

## Underwriting Practices

An underwriter's objective is to know as much about the applicant's health status as the applicant. Any health insurance policy based on medical underwriting requires the applicant (and each family member for family policies) to complete a health history questionnaire and to release medical records. In some-cases, insurers might also require physical examinations or laboratory tests.

### UNDERWRITING PRACTICES

For commercial health insurers offering individual coverage, the majority (23 of 29) surveyed by OTA required a personal health history of all applicants. The same is true for commercial companies offering medically underwritten coverage: 29 of 37 required one of all applicants.

For Blue Cross and Blue Shield (BC/BS) plans represented by the underwriter survey, 22 of 25 plans offering individual coverage required a personal health history of all applicants; 17 of 21 plans offering medically underwritten group coverage required one of all applicants. Underwriters at six of the eight BC/BS plans with open enrollment coverage said their plans did not require a personal history from any applicants. Sixteen of 18 BC/BS plans represented by a medical director survey required a personal health history of all applicants. Thirteen of 15 BC/BS plans represented by a medical director survey required one of all applicants as well. Of those BC/BS plans from medical directors that had open enrollment, 4 of 6 did not require a personal health history from any applicants. For health maintenance organizations (HMOS), 7 of 11 plans offering individual coverage required a personal health history of all applicants. Nine of 20 HMOS required one of all medically underwritten group applicants; all of the remaining plans required a personal health history for less than 40 percent of their applicants.

Family health histories were required of all individual applicants for 14 of 29 commercial insurers; 12 individual insurers did not require one of any applicants. For commercial insurers offering medically underwritten group coverage, nearly half (16 of 37) did not require a family history from any applicants, while 12 required one from all appli-

cants. A majority of BC/BS plans (20 of 25) represented by an underwriter survey never required a family history of individual applicants or medically underwritten group applicants (19 of 21), or open enrollment applicants (7 of 8). Sixteen of 18 BC/BS plans represented by medical directors did not require a family history of any individual applicants. Fourteen of 15 BC/BS plans represented by the underwriter population did not require one from any medically underwritten group applicants. The same holds true for HMOS, with 9 of 11 that offer individual coverage not requiring a family history of any applicants and 14 of 20 never requiring one of medically underwritten group applicants.

Of those commercial insurers requiring a family health history, six routinely request information about the applicant's parents, and five respondents request information about an applicant's spouse and children. Of the few BC/BS plans represented by an underwriter survey that required a family history, information on an applicant's spouse and children is most often requested. Four required information about a spouse and five seek information about children. Health histories on spouse (2 plans) and children (2 plans) are the only ones used by BC/BS plans represented by medical directors. Finally, for HMOS using a family history, information is obtained most often on an applicant's spouse (6 plans) and children (6 plans).

Varying widely are company procedures pertaining to the proportion of applicants required to provide further evidence of their health status through an attending physician statement (APS), physical examination, or blood/urine test. The standard APS form calls for a complete description of a patient's complaints, any abnormal findings (including laboratory and other test results), treatment or operations, present condition, if known, and other medical information with a bearing on an applicants health, such as smoking or alcohol use. For children under 6 months of age, additional information might be sought regarding birth weight and the presence of any disease or abnormality (2).

For both medically underwritten groups and individual policies, the APS is the most common

supplemental source of information for underwriting beyond the health data provided directly through the insurance application (2). For individual applicants, a quarter of commercial insurers (10 of 39) required an APS for less than 25 percent of applicants, 12 required one for between 25 and 50 percent of applicants, and 9 for over 50 percent of applicants. Twenty-four commercial plans required an APS for less than 25 percent of medically underwritten group applicants.

Overall, close to half (12 of 25) of underwriters from BC/BS plans offering individual coverage required an APS for less than 25 percent of applicants; 13 of 21 offering medically underwritten coverage required an APS for less than 25 percent of applicants. Underwriters from seven of the eight BC/BS open enrollment plans said they never required an APS of applicants. Eight of 18 BC/BS plans for the medical director population required an APS for 25 to 50 percent of individual applicants, seven required one for less than 25 percent of applicants. Medical directors from all 15 BC/BS plans that offer medically underwritten group coverage said they required an APS for less than 50 percent of applicants. Over half the HMOS (6 of 11) that offer individual coverage required an APS for 50 to 75 percent of applicants, while four required one for less than 20 percent of applicants. Fifty percent (10 of 20) of HMOS did not require an APS for any medically underwritten group applicants, 8 required them for less than 10 percent of applicants.

