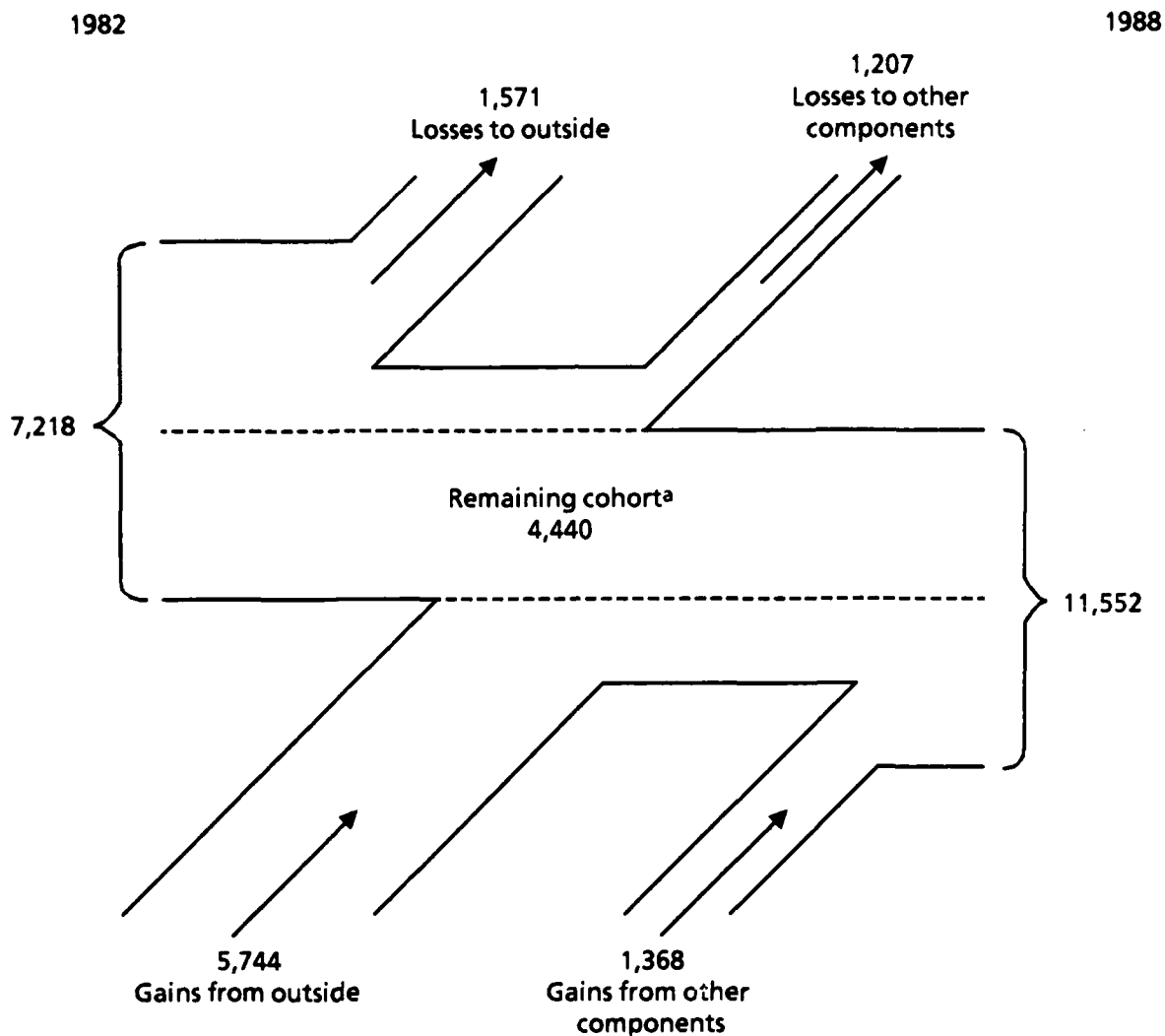


Sources: RCCPDS, 30 June 1982 and 30 June 1988.

• Those nurses in the ARNG in 1982 remaining in the ARNG in 1988 in any category.

FIG. A-1. MIGRATIONS OF ARNG NURSES IN ALL RESERVE CATEGORIES, 1982 - 1988

(Supports Figure 7-1)

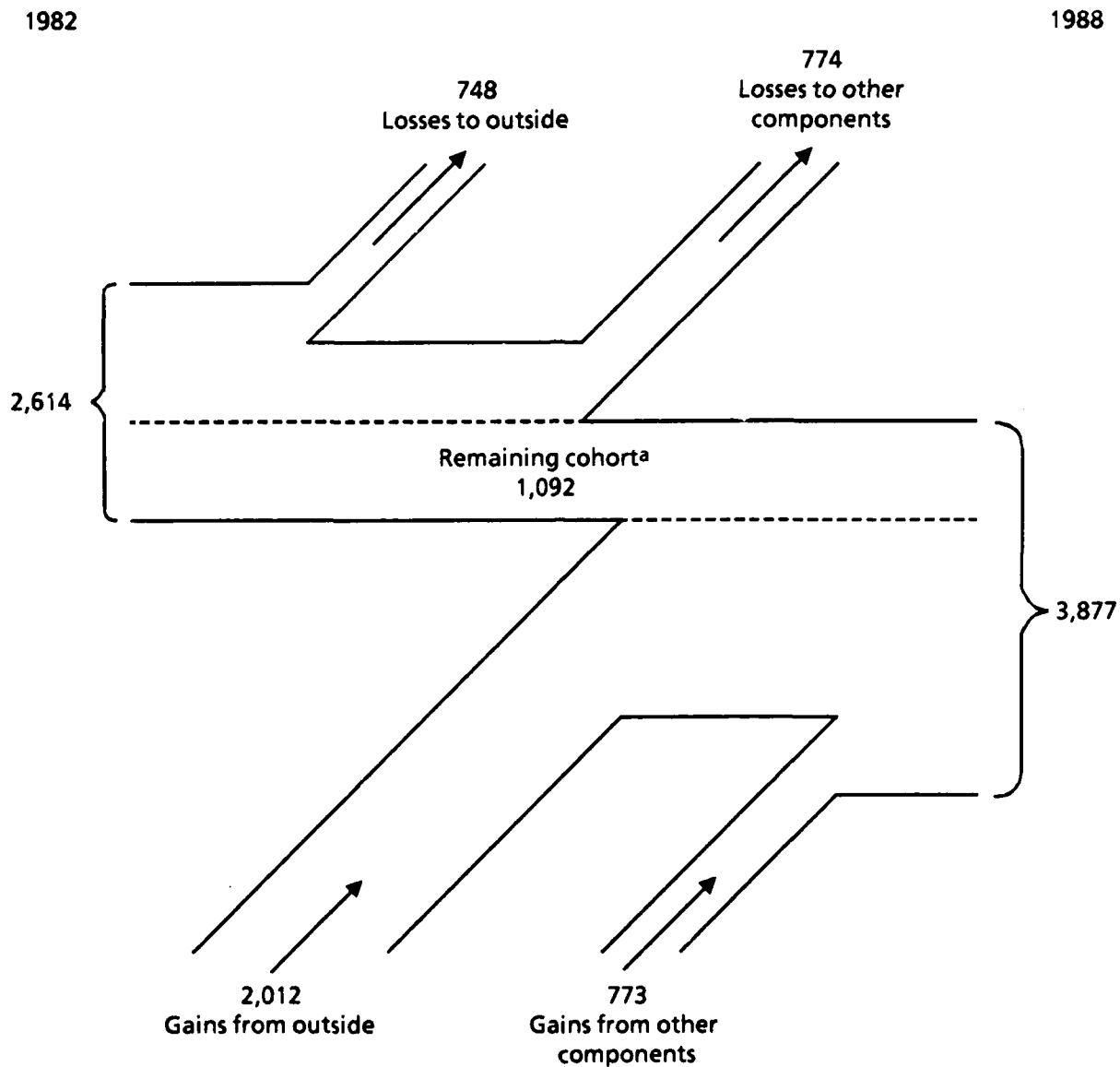


Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Those nurses in the USAR in 1982 remaining in the USAR in 1988 in any category.

FIG. A-2. MIGRATIONS OF USAR NURSES IN ALL RESERVE CATEGORIES, 1982 – 1988

(Supports Figure 7-1)

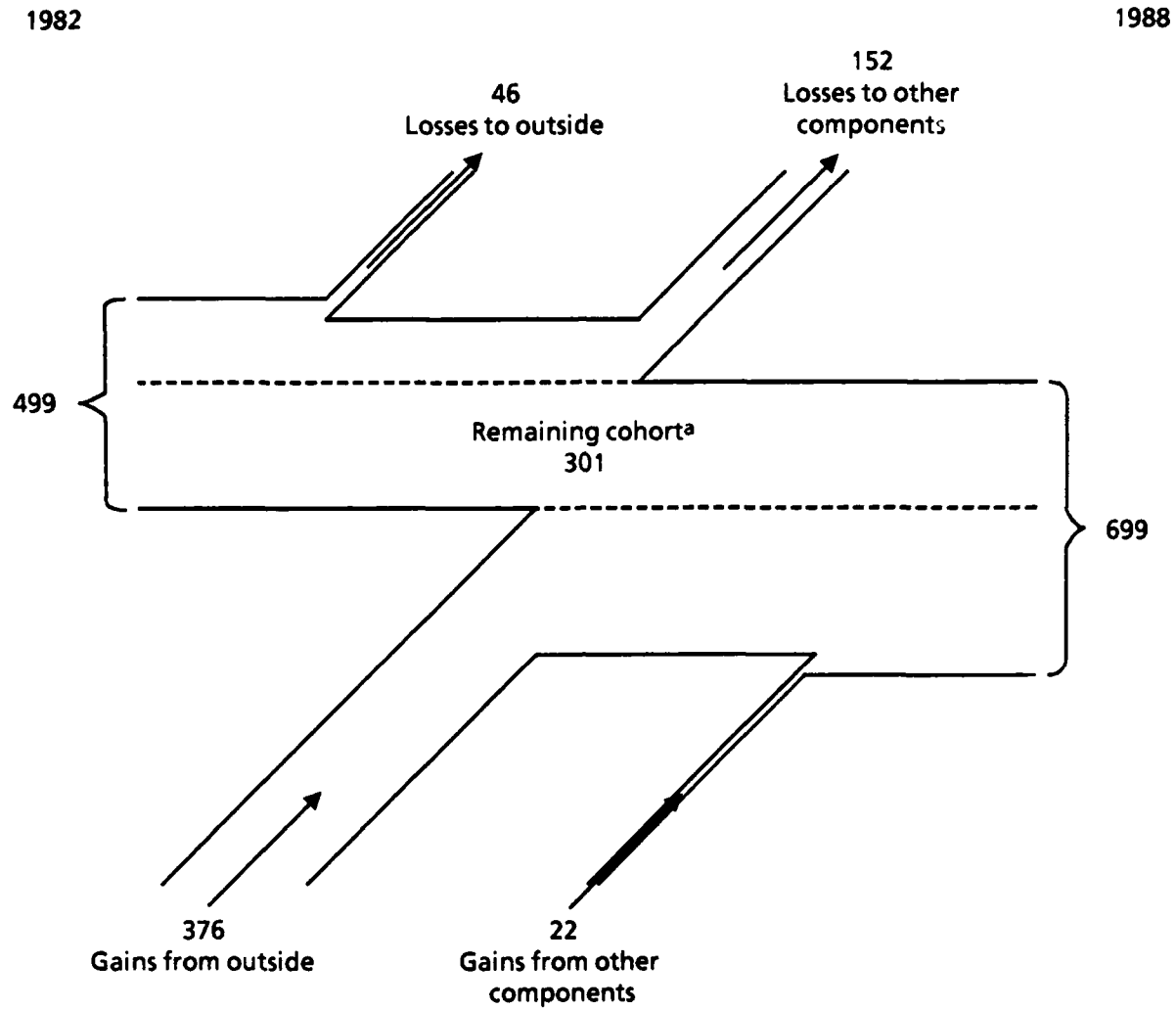


Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Those nurses in the USNR in 1982 remaining in the USNR in 1988 in any category.

FIG. A-3. MIGRATIONS OF USNR NURSES IN ALL RESERVE CATEGORIES, 1982 - 1988

(Supports Figure 7-1)



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

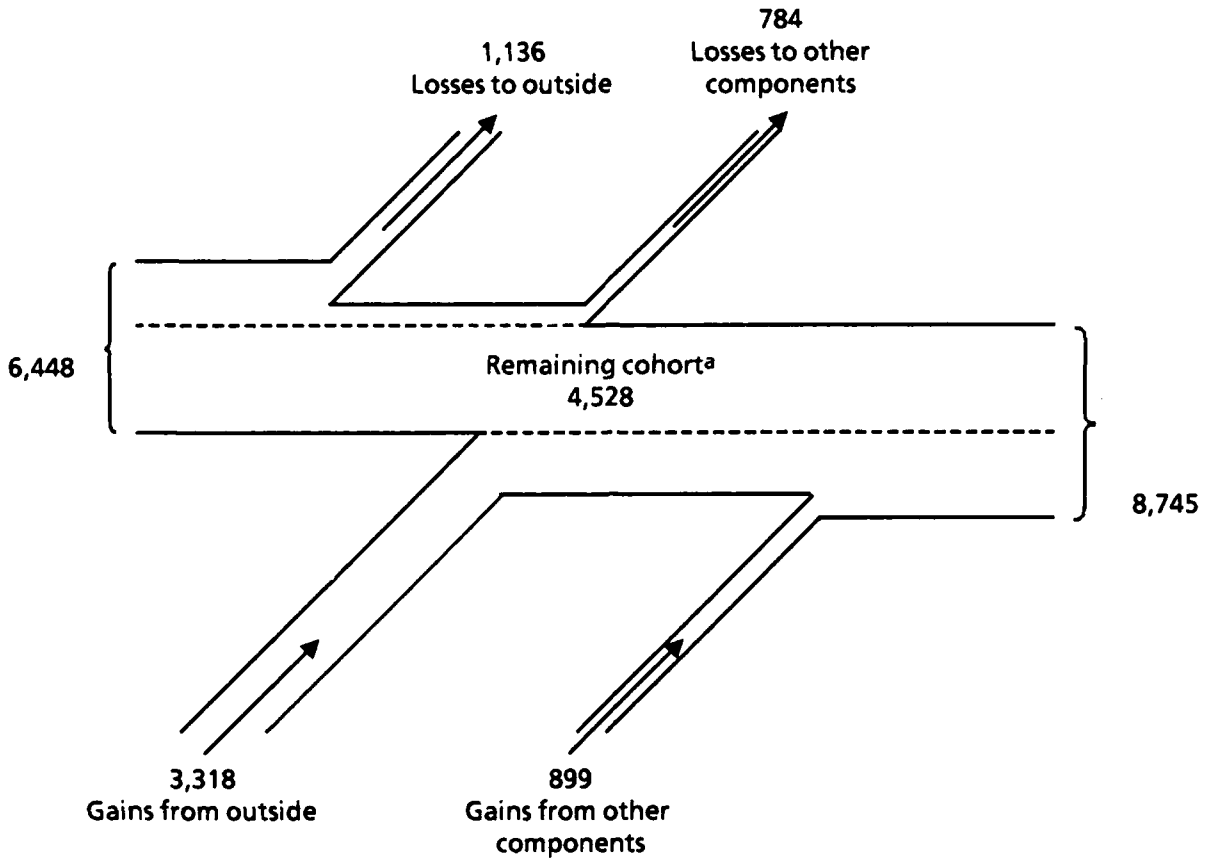
^a Those nurses in the ANG in 1982 remaining in the ANG in 1988 in any category.

FIG. A-4. MIGRATIONS OF ANG NURSES IN ALL RESERVE CATEGORIES, 1982 - 1988

(Supports Figure 7-1)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

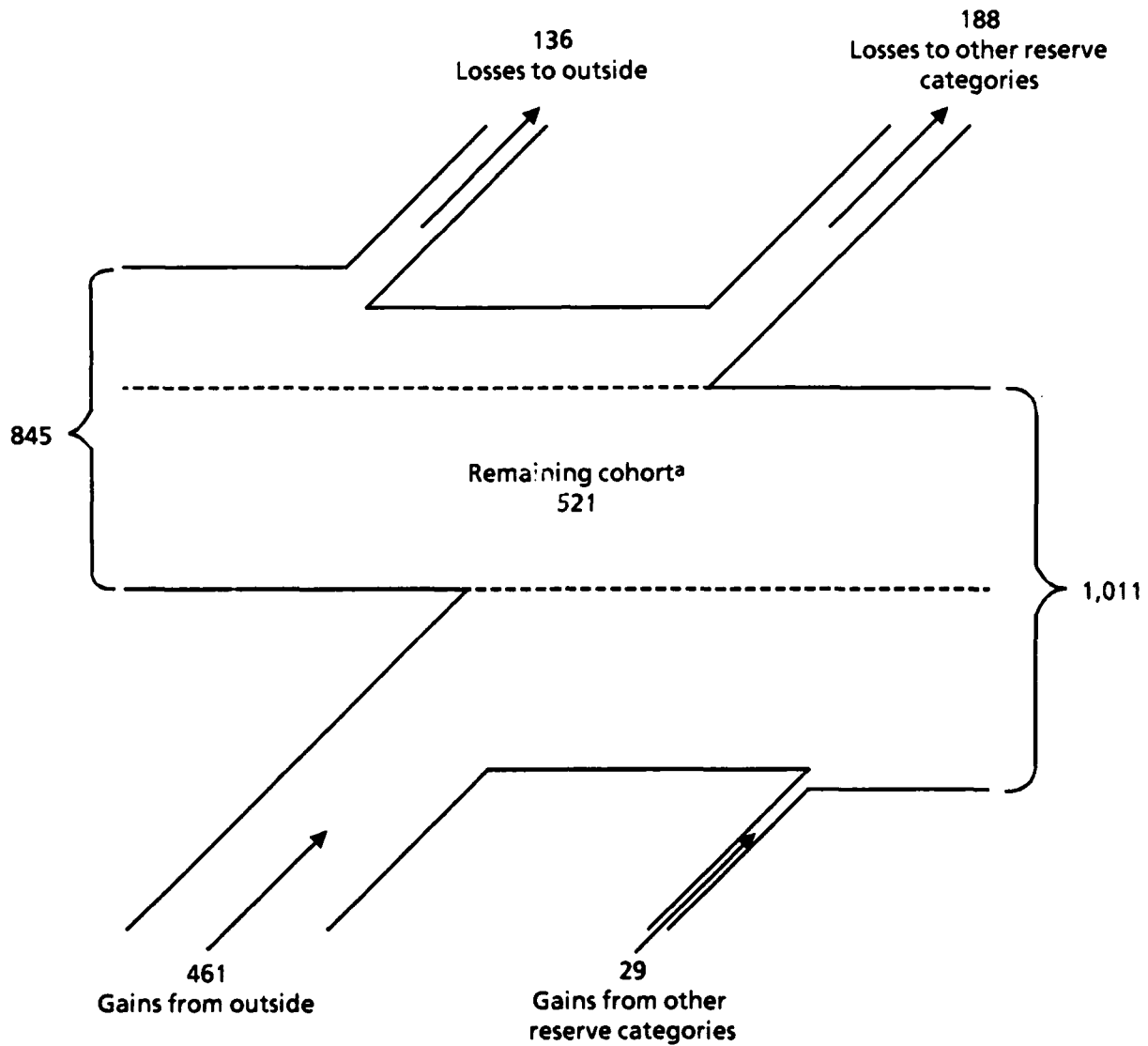
^a Those nurses in the USAFR in 1982 remaining in the USAFR in 1988 in any category.

FIG. A-5. MIGRATIONS OF USAFR NURSES IN ALL RESERVE CATEGORIES, 1982 - 1988

(Supports Figure 7-1)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

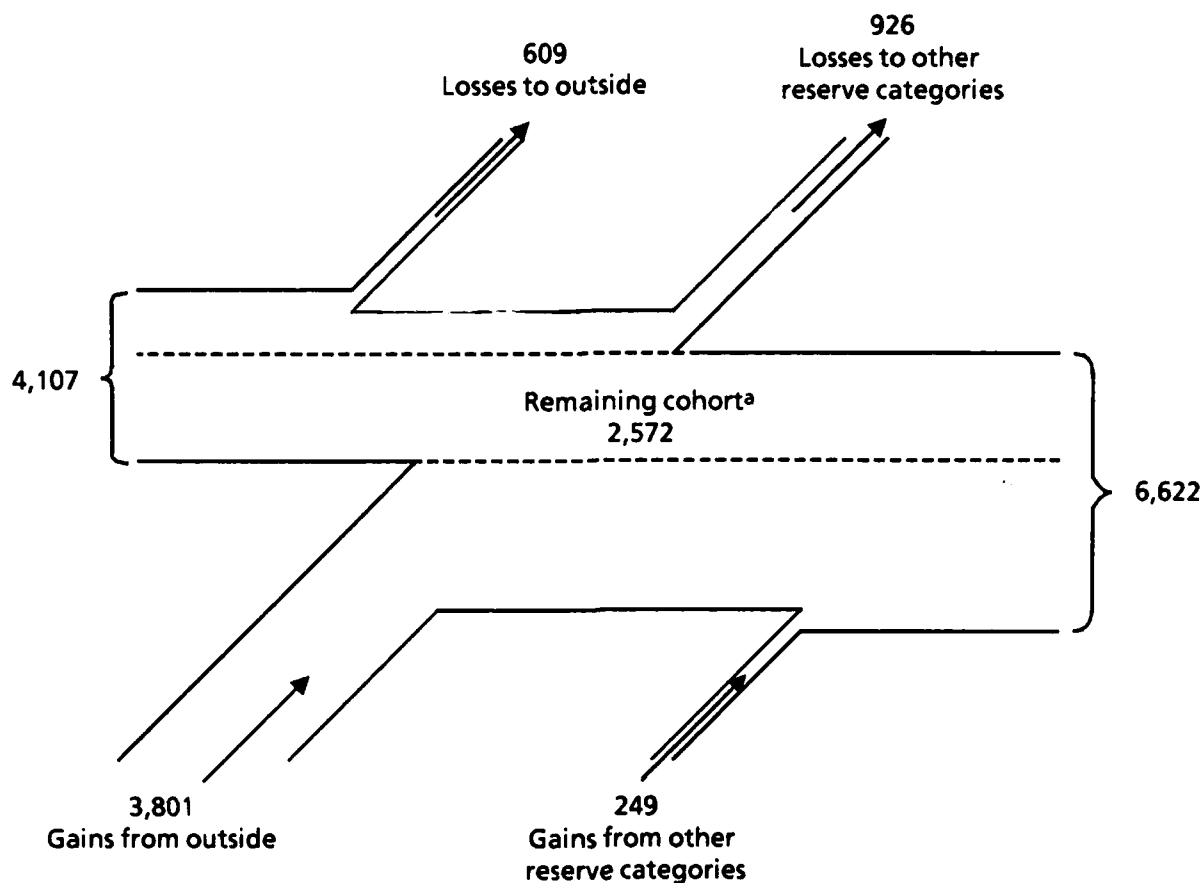
^a Those nurses in the ARNG SELRES in 1982 remaining in the ARNG SELRES in 1988.

