

Air Education and Training Command

Sustaining the Combat Capability of America's Air Force



U.S. AIR FORCE

Occupational Survey Report AFSC 4H0X1 Cardiopulmonary Laboratory

Lt Laura McDonald
Feb 04

Integrity - Service - Excellence

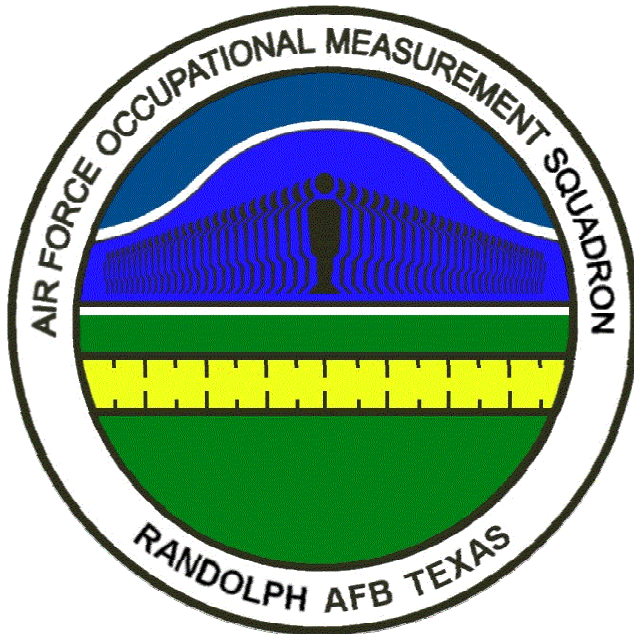
Report Documentation Page

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Overview



- Survey background
- Survey results
- Implications



Executive Summary



- Fairly homogeneous job structure with some variations within the one cluster and one independent job identified
- Technical tasks are performed throughout all skill levels
- STS generally supported by survey data
- Job satisfaction indicators comparable to previous study



Work Performed



- Performs and manages cardiopulmonary laboratory activities for:
 - Non-invasive diagnostic cardiac procedures
 - Invasive diagnostic and interventional cardiac procedures
 - Pulmonary function testing
 - Diagnostic and therapeutic bronchoscopies
 - Respiratory therapy



Current Training Program



- AFSC-awarding courses
 - Cardiopulmonary Laboratory Apprentice (Phase 1)
J3AQR4H031-003
 - 882 TRS, Sheppard AFB TX
 - 12 weeks, 1 day
 - 30 semester hours for CCAF
 - Cardiopulmonary Laboratory Apprentice (Phase 2)
J5ABO4H031-001
 - Andrews AFB, Keesler AFB, Lackland AFB, Travis AFB,
or Wright-Patterson AFB
 - 12 weeks, 1 day
 - 45 semester hours for CCAF



Current Training Program



Programmed TPR

FY04: 53 students

FY05: 52 students

Programmed Elimination Rate

FY04: 6% (Phase 1)

2% (Phase 2)

FY05: 5% (Phase 1)

2% (Phase 2)



Survey Background



- Last Occupational Survey Report (OSR):
May 00
- Current survey developed: Aug – Nov 02
 - Sheppard AFB TX (Tech School)
 - Travis AFB CA
 - Lackland AFB TX
 - Nellis AFB NV

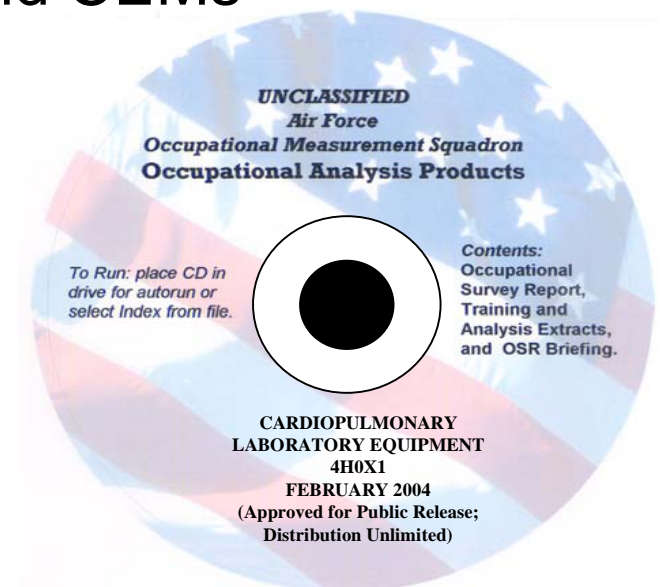




Survey Background



- Survey initiated to obtain data to:
 - Evaluate current classification and training documents
 - Support promotion test development
- Current survey data collected: Feb - Jun 03
- Components surveyed:
 - Active Duty: 3-, 5-, 7-, 9-Skill Levels and CEMs





