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INSTITUTION OF A RUBELLA
SCREENING AND IMMUNIZATION
PROGRAM AT TRIPLER ARMY MEDICAL CENTER

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by

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CPT, MSC

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I. INTRODUCTION

In February 1978, at a large Los Angeles hospital, an obstetrical resident became ill with a low grade fever and rash. Subsequently, in March 1978, two other residents and two nurses experienced the same symptoms. All of these personnel worked during the time they were ill. In mid-March their illness was diagnosed as Rubella. Between them they had exposed about 200 women, pregnant less than 16 weeks, to the risk of congenital abnormality in their unborn children.¹

As a result of this outbreak, the California Department of Health is recommending that all health care personnel in the state, male and female, be screened for antibodies for rubella. Rubella vaccine should be given to all susceptibles after precautions are taken with females regarding pregnancy.

Such action is not unique to the civilian community. As early as 1974, in response to a letter from the Surgeon General of the Army,² Headquarters, United States Army Health Services Command recommended that:

Rubella vaccine should be offered to adolescent and adult females. Particular effort should be made to immunize those military and civilian females working in HSC installations and activities where contracting and transmitting rubella is of vital significance; ie., pediatric, prenatal, and dental clinics; child care centers; etc.³

This position was expanded in 1978 in an HSC Command Bulletin where it was stated:

It is considered sound medical procedure to initiate a rubella screening program for all health care personnel, both male and female, who are likely to be in close contact with pregnant patients. The screening program could be incorporated into the installation occupational health program.⁴

The problem of rubella susceptibility is particularly acute in Hawaii. In a recent study, nearly 68 percent of 122 men, but only 39 percent of 248 women had serum--hemagglutination--inhibition (HAI) antibody to rubella in a titers of 1:10 (considered the minimum for immunity) or over. This data varied greatly by ethnic background and Japanese, the largest single ethnic grouping in Hawaii, had only 32 percent immunity for men and 21 percent immunity for women.⁵ These epidemic and serologic surveys illustrate important aspects of rubella epidemiology in Hawaii. Almost half of all adults born and raised in Hawaii are still susceptible. Therefore, the risk of women acquiring rubella during

the first trimester is unacceptably high. Special intensive efforts are necessary to identify and safeguard adults, particularly women of childbearing age, who are at risk.

In response to command guidance, and because of the unique problems of rubella susceptibility in Hawaii, The Tripler Executive Committee took action in June 1978, directed towards identification and immunization of all Hospital personnel.⁶ (Appendix A). As a result of the directives of this committee the rubella screening and immunization program was undertaken by the Preventive Medicine Activity and the Administrative Resident.

Statement of the Problem

The problem is to study the methods available to institute a rubella screening and immunization program at Tripler Army Medical Center, to select and develop a program adequate to the particular aspects of the Tripler situation which both maximizes the efficiency and minimizes the cost of its operation, and to institute the program designed and selected.

In the conduct of this project, the following goals are deemed necessary.

1. All hospital personnel; to include military and civilian employees, military and civilian student affiliates, trainees such as CETA workers, hospital volunteers, and non-appropriated fund employees whose place of business is within the hospital; must be screened for rubella titers.
2. All personnel in 1, whose titers are less than 1:10, will be immunized against rubella. Appropriate screening and education will be provided for females of childbearing age.
3. A procedure to screen and immunize all new employees and persons (in 1) will be established.
4. Sufficient records will be kept, and data compared to Hawaii Department of Health statistics, to determine when this program may be modified or discontinued.

It was envisioned that some or all of the following problems would be encountered:

1. No effective occupational health program exists for military persons.
2. Not all civilian employees assigned to Tripler presently receive physical examinations.
3. Civilian employees transferred to Tripler from other jobs do not routinely report to occupational health.
4. No mechanism exists for the accumulation of data and record keeping requirements provided by this program.
5. No specific health requirements now apply to civilian student affiliates.
6. Some employees of the hospital may refuse or avoid either the titer or immunization.

7. Problems exist with provision of birth control devices or medication required for those women of child bearing age required to be immunized.

8. The program crosses every organizational line to include military of every uniformed service; civilian employees, appropriated and non-appropriated; civilian, non federal, employees working within the hospital; and civilian volunteer agencies.

All of these areas must be addressed to provide any type of effective program.

The research methodology of this project will be a thorough review of the literature on the same or similar programs, a study of programs which may exist at other Federal hospitals, and an examination of the programs already in use at various health care facilities within the State of Hawaii.

Data collection of the results of screening and titers will be undertaken. Information on susceptibility to rubella by age, sex, and ethnicity will be necessary to establish future parameters of the program. Additional benefits will be the comparison and corroboration of present epidemic and serological rubella data on military, civilian, and Hawaiian populations.

There are basically two primary limitations in the proposed study: (1) cost and workload associated with any

program instituted (i.e., laboratory, personnel, administration) must be kept to a minimum and fall within budgeted service guidelines and (2) no additional personnel spaces will be provided requiring all additional workload to be assumed by existing organizational elements.

Assumptions in the project are:

1. The civilian personnel office will refer all new civilian employees to occupational health for screening.
2. Military personnel will identify and refer all new military persons requiring screening.
3. Affiliated civilian educational institutions will voluntarily screen students studying at Tripler.
4. The Hawaii State Department of Health will screen and immunize all State sponsored employees (i.e., CETA).
5. Non-appropriated fund organizations will comply with the same health standards that govern appropriated fund employees.
6. Preventive Medicine will collect and consolidate screening and immunization data. They will also function as the proponent for the program.

For the most part these assumptions have proven to be valid within the limiting context of the problem statement.

Review of the Literature

Though the effects of rubella upon the pregnant female, particularly in relation to the congenital rubella

syndrome (CRS), have been well known for many years, probably the first definitive study documenting the enormous consequences of the disease was that of Seven, et al, in 1964.⁷ This report followed a major epidemic of rubella in the United States which resulted in more than 1,800,000 cases of rubella and more than 20,000 infants born with CRS.⁸ This is not to mention the large numbers of therapeutic and spontaneous abortions which occurred.

Epidemics of rubella have been reported in fairly regular six to nine year intervals.⁹ The most recent outbreak of any size occurred in Hawaii in 1977 following a previous high in 1969.¹⁰ A total of 477 cases in all age groups was reported April through August 1977, despite a 95% vaccination rate among school children reported by Falvo, et al.¹¹ This substantiates Klock and Rachelefsky¹² locally, who found that there is apparently no herd immunity against rubella. Not unsuspectedly, however, the age distribution of the disease is changing as evidenced by Table 1. The Center for Disease Control (CDC)¹³ has reported that in pre-vaccine years the age group of 15 years and older accounted for only 25 percent of the cases of rubella.

TABLE 1

PERCENT DISTRIBUTION OF REPORTED RUBELLA CASES AND INCIDENCE RATE, BY AGE GROUP, 1975 - 1977, UNITED STATES

AGE	1975				1976				1977				PERCENT CHANGE 1975-1977	
	NO.		%		NO.		%		NO.		%		%	RATE
				RATE				RATE				RATE		
1-4	1016	12.2	12.8	12.8	684	10.2	8.3	8.3	941	7.8	10.4	10.4	-36.1	-18.8
5-9	938	11.3	10.9	10.9	629	9.4	6.8	6.8	1012	8.4	10.0	10.0	-25.7	- 8.3
10-14	1209	14.6	11.9	11.9	651	9.8	6.2	6.2	1610	13.3	14.2	14.2	- 8.9	+19.3
15-19	3836	46.2	36.8	36.8	2927	43.8	25.9	25.9	5867	48.6	47.0	47.0	+ 5.2	+27.7
20-24	900	10.8	9.5	9.5	1128	16.9	10.9	10.9	1950	16.1	16.6	16.6	+49.1	+74.7
25-29	182	2.2	2.2	2.2	344	5.2	3.6	3.6	346	2.9	4.0	4.0	+31.8	+81.8
30+	223	2.7	0.4	0.4	315	4.7	0.6	0.6	352	2.9	0.6	0.6	+ 7.4	+50.0
TOTAL WITH KNOWN AGE	8304	49.9	----	----	6678	53.4	----	----	12078	59.2	----	----	----	----
UNKNOWN AGE	8348	50.1	----	----	5813	46.6	----	----	8317	40.8	----	----	----	----
TOTAL	16652	100.0	7.8	7.8	12491	100.0	5.8	5.8	20395	100.0	9.4	9.4	----	+20.5

SOURCE: CENTER FOR DISEASE CONTROL, ATLANTA, GA, 1978.

This has increased to 62 percent in 1975 and over 70 percent in 1977, apparently direct evidence of the great "gap group" of unvaccinated persons.

Various studies (Evans and Reisinger,¹⁴ Freis et.al.,¹⁵ Staffman and Wolfish,¹⁶ McKusick¹⁷) have shown 17 to 25 percent of women in the child bearing age group to have non protective titers against rubella. Schiff et. al.¹⁸ found 26 percent of college women in the midwest to be susceptible, but in this same group in Hawaii, Halstead et.al.¹⁹ found 50 percent non immune. This data points out the very real problem of rubella and CRS in Hawaii as identified by Halstead and Diwan;²⁰ the majority of island women are still susceptible to the disease and the epidemiology of rubella in Hawaii differs markedly with ethnic group, Japanese being relatively shielded from infection.

A protective vaccine, first licensed in 1969, is available for rubella. A single dose induces antibodies in approximately 95 percent of susceptible persons.²¹ Hermann et. al.,²² in an update of their original study, have indicated the duration of immunity following immunization is very encouraging, persisting for at least nine years.