For commercial companies, an APS was triggered most often by reports of any significant (39 companies) or selected (31 companies) diagnosis or symptoms on the application, or because of a Medical Information Bureau, Inc. (MIB) report (26 companies). Applications for individual insurance—health, life, or disability—carry an explanation about MIB. MIB's reports alert a potential insurer to omissions or misrepresentation of facts by an applicant (3). In the BC/BS underwriter/medical director surveys, any significant (19 plans/11 plans) or selected (16 plans/10 plans) diagnosis or symptoms reported on the application triggered an APS. Twelve HMOS required an APS because of any significant diagnosis or symptoms in the application, and 11 HMOS required one because of selected diagnoses or symptoms.

Physical examinations of individual health insurance applicants are much less common than other

underwriting practices. Five of 29 commercial insurers did not require physical exams of any individual applicants, 22 required a physical exam of less than 40 percent of applicants. Thirty-four of 37 companies required a physical exam from less than 25 percent of medically underwritten group applicants.

Seventeen of 25 BC/BS plans represented by the medical director population did not require a physical exam of any individual applicants. Physical exams are not required of any medically underwritten group applicants in 16 of 21 BC/BS plans. Medical directors at 10 of 18 BC/BS plans that offer individual coverage said their plans did not require a physical exam of any applicants. The remaining plans required them of less than 20 percent of applicants. Of the 15 BC/BS plans represented by the medical director population, 12 do not require a physical exam of any medically underwritten group applicants. For the 11 HMOS that write individual policies, physical exams are required for less than 30 percent of applicants. Only one of 20 HMOS requires a physical exam for medically underwritten group coverage.

If commercial insurers require a physical exam, it is usually triggered because of selected diagnoses or symptoms reported on an application (21 plans), or an MIB report (22 plans). Underwriters at six BC/BS plans reported that selected diagnoses or symptoms in the application, and any significant diagnosis or symptoms in the APS, can trigger a physical exam. Four BC/BS plans represented by the medical director population said that any significant diagnosis or symptoms in the APS prompts a physical exam, as they can for four HMOS.

Insurers generally use the standard blood tests and urinalysis that are commonly ordered by physicians as part of a general physical evaluation. Such panels can detect indicators of use of illicit drugs, as well as nicotine and prescription medications for diabetes, heart disease, and hypertension. The insurer's interest in prescription medicine is twofold; first, to identify applicants who are not forthcoming in their health history questionnaire and, second, to determine whether known hypertensive applicants, for example, are conscientiously following prescribed treatment (2).

Twenty of 29 commercial companies required blood or urine screens of less than 30 percent of individual applicants; 33 of 37 commercial compa-

nies required blood or urine screens of less than 30 percent of medically underwritten group applicants. Eleven commercial companies did not require them of any medically underwritten group applicants. Blood or urine screens are not required of individual applicants by underwriters at 20 of 25 BC/BS plans. Nineteen of 21 BC/BS plans represented by an underwriter survey did not require blood or urine screens of any medically underwritten group applicants. Medical directors from 15 of 18 BC/BS plans said they did not require blood or urine screens from any individual applicants; all 15 plans that offer medically underwritten group coverage never required a blood or urine screen. Nine of the 11 HMOS that offer individual coverage said blood or urine screens are required of less than 20 percent of applicants. Nineteen of 20 HMOS never required them of any medically underwritten group applicants.

## FACTORS IN INSURABILITY

Insurability is not just a matter of health status; several factors are involved in an underwriter's decision to accept or deny an application, to exclude coverage for a condition, or to charge a higher premium. When asked to indicate which nonmedical underwriting factors could affect acceptance of an individual application, commercial insurers most commonly cited smoking habits, age, and occupation. For medically underwritten group applicants, insurers cited age, occupation, and sex (table 3-1).