Survey Sample Characteristics



AD

Assigned*	231
Mailed Out	208
Sample	109
Usable Returns	52%

Average time in career field for AD: 9 years 4 months

Average TAFMS for AD: 11 years 2 months

Percent of AD in first enlistment: 15%

* Assigned as of Oct 02



Paygrade Characteristics



	Assigned*	Sample
E-1 - E-3 -	15%	10%
E-4 -	11%	13%
E-5 -	34%	39%
E-6 -	21%	17%
E-7 -	15%	17%
E-8 -	2%	2%
E-9 -	2%	3%

* Assigned as of Oct 02

Note: Columns may not add up to 100% due to rounding



Command Representation



Command	Assigned %**	Sample %
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AETC	35	24
AMC	26	37
AFMC	17	15
ACC	9	13
USAFE	5	5
USAFA	3	4
PACAF	3	4
OTHER**	2	0



* Assigned as of Oct 02

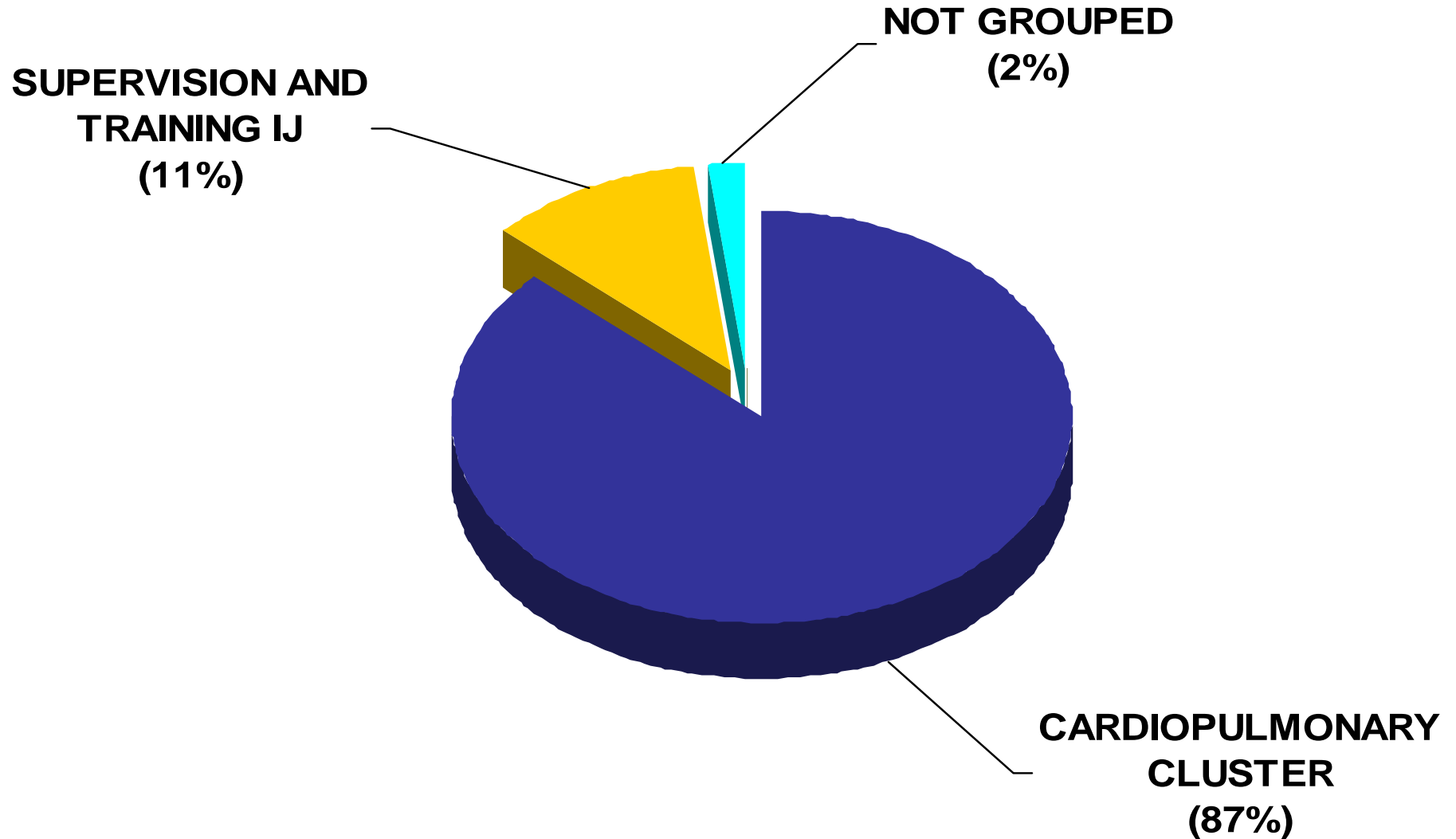
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Specialty Cluster and Job