CDC indicates that life long protection may even be expected.²³ Vaccine side effects including rash, lymphadenopathy, and joint pain occur in only 2 to 9 percent of vaccines.²⁴ Frank arthritis is evidenced in less than 1 percent. Vaccines may shed small amounts of virus from the pharynx for 7 to 28 days following immunization, but CDC reports no cases of virus transmittal in a study of more than 1200 susceptible contacts.²⁵ The vaccine may be given to all persons ages one and up with the possible exception of pregnant women, this due to the possibility of CRS in the offspring following immunization. The risk of such an occurrence is estimated by Modlin, et. al,²⁶ at between 5 and 10 percent based upon an observance of no abnormalities in a group of 55 women inadvertently vaccinated during pregnancy. Fleet, et. al.,²⁷ found a possible potential in the isolation of rubella virus in a cataract in the eye of an aborted fetus, but to date no live offspring evidencing CRS from a vaccinated women has occurred. Since the anticipated risk is lower than that following natural rubella in early pregnancy,²⁸ one would suspect that not much of a potential problem exists, but it still should be avoided if possible.

Given that rubella in the form of the CRS is a problem, that unique features of this problem apply to Hawaii, and that a safe protective vaccine is available, it seems likely to suggest that a program of rubella immunization designed to protect (not necessarily immunize) the target population, the pregnant female, is necessary. Such a program has even been shown by Schoenbaum²⁹ to be cost effective, with the cost of CRS to the public at \$35 per female and the cost of immunization at \$3 per female, including side effects.

A review of the literature for rubella screening and immunization programs (Preblud,³⁰ Shlian,³¹ Weiss, et al,³² Falvo, et al,³³ Povar, et al,³⁴ McLaughlin and Gold,³⁵ and Werdegarr³⁶) has produced much useful information and guidance, some of which was utilized in the program at Tripler and is identified in the text. No total programs described, however, were uniquely suited to the peculiarities of the military health care delivery system. It is hoped this paper, and the program it describes, will help fill that gap.

II. DISCUSSION

The Rubella Program

The management and implementation of a rubella screening and immunization program for over 2300 employees of Tripler hospital seemed, initially, to be a task of immense magnitude. Many hospitals nationally, to include a few in Hawaii, have identified rubella as a potential problem to be managed, but few have documented their efforts. Those that have generally utilized voluntary compliance as a mechanism to elicit support. All these existing models were considered but rejected as not meeting the needs of the hospital. The closest program that appeared to provide good compliance guides was that of the New York State Department of Health,³⁷ but even that neglected male employees and did not require susceptible staff to be immunized.

Initial planning discussions for the program yielded the parameters to be met:

1. Any program implemented had to be mandatory.
2. Male as well as female employees would participate.
3. All employees would be screened to determine immunologic status prior to a decision to vaccinate.
4. Employees who could not be vaccinated would be considered for movement outside high risk areas.

5. All female employees would be counseled as to problems and precautions prior to being vaccinated.
6. All laboratory and medical services would be provided at no cost to the employee.
7. The program would be phased to begin immediately with all new employees and then on a sequential basis with existing employees.
8. Established programs would be continuous.

Some of these parameters had to be modified as they were found to be inadequate or impractical in practice, but for the most part they were met.

The central theme of the TAMC program is its mandatory nature. Only in this manner can 100 percent compliance be approached. This absolute participation is required due to the seriousness of the consequences and the fact that a level of herd immunity is not evidenced by the disease.³⁸ Even in the best voluntary programs reported, only an 85 percent immune rate has been established outside high-risk areas.³⁹ Mandatory programs are not unheard of in public health efforts, and in fact this one only mimics that already in existence for school children in most parts of the country. The issues in the hospital setting are somewhat different, however, as the potential exposure of pregnant women is more pronounced and potential vaccines

are adults. One could argue that such a program is not aimed at the target population, the pregnant woman, but only at protecting her by immunizing everyone else. Such criticism overlooks the fact, however, that once a woman is determined pregnant she cannot be immunized due to the same problem potentials as the disease. The State of Hawaii has recognized this dichotomy, and in fact a bill is before the Governor, having been passed by the House and Senate, requiring women to be tested for susceptibility to rubella when they apply for a marriage license.⁴⁰ It has been estimated that rubella could be wiped out in Hawaii in the next five years (the problem aspects of the disease) if the bill is passed into law.

Once it has been decided that the central issue of the program will be the protection rather than the immunization of pregnant females, it becomes necessary to include males as well as females in all efforts. Obviously either could transmit the disease to a pregnant woman. In fact, all recent reported major outbreaks in the hospital setting (California, March 1978, New York, July 1978⁴²) have been promulgated by male staff. This certainly substantiates Preblud's premise,⁴³ that the non-inclusion of males is the weak-link in hospital based efforts.

The decision to screen all employees prior to requiring immunization is for two purposes, (1) to avoid unnecessary immunizations and, therefore, lessen vaccine side effect probabilities and reduce costs, and (2) to lessen employee resistance to the program. Initial consideration was given to only screening females and mass immunizing males, but this was dropped in favor of the present mechanism. The Air Force has shown⁴⁴ that the cost of the HAI to determine susceptibility is less than vaccine cost, and is, therefore, the mechanism of choice. Additionally, the screening anticipated was administrative as well as serological. Therefore, any person who was found to have a documented titer in their health records or elsewhere, was excluded from serological requirements. This effort necessitated the individual review of all employee health records, both military and civilian, but greatly enhanced employee acceptance.

It is likely that any program as broad in scope as this one would produce some persons who were susceptible to rubella yet could not be vaccinated. The primary problem would likely be pregnancy, but others such as moral or religious persuasion and outright avoidance were anticipated.

Hopefully any individuals who could be physically vaccinated would be swayed by personal approaches and dialog, but others who would not, or were physically unable, would be better managed outside of higher risk areas such as OB/GYN and other departments more frequented by pregnant females. The movement of military personnel was not anticipated to present major problems, nor was the detailing or reassignment of civilians. Action in the later case was vigorously contested by the Civilian Personnel Office, however, and is still not fully resolved, though any course has yet to be tested. Problems in this area are discussed more fully under the Civilian Program, following. The probability of testing the system must be considered as low, however, since it is the multiple of three other low probabilities. Any individual would have to be susceptible, inclined not to participate in the program, and in a "high risk" area.

Prospective studies of pregnancies complicated by maternal rubella during the first trimester have estimated the risk of congenital infection to be 10 to 50 percent depending upon method of assessment.⁴⁵ Actual disabilities occurring from CRS include eye lesions such as cataracts or glaucoma; deafness; cardiac malformations; and brain

damage causing mental retardation, cerebral palsy, or severe behavior disorders.⁴⁶ The risk of spontaneous abortions and therapeutic abortions due to parental concern is also enhanced. Since it has been shown that due to the live virus vaccine used there is a small, but existent risk of establishing rubella with all its complications in the pregnant female by vaccination, this possibility must be minimized. It was therefore determined that all females found susceptible to rubella would be counseled before vaccination to associated risks and the necessity to avoid pregnancy following vaccination. Counseling was provided by the OB/GYN clinic. Particular aspects were left to the discretion of individual physicians, though it was anticipated that a pregnancy test would be performed and some form of contraception prescribed for three months following vaccination. Such actions are normal,⁴⁷ though some authors have advocated vaccination during the menses for those women not on a birth control regimen.⁴⁸

The program, as established, is obviously designed to be a condition of employment. It was therefore determined that all associated costs for laboratory and medical services would be born by the hospital. This was managed under

normal methods for the beneficiary military population and under the occupational health program for civilian employees. Increased costs were anticipated in laboratory tests (HA1), vaccine for the 15 to 20 percent population estimated susceptible, and some pharmacy increase in the use of contraceptives for women required to be immunized who were not previously on some regimen. Of these areas, the laboratory costs were deemed to be the most significant as the rubella titer, though a routine test, is not performed here and the samples are shipped to Ft Baker, California for performance. All labor was provided by internal resources and no cost increases were evidenced in this area. Contraceptives prescribed by OB/GYN were routinely provided for eligible beneficiaries by the Pharmacy, while prescriptions for civilian employees were required to be filled elsewhere. Nothing, of course, mandated that employees utilize TAMC facilities, and all employees were free to see their own personal physicians for screening, counseling or vaccination.

In order to fully implement the program, and to pinpoint a definitive starting population, the program was begun with all new employees first. This insured that the hospital staff not tested could be determined by name,

as of a definite date, and that this population would not be encroached or diluted by new untested arrivals. All new military personnel were referred to the laboratory for blood draw during inprocessing. All new civilian employees were referred to Occupational Health. The remaining hospital staff was divided into organizational units of a size that could be expeditiously managed by the laboratory on a weekly basis. Individual health records were screened for the presence of documented rubella titers and those individuals found to be previously tested were removed from the program. All others were referred to the laboratory with a pre-printed laboratory slip for blood draw. Upon return of laboratory results, susceptible individuals were notified of their status and referred to counseling or immunization as appropriate. Initially it was anticipated that all hospital employees (those "on board," not new) would be screened by the Hawaii State Health Department. Such services were offered by the State (Appendix B) and provided a reduced turn around time on rubella titers, vaccine for those requiring immunization, and all necessary consents. Costs and liability would be born by the State. The problems of managing the

screening of 2300 employees during a short time, plus the necessity to provide mandatory personnel data (required for the State to participate in Federal reimbursement for the program) to the State, and the requirement to establish and manage a program for Tripler anyway (new employees), lead away from this mechanism, however, and towards internal operation.

The continuing existence of the program required all precedures to be of a permanent nature. This feature was provided by the choice of implementation, with separate procedures for new and "on board" employees. At the conclusion of screening and immunization efforts, the program for the previously employed individuals may be terminated, with that for the new employees left in tact. This will insure the viability of efforts. Benefit can be measured by the percentage of susceptible (L1:10) titers returned from the laboratory. When susceptibles reach the point where the program is no longer viable it may be terminated. Such a point is envisioned being reached as the present work force is replaced by individuals vaccinated in childhood (Rubella vaccine was first available in 1969).