FIG. A-6. MIGRATIONS OF ARNG SELRES NURSES, 1982 - 1988

(Supports Figure 7-2)

1982

1988

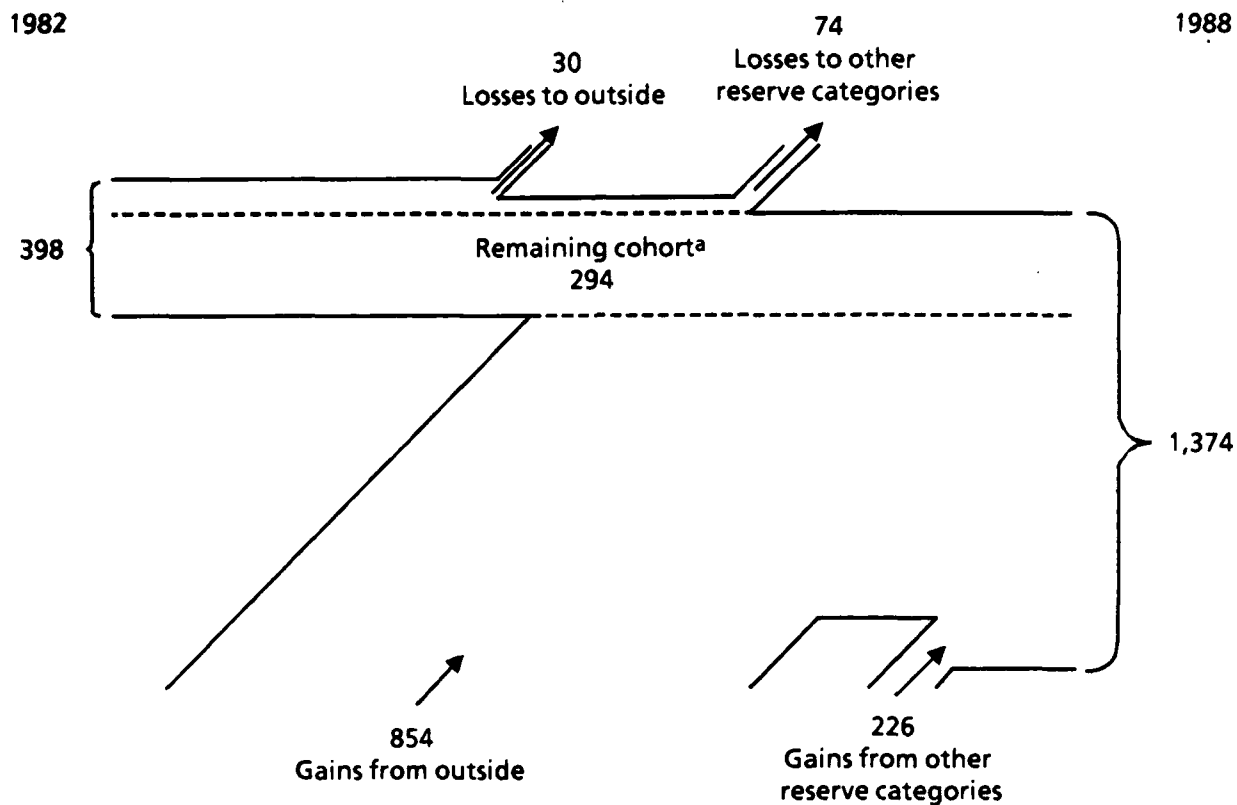


Sources: RCCPDS, 30 June 1982 and 30 June 1988.

* Those nurses in the USAR SELRES in 1982 remaining in the USAR SELRES in 1988.

FIG. A-7. MIGRATIONS OF USAR SELRES NURSES, 1982 – 1988

(Supports Figure 7-2)



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

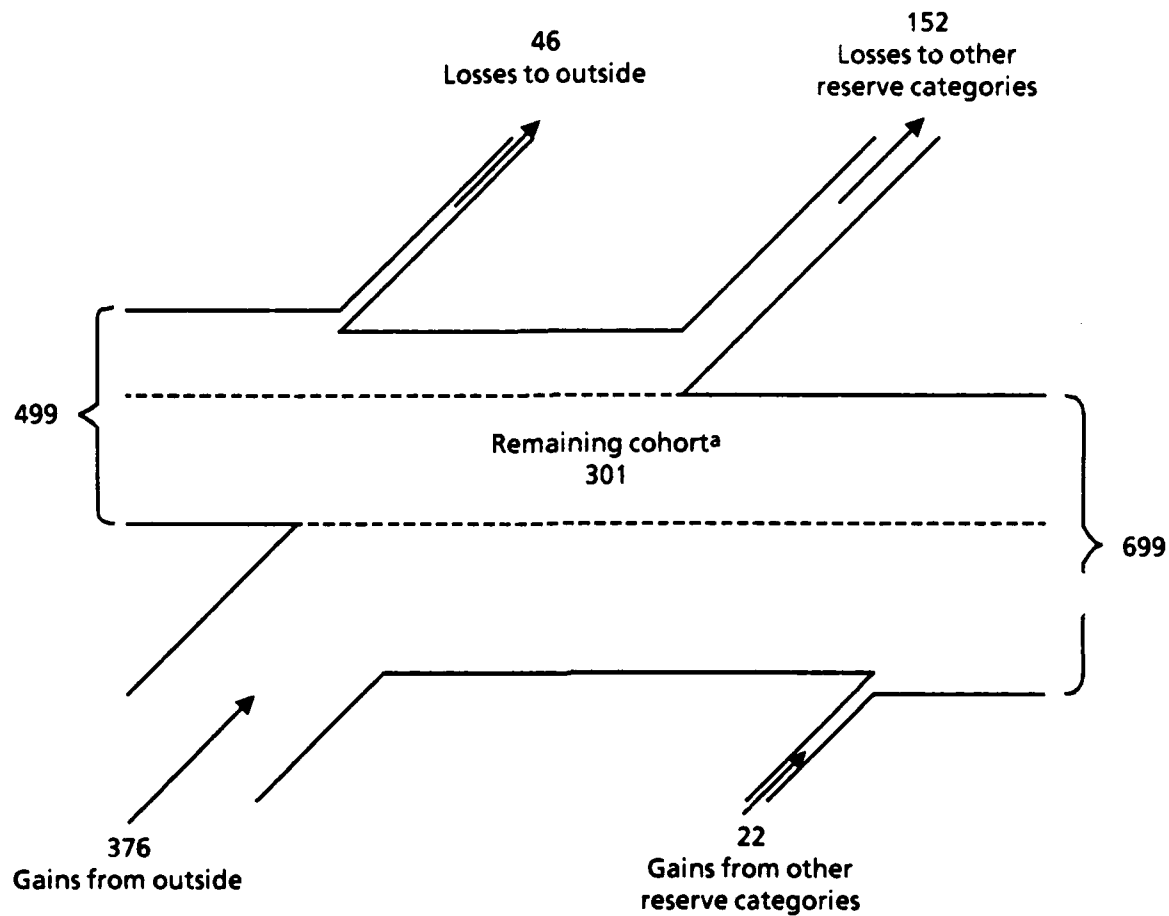
• Those nurses in the USNR SELRES in 1982 remaining in the USNR SELRES in 1988.

FIG. A-8. MIGRATIONS OF USNR SELRES NURSES, 1982 – 1988

(Supports Figure 7-2)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

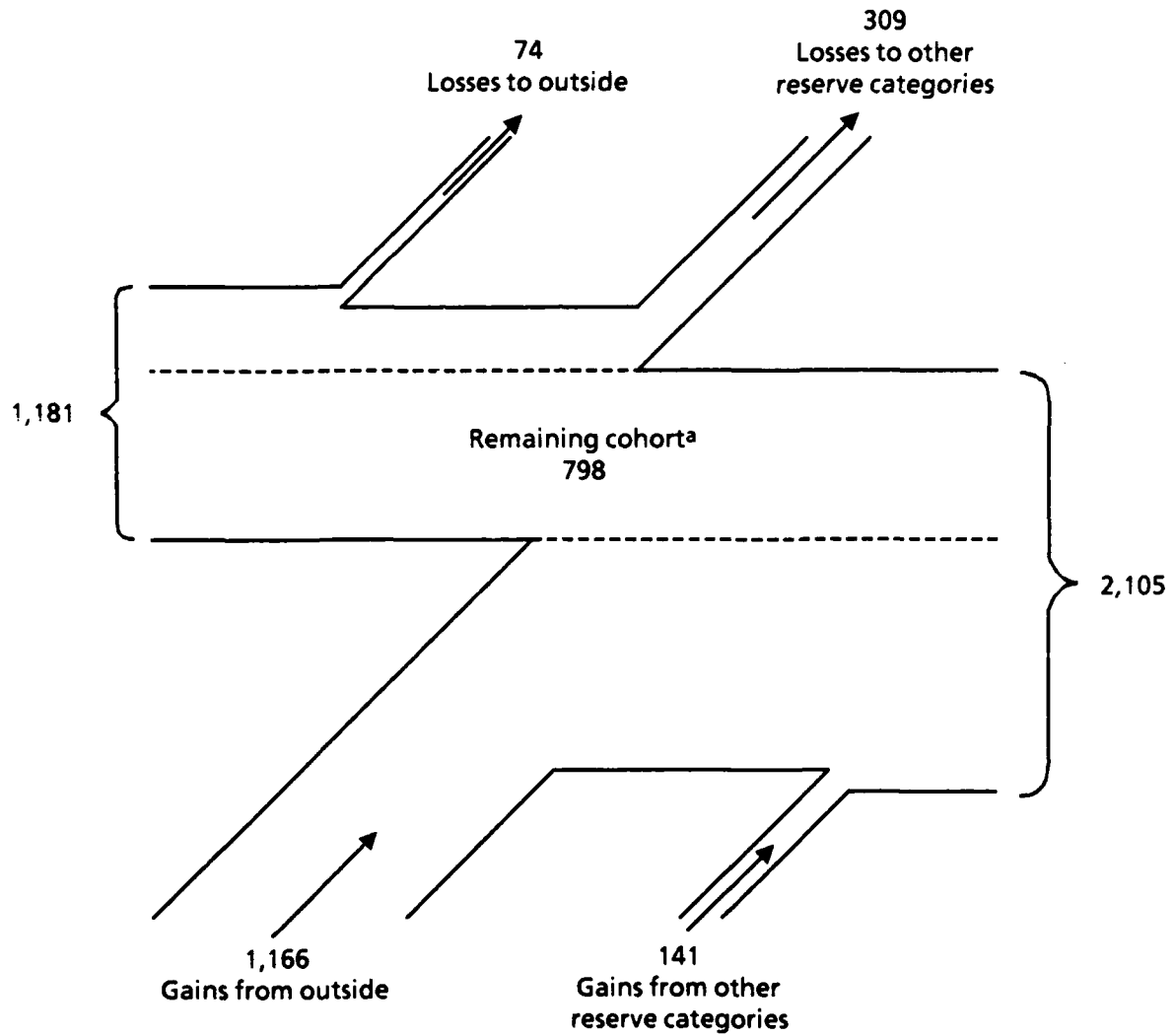
^a Those nurses in the ANG SELRES in 1982 remaining in the ANG SELRES in 1988.

FIG. A-9. MIGRATIONS OF ANG SELRES NURSES, 1982 – 1988

(Supports Figure 7-2)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Those nurses in the USAFR SELRES in 1982 remaining in the USAFR SELRES in 1988.

FIG. A-10. MIGRATIONS OF USAFR SELRES NURSES, 1982 – 1988

(Supports Figure 7-2)

TABLE A-38

**ARNG NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Supports Table 7-1)

(Percent of 1982 inventory)

Migrations	Nurses		All reserve component officers ^a	
	SELRES (percent)	All reserve categories (percent)	SELRES (percent)	All reserve categories (percent)
Gains				
From outside	54.6	54.1	54.8	23.5
From other reserve categories	3.4	N/A ^b	8.3	N/A
Total gains	58.0	54.1	63.1	23.5
Losses				
To outside ^c	16.1	16.2	10.4	20.6
To other reserve categories	22.2	N/A	26.9	N/A
Total losses	38.3	16.2	37.3	20.6
Net gains	19.6	37.8	25.8	2.9

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Individual percentages may not add to totals because of rounding.

^a Excludes U.S. Marine Corps Reserve (USMCR).

^b Not applicable.

^c Outside means beyond the reserve system of five components and four categories.

TABLE A-39

**USAR NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Supports Table 7-1)

(Percent of 1982 inventory)

Migrations	Nurses		All reserve component officers ^a	
	SELRES (percent)	All reserve categories (percent)	SELRES (percent)	All reserve categories (percent)
Gains				
From outside	92.5	79.6	54.8	23.5
From other reserve categories	6.1	N/A ^b	8.3	N/A
Total gains	98.6	79.6	63.1	23.5
Losses				
To outside ^c	14.8	21.8	10.4	20.6
To other reserve categories	22.5	N/A	26.9	N/A
Total losses	37.4	21.8	37.3	20.6
Net gains	61.2	57.8	25.8	2.9

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Individual percentages may not add to totals because of rounding.

^a Excludes USMCR.

^b Not applicable.

^c Outside means beyond the reserve system of five components and four categories.

TABLE A-40

**USNR NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Supports Table 7-1)

(Percent of 1982 inventory)

Migrations	Nurses		All reserve component officers ^a	
	SELRES (percent)	All reserve categories (percent)	SELRES (percent)	All reserve categories (percent)
Gains				
From outside	214.6	77.0	54.8	23.5
From other reserve categories	56.8	N/A ^b	8.3	N/A
Total gains	271.4	77.0	63.1	23.5
Losses				
To outside ^c	7.5	28.6	10.4	20.6
To other reserve categories	18.6	N/A	26.9	N/A
Total losses	26.1	28.6	37.3	20.6
Net gains	245.2	48.4	25.8	2.9

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Individual percentages may not add to totals because of rounding.

^a Excludes USMCR.

^b Not applicable.

^c Outside means beyond the reserve system of five components and four categories.

TABLE A-41

**ANG NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Supports Table 7-1)

(Percent of 1982 inventory)

Migrations	Nurses		All reserve component officers ^a	
	SELRES (percent)	All reserve categories (percent)	SELRES (percent)	All reserve categories (percent)
Gains				
From outside	75.4	75.4	54.8	23.5
From other reserve categories	4.4	N/A ^b	8.3	N/A
Total gains	79.8	75.4	63.1	23.5
Losses				
To outside ^c	9.2	9.2	10.4	20.6
To other reserve categories	30.5	N/A	26.9	N/A
Total losses	39.7	9.2	37.3	20.6
Net gains	40.1	66.1	25.8	2.9

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Individual percentages may not add to totals because of rounding.

^a Excludes USMCR.

^b Not applicable.

^c Outside means beyond the reserve system of five components and four categories.

TABLE A-42

**USAFR NURSE MIGRATIONS COMPARED WITH MIGRATIONS
OF ALL RESERVE COMPONENT OFFICERS, 1982 - 1988**

(Supports Table 7-1)

(Percent of 1982 inventory)

Migrations	Nurses		All reserve component officers ^a	
	SELRES (percent)	All reserve categories (percent)	SELRES (percent)	All reserve categories (percent)
Gains				
From outside	98.7	51.5	54.8	23.5
From other reserve categories	11.9	N/A ^b	8.3	N/A
Total gains	110.7	51.5	63.1	23.5
Losses				
To outside ^c	6.3	17.6	10.4	20.6
To other reserve categories	26.2	N/A	26.9	N/A
Total losses	32.4	17.6	37.3	20.6
Net gains	78.2	33.8	25.8	2.9

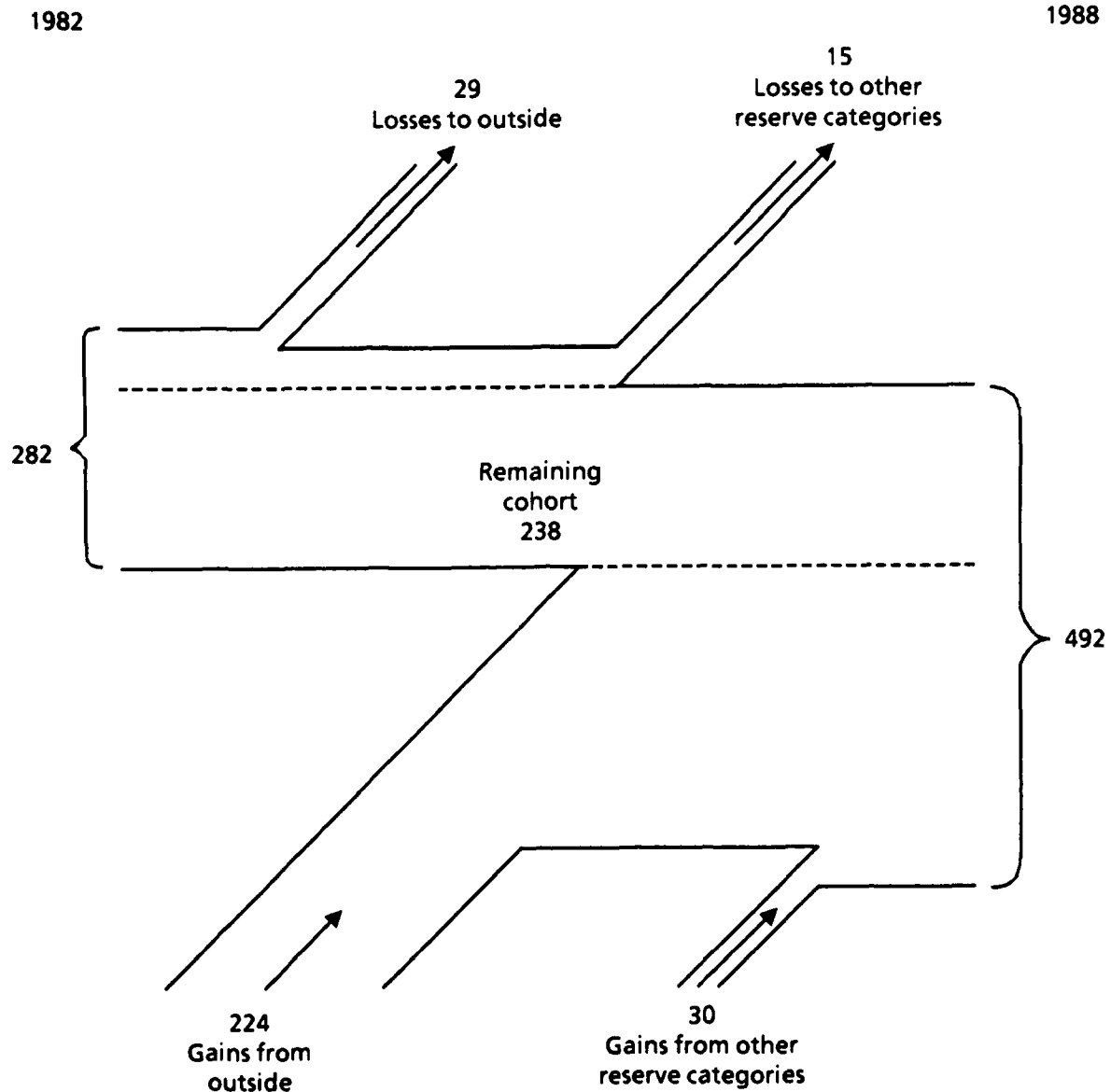
Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Individual percentages may not add to totals because of rounding.

^a Excludes USMCR.

^b Not applicable.

^c Outside means beyond the reserve system of five components and four categories.



