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Medically Disqualified Airline Pilots

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Final Report

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16. Abstract

This study presents comprehensive data reflecting pertinent denial rates regarding the medical and general attributes of those airline pilots denied medical certification in calendar years 1983 and 1984.

The overall annual denial rate of this group is 4.7 per 1,000 active airline pilots. Age-specific denial rates for airline pilots increase to the highest rate at age interval 55-59. The most significant causes for denial are cardiovascular, neuropsychiatric, and the miscellaneous category. The importance of these causes for denial, particularly above age 45, is again recognized. Denials for cardiovascular reasons account for 33% of all denials in this airline pilot group.

Reasons/causes for denial and age-specific denial rates are changing. Denial rates of older pilots have decreased while rates for younger pilots have increased when compared with previous studies' rates. This could be attributed to changes in the interpretation of FAA regulations, certification policies, and pilots' concepts and concerns regarding the economic status of their employer. On the basis of these and previous findings, pilots should be educated to report history or symptoms of any disease during their periodic medical certification examinations.

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MEDICALLY DISQUALIFIED AIRLINE PILOTS

INTRODUCTION

Federal Aviation Regulations (FAR's) require that pilots for scheduled and nonscheduled airlines possess a first-class medical certificate to validate their air transport pilot certificate. Airline pilots are required to obtain a Federal Aviation Administration (FAA) medical examination at 6-month intervals and must meet specific requirements for a first-class medical certificate as set forth in FAR 67.13 (b) through (f). If the medical standards are not met, the application for first-class certification is denied. This denial can result from any of several levels of certification review within the FAA, from the aviation medical examiner (AME) to the Federal Air Surgeon.

Federal Aviation Regulations, Part 67, specify that a medical certificate will be denied if an applicant has an established medical history or clinical diagnosis of any of the following conditions:

1. A personality disorder that is severe enough to have repeatedly manifested itself by overt acts.
2. A psychosis.
3. Alcoholism, unless there is established clinical evidence, satisfactory to the Federal Air Surgeon, of recovery, including sustained total abstinence from alcohol for not less than the preceding 2 years. "Alcoholism" means a condition in which a person's intake of alcohol is great enough to damage physical health or personal or social functioning, or when alcohol has become a prerequisite to normal functioning.
4. Drug dependence.
5. Epilepsy.
6. A disturbance of consciousness without satisfactory medical explanation of the cause.
7. Myocardial infarction.
8. Angina pectoris.
9. Coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant.
10. Diabetes mellitus, requiring insulin or other hypoglycemic drug for control.

Advances in aviation medicine and changes in FAA policies and procedures during recent years have resulted in the medical certification of pilots who in earlier times would have been denied. Persons diagnosed as having alcoholism, coronary heart disease, and various other diseases are, in many instances, now certified on an individual basis. For example, pilots with hypertension maintain their certificates while taking medications to control their blood pressure and the time lapse between myocardial infarction, bypass surgery, etc., and re-application for certification has been reduced. This study presents comprehensive data reflecting pertinent denial rates regarding the medical and general attributes of those airline pilots denied medical certification in calendar years 1983 and 1984 and updates previously reported data with respect to medical certification denials (1,2).

METHODS

The Aeromedical Certification Branch (AMCB) of the Civil Aeromedical Institute is the central screening facility and repository within the FAA for the collection, processing, adjudication, investigation, and analysis of medical data generated by the aeromedical certification and related programs.

The airline pilot denial data were obtained from the computer file as of July 1, 1985, for calendar year (CY) 1983 and 1984 applicants. The 6-month time lapse was allowed to ensure final certification action in the majority of cases. The active airline pilot population as of December 31, 1983, (the mid-period date) was used for rate computation and comparison.

Five-year age groupings, beginning with age 25 and ending with age 59, were utilized since they are closest to the age limits set by FAR's 61.151 and 121.383 (c) for holding an air transport pilot rating and engaging in air carrier operations.

Prevalence data regarding pathology represent conditions cited as cause for denial -- not number of airline pilots. Annual rates were computed to provide data more useful for answering the many questions received concerning airmen denied medical certification.

RESULTS AND DISCUSSION

Observations on the airline pilot group probably come closest to a true reflection of incidence of disqualifying disease as is possible to observe. Prescreening by airline companies before employment and FAA requirements for issuance of a first-class medical certificate result in this group being essentially purged of disease prevalence that contributes to higher rates for other groups. Also, because of occupational/economic reasons, these individuals are less likely to voluntarily remove themselves from follow-up observation for known medical conditions that would preclude FAA medical certification.