(N = 109)



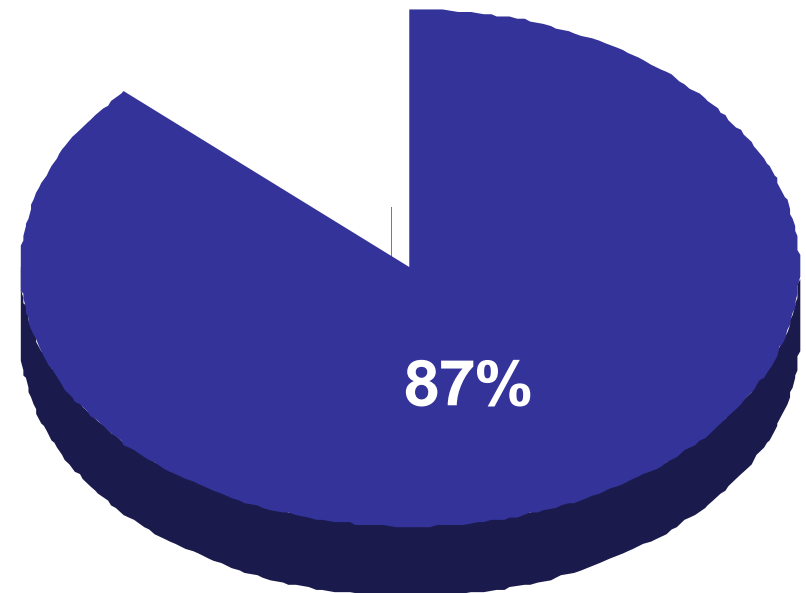


Cardiopulmonary Cluster (N=95)



- Administer medications
- Collect blood gas samples
- Inspect cardiopulmonary equipment
- Take and record vital signs
- Monitor echocardiographic (ECG) recordings
- Review medical records of patients
- Perform routine ventilator checks

Respiratory Therapy Job
Pulmonary Laboratory Job
NCOIC Job
Non-Invasive Cardiology Job

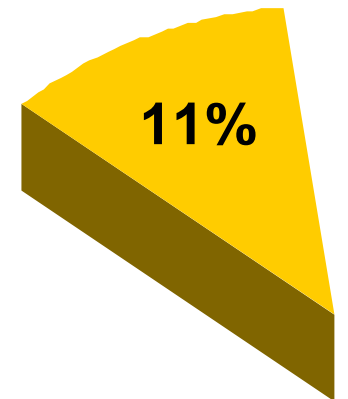




Supervision and Training IJ



- Establish performance standards for subordinates
- Evaluate personnel for compliance with performance standards
- Counsel subordinates concerning personal matters
- Conduct supervisory performance feedback sessions
- Maintain training records or files
- Determine training requirements
- Inspect personnel for compliance with military standards
- Schedule work assignments or priorities