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

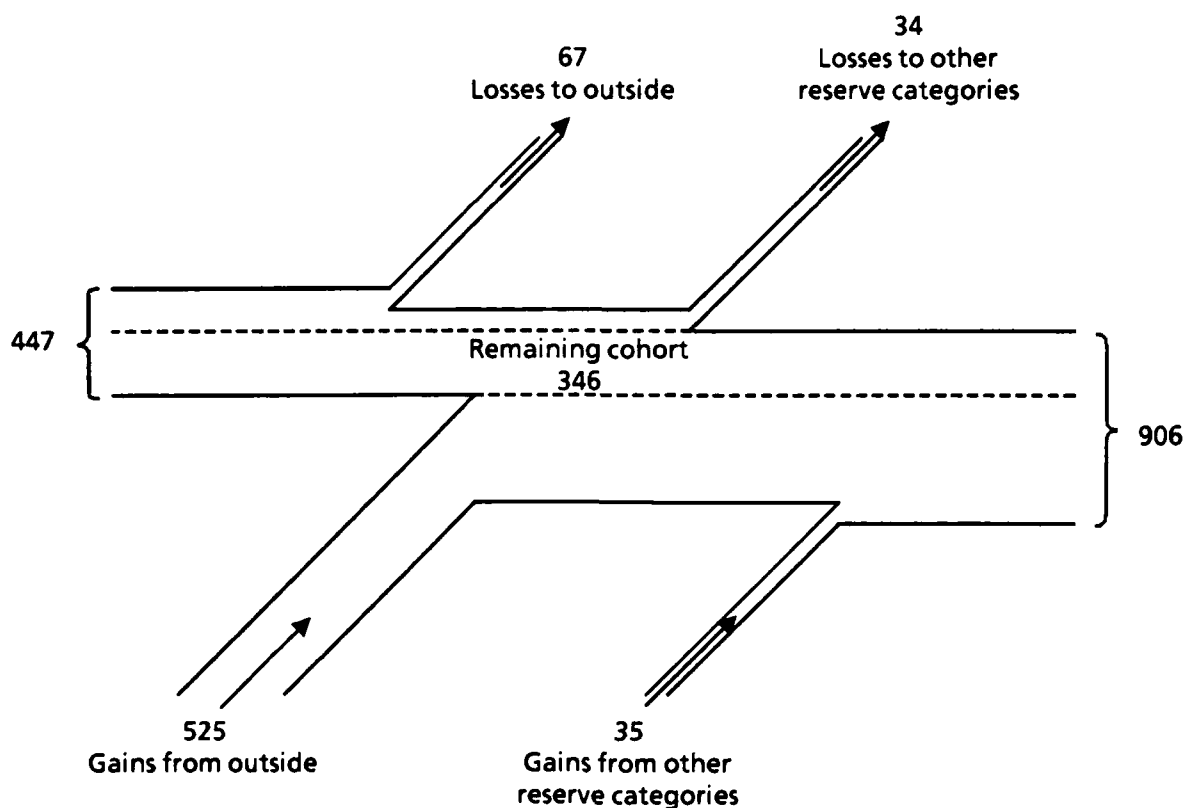
Note: Figure contains combined data from ARNG, USAR, ANG, and USAFR. USNR data not available.

FIG. A-11. MANPOWER FLOW DIAGRAM FOR SELRES NURSE-ANESTHETISTS, 1982 - 1988

(Supports Table 7-4)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

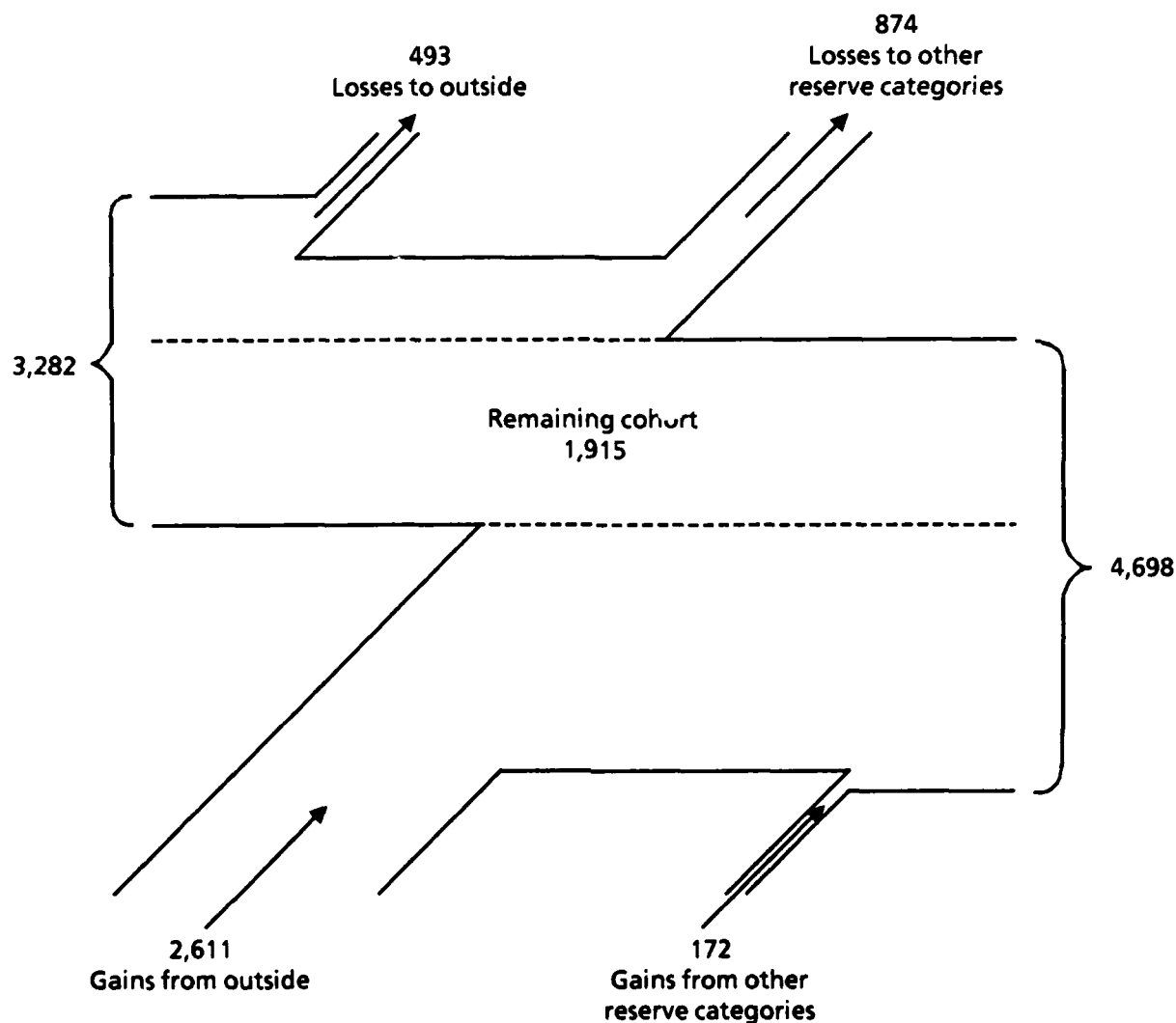
Note: Figure contains combined data from ARNG, USAR, ANG, and USAFR. USNR data not available

FIG. A-12. MANPOWER FLOW DIAGRAM FOR SELRES OPERATING ROOM NURSES, 1982 - 1988

(Supports Table 7-4)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

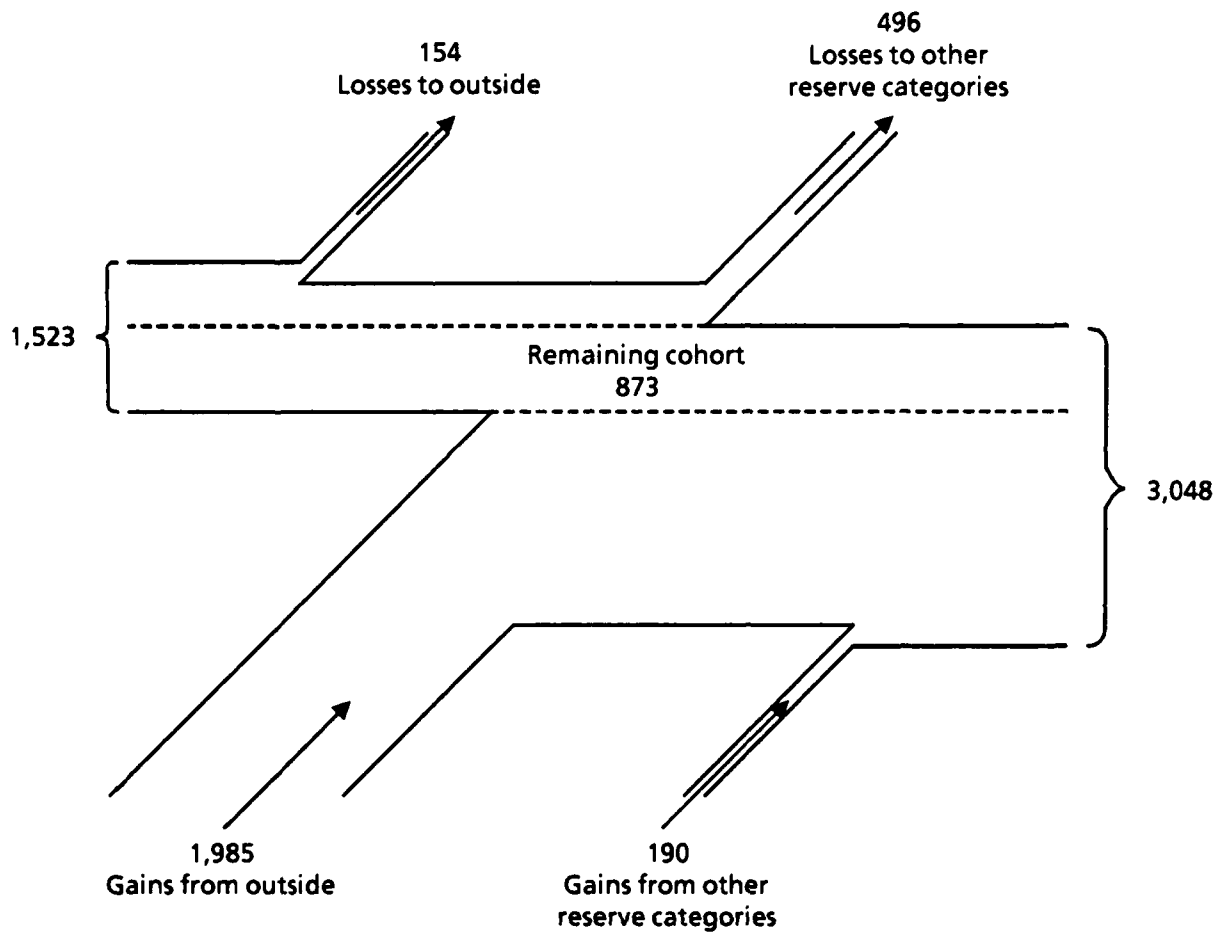
Note: Figure contains combined data from ARNG, USAR, ANG, and USAFR. USNR data not available

FIG. A-13. MANPOWER FLOW DIAGRAM FOR SELRES MEDICAL-SURGICAL NURSES, 1982 - 1988

(Supports Table 7-4)

1982

1988



Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Note: Figure contains combined data from ARNG, USAR, ANG, and USAFR. USNR data not available.

FIG. A-14. MANPOWER FLOW DIAGRAM FOR SELRES CLINICAL NURSES, 1982 – 1988

(Supports Table 7-4)

TABLE A-43

PERSONAL CHARACTERISTICS' CHANGES AMONG ARNG SELRES NURSES, 1982 - 1988

(Supports Table C-3)

Characteristic	1982	1988	Change	
			Number	Percent
Sex				
Male	199	318	119	60
Female	646	693	47	7
Age (years)	35.0	38.6	3.6	N/A ^a
Race and ethnic classification				
White	754	916	162	21
Black	84	85	1	1
Hispanic	42	45	3	7
Asian/American Indian	5	10	5	100
Marital status				
Married	465	630	165	35
Single	380	381	1	0
Dependents				
None	301	255	- 46	- 15
One or two	371	Unknown ^b	-	-
Three or more	173	Unknown	-	-
Highest education attained				
Less than baccalaureate	263	329	66	25
Baccalaureate	467	484	17	4
Master's or more	115	198	83	72

Sources: RCCPDS, 30 June 1982 and 30 June 1988.^a Not applicable.^b RCCPDS data show 756 out of 1,011 nurses with unknown listed for dependents.

TABLE A-44

PERSONAL CHARACTERISTICS' CHANGES AMONG USAR SELRES NURSES, 1982 - 1988

(Supports Table C-3)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	867	1,501	634	73
Female	3,240	5,116	1,876	58
Age (years)	35.5	37.9	2.4	N/A ^a
Race and ethnic classification				
White	3,373	5,113	1,740	52
Black	545	1,151	606	111
Hispanic	70	152	82	117
Asian/American Indian	30	105	75	250
Marital status				
Married	2,221	3,768	1,547	70
Single	1,886	2,704	818	43
Dependents				
None	1,626	1,851	225	14
One or two	1,585	2,639	1,054	66
Three or more	896	1,959	1,063	119
Highest education attained				
Less than baccalaureate	840	1,335 ^b	495	59
Baccalaureate	2,547	2,874	327	13
Master's or more	678	1,206	528	78

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable.^b RCCPDS data shows 1,207 out of 6,622 nurses with unknown listed for education.

TABLE A-45

PERSONAL CHARACTERISTICS' CHANGES AMONG USNR SELRES NURSES, 1982 - 1988

(Supports Table C-3)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	56	201	145	259
Female	342	1,173	831	243
Age (years)	33.0	35.8	2.8	N/A ^a
Race and ethnic classification				
White	356	1,232	876	246
Black	11	48	37	336
Hispanic	1	24	23	2,300
Asian/American Indian	2	19	17	850
Marital status				
Married	217	768	551	254
Single	181	604	423	234
Dependents				
None	189	598	409	216
One or two	137	391	254	185
Three or more	72	383	311	432
Highest education attained				
Less than baccalaureate	101	203 ^b	102	101
Baccalaureate	217	663	446	206
Master's or more	65	232	167	257

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable.^b RCCPDS data show 276 out of 1,374 nurses with unknown listed for education.

TABLE A-46

PERSONAL CHARACTERISTICS' CHANGES AMONG ANG SELRES NURSES, 1982 - 1988

(Supports Table C-3)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	85	144	59	69
Female	414	555	141	34
Age (years)	35.7	36.6	0.9	N/A ^a
Race and ethnic classification				
White	456	643	187	41
Black	32	46	14	44
Hispanic	13	14	1	8
Asian/American Indian	7	10	3	43
Marital status				
Married	245	419	174	71
Single	254	280	26	10
Dependents				
None	234	328	94	40
One or two	173	218	45	26
Three or more	92	153	61	66
Highest education attained				
Less than baccalaureate	251	315	64	25
Baccalaureate	176	294	118	67
Master's or more	70	88	18	26

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable.

TABLE A-47

PERSONAL CHARACTERISTICS' CHANGES AMONG USAFR SELRES NURSES, 1982 - 1988

(Supports Table C-3)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	157	316	159	101
Female	1,024	1,789	765	75
Age (years)	36.4	36.7	0.3	N/A ^a
Race and ethnic classification				
White	1,088	1,910	822	76
Black	73	158	85	116
Hispanic	13	32	19	146
Asian/American Indian	16	30	14	88
Marital status				
Married	552	1,178	626	113
Single	629	927	298	47
Dependents				
None	617	1,106	489	79
One or two	379	669	290	77
Three or more	185	330	145	78
Highest education attained				
Less than baccalaureate	424	665	241	57
Baccalaureate	538	1,044	506	94
Master's or more	216	391	175	81

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a Not applicable.

TABLE A-48

**CHANGES IN BACCALAUREATE ATTAINMENT OF ARNG SELRES NURSES BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-4)

Characteristic	1982	1988	Change	
			Number	Percent
Sex				
Male	136	202	66	49
Female	446	480	34	8
Race and ethnic classification				
White	516	614	98	19
Black	60	59	- 1	- 2
Hispanic	29	38	9	31
Asian/American Indian	4	9	5	125

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-49

**CHANGES IN BACCALAUREATE ATTAINMENT OF USAR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1988**

(Supports Table C-4)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	629	860	231	37
Female	2,596	3,219	623	24
Race and ethnic classification				
White	2,672	3,231	559	21
Black	426	716	290	68
Hispanic	46	95	49	107
Asian/American Indian	24	74	50	208

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-50

**CHANGES IN BACCALAUREATE ATTAINMENT OF USNR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-4)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	41	124	83	202
Female	241	771	530	220
Race and ethnic classification				
White	251	799	548	218
Black	8	36	28	350
Hispanic	1	18	17	1,700
Asian/American Indian	2	10	8	400

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-51

**CHANGES IN BACCALAUREATE ATTAINMENT OF ANG SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-4)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	32	69	37	116
Female	214	313	99	46
Race and ethnic classification				
White	223	350	127	57
Black	14	23	9	64
Hispanic	8	9	1	13
Asian/American Indian	6	7	1	17

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-52

**CHANGES IN BACCALAUREATE ATTAINMENT OF USAFR SELRES NURSES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-4)

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	99	189	90	91
Female	655	1,246	591	90
Race and ethnic classification				
White	703	1,295	592	84
Black	45	110	65	144
Hispanic	11	24	13	118
Asian/American Indian	5	22	17	340

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-53

**CHANGES IN ARNG SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-5)

Characteristic and primary specialty	1982	1988	Change	
			Number	Percent
Sex				
Male				
Nurse-administrator	8	11	3	38
Nurse-anesthetist	24	34	10	42
Operating room nurse	19	32	13	68
Female				
Nurse-administrator	24	46	22	92
Nurse-anesthetist	12	22	10	83
Operating room nurse	58	85	27	47
Race and ethnic classification				
White				
Nurse-administrator	30	55	25	83
Nurse-anesthetist	31	51	20	65
Operating room nurse	69	109	40	58
Black				
Nurse-administrator	2	1	- 1	- 50
Nurse-anesthetist	5	4	- 1	- 20
Operating room nurse	6	7	1	17
Hispanic				
Nurse-administrator	2	6	4	200
Nurse-anesthetist	1	2	1	100
Operating room nurse	6	7	1	17
Asian/American Indian				
Nurse-administrator	0	0	0	0
Nurse-anesthetist	0	1	1	∞
Operating room nurse	2	1	- 1	- 50

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-54

**CHANGES IN USAR SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-5)

Characteristic and primary specialty	1982	1988	Increase	
			Number	Percent
Sex				
Male				
Nurse-administrator	9	12	3	33
Nurse-anesthetist	115	225	110	96
Operating room nurse	67	149	82	122
Female				
Nurse-administrator	36	60	24	67
Nurse-anesthetist	54	88	34	63
Operating room nurse	211	422	211	100
Race and ethnic classification				
White				
Nurse-administrator	42	55	13	31
Nurse-anesthetist	152	285	133	88
Operating room nurse	232	454	222	96
Black				
Nurse-administrator	2	10	8	400
Nurse-anesthetist	13	20	7	54
Operating room nurse	35	88	53	151
Hispanic				
Nurse-administrator	1	1	0	0
Nurse-anesthetist	1	2	1	100
Operating room nurse	3	3	0	0
Asian/American Indian				
Nurse-administrator	0	2	2	∞
Nurse-anesthetist	0	0	0	0
Operating room nurse	6	8	2	33

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-55

**CHANGES IN USNR SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-5)

Characteristic and primary specialty	1982	1988 ^a	Change	
			Number	Percent
Sex				
Male				
Nurse-administrator	4	0	- 4	- 100
Nurse-anesthetist	15	12	- 3	20
Operating room nurse	3	5	2	67
Female				
Nurse-administrator	11	5	- 6	- 55
Nurse-anesthetist	5	5	0	0
Operating room nurse	16	28	12	75
Race and ethnic classification				
White				
Nurse-administrator	42	4	- 38	- 90
Nurse-anesthetist	152	17	- 135	- 89
Operating room nurse	232	30	- 202	- 87
Black				
Nurse-administrator	2	1	- 1	50
Nurse-anesthetist	13	0	- 13	- 100
Operating room nurse	35	1	- 34	- 97
Hispanic				
Nurse-administrator	0	0	0	0
Nurse-anesthetist	0	1	1	∞
Operating room nurse	0	1	1	∞
Asian/American Indian				
Nurse-administrator	0	0	0	0
Nurse-anesthetist	0	0	0	0
Operating room nurse	1	0	- 1	- 100

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a In FY87, the Navy changed its specialty coding system from NOBC to subspecialty designators. In the FY88 RCCPDS file, 892 nurses had not been assigned the new subspecialty designator code. Therefore, data for FY88 are not available and nurses cannot be classified by specialty.

TABLE A-56

**CHANGES IN ANG SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX,
RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-5)

Characteristic and primary specialty	1982	1988	Change	
			Number	Percent
Sex				
Male				
Nurse-administrator	0	3	3	∞
Nurse-anesthetist	4	4	0	0
Operating room nurse	1	3	2	200
Female				
Nurse-administrator	4	35	31	775
Nurse-anesthetist	7	4	-3	-43
Operating room nurse	22	19	-3	-14
Race and ethnic classification				
White				
Nurse-administrator	4	4	0	0
Nurse-anesthetist	11	17	6	55
Operating room nurse	22	30	8	36
Black				
Nurse-administrator	0	1	1	∞
Nurse-anesthetist	0	0	0	0
Operating room nurse	1	1	0	0
Hispanic				
Nurse-administrator	0	3	3	∞
Nurse-anesthetist	0	0	0	0
Operating room nurse	1	0	-1	-100
Asian/American Indian				
Nurse-administrator	0	2	2	∞
Nurse-anesthetist	0	0	0	0
Operating room nurse	0	0	0	0

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-57

**CHANGES IN USAFR SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX,
RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988**

(Supports Table C-5)

Characteristic and primary specialty	1982	1988	Change	
			Number	Percent
Sex				
Male				
Nurse-administrator	11	5	- 6	- 55
Nurse-anesthetist	28	55	27	96
Operating room nurse	9	21	12	133
Female				
Nurse-administrator	69	88	19	28
Nurse-anesthetist	18	42	24	133
Operating room nurse	41	140	99	241
Race and ethnic classification				
White				
Nurse-administrator	75	90	15	20
Nurse-anesthetist	44	88	44	100
Operating room nurse	47	146	99	211
Black				
Nurse-administrator	4	2	- 2	- 50
Nurse-anesthetist	2	6	4	200
Operating room nurse	2	10	8	400
Hispanic				
Nurse-administrator	2	1	- 1	- 50
Nurse-anesthetist	0	0	0	0
Operating room nurse	0	1	1	∞
Asian/American Indian				
Nurse-administrator	0	1	1	∞
Nurse-anesthetist	0	0	0	0
Operating room nurse	1	3	2	200

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-58

CHANGES IN MILITARY CHARACTERISTICS OF ARNG SELRES NURSES, 1982 - 1988

(Supports Table C-6)

Characteristic	1982	1988	Change	
			Number	Percent
MSO remaining	391	141	- 250	- 64
Direct commission	86	934	848	986
Mandatory removal within 10 years	358	307	- 51	- 14
Average years of service	6.6	10.3	3.7	56
Grades				
01/02	346	346	0	0
03/04	465	560	95	20
05	27	85	58	215
06	7	20	13	186

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-59

CHANGES IN MILITARY CHARACTERISTICS OF USAR SELRES NURSES, 1982 - 1988

(Supports Table C-6)

Characteristic	1982	1988	Change	
			Number	Percent
MSO remaining	671	1,639 ^a	968	144
Direct commission	395	5,718	5,323	1,348
Mandatory removal within 10 years	1,998	1,742	- 256	- 13
Average years of service	8.0	9.1	1.1	14
Grades				
01/02	1,206	2,925	1,719	143
03/04	2,621	3,017	396	15
05	182	545	363	199
06	98	135	37	38

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a In addition to the 1,639 USAR nurses coded in 1988 as having a portion of their MSOs remaining, RCCPDS reports an additional group of 4,983 out of 6,622 USAR SELRES nurses listed as unknown for MSO.