Denials may occur at several different levels within the FAA and/or by the AME. The final level of denial is, however, the one recorded on a pilot's medical record. Of the 377 airline pilot denials, over 65% were either general denials issued by the AMCB or AME denials (see Figure 1).

As of December 31, 1983, there were 40,128 airmen between the ages of 25-59 who listed their occupation as airline pilot. As of July 1, 1985, there were 377 airline pilots who had been denied first-class medical certification during CYs 1983 and 1984.

The annual denial rate for airline pilots *is*, therefore, 4.7 per 1,000 active airline pilots, increasing from a rate of 1.0 in the 25-29 age interval to 12.8 in the 55-59 age interval (see Table I and Figures 2 and 3).

Data on denials by airline employers provide some interesting insight, even though fraught with limitations that make comparison difficult, i.e., small numbers substantially affect comparison. Of interest, however, is that in previous studies, the larger employers have had lower denial rates than the smaller employers (1,2). Part of this difference was undoubtedly due to the preventive medical programs of the larger employers and their assumed association with other organizations' prevention and rehabilitation programs.

Another part of the difference was likewise due to early recognition and removal from flight status of those pilots manifesting disease states (pathology) likely to result in denial and the fact that the major airlines have a larger, more select group of pilots from which to choose when initially employed. However, data for this group reflect an unusually high denial rate for some of the larger airlines. This appears to be due to the pilots' concepts and concerns about the economic status of their employer. It could also, at least in part, be attributed to the closing of several of the major airlines' medical departments (see Figure 4).

Annual age-cause-specific denial rates increase to the highest rate at age interval 55-59 (17.8 per 1,000 active airline pilots). The rate of medical disqualification is minimal before the age of 45 years but increases rapidly thereafter (from a rate of *4.8* at the 40-44 age interval to *8.4* at the 45-49 age interval). The mean age of active (issued) airline pilots is 41.8 years of age, compared to a mean age of 48.6 for denied airline pilots. While the mean age of active airline pilots remains fairly stable, the mean age of denied airline pilots is 3 years lower than in the 1984 study (1). Denial rates of older pilots have decreased and rates for younger pilots have increased when compared with previous studies' rates (1,2). The reasons remain unclear but changes in the interpretation of the FAA regulations, changes in certification policies, and airline pilots' concepts and concerns about the economic status of their employer most surely contributed *to* these rate changes.

Observed in the age-cause-specific annual denial rates is an increase of cardiovascular denials after age *45.* Nothing significant is found in the 25-29, 30-34, and 35-39 age intervals; however, in the 40-44 age interval, neuropsychiatric and cardiovascular diseases begin to be reflected, along with the miscellaneous category pathologies. Denial rates begin to increase rapidly in the 45-49 age interval with cardiovascular highest and neuropsychiatric and the miscellaneous category equal and next highest. Cardiovascular diseases continue to increase and to represent the highest cause for denial in age intervals 50-54 and 55-59.

The overall highest causes for denial by pathology series are: (1) cardiovascular; (2) neuropsychiatric; and (3) the miscellaneous category which includes endocrinopathies, general systemic conditions, use of disqualifying medications, and denials for failure to provide additional medical information, with annual rates per 1,000 active airline pilots of 2.1, 1.6, and 1.4 respectively. Cardiovascular causes account for one-third of all causes for denial, with neuropsychiatric and the miscellaneous category approximately one-fourth each (see Table 11 and Figure 5).

The highest causes for denial by specific pathology are: (1) and (2) are equal: failure to provide additional information and use of disqualifying medications (about 2/3 of the disqualifying medications are directly related to cardiovascular diseases); (3) coronary artery disease; (4) hypertension with medication; and *(5)* psychoneurotic disorders. These five specific causes account for 37% of all causes for denial. The current five highest causes for denial by specific pathology are quite different from the five highest causes in the 1984 study. The highest causes at that time were: (1) coronary artery disease; (2) myocardial infarction; (3) use of disqualifying medications; (4) hypertension with medication; and *(5)* coronary artery bypass surgery. Again, changes in the interpretation of FAA regulations and changes in certification policy probably contributed. Two hundred and fifty-seven pilots were denied for a single cause, 109 for 2 causes, and 11 for 3 causes (see Figure 6).

SUMMARY

Cardiovascular, neuropsychiatric, and the miscellaneous pathology category comprise 80% of the causes for medical disqualification. These problems rarely result in disqualification before the age of ***45*** years, while above this age, the rate increases rapidly primarily due to cardiovascular disease **(1-5)**.