In order to support the mandatory nature of the rubella program, insure its viability, and provide a basis

of authority when dealing with outside agencies, the requirements were placed in regulatory format. A copy of the TAMC Supplement to AR 40-562 is provided as Appendix C. This supplement was staffed beginning in October 1978, and appropriate staff comments were incorporated into the body of the program. Final approval was received in May 1979, over several objections from the Civilian Personnel Office (Appendix D). A response to these suggested problems is provided as Appendix E. A legal opinion (Appendix F) from the Hospital Judge Advocate's office was obtained detailing the potential which may exist. CPO also alleged that the failure of the union to respond could jeopardize the program, but the union was queried and failed to provide input. This lack of response is deemed to imply acceptance or at least no objection.

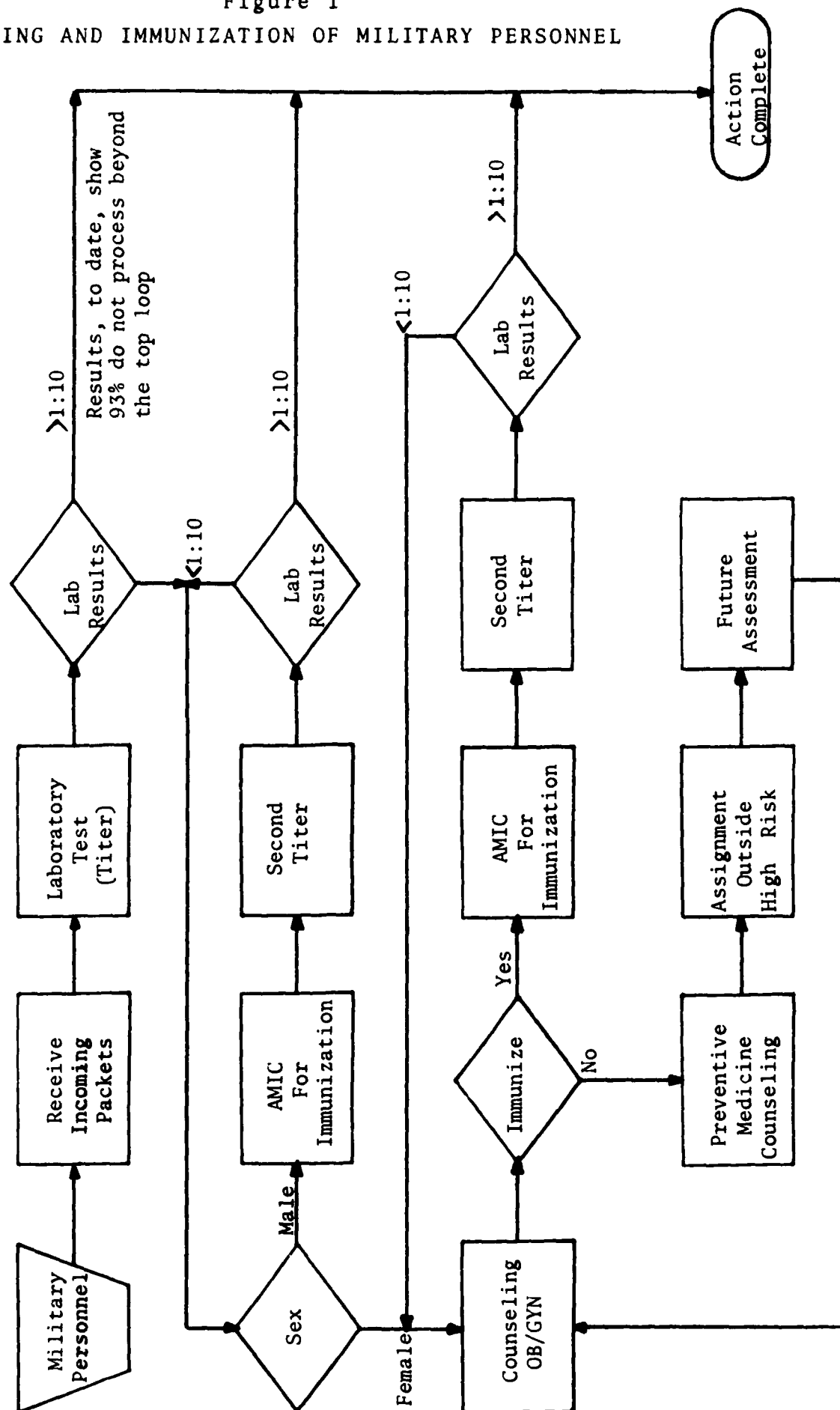
Efforts to encourage acceptance of the program were made by scheduling frequent meetings with involved sections, considering input from all sectors in staffing and implementation, and publically communicating the requirements and their necessity to the staff. One publicity effort from the Tripler newspaper, the Caducean, is provided as Appendix G.

The proper management of the rubella program demanded due regard for the very different control techniques and authorities applicable to different staff groupings within the hospital. The Commander's authority, and mechanisms for implementing it, vary greatly from military personnel, to civilian employees, to others such as non-appropriated fund employees, volunteers, State sponsored workers, and students. Management efforts were thus varied according to these groupings, and the descriptions of operations for each category following mimic this same variance.

Management of Military Personnel

A sample flow detailing the screening and immunization process for military members assigned to TAMC is shown in Figure 1. As a group, military personnel were easier to deal with and presented fewer problems than any other. Lines of authority were much clearer and the requirement for an health related testing or immunizations could be enforced with little effort under normal procedures. For this reason the rubella program was instituted first for these persons.

Figure 1
SCREENING AND IMMUNIZATION OF MILITARY PERSONNEL



All military personnel assigned to TAMC, officer and enlisted, inprocessed through the Military Personnel Office. Normal inprocessing requirements included a visit to the blood bank for typing. It was a simple process, then, to modify the inprocessing checklists (Appendix H) to direct inprocessing personnel to the laboratory for rubella testing and typing. Blood type results are forwarded to the Blood Bank by Pathology and only one draw is necessitated. Laboratory requests (Appendix I) are preprinted, provided to the Personnel Office, and included in inprocessing packets. All administrative efforts are kept to a minimum and personnel are effectively screened.

Upon the return of laboratory results, Pathology forwards the completed slips to Preventive Medicine. Titers greater than 1:10 are considered protective and no further action is taken with personnel in this category. Personnel with titers less than 1:10 are identified and notified of their immunologic status by means of a "Rubella Referral Form for Military Personnel" (Appendix J). Males are directed to the Acute Minor Illness Clinic (AMIC) for immunization. Personnel in the clinic complete the verification portion of the form and return it to Preventive Medicine. Approximately one month from the date of

immunization Preventive Medicine forwards a second request for rubella titer and the results are checked to insure that the individual has seroconverted.

Female military members are handled in a slightly different manner to insure that due precautions are taken for pregnancy, and that adequate counseling is provided on the consequences of becoming pregnant following immunization. All females are referred to the OB/GYN clinic for examination and/or counseling by a physician. Based upon history and examination the physician makes a recommendation as to the woman's eligibility for immunization. Those who can be immunized are referred to the AMIC and managed in the same manner as were the males, previously described. Females ineligible for immunization by reason of pregnancy or other factors are identified to Preventive Medicine. Efforts are undertaken to insure the individual works in an area minimizing potential contacts with pregnant women pending immunization. The individual is also counseled about the problem and to identify and report any signs or symptoms of the disease.

The previously described procedures, of course, only apply to incoming military personnel. No effort was made

to attempt to separate military members in the mechanism utilized to screen and identify those employees "on board" at the initiation of the program. The only difference, however was in the screening mechanism. All hospital employees of record (military and civilian) were identified by the Unit Manning Report (UMR). The organization was divided into sections of a size (approximately 100 unknowns) that could be routinely managed by the laboratory. Health records of military and civilian employees were screened to insure that only those employees who were truly unknown would be required to have blood drawn. Department Chiefs were then forwarded implementing instructions (Appendix K), a listing of personnel requiring screening, and a schedule indicating the time to report to the laboratory. Titers were returned to Preventive Medicine and all subsequent actions were identical to those described for new military personnel.

It should be noted that hospital personnel tended to assist in this program and aid its operation. Laboratory workload was identified initially as a potential problem area, but was not found to be so in practice. One partial reason for this was that many nursing units tended to draw their own bloods and forward them to the laboratory for titer.