TABLE A-60

INCREASES IN MILITARY CHARACTERISTICS OF USNR SELRES NURSES, 1982 - 1988

(Supports Table C-6)

Characteristic	1982	1988	Increase	
			Number	Percent
MSO remaining	397	1,363 ^a	966	243
Direct commission	216	1,344	1,128	522
Mandatory removal within 10 years	252	283	31	12
Average years of service	10.6	10.7	0.1	1
Grades				
01/02	13	279	266	2,046
03/04	369	914	545	148
05	14	153	139	993
06	1	28	27	2,700

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a This total represents 99 percent (1,363 out of 1,374) of all USNR SELRES nurses. The data appear to be incorrect.

TABLE A-61

INCREASES IN MILITARY CHARACTERISTICS OF ANG SELRES NURSES, 1982 - 1988

(Supports Table C-6)

Characteristic	1982	1988	Change	
			Number	Percent
MSO remaining	106	228	122	115
Direct commission	101	682	581	575
Mandatory removal within 10 years	Unknown	335	Unknown	Unknown
Average years of service	9.6	10.3	0.7	7
Grades				
01/02	133	299	166	125
03/04	316	295	- 21	- 7
05	50	104	54	108
06	0	1	1	∞

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

TABLE A-62

INCREASES IN MILITARY CHARACTERISTICS OF USAFR SELRES NURSES, 1982 - 1988

(Supports Table C-6)

Characteristic	1982	1988	Change	
			Number	Percent
MSO remaining	118	613	495	419
Direct commission	83	2,023	1,940	2,337
Mandatory removal within 10 years	644	525	- 119	- 18
Average years of service	10.4	10.6	0.2	2
Grades				
01/02	213	807	594	279
03/04	826	993	167	20
05	114	248	134	118
06	28	57	29	104

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

APPENDIX B

ANNOTATED BIBLIOGRAPHY

ABT Associates, Inc. *Effects of Federal Support for Nursing Education on Admissions, Graduations, and Retention Rates at Schools of Nursing.* Report prepared for Health Resources Administration, 7 June 1982.

This study estimates the impact of the Nurse Training Act of 1964's support of nursing education on the number of students admitted to, retained in, and graduated from the three types of nursing-training programs, between 1969 and 1979. Data on numbers of nursing students, characteristics of nursing schools, and financial aid were obtained by the author on computer tape from the Health Resources Administration. Usable data covered 1,527 nursing programs. The report discusses extensively the difficulty of achieving major conclusions due to limitations in the data and in usable models. Nonetheless, the study reaches the following conclusions: (1) nursing school admissions increased about 47,000 due to the availability of funding under the Act; the total effect was distributed fairly across the diploma, associate, and baccalaureate nursing programs; (2) no consistent relationship appeared between receipt of funds and nursing school attritions; (3) an estimated increase of 32,800 to 42,000 in graduates resulted from funding during the years 1969 through 1979; and (4) no evidence indicates that Federal aid was more effective in states with low ratios of nurses to population than in states with high ratios.

Tabular materials, principally reporting regression results, are arranged by basic nurse training program for each year.

Adkison, Patsy C. *Comparison of Job Attitudes Between Physicians, Nurses, Other Medical Officers, and Other Air Force Officers.* Maxwell Air Force Base, AL: Air Command and Staff College, Air University, 1986.

The objective of this study was to analyze significant job attitudinal differences among medical officer groups and other Air Force officers. The Organizational Assessment Package survey produced data that were collected from October 1981 to September 1985. The package was designed jointly by the Air Force Human Resources Laboratory and the Leadership Management Development Center (LMDC). The data were not collected from a random sample, but rather only from personnel working at facilities where the Commander requested the LMDC study. No response rate data are presented, nor are comparisons made with the total population. No mention is made of follow-up attempts or validation of questionnaire items.

The sample examined was large and included 322 physicians, 567 nurses, 577 other medical officers, and 8,118 other Air Force officers. The findings indicate that nurses scored lowest on all measures, such as leadership and unit effectiveness, advancement and recognition, job-related satisfaction, pride and work group effectiveness, organizational climate, and military mission resource factors. The author makes suggestions for improving the image that medical officers, especially nurses, hold of

their work and organizations. This study contains interesting findings despite methodological weaknesses.

Alexander, Elizabeth A. *Planning Your Career in the USAF Nurse Corps*. Maxwell Air Force Base, AL: Air Command and Staff College, Air University, Master's thesis, August 1982.

This paper provides a concise guide of career and educational opportunities available to Air Force nurses. It lists courses for professional military education, career-broadening education, and collegiate programs. In addition, it presents special duty assignments available to nurses. The resulting "handbook" includes descriptions of courses, objectives, selection criteria, application procedures, and benefits of each educational option. This guide would be most helpful to military nurses and may prove a useful tool for improving retention.

American Academy of Nursing, Task Force on Nursing Practice in Hospitals. *Magnet Hospitals: Attraction and Retention of Professional Nurses*. Kansas City, MO: American Nurses' Association, 1983.

This study investigates magnet hospitals (those which attract and retain professional nurses) to identify the factors that seem to be associated with their successes. Forty-one hospitals were identified by a panel. Directors of nursing and staff nurses at each site were interviewed. Written post-interview comments were solicited from the participants.

The broad categories of administration, professional practice, and professional development are emphasized in the study. Some factors expressed by staff nurses as being important in promoting recruitment and retention are: nurse-patient ratio, flexible staffing and scheduling, supportive administration, clinical advancement opportunities, participative management, good nurse-physician relationships, and educational benefits.

American Hospital Association. *The Nursing Shortage: Facts, Figures, and Feelings*. Chicago, IL: 1987.

This book presents information available to AHA in 1987 about the nurse shortage problem. The findings from the 1986 AHA-sponsored focus group research are presented. Those findings are particularly useful in identifying the career expectations and satisfactions of nursing students and of practicing nurses.

A chapter that presents data on the hospital nurse supply is most helpful. Data are reported about nurse vacancy rates, hospital recruitment channels, and specialty recruiting times by hospital size, type, service, and location. An excellent literature review is included. Recruiting and marketing strategies are recommended.

American Hospital Association. *Surviving the Nursing Shortage: Strategies for Recruitment and Retention of Hospital Nurses*. Chicago, IL: 1987.

The American Hospital Association (AHA), in cooperation with the American Organization of Nurse Executives, published this book to help hospitals formulate strategies to attack their own nurse recruitment and retention problems. The book contains chapters that suggest ways systematically to assess problems in the hospital

environment and ways to develop multidisciplinary market plans to recruit and retain nurses. In addition, hospital case studies are presented to demonstrate successful strategies.

The results of AHA focus group research, undertaken in 1986, are presented. These findings synthesize previous research findings and highlight sources of job satisfaction.

American Nurses' Association. *Facts About Nursing 86-87*. Kansas City, MO: 1987.

This biennial report is a rich compilation of data drawn from various sources. It contains data about nurse supply and population, demographic information on registered nurses, the educational system, credentialing, employment, and salary and benefits for working nurses. Contains 171 tables.

Ayer, N. W. *Report for Army Reserve SGO [Surgeon General's Office] Focus Groups*. U.S. Army Reserve, Unpublished report, November 1983.

Twenty-one focus group discussions were held in eight cities in September and October 1983; each group was composed of seven medical students, seven doctors with 5 years' experience or less, and seven physicians with more than 5 years in civilian practice (total N = 72). The purpose was to explore current perceptions regarding the armed forces generally, and the Army Reserve specifically. Findings indicate that the physician segment had a low level of awareness of the Army Reserve and its benefits (with the exception of military scholarships and certain specialty residencies that constitute "good deals"); low interest in the reserve components, especially the long, 6-year commitment; negative receptivity of salary and benefits, better earned elsewhere; skills expected to be underutilized; military medicine rated second class and military physicians as mediocre; and patriotism is not a factor in peacetime and civic duty fulfilled by civilian practice (in major war the participants would serve). Students and doctors with less than 5 years' experience saw some benefit in community service and patriotism, physical fitness, opportunity to get away, good training workshops, and retirement benefits.

Ayer, N. W. *A Study Among Doctors in the U.S. Army Reserve: Background for Advertising Development to Increase Recruitment into the Army Reserve Medical Corps*. U.S. Army Reserve, Unpublished report, April 1984.

Four focus groups were held in Boston and Chicago with 35 Army Reserve physicians as participants. Most were satisfied with experience and saw such major benefits as working with quality personnel; joining the big team, comradeship, and esprit de corps; learning new skills, earning respect and pride, enjoyment of "getting away from it all"; and making personal friendships. Negative factors included feeling misled about rank (lower than promised), advancement (slow), conference attendance (limited to 800 miles), inability to practice specialty, boredom during weekend drill; receiving negative reactions from peers, employers, and family (who resented time away); and adjusting to military life.

Ayers, James L. *A Study of Non-Economic Motivational Practice for Non-Professional Key Civilian Employees of Naval Medical Facilities.* Waco, TX: Baylor University, Graduate research project, 1983.

Since civilian salaries are set by law for Federal employees under the categories Civil Service or wage grade, this study asked what motivates key nonprofessional employees to perform at optimal ability. In addition, it looked at how administrators view motivations so that motivator skills can be improved. Four naval regional medical centers were randomly selected from a list of CONUS regional medical centers and naval hospitals. Two questionnaires that asked about motivational philosophies and practices were mailed; one was for administrators and one for key personnel. One hundred fifty-six employees (response rate 78 percent) and 40 administrators (response rate 92.5 percent) returned the questionnaires.

The responses are not categorized by occupation and, as a result, this study is of little use to the present effort. It offers a good literature review on job motivations. Its findings do identify motivators of health employees who, the author claims, are paid from 20 to 75 percent less in naval hospitals than in the private sector.

Backer, Jr., Mah. "Physician Recruiting for One Navy." *Military Medicine* 146. July 1981, pp. 485 - 490.

The benefits and disadvantages of a military career for physicians are discussed in the context of Navy recruiting. The advantages of military practice include retirement benefits, travel, education, free time, promotion, coverage of malpractice insurance and overhead expenses, and free medical care. Advantages listed for reserve physicians include pay, promotion, retirement, travel, and other fringe benefits. The reader may infer similarities and dissimilarities between physicians and nurses.

Beaty, John R., et al. *Planning for the Mobilization of the Nation's Medical Resources.* Washington, DC: National Defense University, 1985.

This research seminar paper investigates the ability of the medical manpower community of the Department of Defense and the civilian sector to support the medical requirements anticipated in a major outbreak of hostilities in Europe. Seminar members use Department of Defense reports and interviews with military personnel, pharmaceutical manufacturers, and hospital administrators as source material. The report describes shortfalls of physicians, surgeons, nurses, and corpsmen in the active and reserve forces; the facilities available for military casualties through the Civilian-Military Contingency Hospital System; the status of logistical support; the requirements and capabilities of the armed forces to evacuate patients from a European theatre; and preventive medicine program deficiencies and issues. Recommendations include offering educational incentives to improve recruitment into the reserve forces, using personal service contracts and/or provider group contracts, increasing communication between preventive medical personnel and military planners and operational commanders, and drafting medical personnel (including women).

Bednash, Geraldine, et al. *The Economic Investment in Nursing Education: Student, Institutional, and Clinical Perspectives*. Washington, DC: American Association of Colleges of Nursing, 1989.

The objectives of this study were to identify the costs of baccalaureate and graduate nursing education to students and to ascertain the costs and benefits of that education to clinical service agencies. The methodology involves specifically selecting 10 public and private colleges and universities that offer nursing programs and one hospital and one nonhospital clinical setting affiliated with each school for study. Undergraduate and graduate students were surveyed and data were collected from financial aid offices. In addition, site visits were undertaken, personal interviews were conducted, and activities analyses were performed.

The findings indicate that undergraduate nursing students average 4.9 years to complete their courses of study and rely on loans and personal funds to finance their educations. Nurses who return to school for baccalaureate and graduate degrees usually receive tuition reimbursement from employers. Graduates' average debt is \$10,000 for those who attend public institutions and \$13,000 for those from private colleges. Although student nurses are eligible for the Nursing Student Loan Program, only two of the nine schools studied participate in the program because it is seen as being too stringent in its requirements. The Guaranteed Student Loan (Stafford) is used most frequently.

This study addresses subjects that receive little attention in the literature. It is limited, however, to baccalaureate and graduate degree students.

Benziger, Katherine. "Nurse Retention Adjusting to the Job Revolution." *Nursing Management* 17. October 1986, pp. 62–63.

This article examines the reasons hospital administrators give for nurse turnover and shortages. The author sets up four notional categories (e.g., "the problem is with our girls," "the problem is women's lib") and discredits each. The author's views seem narrow and limited, but her suggestions for relieving shortages – such as part-time work and flextime – have merit. The paper is said to be based on responses from a survey conducted in 60 hospitals. No information is given about the survey methodology and no substantiation of the article's findings is presented.

Bishop, Ronald M., et al. *Integrating the Civilian Health Care System into Medical Mobilization Planning*. Washington, DC: National Defense University, May 1986.

This research seminar paper analyzed the Swiss and Swedish health care systems and their medical mobilization plans to determine areas of applicability to U.S. mobilization planning. The authors used their experiences, interviews or briefings by military personnel, and military reports as sources. They describe U.S. wartime medical requirements; U.S. civilian health care system personnel, hospital capacity, transportation, supplies and equipment; and U.S. contingency planning. They also describe the Swiss and Swedish military and civilian medical systems and mobilization plans. They conclude that, unlike Switzerland and Sweden, the United States lacks a central focal point for integrating, sharing, and coordinating civilian and medical assets to meet national mobilization objectives. They recommend the United States establish a centralized medical mobilization focal point; change the front-line medical treatment concept; and determine the surge capabilities of medical

equipment, supplies, and transportation. Other recommendations call for a Federally funded program or other financial assistance program for medical education that contains a military duty requirement and combat casualty and combat medical training for all medical department officers who might be used during combat emergencies.

Bradley, Douglas D. *A Proposal for a Program for Recruitment of Reserve Component Medical Corps Officers in Medical Planning for Mobilization.* Carlisle Barracks, PA: U.S. Army War College Essay, 1982.

This paper presents recommendations based on the author's 25 years' experience as a medical officer in the Regular Army and the Army National Guard. It deals with the recruitment and retention of physicians with skills appropriate for mobilization requirements (i.e., orthopedic surgeons, anesthesiologists, and emergency medicine specialists). The author notes that the Health Professional Scholarship Program has been effective; it has provided 50 percent of the doctors that joined the Army during the most recent 2 to 3 years. The author also believes that programs such as PRIMUS show promise. Physicians are compulsive and time-oriented and are highly motivated toward self-improvement through continuing education; but, they also participate in activities that are diversionary from the stresses of busy medical practices. The author recommends that time demand be reduced; that active duty requirements be removed; that 25 retirement points be allowed for training achieved through civilian schooling; that 2 years be permitted to accrue 50 retirement points; that a bonus of \$250 to \$375 be paid quarterly for recognized level of training and potential military value; that the potential for promotion to O4 (major/lieutenant commander) be provided using established criteria during reduced participation; that permission be given to those without prior service to extend their commitment to 10 years; and that those with specific critical skills be allowed to serve in reduced participation status.

Brenner, Sally A. *An Analysis of Factors Which Influence Recruitment and Retention: California Army National Guard Medical and Nurse Corps Survey.* Sacramento, CA: Office of the Adjutant General, State of California, Unpublished paper, February 1987.

This study is a survey of the reasons medical and nurse officers remain in the Army National Guard. It identifies retention variables affecting job satisfaction and work values, compares and contrasts field and company grade job-related motivation variables, and suggests options to improve recruitment and retention. Questionnaires were mailed to doctors and nurses licensed to practice in California and currently in four units of the California Army National Guard. Forty-four nurses completed the survey, a response rate of 88 percent. This study was carefully executed (with the exception of one miscalculated table) but suffers the problems of a small sample size and localized representation. The study found that 40 percent of the nurses have prior service, 2 percent are eligible for retirement, and that two-thirds of the respondents plan to stay in the reserve forces until retirement. They would do so because reserve activities interfere with their civilian employment, would conflict with the family activities, or interfere with important leisure time, or because nurses were dissatisfied with their assignment. The major positive influence on nurse retention is financial, either for present income or retirement. They hold high interest in rapid promotions, high salaries, good fringe benefits, job security, fair supervision, and challenging work. Travel is important to the nurses, and field grade officers (O4 and above) are interested in continuing education and staff development, as well as the change from

their civilian job requirements. The nurses are satisfied with their pay, career opportunities, amount of work required, and their coworkers. The weakest satisfaction scores are with physical work conditions and organizational treatment. Successful recruitment strategies are found to be visits to nursing schools and advertisements in professional journals. The recommendations made are in line with the study findings.

Brenner, Sally A. *California Army National Guard Nursing Survey*. Sacramento, CA: Office of the Adjutant General, May 1984.

This paper examines the interests, concerns, and continuing educational needs of California Army National Guard nurses. A questionnaire was mailed to 55 Army National Guard nurses, followed in 6 weeks by post card reminders. Completed interview schedules were returned by 33 nurses (60 percent response rate). Nurses were found to be interested in statewide conferences (84 percent), continuing professional education classes within unit (78 percent), social functions within unit (41 percent), and orientation to military unit (42 percent).

The author recommends that continuing education programs, especially disaster preparedness courses, be made available to all nurses. In addition, leadership and management classes that relate to Guard involvement and to civilian nursing professional development should be offered. Other recommendations include providing information to nurses about continuing education requirements, programs, and application procedures; budgeted funds should be programmed for continuing education and equitably distributed among all units; and a statewide continuing education provider should present programs and award continuing education credits, with opportunities being publicized to all units.

Cole, Ben S. and Matt Sizing. "Cole Nurse Compensation." *Modern Health Care* 18. 2 December 1988, pp. 24 - 47.

This article reports the findings from the Second Cole Survey of Nursing Compensation. It features data submitted by 539 health care institutions in 50 states, the District of Columbia, and Puerto Rico on 46 nurse manager, charge nurse, and staff nurse jobs in 12 different specialties (33,289 employees are represented). The report also uses data about directors and assistant directors of nursing from the 1988 Cole Survey of Management Compensation in Hospitals. The authors looked at average salary increases and base salaries and relate them to position and facility revenue size, bed size, and region. They found that pay differences between nursing professionals at each level of responsibility are very narrow, regardless of specialty. Nurses with comparable levels of experience and responsibility are paid remarkably similar wages. Pay differences between staff and higher level positions are no more than several thousand dollars. Nurse salary increases are modest, ranging between 7 and 9 percent. This excellent article succinctly offers data in an area in which information is sparse.

Crackel, Theodore J. *Will America Be Able to Treat Its Battlefield Wounded?* The Heritage Foundation's Defense Assessment Project, December 1984.

This paper addresses the problem that the Military Services do not have adequate medical resources to provide care to the wounded in case of war. It cites reports that up to 75 percent of casualties at the onset of hostilities would not receive necessary care and is critical of DoD's lack of concern and efforts to alleviate the problem. Steps that

are being taken are insufficient to cope with a major war. Recommendations are offered to require the registration of all persons, including women, between the ages of 18 and 46 years who are trained in a health care occupation; add medical units to the force structure; review promises of host nation medical support; be better prepared to receive casualties back home; and re-evaluate the stated requirements for trained medical personnel in combat.

Custom Research, Inc. *USAR Retention Focus Groups*. Unpublished report, January 1986.

Fourteen focus groups (seven held in Milwaukee and seven in Denver) were conducted. The groups had differing compositions. Three had Army Reserve losses, two had short-term service personnel (9 to 36 months' experience), and two had long-term service people (37 to 60 months' experience). All focus groups consisted of members representing a variety of military skills. The objective was to identify reasons for entry and for attrition, to compare expectations with reality, to determine awareness and satisfaction with reserve benefits, and to discover factors positively affecting retention that could be used to promote retention. The study found that money, training and education, and loan repayment for college are major motivators to joining the Army Reserve, as are retirement benefits, patriotism, and the opportunity for adventure and new friendships. Weekend drills, cited for boredom with nothing to do, do not meet expectations. Retention factors include friendships and comradeship (money is no longer a motivator, as the same amount could easily be earned elsewhere). Attrition is caused by lack of meaningful activity during training and dislike of officers and bureaucracy. Although the focus groups knew of their 6-year Military Service Obligation and anticipated 3 years with the active forces and 3 with the reserve forces, they knew little of the Individual Ready Reserve and its requirements.

Dann, Joyce E. *Sources of Job Satisfaction and Dissatisfaction Among Navy Nurses*. San Diego, CA: Naval Personnel and Training Research Laboratory, September 1972.