The overall highest causes for denial by pathology series are: (1) cardiovascular; **(2)** neuropsychiatric; and (3) the miscellaneous category, with annual rates per 1,000 active airline pilots of 2.1, 1.6, and 1.4 respectively. The highest causes for denial by specific pathology are: (1) and (2) are equal: failure to provide additional information and use of disqualifying medications (about 2/3 of the disqualifying medications are directly related to cardiovascular diseases); **(3)** coronary artery disease; (4) hypertension with medication; and **(5)** psychoneurotic disorders. These five specific causes account for **37%** of all causes for denial.

Reasons/causes for denial and age-specific denial rates are changing. This could be attributed to changes in the interpretation of FAA regulations and certification policies and to pilots' concepts and concerns regarding the economic status of their employer.

On the basis of these and previous findings, pilots should be educated to report history or symptoms of any disease, but particularly heart disease, during their periodic medical certification examinations (1-5). AMEs should also be especially alert for evidence of cardiovascular disease detectable by routine physical examination.

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TABLE I. AGE DISTRIBUTION OF AIRLINE PILOTS

Age Groups	Active Airline Pilots	Percent of Active Airline Pilots	Denied Airline Pilots	Percent of Total Denials	Annual Age-Specific Denial Rate*
25-29	3,365	8.4	7	1.9	1.0
30-34	5,716	14.2	7	1.9	0.6
35-39	7,022	17.5	17	4.5	1.2
40-44	7,738	19.3	56	14.8	3.6
45-49	8,088	20.2	101	26.8	6.2
50-54	5,501	13.7	120	31.8	10.9
55-59	2,698	6.7	69	18.3	12.8
TOTAL	40,128	100.0	377	100.0	4.7

*Annual rates per 1,000 active airline pilots.

Note: The annual denial rate for all first-class medical certificate holders is 3.9; 3.6 for second-class medical certificate holders; 8.4 for third-class medical certificate holders; and 6.3 for all classes of medical certificates.

TABLE II. DENIAL RATES OF AIRLINE PILOTS BY CAUSE/MAJOR BODY SYSTEM AND AGE*

Cause for Denial (Pathology)	Age (Years) 25-29 Rate**	30-34 Rate**	35-39 Rate**	40-44 Rate**	45-49 Rate**	50-54 Rate**	55-59 Rate**	Total Annual Rate**
Eye	-	-	0.1	0.1	0.3	0.8	0.7	0.3
Ear, Nose, Throat	-	-	0.1	0.3	0.6	0.8	0.9	0.4
Respiratory	-	-	-	0.1	-	0.2	0.2	0.1
Cardiovascular	0.1	0.3	0.1	1.0	2.5	6.0	7.6	2.1
Abdominal (mostly GI, GU)	0.1	-	-	0.1	0.2	0.5	-	0.1
Neuropsychiatric	0.3	0.3	0.8	1.6	2.2	2.6	3.9	1.6
Bones & Joints	0.1	0.1	-	0.2	0.5	0.9	0.7	0.3
Muscles	-	0.2	-	0.1	-	0.2	0.2	0.1
Miscellaneous	0.3	0.3	0.3	1.2	2.2	2.5	3.5	1.4
TOTAL	1.0	1.1	1.3	4.8	8.4	14.5	17.8	6.3

*Refers to distinct pathological conditions cited as cause/causes for denial. These figures do not represent applicants. Two hundred and fifty-seven pilots were denied for a single cause; 109 for two causes; 11 for three causes.