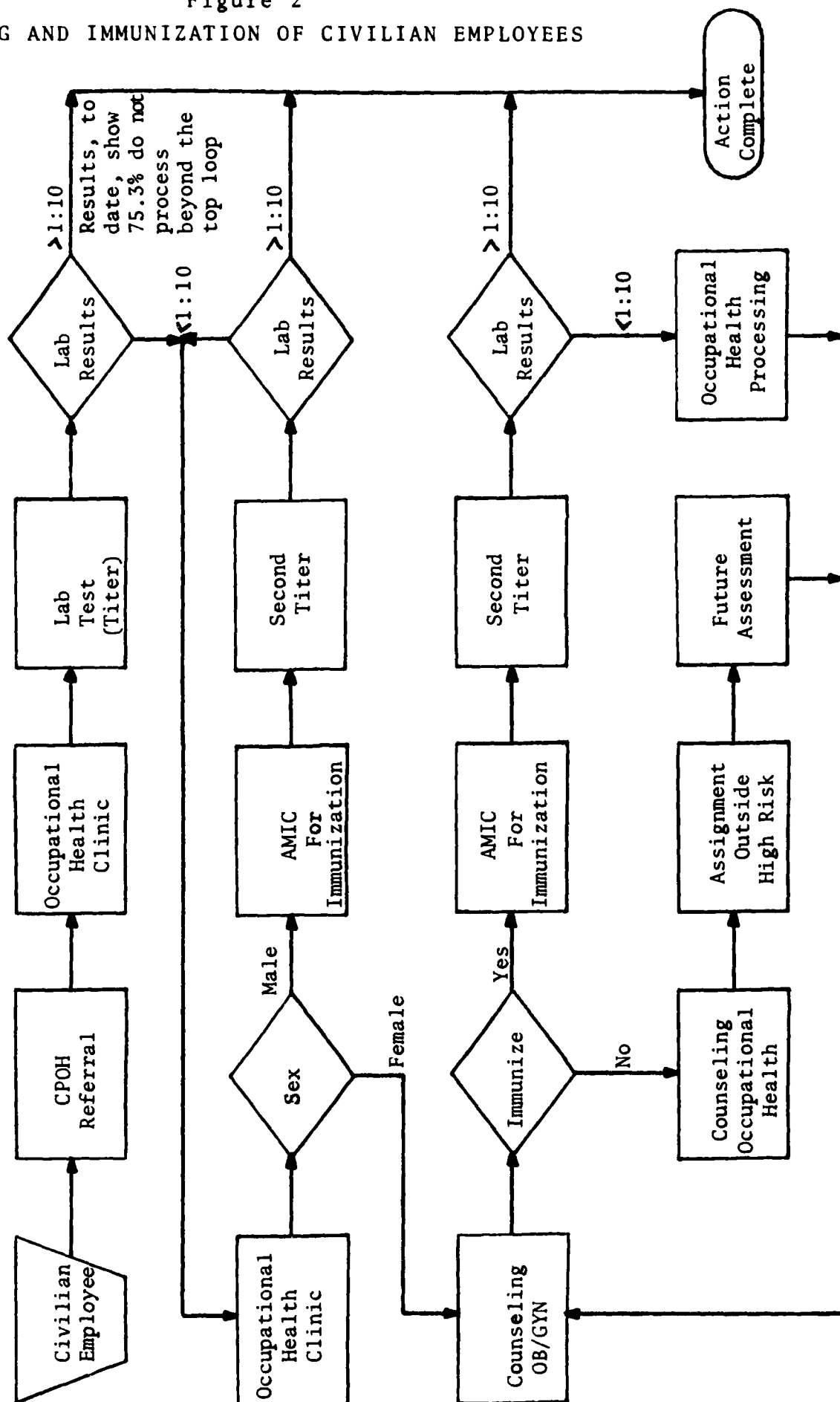
The laboratory was also very helpful and would send a team to draw the bloods for a department if all members could be done at one time. Such actions truly smoothed things out.

Management of Civilian Personnel

The rubella screening and immunization program for civilian employees is essentially the same as that for military members. Differences basically lie in the referral mechanism (CPOH) and the inclusion of the Occupational Health Clinic in the chain of activities. A flow sheet for civilian employees is shown in Figure 2. Much data was already available on the civilian workforce at the start of the program as Occupational Health personnel had been routinely including the rubella titer on all employees who were required to take physicals. Efforts were investigative in nature only, however, and no action had been taken to immunize susceptibles pending regulatory authority.

All new civilian employees are advised by CPOH that immunity to rubella is a condition of employment. New employees are referred to the Occupational Health Clinic during inprocessing. This includes those employees who do

Figure 2
SCREENING AND IMMUNIZATION OF CIVILIAN EMPLOYEES



not normally get employment and routine (food handlers) physicals as well as those who do. Occupational Health provides the employee with a laboratory request (Appendix I) and a routine titer is performed. Titer results greater than 1:10 are considered protective and no further action is required for employees in this category. Those with titers less than 1:10 are notified by a "Rubella Referral Form for Civilian Employees" (Appendix L) from Occupational Health. Male employees are referred to the AMIC for immunization and verification is returned by AMIC to the Occupational Health Clinic. A request for followup titer is sent approximately one month post-immunization to insure seroconversion.

Female employees are referred to OB/GYN, or to their own physician at no cost to the government, for counseling. The physician explains the disease and the problems associated with immunization to include the need to avoid pregnancy for three months following vaccination. He then makes a recommendation concerning the employees' eligibility for immunization. Women eligible for immunization are referred to the AMIC and follow the same sequence as do males. Women ineligible for immunization due to pregnancy or other

reasons are referred back to Occupational Health. Efforts are then made in coordination with CPOH to utilize the employee outside of a higher risk area until such time as she is eligible to be vaccinated.

The TAMC Supplement to AR 40-562, as written, only applies to new employees. Since the Commander's authority is somewhat diluted by the bureaucratic layering of the Civilian Personnel Office and the Union when applied to this part of the labor force, the mandatory nature of the program in relation to employees of record at program inception is somewhat in doubt. The same "clear cut" authorities that drive the military member do not exist, or are limited, when applied to others. This problem, plus the "cart driving the horse" syndrome exhibited by CPO when they do not want to deal with a valid (established by regulation) condition of employment, has left TAMC with the possibility of having a program which may not be enforced with previously employed civilians. The validity and requirement to participate have not, to date, been tested, however, and hopefully the mechanisms will continue to operate in a pseudovoluntary fashion.

The mechanism for managing the screening and immunization of older employees is identical with that for the military person. All personnel are identified organizationally on the UMR and notifications to be screened, forwarded by the means described under military employees, will, in fact, reach everyone. The only difference will be the inclusion of Occupational Health in the immunization process. They will become involved after initial screening and will forward notifications to those civilian employees whose titers are less than 1:10. All actions subsequent will follow the same format for new civilian employees.

Other Personnel

In order to have a complete program, it was necessary to identify other groupings of personnel who are not employees of the hospital, but who work within its confines. These groupings are extremely diverse and may run from one to a large number of individuals. In this, as in any management efforts, the manager must insure that the cost of his controls do not exceed their value to the organization. In light of this limitation, others were found to effectively

consist of four major groupings: Non-appropriated Fund Employees, Volunteers, Comprehensive Employment Training Act (CETA) workers, and students. Some individuals may be excluded by these arbitrary groupings and if identified, they will certainly be separately handled by Preventive Medicine. Any further intensive identification and categorization would however, most likely be unproductive.

Non-appropriated fund activities are prevalent within the hospital and employ a large number of individuals. Services provided include Post Exchange activities such as the exchange itself and the cafeteria, the cleaners, the flowershop, the barbershop, and the optical shop. Some of these activities are operated by the Hawaii Army Airforce Exchange (HAAX) Service and others are concessionaires who contract services. Some of these personnel receive routine physicals (food handlers) at Tripler, but there is generally little control over the individuals. The Chief of Personnel, HAAX, was contacted about the rubella program at TAMC. He indicated the Exchange would comply with all hospital policies upon publication of the implementing regulations, and that they would convey these requirements to concessionaires operating within the building. Non-appropriated fund employees are managed

through Occupational Health and follow essentially the same course as other civilian employees. Controls are, of course, dependent upon support from HAAX and hopefully compliance can be assured on a voluntary basis.

Though there are a large number of volunteers in the hospital involved in patient assistance and educational activities, the majority of these persons are sponsored by the Red Cross. It is this organization, therefore, upon which efforts for the rubella program were centered. The local Field Director for the organization was asked to have the full time staff plus the regular volunteers participate. Irregular volunteers present somewhat of a management problem and this is understood. Workers are screened by the distribution of laboratory requests from Red Cross and any necessary immunization notifications will be made by Preventive Medicine through the same mechanism. Particular emphasis will be made to insure that at least the high risk areas (OB/GYN, pediatrics, dental clinics, etc.) are well screened.

Tripler plays a major role in the training of State sponsored CETA workers. At the peak operation of the program there are approximately 30 trainees in the hospital. They

perform on the job training as LPN's, food service workers, janitorial workers, and clerk/typists. These workers obtain some health related screening from the State Health Department (primarily tuberculosis testing) and the State is very willing to increase this activity to include rubella to insure the viability of the program. New trainees who are identified for vacancies at Tripler are required to have a rubella titer performed before they begin work. A statement that this action has been completed is provided at inprocessing. Notifications of immunologic status are provided by the State to Preventive Medicine. Susceptible trainees are referred back to the State Health Department for immunization. All laboratory and immunization support is provided by the State and the only workload imposed upon the hospital is a minor administrative action. The situation is well operated and routinized and provides excellent response at, essentially, no cost.

Students are a very diverse group including everything from interns to medical assistants. Most students come from the University of Hawaii or other schools in the State, but many are from other mainland areas. TAMC maintains over 20 affiliation agreements with other institutions.

These agreements have always included a paragraph specifying that the civilian institution would be responsible to provide any health related requirements that the hospital and the institution mutually find to be necessary. No requirements however, have ever been placed upon these educational institutions by Tripler. In attempting to implement the rubella program with this group it was decided to also provide for other basic health requirements. A copy of the basic letter and requirements presented to all educational affiliates is shown at Appendix M. All health requirements, to include rubella, are the responsibility of the school, and all students should present in the future with rubella screening and immunization complete. Actions will be checked by medical education, and other than this effort, there will be no resource expenditures by TAMC.

Program Evaluation

A secondary goal of the rubella program was initially determined to be the collection of susceptibility data by age, sex and ethnicity in order to define future program parameters. It was hoped that this data could provide a basis of comparison to corroborate present epidemic and

serological rubella data on military, civilian, and Hawaiian populations. Such actions have been limited, however, by the poor quality of returned data.

The laboratory requests utilized (Appendix I) required basic identifying information plus age and ethnic background be provided. The age and ethnic data often were omitted or of a quality which could not be utilized for the purpose intended. A large number of slips contained the ages of younger persons, so it is assumed that the lack of numbers in older age groups is the result of a reluctance of older persons to disclose age.

The ethnic block was also often omitted, or in many cases obviously misunderstood. Both these problems stem from an inability to place adequate controls on the screening process. In order to keep labor costs to an absolute minimum, efforts were decentralized (previously explained) to at least the department level. No one individual, or group of individuals screened slips for completeness and correctness prior to entry into the laboratory system. It should not be assumed, however, that the data is lost. It is simply not practically available for this study based upon time and manpower constraints. Age and ethnicity can obviously be retrieved

from personnel records by name. The serological information and immunologic status, the most important factors, are both accurate and available. Age and ethnic surveys should be the basis for future research efforts and could provide the material for an excellent short paper.