An individual applicant's smoking status is considered "important" or "very important" by 24 of 29 commercial insurers. Twenty-three of 29 commercial insurers offering individual insurance said age was important or very important. An applicant's occupation is important or very important to 21 (41 percent) insurers of individuals. Eighteen (35 percent) commercial insurers of group applicants consider age, occupation, and gender to be important factors in determining insurability.

Personal and family medical histories were the most important factors in determining insurability for respondents regardless of whether they were from a commercial insurer, HMO, or BC/BS plan. For commercial insurers, for example, all individual and group insurers thought a personal history of significant conditions was very important. However, only 16 of 29 individual insurers and 17 of 37 commercial group insurers thought a family medical

history was important. Insurers of both individuals and groups found genetic predispositions as well as carrier risk for genetic diseases to be relatively unimportant. Genetic predisposition was a very important criterion to 4 of 29 commercial insurers that offer individual policies, important to 6, unimportant to 3, and never used by 16. Eighteen of 37 group insurers found genetic predispositions to be important, with an equal number never using it in determining insurability. Carrier risk for genetic disease was considered important in determining insurability by 7 of 29 companies that insured individuals and by 10 of 37 group insurers. Similar results were obtained for BC/BS plans and HMOS (table 3-1).

### *Information on Specific Conditions*

When certain conditions are detected either in an examination or an application, how do they affect the rating of applicants by insurers? The majority of commercial insurers would not accept individual applicants with standard rates for any of the conditions listed in the OTA survey (table 3-2). A large proportion would decline the applicant. Fewer applicants with hypertension were declined than those who had cerebrovascular disease, diabetes, or cystic fibrosis (CF). HMOS generally accepted individual applicants with the listed conditions, but often with an exclusion waiver and a rated premium. Eight of 11 HMOS that offer individual coverage declined individual applicants with hemophilia and CF (table 3-2). Individual applicants with the listed conditions were most often declined coverage from BC/BS plans (table 3-3). Those applicants with hypertension were declined least often, while applicants with hemophilia and sickle cell anemia were declined most often.

Commercial insurers declined to cover the majority of medically underwritten groups with members who had one of the conditions in table 3-2, except for groups with applicants who had hypertension. In fact, medically underwritten groups with applicants who had hypertension were frequently accepted with standard rates by commercial insurers, BC/BS plans, and HMOS (tables 3-2 and 3-3). When medically underwritten group policies were accepted with applicants having one of the other conditions listed in the OTA survey, most BC/BS plans required either a rated premium or a waiting period (table 3-3), and again, applicants were most often declined

Table 3-I—Factors in Determining Insurability

Question: For each category of coverage, please indicate the importance of each of the following factors in determining insurability (not in rating):