**Annual rates per 1,000 active airline pilots.

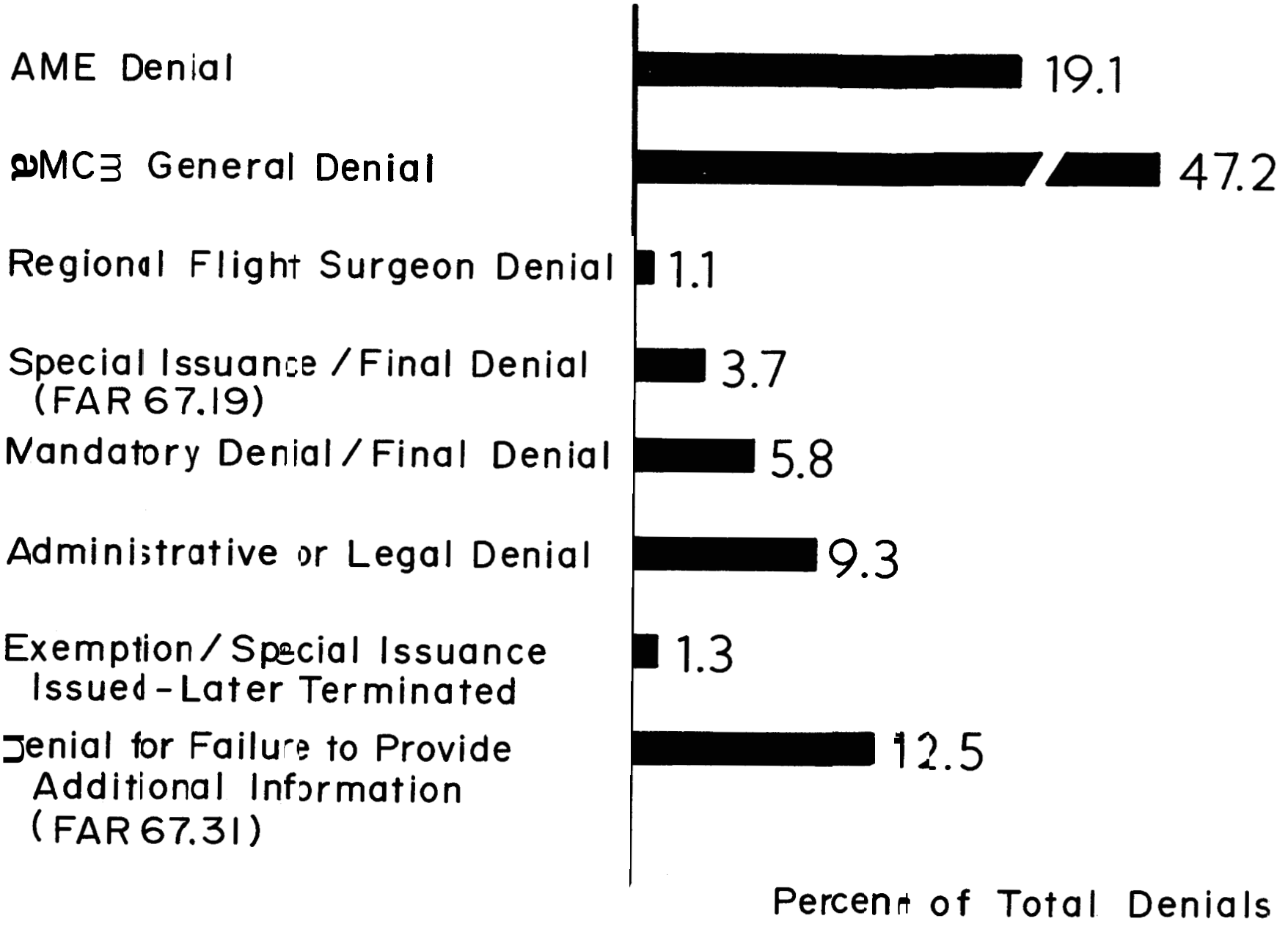


FIGURE 1. LEVEL OF DENIAL.