Career Ladder Progression



- 3-skill-level personnel
 - Spend most all of their time on the technical tasks in the career field
- 5- and 7-skill-level personnel
 - Continue to perform technical tasks
 - However, take on supervisory, training, and administrative duties
- 9-skill-level personnel and CEM
 - Not reported: $N < 5$ surveys returned



Percent Across Specialty Jobs

DAFSC



SPECIALTY JOBS	DAFSC 4H031 (N=15)	DAFSC 4H051 (N=59)	DAFSC 4H071 (N=31)
CARDIOPULMONARY LABORATORY CLUSTER	100	97	71
Respiratory Therapy Job	60	34	16
Pulmonary Laboratory Job	20	17	7
NCOIC Job	0	25	39
Non-Invasive Cardiology Job	13	17	3
Not Grouped	7	4	0
SUPERVISION AND TRAINING IJ	0	2	26

Note: Columns may not add up to 100% due to rounding



Career Ladder Progression

Percent Time Spent on Duties



DUTIES	DAFSC 4H031 (N=15)	DAFSC 4H051 (N=59)	DAFSC 4H071 (N=31)
A PERFORMING COMMON RESPIRATORY THERAPY, PULMONARY, CARDIOVASCULAR, OR POLYSOMNOGRAM ACTIVITIES	40	31	17
B PERFORMING INVASIVE CARDIOVASCULAR ACTIVITIES	*	2	4
C PERFORMING NON-INVASIVE CARDIOVASCULAR ACTIVITIES	12	17	7
D PERFORMING PULMONARY LABORATORY ACTIVITIES	7	7	6
E PERFORMING RESPIRATORY THERAPY ACTIVITIES	34	20	11
F PERFORMING POLYSOMNOGRAM ACTIVITIES	*	*	*
G PERFORMING ADMINISTRATIVE OR SUPPLY ACTIVITIES	4	6	7
H PERFORMING MEDICAL READINESS ACTIVITIES	*	3	4
I PERFORMING TRAINING ACTIVITIES	2	3	16
J PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1	9	28

* Indicates less than 1%

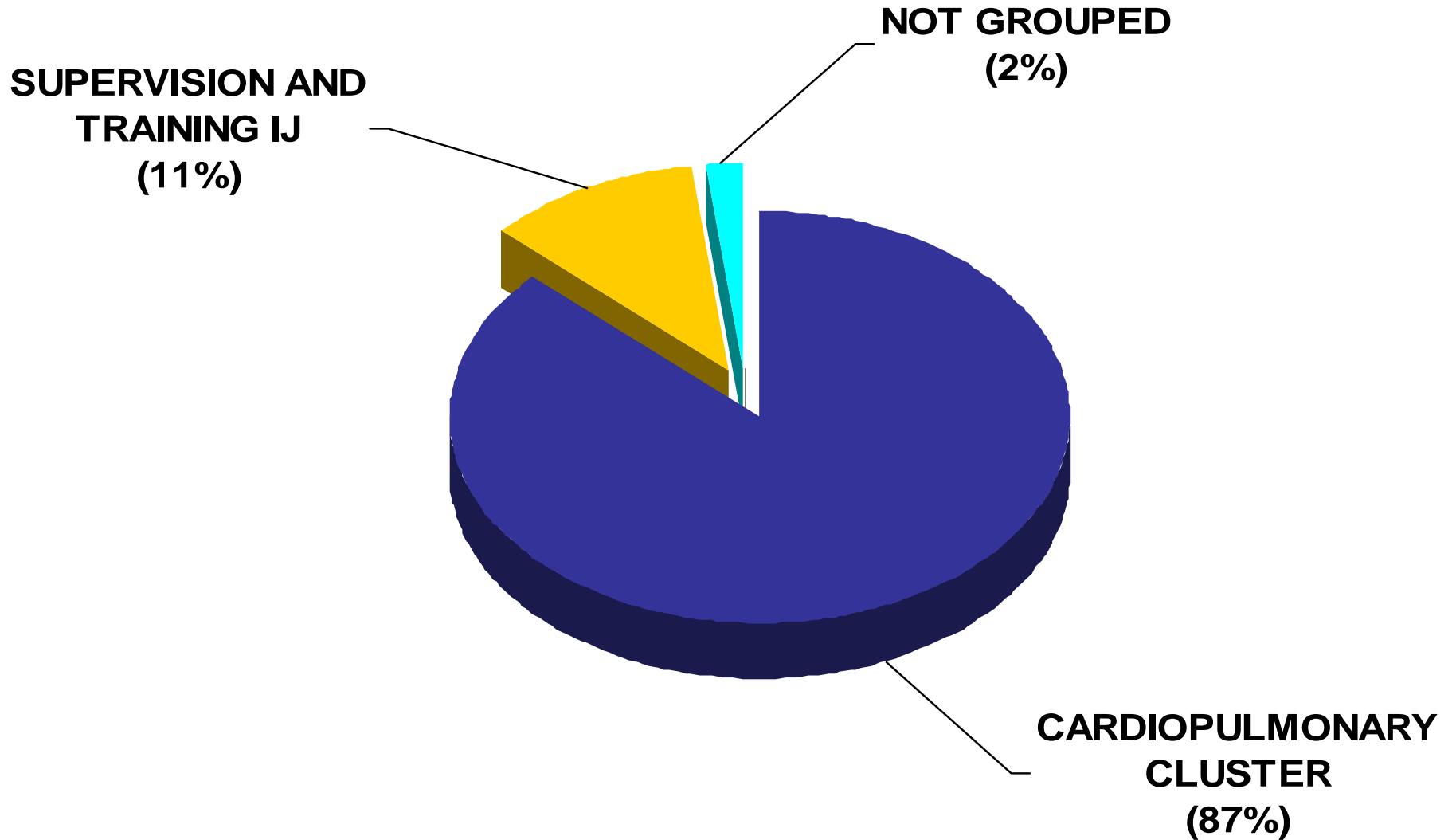
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First-Enlistment Job Structure