The objective of this study was to identify sources of active component Navy nurses' job satisfaction and dissatisfaction. A questionnaire (not pretested) was mailed to all Navy nurses in the active forces — 44 percent were returned completed. The author compared the characteristics of the sample to the total universe and found similarities. The findings show that the most attractive aspects of Navy nursing are interpersonal relationships, travel, achievement, the work itself, security and fringe benefits. The most often mentioned unattractive aspects include hospital policy and administration, Nurse Corps policy and administration, non-nursing duties, other policies and administrative practices, and supervision. Overall, the nurses were satisfied with their work. The report is dated, but its findings are similar to those of later studies.

Douville, Deirdre K. *Career Opportunities and Progression for Nurses in the USAF Reserves*. Maxwell Air Force Base, AL: Air Command and Staff College, March 1982.

This is a handbook of information for Air Force Reserve nurses regarding career opportunities and career progression. The source of the information presented is a long list of official Air Force regulations, manuals, publications, pamphlets, and other

official documents. The author notes that Air Force Reserve nurses ideally should receive career counseling from Air Force Reserve nurse supervisors. Unfortunately, however, schedules and task assignments do not allow the necessary time for this counseling. The book is intended to fill this gap and presents such topics as the mission and structure of the Air Force Reserves, manpower utilization, Air Force Reserve pay categories, and training, active duty, full- and part-time assignment, specialty, and non-nursing opportunities. The publication appears to be an excellent retention tool.

Evanco, William M., et al. *Navy Health Care Study: The Supply of Medical Personnel During War*. Alexandria, VA: Center for Naval Analyses, December 1981.

This is the second volume in a study focused on the Navy Medical Department's ability to provide health care during a conventional war in Europe. In this report, the supply of physicians, nurses, and hospital corpsmen on active and reserve status at the time of the report were related to the wartime requirements. Steady-state inventories of physicians, nurses, and hospital corpsmen were determined. Retention profiles were developed for each, and responsiveness to changes in compensation was estimated. The costs of procuring these health care specialists were also estimated. The assumptions of the models used were given in the appendices, but the database was not identified.

The findings show that the overall physician supply (including the active and reserve components) can meet the demand, but specialty shortfalls (surgical and anesthesiologists) are identified. Permitting scholarship recipients to complete all or part of their obligations in the Selected Reserve can resolve the shortfalls by 1988. Projected inventories of hospital corpsmen meet most wartime requirements, except for the high intensity case. Cash bonuses are recommended as the means to eliminate the shortfall.

Shortfalls in the Nurse Corps were seen — in reserve billets rather than among active duty personnel — in every wartime scenario used. The report proposes a cash bonus program for the direct procurement of Ready Reserve nurses. About one-quarter of the almost 4,600 nurses needed to fill the vacancies noted for the high intensity scenario would be placed in the Selected Reserve, while the remainder would be assigned to the Individual Ready Reserve and programmed for CONUS duty.

This is a "limited distribution" document.

Feldbaum, Eleanor G. *Registered Nurses at Work: A Report to Administrators of Health Facilities*. College Park, MD: Bureau of Governmental Research, University of Maryland, 1980.

This is one of a series of reports emanating from a 3-year study focused on why there are so few black nurses and how the health delivery system is affected by the scarcity of black nurses. Specifically, this book addressed the career patterns, goals, orientation and satisfaction of 5,172 nurse graduates registered to practice as civilians in six states, chosen for geographical representation and sizable concentration of black residents. Pretested, self-administered questionnaires were mailed to a random sample of registered nurses identified from the state boards of nurse examiners. A second sample (stratified) was selected to obtain responses from a sizable proportion of

black registered nurses. Chi-square tests undertaken to compare the characteristics of the responding nurses and the nonrespondents found no statistically significant differences, indicating that the sample was representative.

A longitudinal analysis of the nurses' career and work patterns was presented to show the reliability and predictability of nurses in the labor force, with emphasis on career mobility and family responsibilities that affected career interruptions.

Analyses of nurses' career goals, orientations, and satisfactions shows that they are interested in obtaining material and advancement rewards and in assuming expanded professional roles. Nurses are dissatisfied with levels of resources provided them and with administrative personnel. Suggestions are made to administrators of health facilities and educational institutions to integrate the nurse labor force, support educational enhancement, and increase advancement opportunities. Nurse satisfaction with remaining in the profession may be enhanced by their becoming partners in the care and cure process and being rewarded for excellent patient care.

The study has a rigorous research design, and obtained data from a large, geographically representative sample, which included a high percentage of black nurses.

Feldbaum, Eleanor G. and Morris J. Levitt. *Nurses and the Educational Process: A Report to Nurse Educators*. College Park, MD: Bureau of Governmental Research, University of Maryland, 1980.

This report, part of a 3-year study, reviewed the nursing educational process from the viewpoint of administrators of 42 schools of nursing (589 faculty; 3,942 students; and 5,172 registered nurses). It examined individual career decisions; program choices; work patterns; and schools' recruitment, admission, and retention programs and policies. Data were collected through personal interviews with administrators and pretested survey responses of student nurses in integrated and predominantly black schools of nursing. Mail survey responses were received from a random sample of nurses registered to practice in six geographically representative states having a sizable black population. In addition, stratified sample techniques resulted in 28.7 percent of the student and 18.3 percent of the registered nurse samples being composed of black respondents.

Comparative analysis was conducted between the students' expectations of career choice, satisfactions, and future opportunities and graduate nurses' satisfaction with those choices and work patterns. Recommendations were made to nursing educators about nurses' needs for higher education and problems encountered in obtaining further education in order to keep nurses in the labor force.

This study is unique in its large database of black student and registered nurse population and its rigorous sampling design.

Feris, Michael Leroy and Vernon Melvin Peters. *Organization Commitment and Personnel Retention in the Military Health Care System*. Monterey, CA: Naval Postgraduate School thesis, December 1976.

The thesis identifies the relative contribution certain personal, role-related, and organizational variables make to the development of a commitment to a career in the military health system. Three different self-administered questionnaires were

designed, one for each of the following within the military health care system: providers, trainers of physician extenders, and physicians who evaluate medical task difficulty. Packets of 25 questionnaires were sent to all Army, Navy, and Air Force primary military medical commands within CONUS. Commanding officers were asked to distribute the questionnaires; no guidelines were given, as the authors were not concerned with issues of representativeness. The response rate was 62 percent for the Army (N = 568), 75 percent for the Navy (N = 512), and 60 percent for the Air Force (N = 1,254). The resultant nurse sample was made up of 53 supervisors, 6 staff nurses, and 86 nurse practitioners.

The authors derive a four-way classification of commitment and find that their typology yields accurate predictions. However, the sample size of each type of nurse, divided into three Services and four types of commitment, yields such small size cells that the findings are not meaningful.

Frelin, A. J., T. R. Misener, and H. F. Mechanic. *Army Nurse Corps Personnel Management Practices*. Fort Sam Houston, TX: U.S. Army Health Care Studies and Clinical Investigation Activity, September 1984.

The objective of this study was to explore the attitudes, perceptions, and preferences of active force Army Nurse Corps officers about critical career issues and retention. Pretested and pilot-tested questionnaires were sent to chief nurse representatives to distribute and collect from 3,597 identified members of the Army Nurse Corps. The response rate was 91 percent (N = 3,284). This was an excellent, well-executed study.

The questionnaire contains 16 items on pay and benefits, asks about career decisions and retention, and compares 16 statements with the civilian sector. The nurse respondents for the most part are career-oriented and intend to remain in the Army Nurse Corps until retirement. They are satisfied with their pay and benefits, although they believe these are eroding; nurse-anesthetists are dissatisfied with the compensation system. While the nurses are generally satisfied, they are critical of the system of promotion and the lack of recognition for excellent work.

French, Diana Gail. *An Investigation of the Beliefs of Registered Nurses Towards Service in the Army Nurse Corps Reserves*. Toledo, OH: University of Toledo, Doctoral dissertation, 1986.

The purpose of the study was to identify and compare the beliefs of civilian and Army Reserve nurses in Ohio about service in the Army Reserve. Questionnaires were mailed to a stratified random sample of 500 nurses registered in Ohio, who were no more than 44 years of age and who were practicing nursing. Post card reminders were sent; the response rate was 55 percent. Army Reserve nurses received questionnaires during weekend drills at three hospitals; 75 nurses completed the survey (response rate was 43 percent). The author used complicated statistics which make the study data difficult to interpret.

The findings indicate the Army Reserve nurses are highly positive about their experiences, such as pride in serving, using leadership skills, networking, collegial relationships, friendships, and obtaining extra pay. In contrast, the civilian nurses are neutral or negative about reserve military service. They perceive that Army Reserve nurses have highly structured and regimented lives; that they attend a rigorous boot camp; that their duties interfere with social obligations, work schedules,

and family responsibilities; and that Army Reserve requirements conflict with personal time.

Frey, Thomas O. *Considerations for the Integration of the Clinical Nurse Specialist*. Maxwell Air Force Base, AL: Air Command and Staff College, Air University, March 1983.

The objectives of this study were to define the organizational roles that clinical nurse specialists could assume and to identify potential problems that occur during integration of the clinical nurse specialist role in the Air Force Nurse Corps. Data were collected from a questionnaire administered to only nine Air Force officers. The specialists felt that they should function primarily as consultants and act freely within a specific patient caseload. They suggested that educators should be apprised of the clinical nurse specialist role so that curricula could be designed to meet the needs of the nurse and the Air Force. The role should emphasize research and management skills, provide a means to conduct research and enhance leadership skills. The small sample discredits the quality and power of study findings.

Fullenkamp, Durrelle Mae Black. *Role Conflict, Role Ambiguity, and Role Strain in United States Air Force Chief Nurse Administrators*. Shreveport, LA: Northwestern State University of Louisiana, Master's thesis, November 1987.

The objective of this thesis was to examine levels of role conflict, ambiguity, and strain of nurse-administrators. The sample was composed of 80 chief nurses who completed questionnaires mailed to 85 Air Force health care facilities (response rate was 94 percent). Significant relationships are found among role conflict, role ambiguity, and role strain. In addition, role ambiguity is significantly related to strain symptoms and strain coping mechanisms.

Goebel, J. B. and Christopher Hornick. "Reenlistment and Non-Reenlistment in an Army Reserve Medical Unit." *Military Medicine* 146. July 1981.

This study analyzed data obtained from an earlier survey of enlisted personnel. It found that reenlistment intentions can be accurately ascertained 1 year before military obligation ends. Those most likely to reenlist have not attained high levels of education, have large families, are nonwhite, display mechanical aptitude, and hold higher ranks than those who will leave military service. The author believes that reenlistment efforts should begin early and that reservists often can be persuaded to return to active, as well as reserve, duty.

Gormley, Thomas M. *Role Expectations for United States Air Force Psychiatric Clinical Nurse Specialists*. Gainesville, FL: University of Florida, Master's thesis, 1986.

The purpose of the study was to describe and analyze the role expectations and actual roles of Air Force psychiatric and clinical nurse specialists and to compare them with other mental health officers and nurses. The sample was composed of 30 clinical psychologists, 24 clinical social workers, 59 mental health nurses, 20 nurse administrators, 42 psychiatrists, and 9 psychiatric clinical nurses assigned to Air Force medical treatment facilities. The response rate to the mail questionnaire was 51.7 percent for the total sample, but 100 percent for the psychiatric clinical nurse specialists. The small sample and low response rate give the study questionable

utility. The findings indicate that the role of the clinical nurse specialist is similar along five dimensions identified also for the mental health nurse. In addition, the actual or perceived role of the psychiatric clinical nurse specialist is in conflict with the ideal or role expectations held by respondents.

Green, Kenneth C. "Who Wants to be a Nurse?" *American Demographics* 61. January 1988, pp. 46 – 48 and 61.

This article is a report of UCLA's Cooperative Institutional Research Program that, since 1966, has been conducting freshman surveys of full-time students entering 2- and 4-year colleges and universities. The article's usefulness is diminished by the exclusion of part-time students, but the report does show a 50 percent decline (between 1974 and 1986) in the proportion of freshmen who plan a nursing career. More than one-third of the decrease occurred between 1983 and 1986. In 1986, the number of women aspiring to be physicians (25,000) surpassed for the first time the number that intended to be nurses (19,800). The author believes that the latter number will continue to decline because: (1) the number of college-aged students will decline; (2) retention rates for nursing students in 4-year colleges average 60 to 70 percent and may worsen [since Scholastic Aptitude Test (SAT) scores and grade point averages of aspiring nurses are below national averages]; (3) of personal economic reasons (interest in nursing peaks during recessions but wanes during times of prosperity); and (4) changes in career aspirations of women are leading some women away from nursing. The only increases in nursing school enrollment occurred for black and Asian students.

Greenberg, Robert B. "A New Approach to Army Reserve Medical Officer Recruitment." *Military Medicine* 151. July 1986, pp. 383 – 385.

This is an impressionistic report with no data cited. Some information in it, however, may be applicable to nurses. The reasons doctors join the reserve forces include (1) patriotism and meaningful service, (2) professional development opportunities in medical administration and military and leadership skills development, (3) the esprit and comradeship of a unique group with the development of close and lasting friendships, and (4) psychological uplift of surviving in the context of youth and adventure. Three keys to successful recruiting are (1) command emphasis: everyone in the unit is a physician recruiter; (2) professional programming: conferences, courses, and creative orientation that encourage the interaction of doctors with each other and with other professionals; and (3) unit/university affiliation: interested university officials should be tapped to share resources and training opportunities. Other prominent personnel, such as respected Veterans Administration physicians and the Society of Medical Consultants to the Armed Forces, are useful recruiting agents.

Greenlee, Beverly A. *Oral History: Brigadier General (Retired) Connie L. Slewitzke*. Carlisle Barracks, PA: U.S. Army War College, 28 March 1988.

The issues discussed in this study project include the Army Medical Officer Structure Study and the Health Services Support to Air/Land Battle Study. The first study focused on problems of promotion timing, field grade structure at the 05 and 06 levels, lateral entry officers, and the substitutability of nonwartime areas of concentration. The latter study discussed the changes that were proposed in providing support far forward to the Air/Land Battle. The author interviewed the former Chief, Army Nurse Corps, for her reflections on the issues and used studies from the Office of

the Surgeon General. The conclusions reached were that promotion timing was improving, field grade structure was being more appropriately aligned for the Army Nurse Corps, lateral entry officers were needed, and all Army nurses' areas of concentration were substitutable in wartime.

Griswold, Richard H. *A Study of Civilian Registered Nurse Recruitment at Madigan Army Medical Center, Tacoma, Washington.* Waco, TX: Baylor University, Research project, June 1982.

The purpose of this project was to examine civilian nurse recruitment to improve recruiting at Madigan Army Medical Center. That installation averages 8 to 10 vacancies a year (intensive care units are especially difficult to fill) and a turnover rate of 31 percent a year (16 percent for reasons other than transfer, retirement, death, or education). The author surveyed local hospitals, reviewed records, conducted personal interviews, and surveyed civilian and Army nurses. He reviewed three years of exit interviews and determined that civilian nurses are most dissatisfied with rotating shifts, pay, and lack of promotion opportunities. Indeed, 94.6 percent of civilian nurses claimed to earn less than \$25,000 per year, as compared to only 14.4 percent of the Army nurses who made that claim. The author found that federal hospitals offer nurses stringent schedules with high weekend demands and few educational opportunities compared with other hospitals. Only the Army's vacation benefits equal or surpass those of other institutions. An excellent review of the literature is provided as is a comparison between Federal and private hospital employment. Numerous suggestions for improvement of recruitment are included.

Hart, Deborah A. *The Hospital Organizational Structure and the Department of Nursing in the United States Air Force.* Maxwell Air Force Base, AL: Air Command and Staff College, Air University, 1987.

This study reviewed the chain of command and authority lines within Air Force medical facilities to ascertain whether current organizational policies are generally effective. Questionnaires were mailed to 123 senior nurses functioning as chief nurses in Air Force medical treatment facilities worldwide, and 91 (74 percent) responded. The respondents (99 percent) feel they should be working directly for the hospital commander since such a placement would mean their credibility and authority standings would improve. Over three-quarters of the nurses feel that their current chief does not have the time, training, or desire to represent adequately the local department of nursing in hospital matters. The nurses believe that the chiefs' concerns are limited to getting the job done and meeting inspection standards. A majority of the respondents are generally discontent with their current job situations. This study is very informative with meaningful suggestions for improvement.

Hilton, Thomas F. *Individual, Organizational, and Job Factors Affecting the Quality of Work Life Among Navy Nurse Corps Officers.* Bethesda, MD: Naval School of Health Sciences, March 1987.

This preliminary report deals with Navy nurse job satisfaction, career commitment, quality nursing care, and job performance. The Navy Nurse Corps Organizational Assessment questionnaire was pretested and designed to measure quality of work life. It was distributed to every active duty Navy nurse either by direct mail or by Directors of Nursing Service at all Navy medical treatment facilities. The response rate was 56 percent, producing a sample size of 1,735. In addition, shift supervisors

(635 responded) were given identification numbers and asked to give performance and behavioral ratings that could then be paired with attitudinal data. The author compared the characteristics of his sample with the total Navy nurse population. This is an excellent study, with well-executed procedures, a large number of respondents, and informative findings.

The study found that retention is not a major problem, that nurses are satisfied with the Navy and with their jobs. Sense of achievement from work, the quality of interpersonal relationships, and opportunities for leadership and patriotic service are the factors that most enhanced the quality of work life. In contrast, quality of career planning support, management concern and awareness, heavy workload, and the female work uniform are negative factors. A review of job satisfaction by specialty found that nurse-anesthetists are the most dissatisfied with assignment practices, advancement opportunities, help with career planning, salary, and benefits.

Hixon, Jesse S. *The Recurrent Shortage of Registered Nurses: New Look at the Issues*. Hyattsville, MD: USDHHS, Bureau of Health Professions, September 1981.

This report reviews data on the supply of registered nurses during the late 1970s. Therefore, much of the data are outdated, and newer reports on the current supply of nurses are available. Three findings are of interest, however: (1) personnel and shortage problems in nursing are similar to those in other occupations with high proportions of female workers; (2) the number of entrants to nursing educational programs is significantly affected by market forces (the number is positively related to beginning nurses salaries and negatively related to wages in alternative occupations, with a lag of about 2 years); and (3) the number of entrants is also related to the number of women in the general population aged 18 to 25 years. The author's economic model predicts that a 13 percent decline in women of that age group would result in a sharp decline of nursing school freshmen.

Huey, Florence L. and Susan Hartley. "Nurses in Nursing: 3,500 Nurses Tell Their Stories." *American Journal of Nursing* 82. February 1982, pp. 181 – 188.

The objectives of this study were to identify nurses' satisfactions and dissatisfactions. A questionnaire was originally published in the *American Journal of Nursing* in June 1987. Staff, head, and assistant head nurses in hospitals and nursing homes were asked to respond to questions about the things that would keep them in nursing. Thirty-five hundred nurses responded (not only from the specialties targeted). Although no scientific sampling method was used, the researchers did compare the backgrounds of the respondents with those of the general nurse population and did not find a representative match. The findings identified 10 top dissatisfactions: (1) no child care provided by the employing health facility; (2) lack of support from hospital administrators; (3) too much paperwork; (4) lack of support from nurse administrators; (5) salary level too low; (6) lack of help for required extra patient care; (7) too low a nurse-to-patient ratio; (8) lack of continuing education opportunities; (9) lack of inservice education; and (10) inadequate fringe benefits. Respondent nurses also wanted more competent registered nurse staffs, more nursing judgment permitted in patient care, a greater sense of membership in the health team, workshops, and more up-to-date procedures. Despite its awkward sampling, the large number of respondents lends credence to the findings.

Johns, Lois A., Anna Koneck, and David A. Mangelsdorff. *Army Nurse Clinician Satisfaction and Retention*. Fort Sam Houston, TX: U.S. Army Health Services Command, November 1978.

This study attempted to identify those factors that affect the job satisfaction and retention on active duty of Army nurse clinicians. Questionnaires were completed by 211 clinicians (response rate 78 percent) and by a control group of 167 staff nurses (response rate 68 percent). The authors found dissatisfaction with nursing supervision and channels of administration. Reasons for staying in military service were education, medical, retirement and pay benefits, job security, professional growth, job satisfaction, ability to work in the role for which educated, and chances to travel. Reasons for leaving the military were that jobs were based on rank, not education; nurses were pushed into nursing administration; skills were not utilized; frequent moves were required; and difficulty with rules, regulations, and extra duties were encountered. Many felt that their job potential was better in the civilian community. While the authors indicated those items with statistically significant differences between clinicians and the control group, they did not provide statistics on responses.

Johnson, Donald A. *Nurse Shortage: Fact or Fiction?* Carlisle Barracks, PA: U.S. Army War College, April 1982.

This is a short, lively essay about the shortage of nurses in 1982. Despite the use of statistics from the early 1980s, which have been updated, the reasons and predictions of the shortage remained the same. The author also notes the implications of the shortage on the nation's military care medical capability. He claims that the starting salary of new second lieutenants is lower than that of starting nurse baccalaureate graduates in the civilian sector. He predicts force reductions, a difficulty in obtaining civilians, and an inability to meet wartime requirements because of lack of long lead times; the necessity to identify, locate, train, and indoctrinate nurses; and the present insufficiency of the Selective Service System.

Johnson, James Nathaniel. *Occupational Stress, Strain, and Coping Among Active Duty Military and Department of Army Civilian Practical Nurses*. Washington, DC: Catholic University, Doctoral dissertation, 1987.

This study explores the relationship between occupational stress and occupation-related strain and the extent to which that relationship is mediated by coping. The sample was drawn from the practical nurse population working in a large eastern U.S. Army general hospital. Self-administered questionnaires were completed by 166 military and 59 civilian practical nurses. The findings indicate that the practical nurses feel the most stress from the lack of clarity about established lines of authority and failure to believe that they make an important contribution to providing quality patient care. The author notes that findings of studies of registered nurses are not applicable to the practical nurse population. However, some findings are similar, especially the problems of stress and dissatisfaction with the present reward system.

Kalisch, Philip A. "Why Not Launch a New Cadet Nurse Corps?" *American Journal of Nursing* 88. March 1988, pp. 316-317.