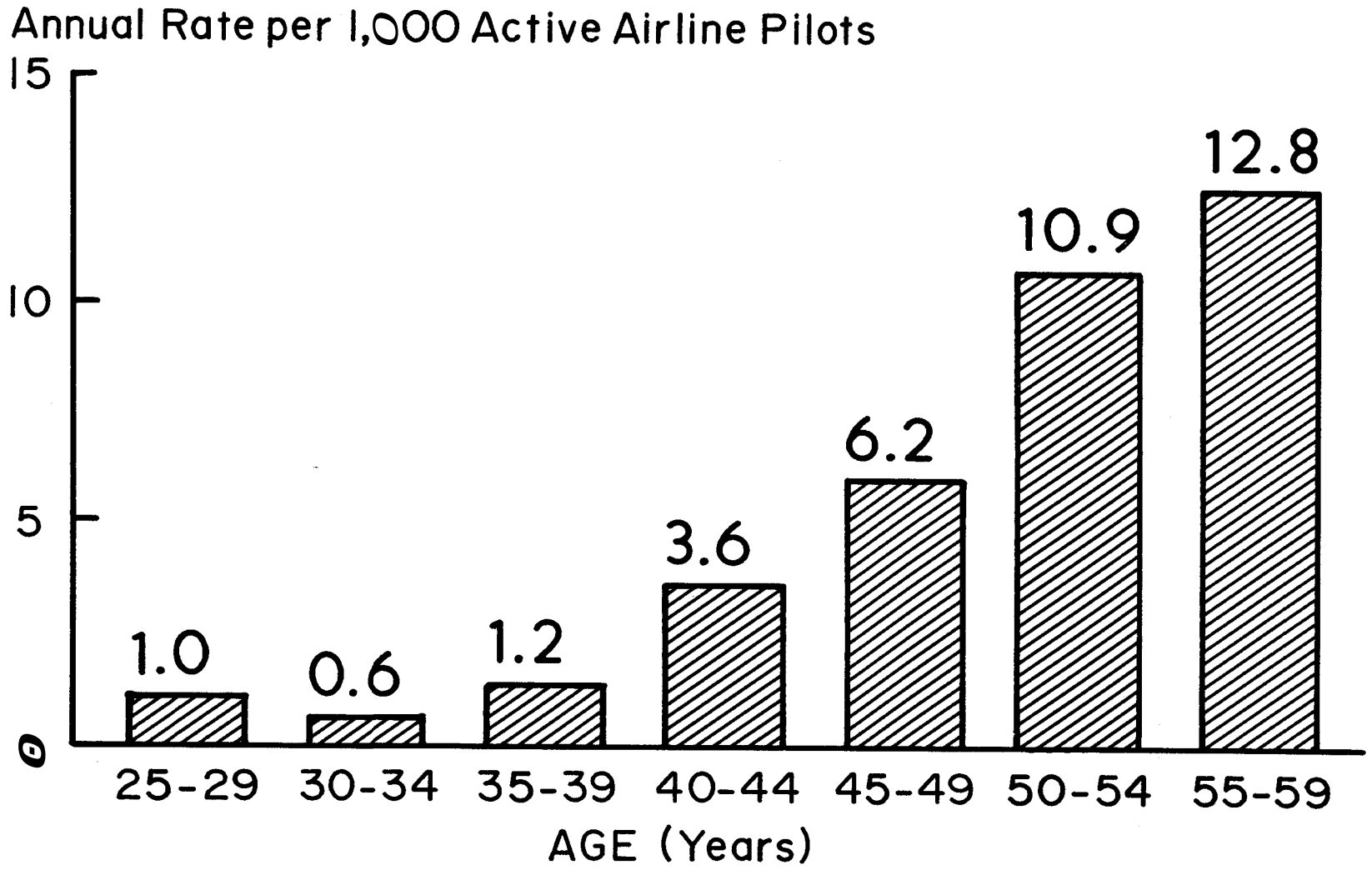


FIGURE 2. AGE-SPECIFIC DENIAL RATES.