At the time of writing, rubella titer results have been documented on 887 employees out of a total workforce of 2393 (37.1%). This number does not include employees who have rubella titer results from other sources, so the percentage of known susceptibility is undoubtedly somewhat higher. The entire staff screening program is designed to be completed in late July, 1979, and final statistics will be available after that data.

Known rubella susceptibility, to date, is shown in Table 2. The overall susceptibility of 17.9 percent is at the high end of the national average reported by CDC. Interestingly, however, the total military percentage of 7.0 is quite different from the civilian 24.7. Also, the susceptibility of military males and females is approximately equal (5.6% vs 9.1%), but that of civilian males and females (16.4% vs 27.8%) is quite diverse. It can be surmised that the low and equal rates for military is due to the diversity and mobility of that population increasing

RUBELLA SCREENING RESULTS FOR TRIPLER ARMY MEDICAL CENTER

CATEGORY	SEX	TITER				TOTAL
		No.	< 1:10 * %	No.	> 1:10 * %	
MILITARY	MALE	11	5.6%	187	94.4%	198
	FEMALE	13	9.1%	130	90.9%	143
	TOTAL	24	7.0%	317	93.0%	341
CIVILIAN	MALE	24	16.4%	122	83.6%	146
	FEMALE	111	27.8%	289	72.2%	400
	TOTAL	135	24.7%	411	75.3%	546
ALL EMPLOYEES	MALE	35	10.2%	309	89.8%	344
	FEMALE	124	22.8%	419	77.2%	543
	TOTAL	159	17.9%	728	82.1%	887

**** % OF TOTAL BY CATEGORY**

exposure. Halstead and Diwan⁴⁹ have postulated that the higher rates in the Hawaiian population, particularly among females, are due to the sequestered nature of some oriental communities. Whether this factor affects the Tripler civilian workforce is unknown due to the unavailability of ethnic or racial data, but it can be assumed that, since a large portion of the workforce is oriental, this is at least a likely answer.

This data does show that the civilian female in the workforce is the target population of choice. Best results (minimization of potential exposure) can be obtained by reducing the susceptibles in this category. Efforts should not, however, be reduced for other categories due to the "herd immunity" problem. Some sensitivity analysis would also be in order to ascertain whether this portion of the workforce is in the most likely position to create an exposure (i.e., high risk area employment as much contact with pregnant females).

The desired result from the entire project is, however, rubella immunity for the hospital workforce. The statistics presented do not reveal what the true status will be following the program. What they do demonstrate is

that the program is needed and that potential results can be accurately measured. All phases of an operational system to include implementation and performance measures are provided. A viable mechanism to reach the final parameter, rubella immunity, has been established. Whether the desired goal is reached is a compliance measure that cannot be ascertained until program completion.

III. SUMMARY

Rubella is a common and relatively mild disease of childhood. When children get the disease it generally takes a short course and, other than some fever and discomfort, there are rarely any serious problems. The problems arise when pregnant women contract rubella, with the greatest danger occurring from exposure in the first few months of the pregnancy. Rubella virus can cause children to be born with abnormalities or cause the pregnancy to end in still-birth or miscarriage. Common defects of rubella affected offspring include cataracts, deafness, heart defects, and mental retardation.

No more hazardous environment for rubella exposure than the hospital can be established. The daily mix of children with many diseases, perhaps including rubella, and large numbers of pregnant women has serious potential consequences. Direct contact between these two groups is not even a necessary feature of transmission. It was demonstrated that there is no herd immunity to the disease and that a large gap group of non-immune individuals exist. A staff member can contract the disease and expose large numbers under many conditions.

Since the immunity of any one individual cannot be determined short of testing, and since women already pregnant are not generally considered eligible for vaccination, it becomes necessary to guarantee the safety of their offspring by establishing and maintaining a safe environment. This environment is provided by insuring that the immunologic status of all hospital personnel is known, and that all eligible persons found not immune are vaccinated. 100 percent compliance is an institutional goal and a requirement in high risk areas, with lesser compliance accepted outside high risk areas only until appropriate mechanisms can be found to immunize all employees. Some of these employees may be temporarily ineligible or avoiding the requirements.

The rubella program at Tripler was instituted in two major phases. The first phase was the establishment of the program for all new employees, military and civilian. Bloods are drawn on all new employees at time of inprocessing and titers established. Those with titers less than 1:10 are required to be immunized. Immunity to rubella is a condition of employment and this is explained to all inprocessing individuals. Adequate counseling is provided for female employees to insure they are not vaccinated

while pregnant. Military personnel and eligible beneficiaries are managed through normal mechanisms and civilian employees are processed through the Occupational Health Program. Some groupings, such as students, are required to present with known titers. The choice of a two phase mechanism was made to provide a known population of existing hospital employees as of a given date.

The second phase of the program was directed towards employees of record as of first phase initiation. All existing hospital employees were identified from the Unit Manning Report. Military and civilian health records were screened for the presence of previous titers to ease requirements and acceptance. The workforce was divided into groups (approximately 100 unknowns) easily manageable by the laboratory and required to have titers performed. Those with titers less than 1:10 were required to be immunized through the same mechanisms provided for new employees

Initial susceptibility rates indicate that approximately 18 percent of the hospital workforce is susceptible to rubella. There is a tremendous, but expected disparity, however, (7 vs 25 percent) between military and civilian employees, and the civilian female in the

workforce has the highest susceptibility overall at approximately 28 percent. This data documents the necessity for the program, but is based upon screening only. Success of the program will be measured by final susceptibility, a compliance factor, at the conclusion of phase two. All mechanisms to provide for implementation and measurement of results are established.

IV. CONCLUSION

The rubella screening and immunization project and this resulting report were done with the idea of assisting in the institution of a new, much needed program for health care facilities. The medical necessity for such an undertaking was well established, but the management requirements associated with its organization and implementation were poorly developed or non-existent. This was particularly evident when the concept was extended the peculiarities of the Federal health care sector and its dichotomy of employment and authority roles.

There were substantial educational gains in the organization and development of this program model. Implementation crossed all personnel lines within and without the institution forcing coordination with every sector. Liaison had to be established with professional activities to provide for medical and laboratory support and counseling. Finally, the program had to be developed within strict resource limitations as no additional assets in personnel, funds or material were available. These demands and requirements were beneficial in making this an extremely worthwhile Problem Solving Project.

This project was not only beneficial to the researcher, but to the hospital as well. A viable program to increase the environmental health aspects of Tripler and establish safe patient conditions was provided. Interestingly, several key people in high risk areas (the OB/GYN head nurse, an OB resident, etc.) were identified as susceptible and immunized. Even the researcher fell prey to his own program. The fact that these individuals who should be most aware of the problems associated with rubella were found susceptible can only highlight the necessity for programs of this type. Certainly the CDC guidelines and the guidance of the Health Services Command should be followed to provide similar programs at all Federal hospitals. Much benefit can be provided for minimal cost.

FOOTNOTES

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APPENDIXES

APPENDIX A

Recommendations of Infection Control Committee

HST-CS

Chairman, Infection Control
Committee

Chairman, Executive Comm

6 June 1978
MAJ Clegg/jm/433-6432

1. At its 26 May 1978 meeting, the Executive Committee approved the recommendations of the Infection Control Committee on 18 April 1978.
2. Action will be taken to develop and implement a hospital policy requiring all hospital personnel to be tested for immunity against rubella and, if found susceptible, to be vaccinated.
3. Coordination will be effected with Chief, Preventive Medicine Activity, to insure implementation as soon as possible.

PETER H. PATTERSON, M.D.
Colonel, MC
Chairman, Executive Committee

CF: Chief, Preventive Medicine Activity

COPY FOR: Chief, Preventive Medicine Activity

APPENDIX B

HST-CS (27 Jun 78)

SUBJECT: Rubella Immunization

TO: C, PVNTMED Actv

FROM: C, Prof Svcs

DATE: 9 Aug 1978

CMT 4

MAJ Clegg/jm/433-6432

1. The use of Hawaii State Health Department services as outlined in CMT 1 is approved.
2. Preventive Medicine Activity will coordinate the program between the Health Department and the various TAMC agencies who will participate in its implementation.



SAMUEL A. CHANEY, M.D.

Colonel, MC

Chief, Professional Services

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HST-PV-I

Rubella Immunization

TO C, Prof Svcs

FROM C, PVNTMED Actv

DATE 27 Jun 78

CMT 1

Ms Beene/jme/433-6693

1. Reference. DF, HST-CS, dated 6 Jun 78, subject: Recommendations of the Infection Control Committee.

2. Coordination regarding implementation of the hospital rubella policy has been initiated. The Hawaii State Health Department has volunteered the following:

a. Laboratory analyses for rubella titer with a probable turn around time less than the 4-6 weeks predicted from Fort Baker.

b. Rubella vaccine for those requiring immunization.

c. Federal consent forms for those receiving the immunization.

3. The Health Department, in turn, would request persons participating in the program to complete a personnel data form as part of a continuing epidemiological study. Completion of this form would be on a strictly voluntary basis.

4. Request your guidance regarding the offer of services from the State Health Department.



PATRICIA A. GREENE

Colonel, ANC

Chief, Preventive Medicine Activity

COORDINATION:

C, Dept of Path
JAG See Cmt 2

C, Dept of Med

HST-JA (27 Jun 78)

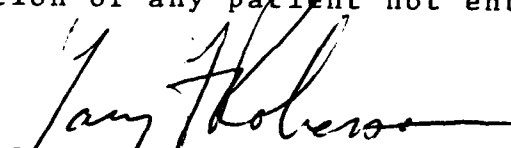
TO: C, PVNTMED Actv

FROM: HST-JA

DATE 25 Jul 78

CMT 2

No legal objections to program as outlined here. No military personnel should participate in the immunization of any patient not entitled to medical care in this facility.