This article discussed the 1940 Nurse Cadet Corps and the merits of bringing it back. The original legislation, passed in the 1940s, financed a massive recruitment and educational program for nurses. The success of this act suggests that the same

idea has merit today. The author proposes establishing a nurse service corps to: increase enrollment in baccalaureate degree nursing programs; place senior interns in hospitals, nursing homes, and other health facilities; and increase the number of nurses with graduate degrees in education and administration.

Klover, Jon A., and O. J. Schumaker, Jr. *An Analysis of Civilian Physicians' Attitudes Regarding the Reserve Programs of the Department of Defense as Determined from a Survey of the Greene County Medical Society in June 1979*. Washington, DC: Unpublished study conducted for the Office of the Assistant Secretary of Defense (Health Affairs).

The purpose of the study was to discuss specific proposals directed by the Senate Armed Services Committee to address the shortage of physicians in the reserve components. This paper addresses only the findings from the pretest, in which 40 percent of Greene County's physicians responded to questionnaires that listed various aspects of serving that may act as disincentives and aspects that could be developed to provide management investment incentives. Findings indicate that 30 percent of the respondents have positive feelings about the reserve forces. The physicians are most interested in opportunities for varying levels of participation. The author believes that a tax-deferred program should be marketed as a major inducement to joining the reserve forces. This study is only marginally applicable to nurses and is somewhat dated.

Kowal, Patricia A. *Assertive Dynamic Management in Nursing: A Handbook for United States Air Force Nurse Supervisors and Administrators*. Maxwell Air Force Base, AL: Air Command and Staff College, March 1983.

This handbook is designed to guide military nurse managers in the process of organizational development, a process that attempts to improve an organization's ability to achieve goals by using people more effectively. The author first discusses the need for nurse leadership education and the theory of organizational development. She explains strategies for diagnosing problems in a unit or organization; team building, creating goals, career counseling, and handling conflict; intergroup communication; and sustaining change through assessments, recognition, and rewards. The handbook lists civilian, military, and bibliographic resources for leadership education.

This publication is a "limited distribution document."

Lambert, Mary H. *A Survey of Physicians Assigned to Madigan Army Medical Center to Determine Perceptions of the Role of the Professional Nurse: Do the Perceptions Substantiate Documented Elements Contributing to the Nursing Shortage?* Fort Sam Houston, TX: U.S. Army and Baylor University, April 1981.

The study examines the military physician's perception of the professional nurse role and the potential causes of any nursing shortage. The hypothesis is that physician perceptions of the professional nurse role reinforce the validity of nurses' claims that they are underutilized and that they lack respect and prestige. Questionnaires were distributed to each physician assigned to Madigan Army Medical Center. Responses were received from 156 staff residents and interns (a 55 percent response rate). The questionnaire solicited responses about perceptions of the educational process and of the role, position, and status of the professional nurse.

The author finds that the physicians perceived relatively few differences in the functional potential of nurses who graduated from associate, diploma, or baccalaureate nursing programs. Moreover, doctors do not necessarily equate the word "professional" with the baccalaureate nurse. A majority of the respondents do not feel that the responsibility a nurse assumes should be correlated with the level of education attained. While the doctors give positive responses to the nurses' contributions to the patient care process, most are less positive about nurses' participation in the clinical decision-making process and about their independent clinical assessments. In addition, physicians are unable to recognize the practice of nursing on a professional level. The author calls for legislation and physician education to permit distinctions among nursing jobs related to the type of degree a nurse earns.

A review of the literature on causes of the nursing shortage is included. Computer printouts of frequencies for each questionnaire item and variable analysis are contained in the appendix.

Larkin, Timothy. "Angels in Blue Serge." *Training* 10. November 1987, pp. 31-34.

This is a short, lively article about New York City's first-year effort to recruit and educate retired policemen and firemen into nursing. With funding from the Division of Nursing, USDHHS, two classes of the experimental project were begun. The students, who were not given a training allowance, incurred out-of-pocket expenses of \$500, and they spent 2 ½ years accumulating 13-hour-per-week segments of classroom and clinical experiences. While this article is largely anecdotal, the success rate statistics were impressive: 170 applied for 100 program openings; 87 percent graduated (compared with a national graduation rate of 67 percent from nursing programs), and more than 60 of the program students eventually returned to school for a baccalaureate degree.

La Rocco, James M. *Understanding, Prediction, and Control as Moderators of the Relationship Between Work Conditions and Well-Being*. Bethesda, MD: Research Department, Naval School of Health Sciences, February 1985.

This study assesses the conditioning effects of understanding on the relationship among organizational conditions, job-related attitudes, and individual psychological and physical health. Questionnaires were distributed to 52 doctors, 33 dentists, and 54 nurses assigned to a large naval hospital in the Northeast. The author's use of statistical procedures, such as Cronbach's Alpha and statistical significance, left the reader confused as to just how participants felt.

La Rocco, James M., and David C. Meder. *Differences in Perceptions of Organizational Conditions and Health Beliefs Among Military Physicians, Dentists, and Nurses*. Bethesda, MD: Naval School of Health Sciences, Research paper, March 1984.

This study intended to identify those job characteristics of military physicians, dentists, and nurses that could be altered by management to enhance the quality of work life. The sample was composed of volunteer participants from the staff of a large naval hospital in the Northeast. A nonrandom sample of 52 physicians, 33 dentists, and 54 nurses completed the questionnaire (which was not pretested).

The findings indicate that nurses are significantly less satisfied with their supervisors than are physicians or dentists; nurses feel more exposed to workplace environmental strain than do physicians; and nurses perceive greater responsibility for others than do dentists. Nurses are the least satisfied of the three groups; they report interrole conflicts and power relationships. The study is interesting but the methodology is weak. In addition, the use of arithmetic means and Cronbach's Alpha made the analysis difficult to decipher.

Lensing, Susan B. *A Model of Career Orientation for Military Nurse Corps Officers.* Monterey, CA: Naval Postgraduate School, Master's thesis, December 1984.

The objectives of this thesis were to develop and test a model used to explain career orientations of military nurse corps officers. The database created from the 1978 DoD Survey of Officers and Enlisted Personnel was used to extract the responses from 260 nurses who had been in military service less than 7 years. The nurses were categorized according to whether they will leave the service or remain as careerists; responses about job satisfaction and perceived opportunities were examined within the developed typology. While the author is satisfied with the results of her categorization, the statistical analyses, such as discriminant and canonical analysis, are so complex they obscure the meaning of the study's conclusions for all but the more sophisticated statisticians.

Levine Associates, Inc. *Survey of the Universe of Critical Care: Final Report.* Newport Beach, CA: American Association of Critical-Care Nurses, June 1988.

The objective of this study (Phase I) was to assess critical-care nurse supply and demand, the settings in which these nurses are employed, and their educational attainments and needs. The methods used were to review hospital and Medicare data about critical-care units and to survey 129 hospitals (65 percent response), 214 critical-care units, and 443 critical-care nurses.

Findings show a 14 percent vacancy rate for full-time, critical-care nursing positions and a 25 percent turnover rate among these nurses each year. Over one-third of the nurses held baccalaureate and associate degrees in nursing, while 27 percent were graduates from diploma programs. Although all had attended continuing education courses during the year, only 15 percent were certified in critical-care nursing (an equal number were pursuing certification). Most hospitals gave preference for nursing with certification, but did not pay those nurses higher salaries.

This is a good study that provided important data, but the nonscientific sampling method makes the findings difficult to generalize to the entire critical-care nurse population.

Lewis, Nancy Louis. *Head Nurse Leadership Style and Staff Nurse Job Satisfaction: Are They Related?* Detroit, MI: Wayne State University, Master's thesis, 1987.

This thesis examines the relationship between staff nurse perceptions of head nurse leadership styles and their job satisfaction. Questionnaires were distributed to nurses assigned to medical, surgical, and oncological units of a 190-bed suburban hospital. The response rate was 49 percent (sample size=26) and no follow-up was undertaken. However, the author compared her sample with the total universe of nurses on those units. In addition, scales used in the questionnaire were tested for

validity and reliability. The findings indicate that 92 percent of nurses are satisfied with their current position and that the hours they work are important to their personal satisfaction. Head nurse leadership style is also related to job satisfaction. This study is well-executed and interesting, but the small sample size limits our ability to generalize the findings to a broader population.

Long, Jeanette L., and Ellen M. Quisenberry. *The Relationship Between the Knowledge Base Needed for Effective Performance by Nurse Corps Officers in Management Positions and the Knowledge Base*. Monterey, CA: Naval Postgraduate School, Master's thesis, December 1986.

This study examines the relationship between skills gained in manpower, personnel, and training analysis (MPTA) and civilian nursing administration programs and those that are required in a particular nurse corps management position. A pilot-tested questionnaire was mailed to Navy Nurse Corps officers filling a variety of management positions. The response rate was 74 percent; that is, 263 nurse-managers completed the survey. After looking at the MPTA and 16 civilian nursing administration curricula and comparing the courses with the activities and knowledge demanded by nurse managers, the authors concluded that both types of instruction met the needs of Nurse Corps officers.

Manucy, Judith M. *Implementation of Air Force Regulation 169-5 for the United States Air Force Nurse Corps*. Maxwell Air Force Base, AL: Air Command and Staff College, Air University, May 1977.

This study recommends methods of accomplishing the American Nurses' Association's continuing professional education requirements for individuals serving in various types of health facilities (which is the thrust of the Air Force Regulation cited in the title). The author looks at the requirements and evaluates whether it is feasible to meet them. She feels that there would be problems in offering formal programs, workshops, and symposia, since many facilities are too small to accommodate these courses internally, while at the same time it would be too expensive to send nurses to other centers. After considering formal courses, conferences, self-teaching courses, and other means of continuing education, the author recommends consideration of computer-assisted instruction as the method offering the most promise.

Mathews, Kristie Rostatler. *Mentorship as a Career Advancement Strategy in the United States Air Force Nurse Corps*. Albuquerque, NM: University of New Mexico, Master's thesis, 1988.

This study questions whether mentoring is perceived by senior Air Force Nurse Corps officers as enhancing an individual's professional socialization and advancement. A pilot-tested questionnaire was mailed to a random sample of lieutenant colonels and colonels on active duty in the Air Force Nurse Corps; 107 responded for a 76 percent response rate. Among the respondents, 67 percent identified a mentor during their career development and 94 percent felt that their mentor aided in career achievements. Over three-quarters felt that their mentors were agents for professional socialization and 72 percent saw them as role models. The author concludes that mentors can serve as adjustment smoothers, supporters, and knowledge sharers who can foster feelings of organizational belonging and thereby increase retention.

This is an interesting report that lacks a clear definition of mentorship. The questions asked are somewhat limited, and do not delve as deeply as they might into relationships between nurses and their mentors.

Maximus, Inc. *Wartime Availability of Medical Personnel Upon Mobilization: A Final Report for the Assistant Secretary of Defense.* April 1984.

This report describes the computer-based Wartime Accessibility of Medical Personnel Upon Mobilization model. The model is a tool to profile the characteristics of reserve medical personnel and relate wartime accessibility to those characteristics. Specifically, the model centers on a number of circumstances that could cause reserve members to be inaccessible upon mobilization. This is done by measuring the impact of the selected factors on each reserve manpower pool by medical specialty, reserve category, and Military Service component.

The report describes the model, presents a demonstration based on the Defense Manpower Data Center's 1982 Reserve Component Common Personnel Data System files, provides detailed guidelines for the model's use, and lays out specifications for system and database design.

McMahon, Margaret. "President's Message: Preserving the Freedom." *Journal of Emergency Nursing* 13. July/August 1987, pp. 194 – 196.

The paper addresses the projected wartime shortage of 31,000 nurses in the military reserve forces and the meeting held between leaders of the military and civilian nursing sectors. The solutions discussed at this meeting include making the nursing community aware of military reserve force needs, increasing the age of entry into the reserve components to 48 years, enhancing educational assistance programs, providing flexibility in scheduling, and encouraging the nursing community to assist DoD in its recruitment efforts. In addition, the paper discusses the author's 21 years of reserve service. The article is interesting and easily read. It may interest civilian nurses in reserve military service.

Miller, Jean R. *United States Army Reserve Nurse Retention Study.* Kingston, RI: The University of Rhode Island, Work-in-progress.

This soon-to-be-published study, which involves a large sample of Army Reserve nurses assigned to units of the Selected Reserve, is an important project with tightly drawn controls. The author, a lieutenant colonel in the Army Reserve, is also Dean of the College of Nursing at the University of Rhode Island.

The overall purpose of the study is to determine the extent to which the retention of nurses in the Army Reserve is affected by the nurses' job satisfaction, military benefits, and personal commitments to the Army Nurse Corps. Correlations with a set of demographic variables are also computed and analyzed.

A 104-item questionnaire was mailed to a random, stratified sample of 2,231 nurses representing a population of 6,732 nurses in the troop program units of the Army Reserve. Nurses in nonmedical units as well as those in medical units were sampled. Nurses in the lower grades (01 through 03) were oversampled to offset any potential lower return rate. Completed instruments were returned by 1,131 nurses (51 percent return rate). The author then distributed a short form of the research instrument among all original nonrespondents. Of these, 389 responded to the

follow-up effort. Short form responses were tested (by using Duncan's multiple range test) to determine any significant differences between first-chance respondents and nonrespondents. While statistically significant differences occurred in three of the nine items tested, the author elected to continue because of the overall similarity of the two groups. Using responses to both the long and the short forms of the questionnaire resulted in an adjusted response rate of 68 percent for the combined (1,131 + 389 = 1,520 of 2,231) group.

The research questionnaire was designed so that clusters of questions related directly to each of the concepts (job satisfaction, benefits, commitment, and retention) around which the study was built. Three of these concepts (all except commitment) were further defined by using descriptive phrases (factors) that became the focus of most questions. Analysis of the responses permitted the author to deduce relationships among these concepts and some 22 demographic variables. Data analysis was completed largely by the use of factor analysis and the Chi-square statistic.

Tentative findings involve:

- Relating study variables to intent-to-remain versus leave-current-status within the coming year
- Identifying study variables that tend to predict intent-to-remain versus leave-the-Army Reserve-before-retirement
- Citing reasons for leaving
- Suggesting ways to improve satisfaction and retention.

This work will be a substantive contribution to the literature on nursing professionals when it is published later this year. The reader will want to compare the outcomes of Miller's work with those of the present LMI study.

Misener, Terry R., et al. *Mobilization Readiness of Retired Army Nurse Corps Officers*. Fort Sam Houston, TX: U.S. Army Health Services Command, June 1986.

This study surveyed retirees. The study sought to discern personal and professional readiness, as well as attitudes, opinions, needs, and concerns regarding mobilization of retired Army Nurse Corps officers. Data were collected through a mail survey sent to all those who retired, for medical or nonmedical reasons, from the active force, from the Army Reserve, and from the Army National Guard, and who were under 60 years of age (sample size = 748). An 88.2 percent response rate was achieved after four follow-up contacts.

A profile shows the average respondent to be a 51 year-old unmarried female who does not have any dependents. She has served 21.5 years in military service (19.26 years with the Army Nurse Corps), has served in combat, and has held positions of nurse-administrator, nurse-anesthetist, or medical-surgical nurse. She has attended a diploma nursing school and holds a current registered nurse license. She retired in good-to-excellent health and is currently working for pay in a variety of settings. Over half attended continuing education courses.

Nearly all the respondents were aware of their recall status; but only about one-quarter maintained contact with their assigned facility. Three-fourths of the

respondents wanted to be recalled, if physically able; one-fifth would choose to seek exemption if recalled. Nearly all the respondents believed that they should have some choice concerning the geographic location of any mobilization assignment as well as an input into their duty position assignment. This is an excellent study with a population for whom few data exist.

Misener, Terry R., et al. *Time Spent in Indirect Nursing Care.* Fort Sam Houston, TX: U.S. Army Health Services Command, September 1983.

This study investigates the percentage of time spent by nursing personnel performing clinical services other than direct care. Such activities include planning for patient care, preparation of medications and equipment, team conferences and communication, and other activities which detract from time available for patient care.

Using a work-sampling method, the authors survey nine medical treatment facilities to quantify the percentage of time spent by nursing service personnel over a 2-week period. Nursing units were randomly selected at the facilities. A total of 107,700 10-minute time segments were monitored during randomly selected nursing shifts. Data collection forms from a prior study were used. In addition, the charge nurse for each shift was asked to assess subjectively the adequacy of the staffing on the shift.

The study finds that, across all sites and services, 60.5 percent of nursing time is spent providing indirect care; 24.5 percent providing direct care; and 15 percent is reported as time unavailable for care. The greatest variances appear to be attributable to hospital size and to the mix of personnel assigned.

The study finds a tendency for installations with a higher ratio of nurse-to-nonprofessional-staff to have a higher proportion of the time spent in direct care activities. Charge nurses feel that nearly one-quarter of the shifts are inadequately staffed; many feel that an additional nurse per shift could remedy the staffing problem.

The appendices include computer printouts analyzing the data according to the time spent by care providers, while citing activities performed. The report recommends further study to determine adequacy of staffing and quality of care.

Mohr, Henry. *Will America be Able to Treat Its Battlefield Wounded?* Washington, DC: The Heritage Foundation, 18 December 1984.

The objective of this background paper is to present information to answer the question, "How well will American casualties be treated medically in future and possibly larger conflicts?" The answer is that the medical care on hand, available, or currently programmed is insufficient to treat the numbers of casualties likely to result from heavy armed conflicts. The author cites GAO reports. The paper also observes that medical personnel on active duty have insufficient training in combat casualty care and that DoD is not addressing wartime needs realistically. The author makes several recommendations, including suggesting an amendment to the Military Selective Service Act, that would require the registration of all persons between the ages of 18 and 46 years who are trained in a health care occupation.

Moses, Evelyn B. *The Registered Nurse Population*. Washington, DC: USDHHS, November 1984.

This report provides statistics from the 1984 survey of registered nurses. This survey is conducted to provide data to assess the current status of the registered nurse population and to evaluate trends in the availability of nursing resources. Tables are presented with data on the supply of nurses, nurse employment, and the demographic characteristics of nurses. This is an excellent, if somewhat dated, source on information of registered nurses.

Moses, Evelyn B. *Selected Findings from the 1988 Sample Survey of Registered Nurses*. Rockville, MD: USDHHS, Division of Nursing, 1989.

This brief report provides a few preliminary findings from the Fourth National Sample Survey of Nursing, a comprehensive study of the personal and professional characteristics of all those who possess licenses to practice as registered nurses. The data, collected from a sample of 33,000 nurses, are being prepared for publication. This interim report presents findings on employment status, educational preparation, employment setting, average salaries, and distribution of the nurse population.

Nichols, Glennadee A. "Job Satisfaction and Nurses' Intentions to Remain with or Leave an Organization." *Nursing Research* 20. May/June 1970, pp. 218 - 228.

The objective of the study is to examine the relationship of job satisfaction and nurses' intentions to remain with or leave an organization. A pretested survey instrument was mailed to novice Army nurse officers; after a second mailing, 186 responded (69 percent response). The study finds that only 17 percent of the nurses intend to remain in the Army, while 76 percent plan to leave. A significantly larger proportion of unmarried women intend to stay than do those who are married. In addition, "stayers" are more satisfied than "leavers." In contrast, "leavers" perceive that they would be more satisfied in other health care settings. The study findings are interesting but presented in a very general fashion.

Nichols, John C. *Turnover Among Air Force Nurses*. Salt Lake City, UT: University of Utah, Master's thesis, 1987.

This thesis is a report on efforts to ascertain the impact of satisfaction on turnover, reasons for leaving, and the impact of work role design and individual motivation on satisfaction. It uses stratified, quota, random sampling methods to distribute surveys to 1,200 active component Air Force nurses working in medical treatment facilities worldwide. The response rate was 73.5 percent and tests were conducted to evaluate the representativeness of the sample.

The major findings of the study are as follows: (1) turnover intentions closely resemble actual nurse turnover; (2) most nurses are satisfied with their work, and satisfaction is related to consistency, equity of organizational policies, and individual motivation; and (3) reasons for leaving include working conditions and job politics, family responsibilities, supervision, and policies. This study presents an excellent review of the literature on turnover, job satisfaction, and retention models. However, the data presentation and multiple correlations are somewhat overwhelming. Recommendations are offered to improve retention.

Novak, Mary E. *Job Satisfaction Among Air Force Clinical Nurses: Causes and Ways to Change It.* Maxwell Air Force Base, AL: Air Command and Staff College, Air University, 1988.

This study identifies probable causes of job dissatisfaction in Air Force clinical inpatient nursing and offers recommendations on how nurses at all levels can improve working conditions. This project has severely limited benefit. One major contribution is citations of several interesting findings from other studies. No obvious methodology guides this research; the paper notes only that conversations were held with charge and chief nurses. The paper's review of findings from the Air Force Medical Management Engineering Team's 1987 nursing questionnaire indicates that active duty nurses work 10 to 70 hours of overtime per week, that two-thirds of work centers are performing with undue strain, that nurses unanimously complain about performing duties that should be performed by other sections, and that physical conditions need improvement.

Nursing (Editors). "The Changing Universe of Nursing." *Nursing* 86. 16 January 1986, pp. 48 — 49.

This editorial reports the findings from the journal's 15th survey of readers. The scientific merit of the findings is doubtful since no method, number of respondents, or response rates are offered. However, over half of the respondents feel that satisfaction within nursing decreased during the past 5 years although only one-quarter feel that nurses' status diminished during that time. Those who noted less satisfaction give four reasons: too much paperwork (75 percent), low salaries (66 percent), decreased quality of care (60 percent), and discontent with Medicare's Diagnostic Related Group reimbursement program (55 percent). While the nurses believe that health facilities are hiring fewer nurses, they note changes toward a decentralized structure as typified by the change from team to primary nursing.

Opinion Research Corporation. *Study of the Recruitment of Medical Professionals for the Military Services.* Princeton, NJ: April 1976.