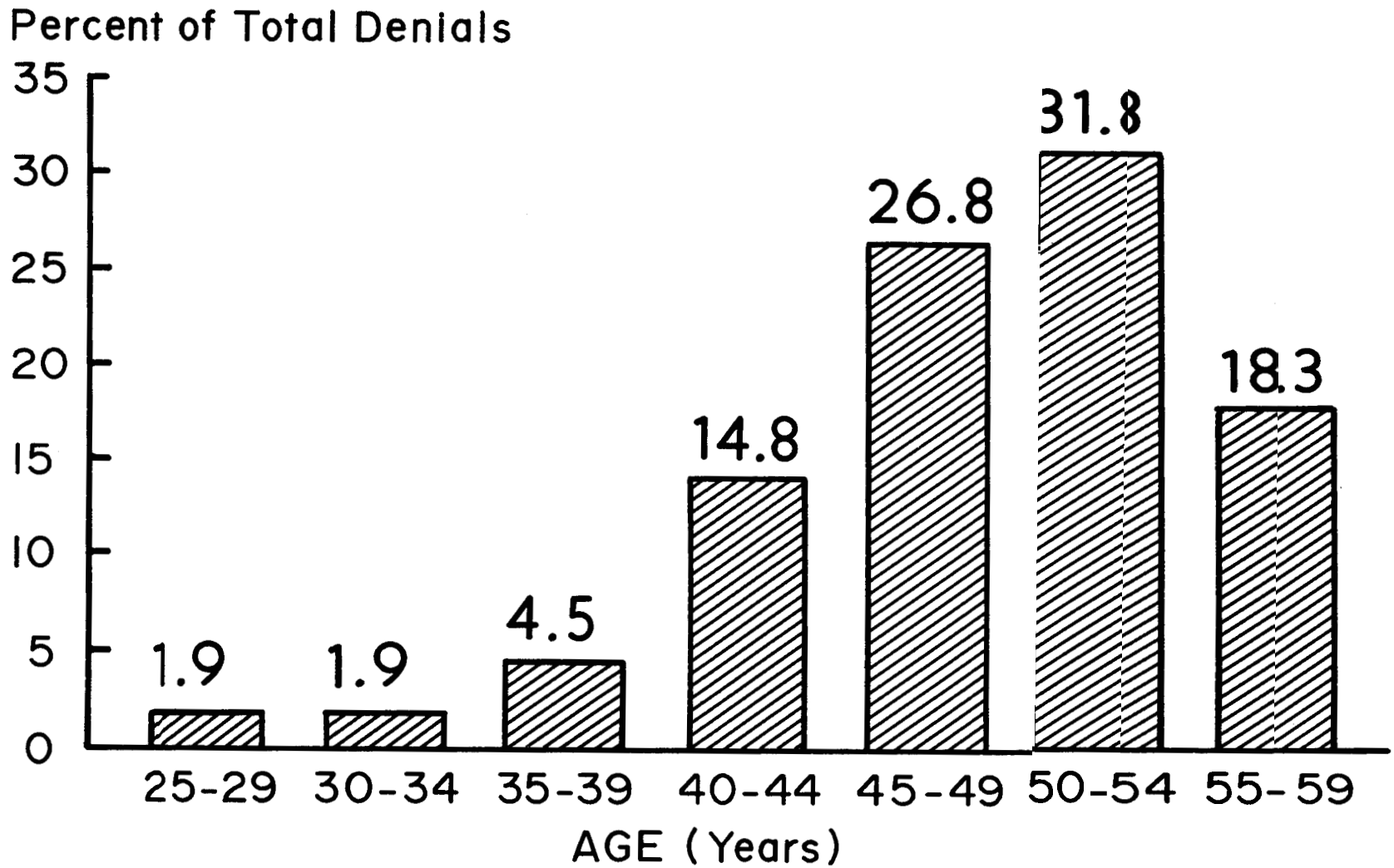


FIGURE 3. AIRLINE PILOT DENIALS ∃ YAG≤.