GARY F. ROBERSON

MAJ, JAGC

Hospital Judge Advocate

HST-PV-I (27 Jun 78)
SUBJECT: Rubella Immunization

TO: C, Prof Svcs

FROM: C, PVNTMED Actv

DATE: 4 Aug 78 CMT 3
Ms Beene/jme/433-6693

Per conversation with MAJ Roberson, 2 Aug 78, CMT 2 was only intended to preclude involvement of military personnel in community immunization programs, not to infer that they should not participate in immunization of TAMC employees.



PATRICIA A. GREENE
Colonel, ANC
Chief, Preventive Medicine Activity

CF:
Hosp JA

APPENDIX C

DEPARTMENT OF THE ARMY
HEADQUARTERS, TRIPLER ARMY MEDICAL CENTER
TRIPLER AMC, HI 96859

TAMC Suppl
to AR 40-562

Medical Services
IMMUNIZATION REQUIREMENTS AND PROCEDURES

AR 40-562 (7 June 1977) is supplemented as follows:

Page 11, Paragraph 12b, add subparagraph (11).

(11) Rubella. All military and all civilian personnel employed at Tripler Army Medical Center will have a rubella titer determination during inprocessing. Susceptible male personnel will be immunized. Susceptible female personnel will be referred to OB-GYN for counseling prior to immunization. Immunizations for female personnel will be given on the basis of physician's recommendation.

(HST-PV-I)

FOR THE COMMANDER:

JOHN R. MOHN
MAJ, MSC
Adjutant

DISTRIBUTION:

A
10 - HST-AJ
15 - HST-PV

Appendix A

Procedures for Civilian Employees (TAMC)

1. Individuals who receive pre-employment physicals:

a. Physical exam section will request a rubella titer at the time of examination.

b. Results will be screened by the Physical Exam section who will refer results of less than 1:10 to the Occupational Health Clinic for followup. Titers equal to or greater than 1:10 are considered protective. These titer results will be entered in the individual's health record and on the TAMC Hospital Immunization Record (SF 601).

c. All personnel with titers of less than 1:10 will be (responsibility of Occupational Health Nurse):

(1) Counseled as to the meaning of the HI antibody test results, the danger, value and procedures used in Rubella immunization and the risk of exposing susceptible patients should one contract the disease. Female employees will also be made aware of the risk of contracting rubella during pregnancy.

(2) Male personnel will be referred to AMIC for immunization as indicated.

(3) Female personnel will be referred (Rubella Referral Form) to either OB-GYN Clinic (via CAS) or their private physician (at no charge to TAMC). Employees will require an evaluation, counselling, pregnancy test, and contraception program. If the individual is pregnant and has an HI antibody titer of less than 1:10, a recommendation will be made to immediately reassign the

individual to an area where risk of contracting rubella is minimized, if necessary. If not pregnant and having an HI antibody titer less than 1:10, the employee must have been on a contraceptive program for one month prior to immunization and will remain on the contraceptive program for three months following immunization. Physician will complete items 1 and 2 of the *THINC Form* (Rubella Referral Form ^{for Cas Emp}) and refer the employee back to the Immunization Clinic to receive rubella immunization.

d. At the time of immunization, the employee will be asked to sign the *THINC Form* ——— (*Request for Immunization and Acknowledgement of Counseling Form).^a Completed forms are then placed in the employee's health record and an entry made to the immunization record.

e. Personnel will be scheduled for a second rubella titer one month after immunization.

2. Those who do not get pre-employment physicals:

a. All new employees must contact the Occupational Health Clinic for an appointment prior to the first day of employment.

b. Occupational Health Clinic will request rubella titers for all personnel.

c. Results will be screened and personnel followed the same as employees receiving pre-employment physicals.

3. Employees ineligible for rubella immunization per physician dx or those refusing immunization will be referred to the Occupational Health Clinic for counseling and coordination with CPO.

APPENDIX B

PROCEDURES FOR MILITARY EMPLOYEES

1. All military personnel will have blood drawn for rubella titer at time of in-processing. C, Personnel Division will insure that Pathology (6th floor, blood drawing area) is included on the in-processing checklists for both enlisted and officer personnel and that pre-stamped lab forms be included in the in-processing packets. Pre-stamped lab forms will be provided by C, Preventive Medicine Activity (PVNTMED Actv).
2. Results of rubella titers will be screened by PVNTMED Actv. Titers of greater than 1:10 are considered protective. Personnel with titers of less than 1:10 will be referred as detailed below. All titer results will be entered in the individual's health record and on the Hospital Immunization Record (SF 601).
3. Male personnel with titers of less than 1:10 will be referred to AMIC for immunization via Referral Form. AMIC will complete bottom portion of form and return to PVNTMED Actv.
4. Female personnel with titers of less than 1:10 will be referred via Referral Form (Incl 1) to OB-GYN Clinic (via CAS) for evaluation, counseling, pregnancy test and contraception program. Personnel eligible for immunization will be referred to AMIC for immunization. AMIC will complete bottom portion of forms and return to PVNTMED Actv. OB-GYN Clinic will make notation on the referral form for those personnel ineligible for immunization and return to PVNTMED Actv.
5. All personnel will receive a repeat rubella titer one month following immunization.

APPENDIX D

HST-CPOH (26 Oct 78)

SUBJECT: TAMC Supplement to AR 40-562

THRU SJA, TAMC ~~was given~~
by SJA

FROM CPOH

DATE 13 DEC 1978 CMT 2
Mr. Rozmiarek/ps/438-2278

TO C, Pymt Med Actv

1. Subject TAMC supplement has been furnished to the International Association of Machinists and Aerospace Workers (IAM&AW) for comment with response requested no later than 20 Dec 78. The following interim USACPOH comments are furnished for your consideration with final comments to be furnished upon receipt of union input. Further discussion with this office is invited concerning administrative procedures suggested by the draft supplement.

2. Appendix A.

a. Paragraph 1a: Recruitment and Placement Specialists, USACPOH, would be able to inform new hires during in-processing procedures that a rubella titer is mandatory. It must be clearly established by TAMC, however, whether or not willingness to submit to the titer and to subsequent inoculation and required program of contraception is a condition of employment. In brief, whether an employee's refusal to submit to the titer, the inoculation or the required program of contraception is basis for nonselection or removal. The negative repercussions of such a policy are obvious: TAMC would place itself in a position of requiring all new female employees, regardless of age or marital status, to sign a statement agreeing to practice contraception for a period of four months, a religious and moral issue that would be best avoided in an administrative procedure.

b. Paragraph 1c(3): TAMC must address what procedure will be followed if a pregnant female with an antibody titer of less than 1:10 cannot be reassigned to a minimal risk work area due to inappropriate skills or a lack of appropriate vacancies. Options include removal, detail, sick leave or leave without pay, or a retention in the risk area with known possible consequences to the unborn baby. The paragraph further requires a contraceptive program for nonpregnant females similarly susceptible to infection. TAMC must develop a procedure to be followed if the employee refuses to participate, as indicated in comment 2a above.

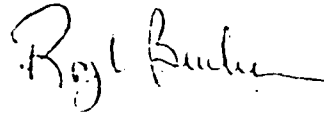
c. Paragraph 3: The above comments indicate a need to develop a policy to govern the counseling and coordination intended to be provided by USACPOH.

d. Request for Immunization and Acknowledgement of Counseling Form: The necessity for requiring the employee to indicate the specific method of contraception is unclear. Further, the form requires the employee to affix her signature to the statement, "...I must be certain not to become pregnant for at least three months". Surely less controversial language can be substituted to accomplish the same goal of protecting the best interest of mother, child and Tripler Army Medical Center.

HST-CPOH (26 Oct 78)

SUBJECT: TAMC Supplement to AR 40-562

3. We encourage further discussion of the proposed supplement with SJA, EEO and this office prior to final draft. Please contact Ms. Ida Holtsinger at 438-2278 if you have questions or wish to arrange a meeting on this subject.



ROY L. BENHAM
Civilian Personnel Officer

APPENDIX E

LIST-XO

TAMC Supplement to AR 40-562

C, Preventive Med Actv

Admin Resident

27 Dec 78

CPT Muldoon/gt/433-6633

1. References:

- a. DF, HST-PV-I, CMT 2 (HST-CPOH), 26 Oct 78, subject as above.
- b. DF, HST-CS, 6 Jun 78, subject: Recommendations of The Infection Control Committee.
- c. AR 40-5, Health and Environment.
- d. AR 40-562, Immunization Requirements and Procedures.

2. This correspondence is in response to concerns expressed by CPOH in reference 1.a., regarding the proposed TAMC Supplement to AR 40-562. Specific comments will be addressed in paragraph 2 in the same precedence as CPOH's DF.

3. Reference 1.c., paragraph 1-3a(10), gives commanders the authority and the responsibility to provide immunizations necessary to maintain the health of the command. Reference 1.d., paragraph 10c(2), extends these actions to federal civilian employees when health is an issue. Reference 1.b. clearly extends these authorities (for TAMC) to rubella and provides that "action will be taken to develop and implement a hospital policy requiring all hospital personnel to be tested for immunity against rubella and, if found susceptible, to be vaccinated." Screening and immunization, if required, will definitely be a condition of employment. It should be noted that contraception, per se, is not a condition of employment, but an exigency of the immunization process for women. The opinion that all new female employees would have to practice contraception is erroneous, as the majority would be found immune at the time of initial screening (titer). Regardless of whether contraception is a religious and moral issue to be avoided in an administrative procedure, it is a medical necessity to consider the possible consequences to the fetus, in the crucial first three months of the gestation period, of a rubella immunization. Contraception must be addressed.