This study reviews the recruiting practices for health care professionals for military service and analyzes sentiments toward military practice. A sample of 217 student nurses, seniors in 3- and 4-year nursing school programs, was selected randomly from lists provided by the schools. None of the students was in school under an armed forces scholarship program. The sample consisted of single, white, American females who were under the age of 22 years.

Findings include reasons the respondents gave for considering or avoiding a military career. Data are included to show which types of recruitment information were effective. In addition, determinants of career choice and expectations by students are analyzed.

The study also reports responses from practicing physicians and from medical, osteopathy, and dental students, but we did not review those in preparing this annotated bibliography.

Poland, Edith A. *The Effect of Permanent Change of Station (PCS) Policy Changes on Nurse Corps Career Development*. Monterey, CA: Naval Postgraduate School, Master's thesis, December 1984.

The thesis examines the permanent change of station policy for the Navy Nurse Corps and investigates how it relates to nurse career development and historical trends in nurse corps tour lengths. The data used in the study are derived from the Navy Nurse Corps' database, which contains records of 5,860 officers from the grades of ensign to rear admiral. The author concludes that variety of tours (both within and outside CONUS) gives progressively expanding experiences to the individual nurse. Smaller duty stations are seen to provide opportunities to develop management and leadership skills as well as to encourage independent nursing practice within professional guidelines. Variety in tours of duty provides nurses with experiences necessary for promotion. The author expects tour lengths to increase and rotational moves to decrease in the future as more nurses seek OCONUS tours. However, the cost savings from decreasing permanent changes of station must be carefully weighed against the costs of reduced opportunities for career development and the potential loss of qualified nurse officers.

Porter, Lyman W., and Richard M. Steers. "Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism." *Psychological Bulletin* 8. 1973, pp. 151 - 176.

This article presents an excellent review of the research that had been undertaken over the previous 10 to 12 years on turnover and absenteeism. The authors find that overall job satisfaction is consistently related inversely to turnover. To make satisfaction more understandable, the authors categorize factors that represent different levels in the organization. Aspects of four organizational levels (organization-wide factors, immediate work environment factors, job-related factors, and personal factors) consistently are found to be related to both turnover and absenteeism. A conceptual framework is developed to present the diverse findings. Methodology and needs for future research are discussed. One interesting, and often forgotten, finding is that turnover is necessary for an organization to increase its adaptability to changing technologies and modes of work, as well as to increase efficiency. Although the report focuses on employees in general, nurses represent one group of employees considered.

Prescott, Patricia A., and Sally A. Bowen. "Controlling Nursing Turnover." *Nursing Management* 18. June 1987, pp. 60 - 66.

The objective of this study is to determine why some nurses leave and some stay, so that the flow can be managed. The sample was composed of 1,044 staff nurses employed in 15 hospitals who completed mail questionnaires, 92 personally interviewed staff nurses, and 111 telephone interviews with nurses who had resigned from their positions. Several interesting findings are reported about why nurses left and what factors are dissatisfying to nurses who had remained in their positions. The work-related reasons given for resignations include scheduling problems, poor administration, lack of stimulation, poor nursing practice, low salary, and inadequate staffing. Non-work-related reasons for resignations were relocation, personal/family responsibilities, distance to work, school, and hospital location. Those nurses who remained with the organization report the following factors to be inadequate: child care facilities, salary, promotion opportunities, fringe benefits, staffing, respect from physicians, respect from nurse administrators, time/work patterns, workload, and

flexible scheduling. This is an interesting study that has been cited frequently since its publication.

Rhoton, Nina Kay. *The Relationship Between Charge Nurse Leadership Style and Staff Nurse Satisfaction*. Baton Rouge, LA: Louisiana State University, Master's thesis, 1985.

This study seeks to determine whether a relationship exists between a charge nurse's leadership style and the job satisfaction of subordinate staff nurses. Air Force nurses at two Air Force medical centers were contacted by telephone and asked to participate in the study. Those who agreed were sent a leadership opinion questionnaire and the Minnesota job satisfaction interview schedule. The sample is composed of 77 staff and 15 charge nurses (a 97 percent response rate). All charge nurses and almost half the staff nurses claim that they probably or definitely plan a military career, and a majority scored high in job satisfaction. Staff nurse satisfaction is related to just how considerate the charge nurse is, but staff nurse satisfaction is not affected by other dimensions of charge nurse leadership style. While this study highlights interesting findings, the small number of respondents limits its usefulness.

Roberts, Benjamin J., and Kathryn M. Kocher. *Recruiting and Retaining Army Nurses: An Annotated Bibliography*. Monterey, CA: A report prepared under contract to the U.S. Army Recruiting Command by the Naval Postgraduate School, December 1988.

This helpful bibliography contains references to some 118 articles, reports, papers, and other documents (including unpublished materials) relating in the broadest way to Army nursing (only 16 titles contain specific references to the Military Service). As the authors point out, however, the recruiting of Army nurses for either the active forces or the reserve forces is conducted within the environment of the national labor market. This bibliography has a distinct "tilt" toward works on labor market and health care economics, but the authors also refer to studies of job satisfaction, reasons for employment termination, registered nurse supply and demand, and other pertinent topics.

This work will be quite helpful to researchers studying nurse recruiting and retention.

Rose, Mary Ann. "ADN vs. BSN: The Search for Differentiation." *Nursing Outlook* 36. November/December 1988, pp. 275-279.

Since the 1965 American Nurses' Association's position paper on nursing education, controversy has existed within the profession over the relative merits of the Associate Degree in Nursing (ADN) and the Bachelor of Science in Nursing (BSN) as preparation for nursing practice. This article reports on the large body of research that addresses the question. First, the author discusses the methodological problems of the studies cited. Second, she looks at findings on professionalism, decision-making ability, leadership, job satisfaction, personality, and the opinions of colleagues to ascertain which type of educational program produces nurses who score higher in these categories. Studies do not consistently find either ADN or BSN students scoring highest in the various categories except for professionalism, which is usually scored high for BSN students. The author notes that diploma school graduates received good ratings from patients and that they reported higher levels of satisfaction than did

graduates from either of the other programs. The article offers a good literature review for those concerned about educational requirements for a nursing profession.

Rosenfeld, Peri. *Nursing Student Census with Policy Implications, 1988.* New York: National League for Nursing, 1989.

This report presents data from the National League for Nursing's 1986-87 annual survey of all basic registered nurse programs and graduate degree nursing programs. The data (from 100 percent of all schools of nursing) on admissions, enrollments, and graduations are presented by state, region, financial support, and program type. In addition, 5-, 10-, and 20-year trend data are offered. Data are presented that show admissions, enrollments, and graduations for minority and male students, with 10-year trends indicated. The reader can find information about registered nurses returning for baccalaureate and graduate degrees. This book is very helpful for anyone studying nurse education.

Rosser, Deena L. *A Job Satisfaction Survey of Nursing Personnel.* Washington, DC: Veterans Administration, January 1981.

This study reviews the level of job satisfaction of registered nurses as compared to that of licensed practical nurses in order to ascertain ways to reduce turnover and decrease absenteeism. One major problem with the study is that it is limited to nurses working at Cooper Drive Division of the Veterans Administration Medical Center, Lexington, Kentucky. Seventy-five percent of the 155 registered nurses who completed the questionnaire (representing an 81 percent response rate) are generally satisfied with their jobs. On a five-point scale, the mean scores of registered nurses on various satisfaction measures are: comfort, 3.01; challenge, 3.15; financial rewards, 4.52; relations with coworkers, 3.66; resource adequacy, 3.55; and promotions, 2.88. While the author notes that these scores are higher than those of other workers surveyed by the University of Michigan, she does not tell us which questions comprise the satisfaction measures. Her use of the arithmetic mean, rather than the median, seems questionable.

Seevers, James. *Recruiting Physicians and Nurses for the Reserve Components.* Washington, DC: The Industrial College of the Armed Forces, Fort Leslie J. McNair, 1988.

The project reported here examines the elements of supply and demand when considering recruiting the required physicians and nurses into DoD's reserve components. The project also seeks to evaluate alternative incentives and other factors that influence the health care professional's decision to serve. Particular attention is given to critical specialties for which there are significant wartime shortfalls. The author attempts to show how to tap available supply successfully to satisfy growing demands. He also reviews military recruiting initiatives to assess the advantages and disadvantages of each. This study contains useful, current information and recommendations on wartime medical manpower requirements, supply of health care professionals, and options to address the problem.

Seybolt, John W., Cynthia Pavett, and Duane D. Walker. "Turnover Among Nurses: It Can Be Managed." *Journal of Nursing Administration* 8. September 1978, pp. 4-9.

The authors present and then test a complex model to predict turnover among nurses. In order to do that, they surveyed 242 registered and licensed practical nurses in a 310-bed university hospital during working hours. One year after the survey, they examined the hospital's records to discover which nurses left. Of 212 nurses they could trace, 89 (42 percent) had left.

The authors collected attitudinal data on overall job satisfaction, satisfaction with supervision, role perceptions, performance motivations, rewards, and chance to use professional abilities. They review educational level, degree held, marital status, and length of service. They conclude that their model could indeed predict who would leave.

Slewitzke, Connie L. *U.S. Army Reserve and National Guard Survey*. Washington, DC: Walter Reed Medical Center, Nursing Research Service, Unpublished report, August 1982.

A large number of randomly selected nurse officers in the Army Reserve (sample size=901) and Army National Guard (sample size=459) completed a 67-item questionnaire mailed to them in January 1982. This response rate is 55 percent of the deliverable surveys. Since the questionnaire had not been pilot-tested, responses to two items were eliminated because of ambiguous interpretations. Several other findings were not clear, such as readiness for mobilization, because the responses of inactive reservists (4 percent of the Army National Guard and 26 percent of the Army Reserve) were not reported separately from those in the Selected Reserve. The objectives of the study were to assess problems relating to recruitment and retention, identify training needs for mobilization, and recommend policy changes. Approximately 70 percent of all respondent nurses indicated that they will remain in the reserve forces until retirement, although large percentages expressed dissatisfaction with educational opportunities, training materials, supervisors, utilization of personnel, communication, and promotion opportunities. Recruiters were not viewed as influential. In-processing procedures were remembered as problematic. The author raises questions about the level of mobilization preparedness of the nurses and offers 23 recommendations to address the identified problems.

Smith Cassandra, Mary E. *Senior Nursing Students' Perceptions of Nurses and Nursing in the Military Service*. New York: Columbia University, Doctoral dissertation, 1970.

This study identifies those characteristics that nursing students (potential recruits) perceive as specific to nurses in general and to nursing in the Military Services, and identifies how those perceptions differ from those of nursing in the civilian sector. The sample consists of 318 nursing students enrolled in accredited generic baccalaureate degree nursing educational programs. Schools were selected at random with 25 in the final sample. Students were asked to participate. Questionnaires were sent to 529 students who agreed, giving a response rate of 60 percent. The author pilot-tested the instrument and made follow-up calls to nonrespondents to assure representativeness of the response group's answers.

The findings indicate that 31 of the 53 characteristic trait words showed statistically significant differences in perceptions between civilian and military nurses. The military nurse is perceived to be regimented, rigid, authoritarian, adventurous, independent, efficient, hardworking, ambitious, punctual, well-educated, and neat. The civilian nurse is seen as feminine, warm, gentle, and having a tender touch. As for a list of 38 statements on nursing practice, work environment, and personal benefits in each setting, the students are more uncertain about the military benefits and regulations than they are about the civilian general hospital.

This study is interesting and well conducted, although outdated. It is unfortunate that the author did not ask whether the students intended to join a Military Service.

Sorenson, Wayne Bert. *A Causal Model of Organizational Commitment.* Iowa City, IA: University of Iowa, Doctoral dissertation, May 1985.

In this study, the author developed and tested a model that identifies and describes organizational commitment, its determinants, and effects. All employees in the nursing departments of large, acute-care, teaching military hospitals in CONUS were sent survey questionnaires; 73.2 percent responded. Several methods are utilized to assure the robustness of the inferences to be drawn. They included comparing the sample with the overall population, pretesting the survey instruments, and undertaking validity tests.

The author's model works. It produces relationships between satisfaction, commitment, integration, downward communication, and personal pay. Unfortunately, the nontechnical reader will have some difficulty understanding the results; variable names and definitions are difficult to comprehend; path and factor analysis are difficult statistical routines to understand and interpret; and the published work does not separate the sample into helpful groups, but rather treats staff nurses, licensed vocational nurses, administrators, medical specialists, nurses aides and clerks as a single group.

Stabingas, Sandra Frances. *A Comparison of Reserve Officer Training Corps (ROTC) and Volunteer Accessions to the Army Nurse Corps in Terms of Their Achievement.* Washington, DC: The George Washington University, Doctoral dissertation, May 1985.

This study seeks to determine whether a difference exists between ROTC graduates and direct-commission, volunteer Army Nurse Corps accessions in their achievement in an Army Medical Department (AMEDD) orientation course, performance on active duty, and their perceptions of current duty and military issues. The study sample is composed of 36 ROTC and 79 volunteer accessions who meet the criteria of attendance at the July AMEDD course, rank of second lieutenant, and initial duty assignment in CONUS (89.57 percent of all possible attendees). Findings indicate that no significant differences exist between the two groups with regard to sex, age, prior military experience, family military background, nonclinical performance aspects (e.g., leadership, military expectations, and professional behavior), clinical performance, and perceptions of current duty and military issues. The only significant difference is that ROTC nurses have higher grade point averages and scored higher on the orientation course examination. Interesting questions are asked about various aspects of military work and careers; these, too, do not yield significantly different responses from the two groups.

Stoller, Eleanor Palo, "Preconceptions of the Nursing Role: A Case Study of an Entering Class." *Journal of Nursing Education* 17. June 1978, pp. 2-14.

The article focuses on concepts of the nursing role that an entering class brings with them into the educational setting. The study further compares these with the attitudes of the graduating class to assess any trends toward convergence in orientation toward nursing. All first-year students (sample size = 34) in a 3-year diploma school of nursing were given a (not pretested) survey during the first week of their classes, and senior students (sample size = 23) completed a survey 1 week prior to their graduation. Three different orientations of nursing roles (professional, traditional, and utilitarian) are scaled.

Texidor, Margaret S., and Barbara L. Hyde. *A Survey of the Army Nurse Corps Reserve Program Membership Within the 807th Medical Brigade: Education, Leadership, Membership Factors, and an Expanded Perspective on Nursing Practice*. Unpublished paper, September 1987.

After a pilot test of the questionnaire, the authors mailed a 32-item survey instrument to 12 chief nurses within the 807th Medical Brigade (USAR) to distribute to 428 nurses during a single unit training assembly. A total of 193 Army Reserve nurses completed the questionnaire, representing a 45 percent response rate. The study seeks to define the factors that bring nurses into the Army Reserve and promote their retention. The findings indicate that the five most significant factors for entry are patriotism; the ability to practice nursing from a different perspective; enhancement of self-worth; career direction expansion that contrasted to civilian work; and promotion/ personal, and professional recognition. The five major retention factors are retirement pay, patriotism, ability to practice from a different perspective, development of friendships, and enhancement of self-worth.

Tichenor, Robert W. *Factors Graduating Student Nurses Consider when Seeking Their First Employment*. Washington, DC: Veterans Administration, 1971.

Questionnaires were completed by 585 senior student nurses from the three types of nursing educational programs, representing 85 schools located in all but nine states (44 percent response rate). The study attempts to determine the job factors that are considered most important when seeking a first nursing job and to ascertain student nurse images of VA nursing service. Although the data presented serious consistency problems, the study shows that student nurses consider the following factors most important: attitudes toward progressive patient care (64 percent), educational opportunities (50 percent), and type of nursing specialty (43 percent). The seniors had made employment inquiries (86 percent), had received employment offers (75 percent), and 48 percent had accepted positions. The students use varied sources for information about employment: friends or family (73 percent), persons at home or affiliate hospital (68 percent), and professional journals (56 percent). Nearly two-thirds of the seniors note that they intended to work in or near their home town, and only 25 percent were interested in relocating. While the topic is of interest, the study's merit is limited by questionable analytic presentations and the age of the information.

Troyer, Susan J. *Factors Affecting Recruiting and Retention in the Air National Guard Nurse Corps.* Maxwell Air Force Base, AL: Air Command and Staff College, March 1984.

This study surveys Air National Guard nurses to ascertain why they have separated from or remained with the nurse corps during the past 5 years and to suggest improvements in recruitment and retention. Mail questionnaires were completed by 79 Army National Guard chief nurses (response rate of 81 percent). The data presented have questionable reliability, for they are based on the chief nurses' opinions on exit interviews and on informal polls of nurses in units. However, factual data about recruitment activities and nurse demographics are useful. This is an interesting study, for it makes a small dent in the scarcity of information about nurses who have left the reserve forces. The study also presents a good review of nurse shortage problems. Findings indicate that 127 nurses left the Army National Guard between 1979 and 1983; 55 percent were 35 years of age or younger, 43 percent were captains, 21 percent were majors, and 12 percent were lieutenant colonels. Recruiting has only limited effectiveness: while 86 percent of the units have a recruiting plan, only 10 percent use nurse recruiters; most use "word of mouth" for recruitment efforts.

U.S. Comptroller General. *Will There Be Enough Trained Medical Personnel in Case of War?* A Report to Congress, 1981.

This report discusses ways to improve readiness planning to meet wartime medical personnel requirements, while recognizing expected postmobilization shortages and training needs for combat support missions. DoD estimates for wartime requirements and medical personnel shortages (including various categories of nurse specialties) are shown. The report calls for improved medical mobilization planning and efforts to recruit and retain physicians and nurses. A specific recommendation to the Selective Service System is to preregister civilian medical personnel.

U.S. Department of Defense. *The 1986 Reserve Components Survey.* Arlington, VA: Defense Manpower Data Center, 1986.

The 1986 Reserve Components Survey provides reliable, valid, and timely data on reserve military personnel, their backgrounds, experiences, and responses to past and current policy changes and identification of future areas for policy action. Over 12,000 officers and about 52,000 enlisted personnel in all seven reserve components, all representing those serving in the Selected Reserve, completed comprehensive questionnaires mailed to them in the Spring of 1986. The sample presented here is scientifically selected, respondents are tested for representativeness, and responses are weighted. The authors followed technically excellent research and survey design methodology.

Findings from the study pertain to a variety of topics including demographic characteristics; military background; military training, benefits, and program participation; reasons for joining the reserve forces; perceptions of problems with meeting unit training objectives; convenience of and satisfaction with reserve participation, civilian employment, and family resources.

This survey is an excellent source of reliable and valid data from a large sample of military officers (we did not review enlisted data). Data for nurses from the five

components with nurses were isolated for use in several studies; we have cited this study repeatedly in the current work.

U.S. Department of Defense. *Health Professionals Special Pay Survey: Nurses*. Washington, DC: Office of the Assistant Secretary of Defense (Health Affairs), Unpublished report, January 1989.

The report addresses attitudes of armed forces nurses toward compensation and benefits received for active duty. A worldwide electronic message survey was conducted. Details of the survey method are not specified. A total of 3,310 nurse respondents, in the Army, Navy, and Air Force are included in the survey sample. The respondents are critical of the pay and benefit package received and feel that the compensation system is not effective in motivating people to enter or to remain in service. Levels of dissatisfaction with facilities, equipment, personnel shortages, and personal factors were shown. The study presented interesting findings although the methodology did not appear to be either scientific or rigorous.

U.S. Department of Defense. *Joint Operation Planning System (JOPS) III Medical Planning Module (MPM): Users Manual*. Washington, DC: Joint Data Systems Support Center, 9 January 1987.

This manual provides instructions for using the medical working file and the medical database to generate reports for admissions; patient processing; evacuations; returns to duty; surgeon and physician requirements; and hospital bed, medical supply, and user care requirements.

U.S. Department of Defense. *Report on Publicity and Marketing Efforts to Increase Awareness of Reserve Component Incentive Programs for Health Professionals*. Washington, DC: Office of the Assistant Secretary (Health Affairs), prepared for the House and Senate Committees on Armed Services, U.S. Congress, February 1989.

This report provides the Senate and House Armed Services Committees information about actions that were taken to publicize the availability of the financial incentive programs for reserve medical recruiting and to develop a marketing strategy to attract health professionals into the reserve forces. The report discusses the following subjects: congressionally approved measure to improve reserve medical staffing; actions taken by the Assistant Secretaries for Force Management and Personnel, Health Affairs, and Reserve Affairs to increase awareness; significant limitations to program growth that need to be remedied; additional proposals to improve the effectiveness of the loan repayment and stipend programs; and the adequacy of recruitment resources for the FY90/FY91 biennium.

U.S. Department of Defense. *Survey of Recruitment and Retention of Reserve Physicians*. Washington, DC: Office of Planning and Policy Analysis, Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics), 1979.

This brief interim report presents the findings, recommendations, and initiatives of a study group for enhancing recruitment and retention of physicians in the reserve components. The six reserve component officers who are members of the study group note eight factors inhibiting recruitment and retention and suggest initiatives for approaching solutions. The recommendations include suggestions to increase

retirement age, appoint noncitizen physicians and dentists, streamline the application process, and offer reserve duty service as repayment for medical scholarships received.

U.S. Department of Defense. *Sixth Quadrennial Review of Military Compensation [QRMC]: Volume 1C – Compensation in Support of Reserve Medical Manpower.* Washington, DC: July 1988.

This volume is part of the sixth QRMC final report. It focuses on compensation for reserve component health care personnel (including doctors, dentists, and nurses). The study traces the development of medical manpower requirements, the history of incentives for professionals, noncompensation programs and incentives, attitudes and environment of physicians and nurses, and attitudes of enlisted health care personnel in the reserve forces. A separate chapter is devoted to attacking shortages of nurses in the reserve components. Heavy reliance appeared to be placed on published literature and the Reserve Medical Management Information System (REMMIS) database for Army Selected Reserve units. Several recommendations for incentive programs are made: a limited test program of an annual bonus for critically short wartime physician and nursing specialties, increased special pay for reserve medical officers when on active duty for training, and funding for attendance at health education conferences.