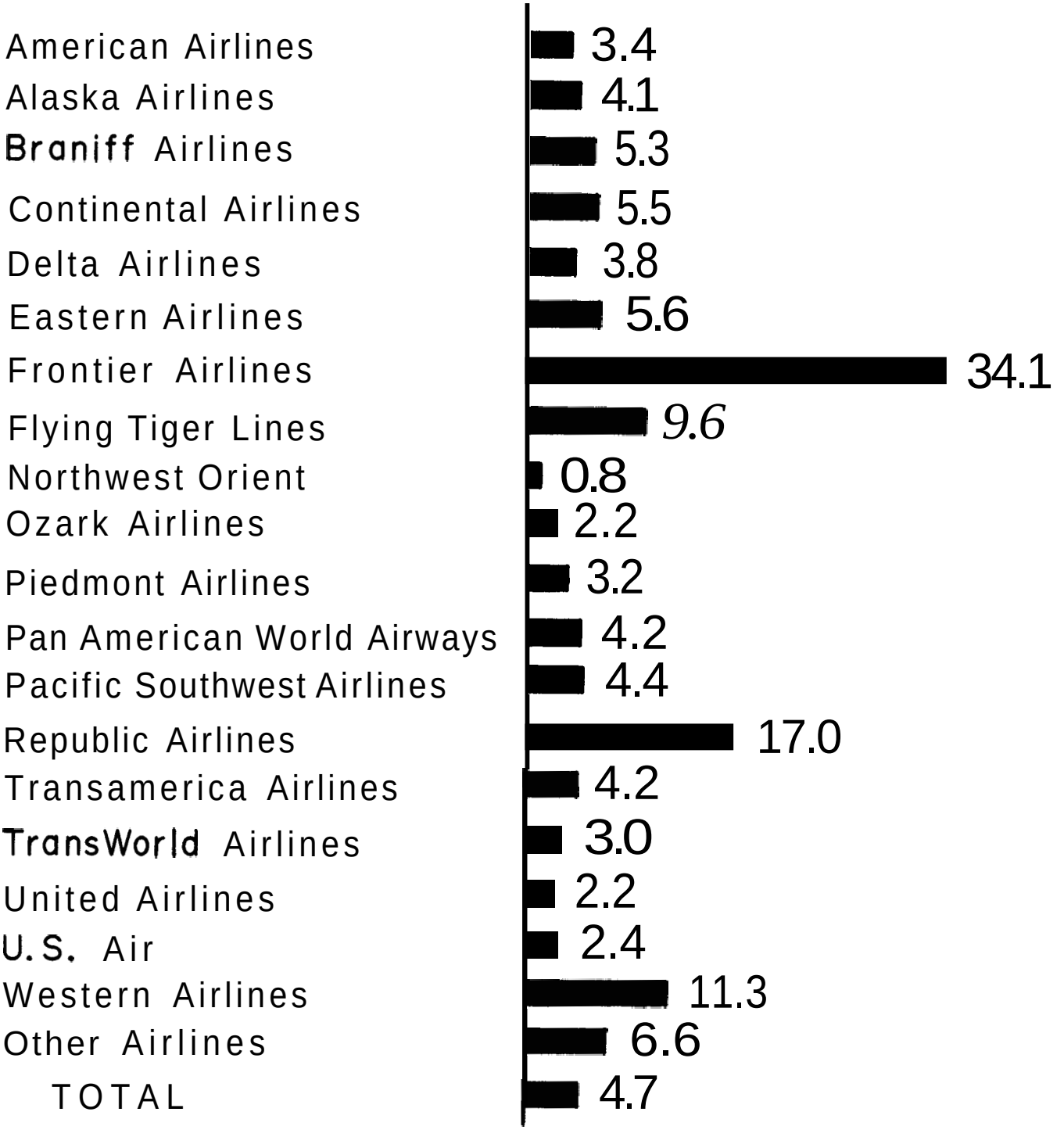


FIGURE 4. DENIALS BY EMPLOYER.