(N = 16)





First-Enlistment Personnel Representative Tasks



TASKS	PERCENT MEMBERS PERFORMING (N=16)
Administer medications	88
Perform arterial punctures	81
Collect blood gas samples	81
Clean and disinfect nondisposable cardiopulmonary equipment or components	75
Set up nebulizers	75
Administer and monitor bronchodilator therapies	75
Perform pulse oximeter tests	75
Perform peak flows	75
Take and record vital signs	69
Instruct patients in use of handheld or updraft nebulizers	69
Perform routine ventilator checks	69
Instruct patients in use of metered dose inhalers (MDIs)	69
Set up and administer delivery devices for administering oxygen	69
Perform pre- or post-treatment evaluations of respiratory therapy patients	69
Perform blood gas analyses	69



First-Enlistment Personnel Equipment & Systems



**PERCENT
MEMBERS
PERFORMING
(N=16)**

EQUIPMENT & SYSTEMS

Flow Meters	81
Metered-Dose Inhalers (MDIs)	81
Stethoscopes	81
Nebulizers, Small Volume (SVNs) or Handheld (HHNs)	75
Oximeters, Pulse	75
Suction Machines	75
Cuff Manometers	69
Resuscitation Bags	69
Catheters, Suction	63
Composite Health Care Systems (CHCS)	63
Devices, Oxygen (O2) Humidification (Bubble)	63
Electrocardiographic Machines	63
Incentive Spirometer	63
Devices, Humidification	56
Oxygen Blenders	56
Percussors	56



First-Enlistment Personnel Equipment & Systems (Cont.)



PERCENT
MEMBERS
PERFORMING
(N=16)

EQUIPMENT & SYSTEMS

Devices, Humidification	56
Oxygen Blenders	56
Percussors	56
Defibrillators	50
Holter Monitor Equipment	50
Monitors, Ventilator Mechanics	50
Ventilators, Volume	50



Specialty Training Standard (STS) Analysis



- STS was generally supported by survey data
 - However, several STS elements were unsupported
- Some STS items may need proficiency code review
 - Three uncoded STS elements matched to JI tasks performed by more than 20% of members
- Several technical tasks performed by 20% or more of members were not referenced to STS
 - These should be reviewed for possible inclusion in STS