4. Discussions with the Chief, Force Development Division, indicate that detailing would probably be the mechanism of choice in handling pregnant persons with titers less than 1:10. It is envisioned, however, that the conditions described by CPOH would be non-routine and handled on an individual basis. Removal from employment is not contemplated. It is likely that some method of contraception for non-pregnant females with titers less than 1:10 will be required, as most physicians will be reluctant to prescribe rubella immunization without this action. Rubella immunity will be a condition of employment. It therefore follows that contraception may also be, but based on medical, not administrative, requirements. Refusal to participate in the program should be a basis for non-selection.

HST-XO

27 Dec 78

SUBJECT: TAMC Supplement to AR 40-562

5. The development of counseling policies is a CPOH requirement and should be handled by them. We should, however, provide them with necessary information on our requirements and provide coordination.

6. I agree that it is unnecessary for us to require the individual female to disclose the method of contraception she may employ. This should be deleted from the form. The statement "... I must be certain not to become pregnant for at least three month.," however, has been taken out of context, and merely emphasizes the rationale for that action. It is necessary for that purpose.

7. Hopefully this discussion has clarified some of the issues raised by CPOH. Action will be taken to meet with Ms. Holtsinger to discuss these and any other problems.

TERRANCE A. MULDOON
Captain, MSC
Administrative Resident

APPENDIX F

HST-JA (21 Feb 79)

SUBJECT: Proposal to Supplement AR 40-562

TO XO, TAMC

FROM HJA, TAMC

DATE 18 Apr 79
MAJ ROBERSON/jnlf/5311

CMT 4

1. The proposal as written is directed primarily at new personnel. If this becomes, as is anticipated, a condition of employment, then civilian personnel problems will be minimal.
2. The primary problem arises with current employees who, for whatever reason, refuse to submit to immunization. There is no authority to force any civilian to receive the immunization. However, regular CPO procedures should be adequate to effect the transfer or removal of any employee who is susceptible to the disease and, because of that, presents a hazard to patients. Personnel actions of this nature will be based on actual, provable risks. It is foreseeable that employees in non patient care areas could not be removed or transferred.
3. The problem of birth control should not be treated as a separate issue. The decision of an employee to submit or refuse will be made with an awareness of the procedure and risks.
4. The proposed forms are adequate with the exception of the "Request for Immunization and Acknowledgement of Counselling Form." ~~Delete~~ the last paragraph of that form and it will be acceptable.
5. The questions raised by CPOH have been dealt with in part by the above paragraphs. For clarity, I will comment on each paragraph of the 13 December 1978 DF from CPOH separately;

Paragraph 1: Mr. Rozmierick informed me sometime in March 1979, that the union did not respond. We will proceed as if there are no union objections.

Paragraph 2a: See paragraph 1, this comment.

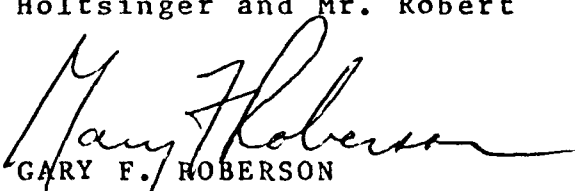
Paragraph 2b: See paragraph 2, this comment.

Paragraph 2c: No comment.

Paragraph 2d: The attached counseling form does not require information on methods.

Paragraph 3. I have discussed this program with Mr. Joe Rozmierick, Ms. Ida Holtsinger and Mr. Robert Opedal from CPOH.

3 Incl
nc


GARY F. ROBERSON

MAJ, JAGC

Hospital Judge Advocate

TAMC wages war on rubella virus

APPENDIX G

by Kathy Martin

In 1976 a newly assigned Schofield Barracks soldier was admitted to the Tripler emergency room and later diagnosed as having rubella.

During the time before the final diagnosis and even during his isolation period, 39 people came in contact with the infected soldier. Of those who did, 20 percent were found to be susceptible to the infection - including his primary physician.

In early 1978 a large Los Angeles hospital reported a major rubella outbreak among physicians and nurses. This caused a major effort to determine the susceptibility status of 200 pregnant women exposed to the infected staff during the six weeks before the infection was diagnosed.

These are only two cases that led to the beginning of a full-fledged fight against rubella, or German measles.

According to Mrs. Janice C. Beene, infection control officer at TAMC, one of the major concerns is due to the high pregnancy rate among workers and patients at Tripler. A woman who contracts rubella during the early months of her pregnancy has a 30 to 50 percent chance of having a baby with serious birth defects or a child that will not survive.

The rubella virus is a highly contagious disease that is spread when a person who is infected coughs, sneezes or speaks. Symptoms of the disease are characterized by a mild upper respiratory illness with a low fever and a mild rash that usually lasts for three days.

To determine if a person is susceptible, a blood sample is taken. A "titer determination tells whether a person is unprotected from the virus," explains Beene.

If a person is found to be susceptible, a vaccine is administered. This one vaccine is all that is needed to give a lifetime of protection.

Side effects could result such as a mild rash for a day or two and pain in the body joints. According to the Hawaii Department of Health "approximately 10 percent of adolescents and adults who are immunized against rubella feel pain in the joints of their hands and feet or the knees" for a short period of time.

In mid-1978, the Infection Control Committee at TAMC was given approval to "develop and implement a hospital policy requiring all hospital personnel to be tested for immunity against rubella and, if found susceptible, to be vaccinated."

This approval has led to the writing of a TAMC Supplement to AR 40-562, Immunization Requirements and Procedures. This new regulation states that susceptible males will be immunized and females will be sent to OB-GYN for counselling prior to immunization. Immunizations for females will be given on the basis of physicians recommendation.

According to Beene, the full scale implementation of the rubella program will begin by spring, at the latest. Titer determination samples will be mandatory for all personnel, including people such as volunteers, secretaries and AAFES workers.

Persons now inprocessing are required to go through Pathology for blood tests. "A group of 43 were recently tested during in-processing," relates Beene, "and 16 percent of the group are not immune from the rubella virus."

Beene also stated that according to statistics "people born in Hawaii are much more susceptible to rubella than those people born on the mainland. Due to the large number of island-born personnel working throughout the hospital, the need to have them tested is greater."

APPENDIX H

TAMC OFFICER IN-PROCESSING CHECKLIST				
You are required to visit all activities listed below in person to complete your in-processing. For your convenience, the stations have been listed by areas that should preclude unnecessary travel on your part. After processing at each station, the cler will initial the checklist. Upon completion of your in-processing and within five (5) working days after you receive this checklist, return this form to the Military Personnel Branch, Bldg 215, TAMC, for inclosure in your personnel records.				
LAST NAME	FIRST NAME	(MI)	SSAN	RANK DEPT
COMPLETE IN ORDER INDICATED:				
1 Military Personnel Branch (Bldg 215, TAMC)	For military personnel actions (records, leave, orders, etc.).			
2 Family Housing Office (Bldg S-330, Ft Shafter) (Command sponsored service members only)	Company grade bachelors & those field grade bachelors who desire to live in the BOQ, report to the Adjutant's Office, Rm 207, 2nd Floor, Unit A, TAMC).			
3 Finance Office (Bldg 123, Ft Shafter)	For finance records check & claims for travel pay.			
COMPLETE IN ANY ORDER:				
Post Office (B-1 Level, Unit A)	For change of address cards and assignment of P. O. Box.			
Outpatient Records (Reception Desk, 1st Floor, Unit A)	For turn in or medical records.			
Pharmacy (1st Floor, Unit A)	For orientation & signature (MC-DC-ANC officers).			
Information Desk (2nd Floor, Unit A)	For information.			
Professional Education (Rm 234, 2nd Floor, Unit A)	Admin Support Br (TAMC Reg 40-63) (MC interns & residents; dental, podiatrist, optometrist, audiologist, physical therapist, & occupational therapist officers; dietitian, nurse clinician, & nurse ANES).			
Public Affairs (Inducian Rapor) (Rm 1102, 2nd Floor, Unit A)	For information. Bldg 102			
Blood Bank LAB 6th Floor (B-2 Level, Unit C)	For blood type.			
ENT (Rm 1S9, 1st Floor, Unit C)	For ear plugs.			
Dept of Dentistry (6th Floor, Unit C)	For turn in of dental records.			
Race Relations (Bldg 102, TAMC)	For information.			

CI F

By post office B-1 level

ENLISTED PERSONNEL INPROCESSING CHECKLIST

NAME	GRADE	SSN	DATE
ARRIVAL DATE	PMOS	BY ASSIGNMENT/SECTION	UNIT OF ASSIGNMENT

INSTRUCTIONS: All enlisted personnel will inprocess in duty uniform thru the following offices in the order indicated. Two working days are authorized for this inprocessing. Initials and date will be indicated in space provided by responsible personnel in each office. Return this form to Military Personnel Branch upon completion of your inprocessing.

OFFICE	INITIALS/DATE	LOCATION/REMARKS
1. Mil Pers Br*		Bldg 215-TAMC
2. Troop Command SGM		Bldg 215-TAMC
3. Unit Orderly Room		Bldg 104-TAMC
4. Unit Supply		Bldg 104-TAMC
5. Mail Room		A Unit B-1 Level Main Hosp Bldg
6. Family Housing		Bldg S-330 Ft Shafter
7. Outpatient Clinic		A Unit-1st Floor, Main Hosp Bldg. Handcarry Medical Records
8. Career Counselor		Orderly Rm
9. Laboratory		6th floor A Unit Main Hospital
10. ENT Clinic		C Unit 1st Floor Main Hosp Bldg
11. Dental Clinic		C Unit 6th Floor Main Hosp Bldg Handcarry Dental Records
12. Education Center		Bldg 102 TAMC
13. Finance Office		Bldg 123 Ft Shafter Appt time: Handcarry records
14. Provost Marshal**		Bldg S-330 Ft Shafter
15. Command SGM		A Unit 2d Floor (Next to information desk) Main Hospital Entrance
16. Public Affairs Office		Bldg 102 TAMC CANUCAN OFFICE
17. Equal Opportunity Ofc		Bldg 102 TAMC
18. CIF Central Issue Facility		B-1 Level Rm#B-114 Main Hosp Bldg
19. ACS-- Army Community Service		Bldg T-330 Ft Shafter Call for appt 438-1749 (E1-E6)
20. Mil Pers Br		Bldg 215 TAMC (return inprocessing form)

*Information packet furnished. **Process thru Provost Marshall only if you have a weapon or POV to register.