U.S. Department of Education. *Undergraduate Financing of Postsecondary Education: A Report of the 1987 National Postsecondary Student Aid Study.* Washington, DC: Office of Educational Research and Improvement, June 1988.

This is an extensive report on how undergraduate college students are financing their studies. It reports on the students' enrollment characteristics, financial aid status, cost of attendance, types and sources of student financial aid, and Federal aid funding programs. Many of those categories were compared by cross-tabulations with demographic and socioeconomic characteristics of students.

The report concludes that financial aid is an important source of support for many undergraduates, especially for those attending private educational institutions and those from lower income families. Nearly half of the enrolled students receive some form of aid, and 35 percent receive some form of Federal aid. Over one-third of the students receive grants; more of those receive the aid from non-Federal sources than from the Federal Government. Almost one-quarter took a loan (mainly from the Federal Government) to finance their expenses and combined this with some other types of aid to complete the funding support required. About 29 percent of the students rely only upon themselves, their spouses, and/or relatives for financial support.

Several findings in the study detail personal characteristics of students and relate them to their financial aid status. For example, nearly 40 percent of undergraduates are older than the traditional college age; and females are more likely than males to rely on themselves or their spouses for financial support.

Data cover students enrolled in the Fall 1986 semester or quarter in postsecondary institutions. The data were collected from multiple sources. First, registration information and financial aid records were scanned in 1,353 schools selected by a strata sampling design. Second, a questionnaire (with telephone follow-up) was mailed to a random and stratified sample of 59,888 students. A subsample of parents of nonaided, dependent students were interviewed.

The data source is unique and excellent because of its scope of students identified and its breadth of data on expenses and funding sources.

U.S. Department of Health, Education and Welfare. *Evaluation of Employment Opportunities for Newly Licensed Nurses*. Washington, DC: Division of Nursing, May 1975.

The findings of a study to investigate and evaluate job opportunities for newly licensed nurses are reported here. Data were collected from 6,223 respondents (81 percent response rate) to a pretested, mailed questionnaire. Different demographic characteristics are found among graduates of four types of nursing programs. Data are shown about: first-position opportunities; difficulties in finding a position; sources of job information; determinants of job acceptability; perception of skill utilization in job; and job satisfaction. Findings revealed that the nurses generally are employed by a type of employer that represents their first preference. Nurses found that the job market was very open. Most nurses went to work in hospital settings. Most nurses were satisfied with their first position.

U.S. Department of Health, Education and Welfare. *Supply, Need and Distribution of Anesthesiologists and Nurse Anesthetists in the U.S., 1972 and 1980: A Summary Report*. Washington, DC: 1976.

This brief report contains data on characteristics of anesthesiologists and nurse-anesthetists, and supply projections and needs for the years 1972 and 1980 in each of the 50 states. Data were supplied by the relevant professional associations.

U.S. Department of Health and Human Services. *A Report on Allied Health Personnel*. Washington, DC: Bureau of Health Manpower, Health Resources Administration, Public Health Services, prepared for the Committee on Interstate and Foreign Commerce, U.S. House of Representatives and the Committee on Labor and Human Resources, U.S. Senate, 26 November 1979, pp. V31 – V36.

This report describes Operation MEDICH (Military Experience Directed into Health Careers), which began March 1970 and was coming to an end at the time this report was submitted. The program sought to tap the pool of approximately 35,000 trained and experienced Vietnam veterans who were leaving military medical departments each year. The veterans were offered career counseling, vocational guidance, and educational or employment referrals.

During the life of the operation, 78,584 veterans – nearly half of whom worked in nursing care or nursing-related positions – were interviewed. The average person was male, noncareer, with less than 5 years of service, high school graduate, unskilled except for military training. Sixty percent were placed: 43.8 percent in the health field; 18.8 percent were placed in nursing or nursing-related services. Nearly 4,300 veterans were placed in nursing employment positions, while another 2,165 entered nursing educational programs. The major barrier to placement was the lack of credentials for receiving advanced standing.

U.S. Department of Health and Human Services. *Nursing Shortage: Strategies for Nursing Practice and Education: A Report of the National Invitational Workshop*. Washington, DC: Division of Nursing, 1988.

This document reports the proceedings of the National Invitational Workshop on the Nursing Shortage: Strategies for Nursing Practice and Education, held during February 1988 under the auspices of the Division of Nursing. Fifty-five nurse administrators, nurse educators, and Federal Government officials attended the conference. The document contains the keynote address, the conference presentations and recommendations related to recruitment and retention strategies in nursing education and practice. Data are presented on nurse supply in various settings. Recommendations are made to improve the image of nursing practice, to examine long-term effects of recruitment programs, to provide direct payment to nurses for services rendered in hospitals, and to develop educational programs for nurses to assume executive positions in hospitals and other practice settings.

U.S. Department of Health and Human Services. *Nursing — Sixth Report to the President and the Congress on the Status of Health Personnel in the United States*. Washington, DC: June 1988.

This nursing report presents and analyzes recent developments in the supply, geographic and specialty distribution, and education of the nation's nursing personnel. In addition, it provides an assessment of projected nursing personnel demand and supply for the years 2010 and 2020.

The report states that women constitute a large and growing component of the total work force, that educational expenses have increased, and that decreases in the supply of nurses will be felt after the turn of the century. Summary data are presented showing the characteristics of the nurse population, nurses' educational preparation, nurses' work sites, and rates of compensation for nurses. The results of analysis using both a historical, trend-based model, and a criteria-based model to assess future labor force needs and requirements are presented. No research methodology is included in this volume.

U.S. Department of Health and Human Services. *Secretary's Commission on Nursing: Final Report*. Washington, DC: 1989.

In response to concern about the nursing shortage and to legislation, Secretary of Health and Human Services Bowen established a 25-member Secretary's Commission on Nursing. The Commission was charged to provide advice on the problems of nurse recruitment and retention and to develop recommendations on how the public and private sectors can cooperate in addressing these problems and in implementing immediate and long-range solutions. The panel spent 1988 reviewing studies and data, listening to testimony from experts on nursing education and employment, and assessing the causes, consequences, and future implications of the nursing shortage.

This report is presented in three volumes. Volume I offers 16 specific recommendations and 81 directed strategies to implement the recommendations. Strategies are presented for utilization of nursing resources, nurse compensation, health care financing, nurse decision making, development of nursing resources, and maintenance of nursing resources.

Volume II, entitled, "Support Studies and Background Information," presents studies and data about nursing in various sectors. The chapters in this volume are: Nursing Shortage in the Hospital Sector, 1982-87; Nursing Home Shortages; Home Care and the Demand for Nursing Services; The Shortage of RNs in Rural Areas; Hospital Best Practices in Nurse Recruitment and Retention; Federal Nursing; Military Nurses Task Force Report on the Military Nursing Shortage; Overview of Nursing within the Department of Health and Human Services; Overview of the Veterans Administration Nursing Service; Twice as Many: and Still Not Enough; The Mystery of Nursing; An Examination of Issues and Projections; An Analysis of the Key Determinants of RN Demand in Nursing Homes and Their Potential Impact on Future Demand; The Potential Impact of Hospital Closure on the Nursing Shortage; The Potential of Professional Nursing Information Systems; Nurse Participation in Hospital Decision-Making; Changes in Severity of Case Mix and Nursing Resource Requirements; and Factors Affecting the Hospital Employment of Registered Nurses.

Volume III, the project's original Interim Report, was first published in 1988. It presents the Commission's assessment that a nursing shortage actually exists, its causes, the effects of the RN shortage, and the implications for the future. This report clearly establishes that the shortage of RNs "is real, widespread, and of significant magnitude." Its primary cause is an intense increase in demand that is not likely to subside and may affect the quality of patient care. The Commission does not find future projections encouraging and does not believe that the future supply of RNs will be adequate to meet the demand.

The report represents the latest and most comprehensive study of nurse supply. It is an invaluable resource for any investigation of nurse resources and is bound to be cited in all major papers on nurse supply and demand.

U.S. General Accounting Office. *Medical Readiness: Progress in Manpower Needs.* Washington, DC: Report to the Chairman of the Armed Services Committee, House of Representatives, April 1987.

This report, an assessment of the medical readiness of the Military Services and an overview of management information and analysis problems, is the result of a request by the Chairman of the House Armed Services Committee in response to the Assistant Secretary of Defense's (Health Affairs) assertion during hearings (September 1986) that the United States faces a shortfall of about 7,800 physicians and 32,800 nurses in meeting all wartime requirements for medical care for forces upon full mobilization. The major finding stated

We could not substantiate Defense statements about wartime shortfalls of medical personnel because we could not obtain complete, reliable, and consistent data needed to make valid Department-wide assessments of medical manpower needs and personnel resources.

Actions that DoD has taken on reporting requirements were cited, such as the development of the Reserve Medical Management Information System and the Medical Planning for Mobilization model.

U.S. Institute of Medicine. *Nursing and Nursing Education: Public Policies and Private Actions*. Washington, DC: National Academy Press, 1983.

This is the final report of a 2-year study to determine the need to continue Federal financial support for nursing education, the reasons nurses do not practice in medically underserved areas, and the rate at which and the reasons for which nurses leave the profession. The report relies on previously published literature and survey reports from public agencies rather than on new data. It includes discussions on the background of diverse nurses' roles and of nurse education programs; the supply of and future demands for nurses; the effects of education costs, policies, and practices on the generalist nurse supply; the supply and demand for nurses with advanced education in administration; teaching and clinical specialty practices; the underserved geographic areas and populations; and topics for future research. One chapter focuses on job turnover and attrition, career opportunities, working conditions, and benefits.

It reports a vast array of findings from an extensive review of the literature.

Warren, Carolyn, David Styer, and Mabelle Sturm. *Delineating the Ambulatory Care Nursing Activities in the Navy Medical Department*. Bethesda, MD: Naval School of the Health Sciences, Research report, April 1987.

The object of this study is to extend the Workload Management System for Nursing Manpower Model to ambulatory care settings so that professional and paraprofessional nursing staff can be allocated within freestanding clinics and hospital emergency and outpatient departments based upon varying patterns of workload requirements. A survey was conducted (no pretest) with 591 civilian and military registered nurses (67 percent) who worked in 98 percent of the Navy's emergency and outpatient departments. Common direct and indirect care activities, essential to the patient care mission, are identified in 19 clinical areas. Descriptions of patient populations show significant differences between the levels of intensity of nursing care found in emergency departments as compared to outpatient clinics. The majority of nurses see the need for increased staff; 46 percent mention more registered nurses, 59 percent seek additional hospital corps personnel, and 65 percent mention the need for increased clerical support personnel.

Westat, Inc. *1984 National Sample Survey of Registered Nurses: Summary of Results*. Rockville, MD: USDHHS, Bureau of Health Professions, April 1986.

This report presents data from the third in a series of surveys on the personal and professional characteristics of registered nurses. Data were provided from 44,268 respondents (80 percent response rate) to a 1984 questionnaire mailed to a probability sample of registered nurses licensed to practice throughout the United States. The questionnaire, comparable to the ones used in 1977 and 1980, solicited information about demographic characteristics, field of employment, type of position, educational preparation, functions performed, and income for nurses who were employed full time. In addition, characteristics of nurses not employed in nursing are described, and 51 tables and charts are presented.

Wilke, Richard J., et al. *Physicians and the Military: A Study of Contact, Awareness, and Interest*. Chicago, IL: American Medical Association Center for Policy Research, April 1987.

This study examines physicians' knowledge and attitudes about military service. Mail and telephone surveys were completed with 380 physicians under age 40 who had never served in the military (response rate 44.2 percent); 118 who were currently on active duty, 130 who served in the reserve forces, and 156 who had retired from military service (response rate 60.5 percent); 996 medical students (response rate 35.4 percent), and 807 medical residents (response rate 29.4 percent). In addition, civilian physician and resident anesthesiologists and surgeons were oversampled. Follow-up attempts were made and the characteristics of respondents were compared with those of the eligible population. This is an excellent, methodologically sound study.

The findings indicate that the majority of physicians had been contacted about military service, usually by mail. Over one-third were unaware of military reserve options as opposed to a small group who had thorough knowledge. Less than 10 percent were aware that reserve physicians had more than one option for fulfilling their military commitments. Over half said that it was unlikely that they would consider active military or reserve military service. Of those with military experience and eligible, over 75 percent were enticed by military scholarships. Most appealing were travel, continuing education, and training. Least appealing were travel, military organization, and discipline. Fourteen recommendations were offered to help recruitment.

APPENDIX C

CHANGES ACCOMPANYING GROWTH: 1982 – 1988

INTRODUCTION

As the population of reserve military nurses has increased over the past few years, changes have occurred in the characteristics of some of the groups comprising that population. In addition, not all reserve components and categories have experienced similar growth in similar ways. Future strategies for successful recruiting and increased retention should take into account the changes that the Military Services have experienced. Displaying those changes is the purpose of this appendix. In this appendix, we use 13 acronyms; for the convenience of the reader we define them here:

ANG	Air National Guard
ARNG	Army National Guard
IRR	Individual Ready Reserve
ING	Inactive National Guard
MSO	Military Service Obligation
OCS	Officer Candidate School
RCCPDS	Reserve Components Common Personnel Data System
ROTC	Reserve Officer Training Corps
SELRES	Selected Reserve
USAFR	U.S. Air Force Reserve
USAR	U.S. Army Reserve
USMCR	U.S. Marine Corps Reserve
USNR	U.S. Naval Reserve.

INVENTORIES

When considering nurses in all reserve categories, there has been substantial growth in inventories since 1982. Total inventories have grown from 17,643 to 25,919 or by 8,276 (46.9 percent). Within the SELRES, the growth was even more dramatic, increasing by nearly 5,000 nurses, for a 68 percent growth. This information, shown by reserve category, is displayed by Table 5-5 of this report.

Selected Reserve inventory growth was not evenly distributed across reserve components. The greatest percentage growth occurred in the USNR (245 percent) and the least in the ARNG (20 percent). Table C-1 shows this growth.

TABLE C-1

SELRES NURSE INVENTORY GROWTH, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	Population size		Growth	
	1982	1988	Number	Percent
ARNG	845	1,011	166	20
USAR	4,107	6,622	2,515	61
USNR	398	1,374	976	245
ANG	499	699	200	40
USAFR	1,181	2,105	924	78
Total	7,030	11,811	4,781	68

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

The IRR has also experienced large growth since 1982, increasing in size by 2,103 members or 74 percent. The increases in USAR and USAFR IRRs are most notable, while the strength of the Navy's IRR has actually declined. Many new SELRES members in the USNR were obtained from the Navy's IRR in order to fill its growing reserve force structure during this time. The changes in the IRRs of all components since 1982 are shown in Table C-2.

PERSONAL CHARACTERISTICS

The inventory growth experienced in almost all reserve categories was accompanied by uneven changes in the personal characteristics profiles of these groups of

TABLE C-2

IRR NURSE INVENTORY CHANGES, BY RESERVE COMPONENT, 1982 - 1988

Reserve component	Population size		Change	
	1982	1988	Number	Percent
ARNG	19 ^a	35 ^a	16 ^a	84
USAR	1,697	3,276	1,579	93
USNR	850	712	-138	-16
ANG	N/A ^b	N/A	N/A	N/A
USAFR	273	919	646	236
Total	2,839	4,942	2,103	74

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

^a ING.

^b Not applicable. The ANG does not maintain an ING.

reservists. We now review some of those changes occurring in the SELRES, seeking information that might aid recruiting.

The assignment of males to the SELRES grew at a higher rate than that of females during the 6-year period from 1982 through 1988. This growth was 1,116 male nurses or 82 percent, as opposed to 65 percent growth for females. Overall growth of SELRES nurses from 1982 through 1988 was 68 percent.

As shown in Table C-3, the average age of nurses in the SELRES increased only 2 years during the 6-year period from 1982 through 1988. This means that the large number of new accessions obtained during the period were younger than the average age of those remaining in the SELRES.

The proportion of racial and ethnic minority nurses increased more than that of white nurses during the 6-year period. The percentage increases in SELRES minorities also exceeded the overall growth of the SELRES of 68 percent. The largest proportional increase in membership was for Asian and American Indians, which collectively grew 190 percent during the period. While minority groups are small when compared to the group of white nurses — they together total only about one-fourth of the white nurse population — the changes noted are not trivial.

TABLE C-3
PERSONAL CHARACTERISTICS INCREASES AMONG SELRES NURSES, 1982 - 1988

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	1,364	2,480	1,116	82
Female	5,666	9,326	3,660	65
Age (years)	35.5	37.5	2	N/A ^a
Race and ethnic classification				
White	6,027	9,814	3,787	63
Black	745	1,488	743	100
Hispanic	139	267	128	92
Asian/American Indian	60	174	114	190
Marital status				
Married	3,700	6,763	3,063	83
Single	3,330	4,896	1,566	47
Dependents^b				
None	2,967	4,138	1,171	40
One or two	4,063	6,742	2,679	66
Three or more	1,418	2,825	1,407	99
Highest education attained				
Less than baccalaureate	1,879	2,447	568	30
Baccalaureate	3,945	5,359	1,414	36
Masters or more	1,144	2,115	971	85

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Tables A-43, A-44, A-45, A-46, and A-47. No nurses are assigned to the USMCR SELRES.

^a Not applicable.

^b Dependents include spouses.

The number of married nurses in the SELRES increased 83 percent, which is higher than the growth rate (68 percent) of the entire SELRES nurse population during the period. In addition, the growth of SELRES nurses having one or two dependents increased at about the same rate as the growth in the SELRES. Membership by those nurses having three or more dependents increased by 99 percent; a much higher rate of increase than any other group.

Education by Sex, Race, and Ethnic Classification

During the period reviewed, the proportion of males having baccalaureate degrees or higher increased faster than that of females, although neither group increased as rapidly as the SELRES population. Similarly, the proportion of minority members (black, hispanic, and Asian/American Indian) having baccalaureate or advanced degrees increased faster than that of white nurses. Table C-4 summarizes these changes in education by sex, race, and ethnic classification.

TABLE C-4

INCREASES IN BACCALAUREATE AND GRADUATE DEGREE ATTAINMENT BY SELRES NURSES,
BY SEX, RACE, AND ETHNIC CLASSIFICATION, 1982 - 1988

Characteristic	1982	1988	Increase	
			Number	Percent
Sex				
Male	937	1,444	507	54
Female	4,152	6,029	1,877	45
Race and ethnic classification				
White	4,365	6,289	1,924	44
Black	553	944	391	71
Hispanic	95	184	89	94
Asian/American Indian	41	122	81	198

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: The SELRES nurse inventory grew 68 percent between 1982 and 1988. Based on data in Tables A-48, A-49, A-50, A-51, and A-52. No nurses are assigned to the USMCR SELRES.

Skill by Sex, Race, and Ethnic Classification

The proportion of males qualified in the skilled nursing specialties of nurse-anesthetist and operating room nurse has grown faster than that of females, while proportionately more females carry administrative specialties. Whites are more highly represented in the nurse-administrator, nurse-anesthetist, and operating room nurse specialties, but blacks have experienced higher proportionate growth. Table C-5 summarizes these changes in specialty by sex, race, and ethnic classification.

TABLE C-5

**CHANGES IN SELRES NURSE INVENTORIES IN SELECTED PRIMARY SPECIALTIES, BY SEX, RACE,
AND ETHNIC CLASSIFICATION, 1982 - 1988**

Characteristic and primary specialty	1982	1988	Change	
			Number	Percent
Sex				
Male				
Nurse-administrator	32	31	- 1	- 3
Nurse-anesthetist	186	330	144	77
Operating room nurse	99	210	111	112
Female				
Nurse-administrator	144	234	90	63
Nurse-anesthetist	96	161	65	68
Operating room nurse	348	694	346	99
Race and ethnic classification				
White				
Nurse-administrator	164	238	74	45
Nurse-anesthetist	255	448	193	76
Operating room nurse	385	760	375	97
Black				
Nurse-administrator	9	17	8	89
Nurse-anesthetist	20	31	11	55
Operating room nurse	45	106	61	136
Hispanic				
Nurse-administrator	6	11	5	83
Nurse-anesthetist	2	5	3	150
Operating room nurse	13	12	- 1	- 8
Asian/American Indian				
Nurse-administrator	0	5	5	-
Nurse-anesthetist	2	1	- 1	- 50
Operating room nurse	13	12	- 1	- 8

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Tables A-53, A-54, A-55, A-56, and A-57. No nurses are assigned to the USMCR SELRES.

MILITARY CHARACTERISTICS

Increases were noted in the numbers of nurses having an MSO. Although only one-third of all SELRES officers have some portion of their MSOs remaining (see Chapter 3), the much higher percentages for nurses reflect the increase in nurse accessions from 1982 through 1988. The large growth of direct commissions reflects a shift from OCS and ROTC as sources. The increase in the number of nurses approaching their mandatory removal dates is a result of the increased size of the SELRES together with the high retention rate of the reserve nurses.

The average years of service increased moderately, consistent with the large numbers of accessions and the modest increase in age of the SELRES nurses. Large numbers of 01/02 officers also imply increases in entry-level nurse accessions. The opportunity to hold higher grades improved significantly, although the opportunities for nurses to attain higher ranks appear to be more restricted than for other officers in the SELRES (as mentioned in Chapter 5). Table C-6 summarizes these military characteristics.

TABLE C-6
CHANGES IN SELRES NURSE MILITARY CHARACTERISTICS, 1982 - 1988
(All reserve components)

Characteristic	1982	1988	Change	
			Number	Percent
MSO remaining	1,683	3,984	2,301	137
Direct commission	881	10,701	9,820	1,115
Mandatory removal within 10 years	1,166	3,362	2,196	188
Average years of service	8.5	9.7	1.2	14
Grades:				
01/02	1,912	4,656	2,744	144
03/04	4,597	5,779	1,182	26
05	387	1,135	748	193
06	134	241	107	80

Sources: RCCPDS, 30 June 1982 and 30 June 1988.

Notes: Based on data in Tables A-58, A-59, A-60, A-61, and A-62. No nurses are assigned to the USMCR SELRES.