Unsupported STS Elements



Examples

UNIT	STS ELEMENT	PROF CODE	PERCENT MEMBERS PERFORMING		TNG EMP*	TSK DIF**	ATI***
			1ST ENL (N=16)	3-LVL (N=15)			
1f(4)(c). Task	Caustic and corrosive chemicals (1(f)4. Plan safety or security programs) J0363. Plan safety or security programs	b	0	0	1.32	5.23	****
7(a)11. Tasks	Drug or physiologically induced asthma study (7a. Assist physician in performing) D0140. Perform drug-induced asthma tests D0142. Perform exercise-induced asthma tests	a	13 6	13 7	5.37 5.21	5.26 5.34	11 11
7b(5). Tasks	Operate D.C. defibrillators (7b. Assist physician in cardiopulmonary emergency procedures) A0049. Perform user maintenance on defibrillators B0080. Perform cardiac defibrillation	2b	13 6	7 7	4.53 2.95	4.32 5.54	7 2
9i(5). Tasks	Fiberoptic bronchoscope (9i. Perform user maintenance on) D0152. Perform user maintenance on fiber-optic bronchoscopes F0230. Perform user maintenance on polysomnograph equipment	2b	6 0	0 0	4.42 1.26	5.56 5.96	7 ****

* Mean TE Rating = 3.18; Standard Deviation = 1.92; High TE = 5.10

** Mean TD Rating = 5.00; Standard Deviation = 1.00; High TD = 6.00

*** ATI = Automated Training Indicator is training decision value for resident training (18 = high; 1 = low)



Proficiency Codes Requiring Review



UNIT	STS ELEMENT	PROF CODE	PERCENT MEMBERS PERFORMING		TNG EMP*	TSK DIF**	ATI***
			1ST ENL (N=16)	3-LVL (N=15)			
10t(5).	Transport mechanically ventilated patients (internal or external) (10t.)Team functions during long/short-term ventilation	-					
Tasks	A0060. Transport or monitor patients within facility		63	60	5.26	3.94	13
	E0222. Transport and monitor mechanically ventilated patients to another facility		25	27	6.53	5.84	11
	E0223. Transport and monitor mechanically ventilated patients within facility		63	67	6.68	5.18	18

* Mean TE Rating is 3.18, Standard Deviation is 1.92 (HIGH TE= 5.10)

** Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

***ATI=Automated Training Indicator is a training decision value for resident training (18=high; 1=low)



Tasks Not Referenced to STS



TASK	TNG EMP*	PERCENT MEMBERS PERFORMING		TSK DIF**	ATI***
		1ST ENL (N=16)	3- LVL (N=15)		
A0004 Assemble or disassemble cardiopulmonary equipment components	5.21	50	53	4.94	18
A0015 Clean patient treatment or examination rooms	2.79	38	33	1.29	4
A0023 Inspect cardiopulmonary equipment	4.63	63	60	3.90	8
A0040 Perform code cart checks	3.63	63	67	2.91	8
E0180 Maintain open airways	6.74	56	60	5.36	18
E0183 Perform bedside spirometry	5.16	31	33	4.54	12

* Mean TE Rating is 3.18, Standard Deviation is 1.92 (HIGH TE= 5.10)

** Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

***ATI=Automated Training Indicator is a training decision value for resident training (18=high; 1=low)



Job Satisfaction Indicators (Across Specialty Jobs)



	CARDIO- PULMONARY CLUSTER (N=95)	Respiratory Therapy Job (N=35)	Pulmonary Laboratory Job (N=15)	NCOIC Job (N=28)	Non- Invasive Cardiology Job (N=13)
JOB INTERESTING	83	86	73	93	62
TALENTS WELL UTILIZED	90	94	80	96	77
TRAINING WELL UTILIZED	90	94	80	93	84
SENSE OF ACCOMPLISHMENT	74	77	67	79	54
PLAN TO REENLIST	56	51	67	61	54



Job Satisfaction Indicators (Across Specialty Jobs)



	SUPERVISION & TRAINING IJ (N=12)
JOB INTERESTING	100
TALENTS WELL UTILIZED	100
TRAINING WELL UTILIZED	92
SENSE OF ACCOMPLISHMENT	83
PLAN TO REENLIST	50



Job Satisfaction Indicators (Current vs. Previous Study)