	Respondent	Very important	Important	Unimportant	Never used	No response <sup>a</sup>
<b>Individual policies</b>						
Age	Commercials	11 (38%)	12 (41%)	5 (17%)	1 (3%)	0 (0%)
	HMOS	0 (0%)	3 (27%)	7 (64%)	1 (9%)	1 (9%)
	BC/BS plans-U	0 (0%)	9 (36%)	7 (28%)	8 (32%)	1 (4%)
	BC/BS plans-M	3 (17%)	6 (33%)	4 (22%)	5 (28%)	0 (0%)
Occupation	Commercials	3 (10%)	18 (62%)	7 (24%)	1 (3%)	0 (0%)
	HMOS	0 (0%)	2 (18%)	3 (27%)	5 (45%)	1 (9%)
	BC/BS plans-U	0 (0%)	3 (12%)	10 (40%)	11 (44%)	1 (4%)
	BC/BS plans-M	0 (0%)	6 (33%)	3 (17%)	9 (50%)	0 (0%)
Smoking status	Commercials	9 (31%)	15 (52%)	2 (7%)	3 (10%)	0 (0%)
	HMOS	1 (9%)	5 (45%)	1 (9%)	3 (27%)	1 (9%)
	BC/BS plans-U	3 (12%)	9 (36%)	4 (16%)	8 (32%)	1 (4%)
	BC/BS plans-M	3 (17%)	5 (28%)	1 (6%)	9 (50%)	0 (0%)
Lifestyle	Commercials	1 (3%)	10 (34%)	3 (10%)	14 (48%)	1 (3%)
	HMOS	0 (0%)	3 (27%)	2 (18%)	5 (45%)	1 (9%)
	BC/BS plans-U	1 (4%)	5 (20%)	6 (24%)	12 (48%)	1 (4%)
	BC/BS plans-M	1 (6%)	5 (28%)	1 (6%)	11 (61%)	0 (0%)
sex	Commercials	5 (17%)	4 (14%)	7 (24%)	13 (45%)	0 (0%)
	HMOS	0 (0%)	0 (0%)	2 (18%)	8 (73%)	1 (9%)
	BC/BS plans-U	0 (0%)	3 (12%)	7 (28%)	14 (56%)	1 (4%)
	BC/BS plans-M	1 (6%)	5 (28%)	3 (17%)	9 (50%)	0 (0%)
Financial/credit status	Commercials	2 (7%)	11 (38%)	9 (31%)	7 (24%)	0 (0%)
	HMOS	0 (0%)	0 (0%)	3 (27%)	7 (64%)	1 (9%)
	BC/BS plans-U	0 (0%)	0 (0%)	0 (0%)	24 (96%)	1 (4%)
	BC/BS plans-M	0 (0%)	0 (0%)	0 (0%)	18 (100%)	0 (0%)
Personal medical history of significant conditions	Commercials	29 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	HMOS	9 (82%)	0 (0%)	0 (0%)	1 (9%)	1 (9%)
	BC/BS plans-U	22 (88%)	1 (4%)	0 (0%)	1 (4%)	1 (4%)
	BC/BS plans-M	16 (89%)	0 (0%)	0 (0%)	2 (11%)	0 (0%)
Family medical history of Significant conditions	Commercials	5 (17%)	11 (38%)	9 (31%)	4 (14%)	0 (0%)
	HMOS	1 (9%)	0 (0%)	2 (18%)	7 (64%)	1 (9%)
	BC/BS plans-U	0 (0%)	6 (24%)	4 (16%)	14 (56%)	1 (4%)
	BC/BS plans-M	0 (0%)	4 (22%)	4 (22%)	10 (56%)	0 (0%)
Genetic predisposition to significant conditions	Commercials	4 (14%)	6 (21%)	3 (10%)	16 (55%)	0 (0%)
	HMOS	0 (0%)	3 (27%)	1 (18%)	6 (55%)	1 (9%)
	BC/BS plans-U	1 (4%)	2 (8%)	5 (20%)	16 (64%)	1 (4%)
	BC/BS plans-M	0 (0%)	3 (17%)	1 (6%)	14 (78%)	0 (0%)
Carrier risk for genetic disease	Commercials	2 (7%)	5 (17%)	6 (21%)	16 (55%)	0 (0%)
	HMOS	0 (0%)	2 (18%)	1 (18%)	7 (64%)	1 (9%)
	BC/BS plans-U	0 (0%)	2 (8%)	5 (20%)	17 (68%)	1 (4%)
	BC/BS plans-M	0 (0%)	3 (17%)	1 (6%)	14 (78%)	0 (0%)

for coverage by BC/BS plans when they had cerebrovascular disease, hemophilia, or sickle cell anemia.

### *Inquiries About Genetic Conditions*

Do applications for either individual or medically underwritten group insurance coverage contain ques-

tions about genetic conditions? OTA asked insurers whether questions on genetic conditions were included in either a personal history, a family history, or neither. For individual policies, the majority of commercial insurers did not inquire about any of the listed genetic conditions in either the personal or family history (table 3-4). Five of 29 commercial

Table 3-I—Factors in Determining Insurability-Continued

Question: For each category of coverage, please indicate the importance of each of the following factors in determining insurability (not in rating):