APPENDIX I

U.S. GPO: 1977-0-241-526/24

NAME RANK DUTY SECT SSAN AGE ETHNIC B G		HST PY		SPECIMEN/LAB RPT NO	
SEROLOGY URGENCY ☐ ROUTINE ☐ TODAY ☐ PRE-OP ☐ STAT		PATIENT STATUS ☐ BED ☐ OUTPATIENT ☐ NP ☐ AMB ☐ DOM		SPECIMEN SOURCE ☐ BLOOD ☐ OTHER (Specify)	
Enter in above space PATIENT IDENTIFICATION--TREATING FACILITY--WARD NO--DATE REQUESTING PHYSICIAN'S SIGNATURE DR. J. BROWN REPORTED BY MD DATE				LAB ID NO	
HOSP EPIDEMIOLOGIST TECH					
REMARKS					
RUBELLA TITER					
TEST(S)	SPECIMEN TAKEN	DATE	TIME	AM	PM
RESULTS	REQUESTED	(A)			
	INF MONO				
	QUAL				
	INF MONO				
	QUANT				
	RPR				
	AUTO				
	CARD				
	VDRL				
	QUANT				
	FTA-ABS				
	TPHA				
	RHEUMATOID				
	FACTOR				
	ANTI-NUCLEAR				
	FACTOR (ANF)				
	COLD AGG.				
	ASO				
	CRP				
	SERUM				
	COMPLEMENT				
	FEBRILE				
	AGG				
	COMP FIX				
	HAI				
	THYROGLOBULIN				
	ANTIBODY				
	THYROID				
	MICROSOMAL				
	ANTIBODY				

551-104

SEROLOGY

STANDARD FORM 551 (Rev. 9-77)
GPO: 1977-0-241-526/24
Committee on Medical Records Form 10-11 104-8

PATIENT'S MED. RECORD

APPENDIX J

RUBELLA REFERRAL FORM FOR MILITARY PERSONNEL

Results of the rubella titer performed indicate that you are susceptible to rubella (German measles).

An immunization is required to protect yourself, other personnel and patients. Rubella is usually a mild disease, but highly contagious. If you have rubella while working in the medical setting, you could pass on the rubella virus to patients, many of whom are pregnant women. A woman who gets rubella during the early months of her pregnancy has a 30 to 50 percent chance of having a baby with serious birth defects. Such defects range from blindness and deafness to heart disease, and even death.

Male personnel should bring this form to the AMIC for immunization.

Immunization administered by _____

Date _____

Female personnel should call OB-GYN Clinic (via CAS) for an appointment for evaluation, counseling, pregnancy test and contraception program, as required. It is important that you bring this form with you.

_____ was seen on _____ and was determined to be:

☐ Eligible for rubella immunization of _____
(Refer patient to AMIC) (Date)

☐ Ineligible for rubella immunization (Return form to PVNTMED Actv)

Signed _____
Physician

Immunization administered by _____

Date _____

AMIC Clinic: Return completed form to HST-PV-I

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL HST-DC	SUBJECT Rubella Titers For TAMC Staff		
TO	FROM CPS	DATE 1 Mar 79	CMT 1
CPT Muldoon/gt/433-6633			

1. References:

- HST-CS, DF, dated 6 Jun 78, Subject: Recommendations Of The Infection Control Committee.
- AR 40-562, Immunization Requirements and Procedures.
- Draft TAMC Supplement to AR 40-562.

2. Reference 1.c. has been staffed and is presently being prepared for publication. This regulation requires all hospital personnel to be tested for immunity against rubella by titer, and if found susceptible, to be immunized. Such action is necessary to lessen the possibility of children being born with congenital birth defects to mothers inadvertently exposed to rubella virus during pregnancy.

3. The health records of personnel assigned to your section have been screened for documented rubella titers. Those personnel with documented titers have been removed from the UMR listing at Inclosure 1 and do not require additional tests. All other personnel assigned to your section must be screened for rubella. In the event that a rubella titer result for one of your personnel was overlooked in the screening process, that person need only provide the appropriate laboratory result to Preventive Medicine Activity (ATTN: HST-PV-I) and he/she will not require rescreening.

4. Personnel requiring titers should complete the top portion of one of the inclosed laboratory request slips (Inclosure 2) and report to the laboratory (6th floor, TAMC) during the week indicated at the top of Inclosure 1. Personnel must report during normal duty hours. Tuesday, Thursday, or Friday afternoons are preferred to reduce waiting time.

5. It is possible that you may have new personnel assigned who do not appear on the UMR. If this is the case, and they have not been screened for rubella during in-processing, they should be included in the group required to be tested.

6. Personnel found to be not immune to rubella will be separately notified upon return of laboratory results, and will be referred for counseling and/or immunization as appropriate.

7. A proposed schedule of testing is included (Inclosure 3) for your information only. Changes may be necessary and personnel should report as directed at the top of Inclosure 1. Any questions should be directed to Ms. Jan Beene, 433-6693; or CPT Terry Muldoon, 433-6633.

3 Incl
as

Samuel A. Chaney
SAMUEL A. CHANEY, M.D.
Colonel, MC
Chief, Professional Services

RUBELLA REFERRAL FORM FOR CIVILIAN EMPLOYEES

TO: Attending Physician

Ms _____ is an employee of Tripler Army Medical Center. Current hospital policy requires all hospital employees to have a rubella titer determination and those susceptible personnel to be immunized. On _____, a serum HI titer against rubella was performed and the results of the patient's titer were _____. This titer of less than 1:10 is considered non-protective and because of the inherent risk of her contracting the disease within the work environment and subsequently exposing susceptible patients, immunization is required. The immunization is available to her from this clinic or from private facilities at no expense to the government..

1. In order for the immunization to be given by this clinic, the employee must:

a. ☐ Be counselled about the importance of being protected against Rubella (to prevent the Rubella Baby Syndrome), the potential danger of becoming pregnant within three months of immunization with the live Rubella virus vaccine, and the risk of exposing susceptible patients should she contract the disease.

b. ☐ Be provided with a pregnancy test and initiation of a contraception program (one month prior to Rubella immunization and remain on such for three months following immunization) if clinically indicated.

c. ☐ Be assessed (in terms of contraceptive history) for eligibility to receive rubella immunization.

2. Please fill in the information below:

a. Pregnancy test performed _____ (date).

☐ Not indicated ☐ Negative ☐ Positive

b. ☐ Patient already met criteria and received rubella immunization on _____ (date).

c. ☐ Patient will be eligible to receive rubella immunization on _____ (date).

d. Patient ineligible for rubella immunization.

Physician's Signature

3. Please return this form to my office for inclosure in patient's Occupational Health Record.

Sincerely,

APPENDIX M

HST-CS-E

24 April 1979

The Occupational Safety and Health Act (OSHA) requirements, Department of Health, Education and Welfare (HEW) guidelines, and United States Army Regulations recommend basic health testing and immunizations for all hospital staff and employees. These measures insure that patients are not exposed to an infectious hospital staff member or student, and that personnel are protected as much as possible from acquiring a contagious disease from the work/study environment.

The Memorandum of Agreement between your institution and Tripler Army Medical Center (paragraph II2f) indicates that your institution is responsible for health examinations and such other medical examinations and protective measures as the facility and non-federal institution mutually find to be necessary. Attached are the "Occupational Health and Safety Requirements for Civilian Students Participating in Short-Course Training at Tripler Army Medical Center." It is requested that you insure that these basic testing and immunization requirements are fulfilled by your students before they commence study at Tripler.

Thank you for your cooperation in this effort to make our hospital environment as safe and healthful as possible.

Sincerely,

1 Incl
As stated

SAMUEL A. CHANEY, M.D.
Colonel, MC
Chief, Professional Svcs
and Director, Medical Education

OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS
FOR CIVILIAN STUDENTS
PARTICIPATING IN SHORT-COURSE TRAINING AT TRIPLER ARMY MEDICAL CENTER

1. The following requirements are designed to provide for the mutual protection of patients from infectious students and students from infectious patients. The listed tests and immunizations, except where otherwise indicated, are considered the minimum essential.

2. Requirements are:

a. TB Testing. A TB skin test should be provided within three months of commencing study and annually thereafter. Documented skin reactors will obtain a chest x-ray on the same schedule.

b. Rubella Testing. All students should be known immune to rubella before working in a high risk area such as a hospital. A screening for the presence of rubella antibodies is to be performed. Those who have titers less than 1:10 should be immunized after appropriate counselling as to associated risks. If immunization is refused, a waiver of legal responsibility may be requested and those students will be excluded from rotation through high risk areas.

c. Immunizations.

(1) Diphtheria--tetanus (within the past 10 years).

(2) Poliomyelitis.

3. It is recommended that students be tested for hepatitis B antigen to establish baseline data. At present there are no restrictions on healthy carriers working within the hospital.

4. An annual physical examination is highly recommended.

5. Participation in a safety orientation/training session in compliance with proposed OSHA standards may be required.

6. Students with upper respiratory infections, open skin lesions, diarrhea, or other infectious or contagious diseases are asked to remain out of patient care areas. In the event of an injury in the course of duty or question regarding suitability for duty because of illness, coordination will be achieved with the Occupational Health Clinic.

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SELECTED BIBLIOGRAPHY

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