	1-48 Months		49-96 Months		97+ Months	
	2004 (N=16)	2000 (N=57)	2004 (N=32)	2000 (N=48)	2004 (N=61)	2000 (N=98)
JOB INTERESTING	75	88	84	81	89	80
TALENTS WELL UTILIZED	81	82	94	85	94	81
TRAINING WELL UTILIZED	88	88	94	83	90	79
SENSE OF ACCOMPLISHMENT	69	70	72	75	79	70
PLAN TO REENLIST	44	49	59	44	56	65



Retention Dimensions First-Term Airmen (N=16)



PLANNING TO REENLIST (N=7)	PERCENT	
	RESPONDING	AVERAGE
Military-related education or training opportunities	100	2.43
Medical or dental care for AD member	71	2.80
Pay and allowances	71	2.00
Job security	57	2.75
Military lifestyle	57	1.75
<hr/>		
PLANNING TO SEPARATE (N=9)		
Military lifestyle	67	2.00
Pay and allowances	67	1.67
Unit manning	56	2.40
Recognition of efforts	44	2.50
Civilian job opportunities	44	2.25

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions Second-Term Airmen (N=32)



PLANNING TO REENLIST (N=19)	PERCENT RESPONDING	AVERAGE
Military-related education or training opportunities	68	2.00
Medical or dental care for AD member	63	2.42
Job security	47	2.78
Medical or dental care for family members	47	2.56
Retirement benefits	47	2.33
PLANNING TO SEPARATE (N=13)		
Unit manning	54	2.43
Recognition of efforts	46	2.83
Civilian job opportunities	46	2.67
Bonus or special pay	46	1.83
Off-duty education or training opportunities	38	3.00

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions Career Airmen (N=61)



	PERCENT RESPONDING	AVERAGE
PLANNING TO REENLIST (N=34)		
Retirement benefits	76	2.85
Job security	71	2.79
Medical or dental care for family members	68	2.87
Pay and allowances	68	2.52
Military lifestyle	59	2.45
PLANNING TO SEPARATE (N=7)		
Recognition of efforts	71	2.40
Unit manning	57	2.75
Military lifestyle	57	2.50
Pay and allowances	57	2.50
Civilian job opportunities	43	3.00

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



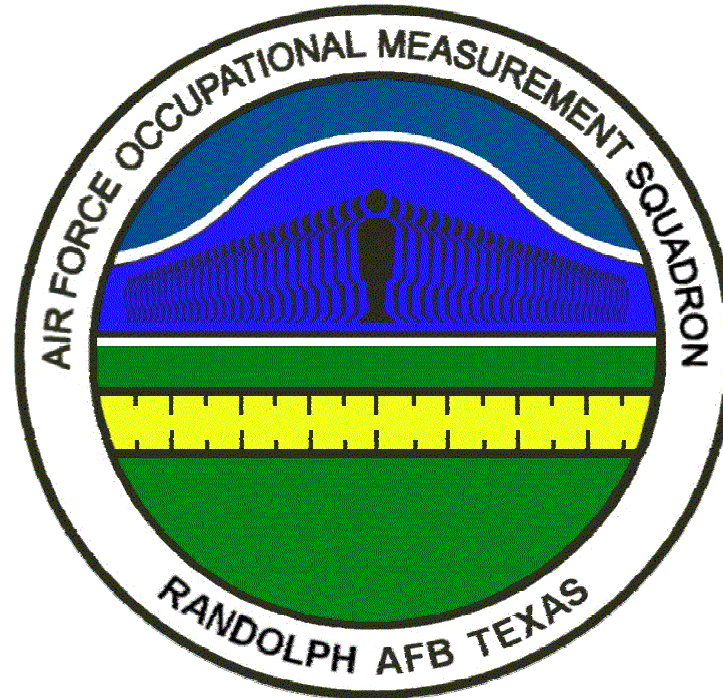
Summary of Results



- Homogeneous career ladder
- Career ladder progression typical
 - Highly technical at 3-skill level progressing to more managerial at 7-skill level
- STS provides coverage of work performed by career ladder
 - However, review of some items warranted
- Job satisfaction indicators
 - Comparable job satisfaction ratings when compared to the previous study conducted in 2000
 - Lowest job satisfaction indicated by first-enlistment personnel



Questions?



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