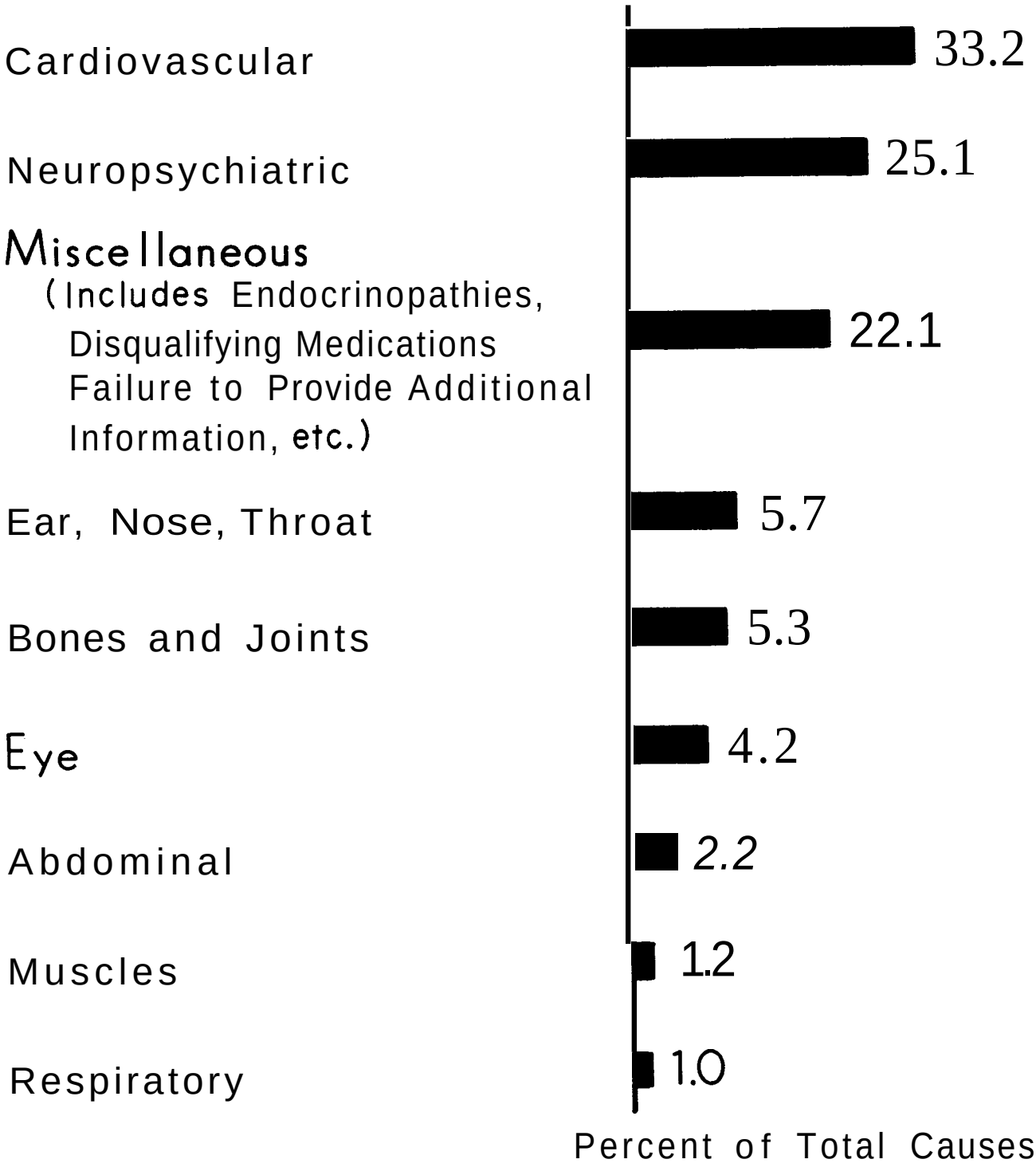
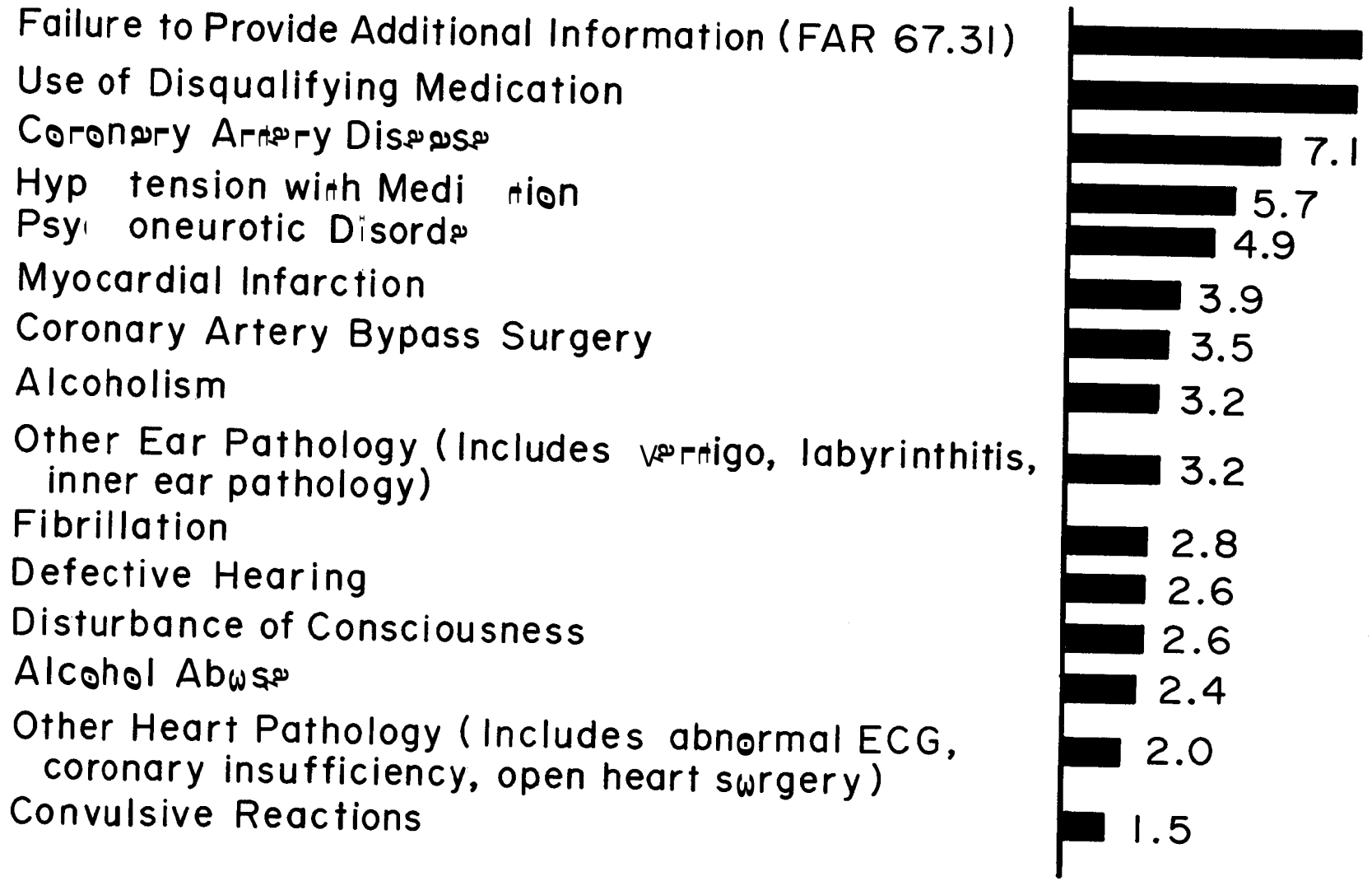


FIGURE 5. CAUSE FOR DENIAL BY MAJOR BODY SYSTEM.



*65% of total causes for denial

FIGURE 6. THE MOST FREQUENTLY OCCURRING CAUSES FOR DENIAL.