	Respondent	Very important	Important	Unimportant	Never used	No response <sup>a</sup>
<b>Medically underwritten group policies</b>						
Age	<i>Commercials</i>	4 (11%)	14 (38%)	11 (30%)	8 (22%)	0 (0%)
	<i>HMOs</i>	3 (15%)	6 (30%)	0 (0%)	10 (50%)	1 (5%)
	<i>BC/BS plans-U<sup>b</sup></i>	1 (5%)	9 (43%)	4 (19%)	7 (33%)	0 (0%)
	<i>BC/BS plans-M</i>	3 (20%)	5 (33%)	4 (27%)	3 (20%)	0 (0%)
Occupation	<i>Commercials</i>	4 (11%)	14 (38%)	12 (32%)	7 (19%)	0 (0%)
	<i>HMOs</i>	4 (20%)	6 (30%)	4 (20%)	5 (25%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	7 (33%)	5 (24%)	8 (38%)	0 (0%)
	<i>BC/BS plans-M</i>	1 (6%)	9 (60%)	1 (6%)	4 (28%)	0 (0%)
Smoking status	<i>Commercials</i>	2 (5%)	14 (38%)	10 (27%)	11 (30%)	0 (0%)
	<i>HMOs</i>	2 (10%)	4 (20%)	2 (10%)	11 (55%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	7 (33%)	5 (24%)	8 (38%)	0 (0%)
	<i>BC/BS plans-M</i>	0 (0%)	4 (27%)	2 (13%)	9 (60%)	0 (0%)
Lifestyle	<i>Commercials</i>	1 (3%)	7 (19%)	7 (19%)	20 (54%)	2 (5%)
	<i>HMOs</i>	1 (5%)	6 (30%)	2 (10%)	10 (50%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	6 (29%)	3 (14%)	12 (57%)	0 (0%)
	<i>BC/BS plans-M</i>	1 (6%)	4 (27%)	3 (20%)	7 (47%)	0 (0%)
sex	<i>Commercials</i>	0 (0%)	6 (16%)	12 (32%)	19 (51%)	0 (0%)
	<i>HMOs</i>	0 (0%)	5 (25%)	1 (5%)	13 (65%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	4 (19%)	5 (24%)	11 (52%)	0 (0%)
	<i>BC/BS plans-M</i>	1 (6%)	6 (40%)	3 (20%)	5 (33%)	0 (0%)
Financial/credit status	<i>Commercials</i>	1 (3%)	4 (11%)	11 (30%)	20 (54%)	1 (3%)
	<i>HMOs</i>	3 (15%)	3 (15%)	1 (5%)	12 (65%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	3 (14%)	1 (5%)	16 (76%)	0 (0%)
	<i>BC/BS plans-M</i>	0 (0%)	1 (6%)	1 (6%)	13 (87%)	0 (0%)
Personal medical history of significant conditions	<i>Commercials</i>	36 (95%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)
	<i>HMOs</i>	15 (75%)	1 (5%)	0 (0%)	3 (15%)	1 (5%)
	<i>BC/BS plans-U</i>	18 (86%)	1 (5%)	0 (0%)	2 (10%)	0 (0%)
	<i>BC/BS plans-M</i>	15 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Family medical history of significant conditions	<i>Commercials</i>	3 (8%)	14 (37%)	10 (27%)	9 (24%)	1 (3%)
	<i>HMOs</i>	4 (20%)	3 (15%)	2 (10%)	10 (50%)	1 (5%)
	<i>BC/BS plans-U</i>	1 (5%)	3 (14%)	4 (19%)	13 (62%)	0 (0%)
	<i>BC/BS plans-M</i>	0 (0%)	4 (27%)	3 (20%)	8 (53%)	0 (0%)
Genetic predisposition to significant conditions	<i>Commercials</i>	0 (0%)	12 (32%)	6 (16%)	18 (49%)	1 (3%)
	<i>HMOs</i>	0 (0%)	3 (15%)	2 (10%)	13 (65%)	2 (10%)
	<i>BC/BS plans-U</i>	1 (5%)	1 (5%)	4 (19%)	15 (71%)	0 (0%)
	<i>BC/BS plans-M</i>	0 (0%)	3 (20%)	1 (7%)	11 (63%)	0 (0%)
Carrier risk for genetic disease	<i>Commercials</i>	1 (3%)	9 (24%)	9 (24%)	17 (46%)	1 (3%)
	<i>HMOs</i>	0 (0%)	3 (15%)	2 (10%)	13 (65%)	2 (10%)
	<i>BC/BS plans-U</i>	1 (5%)	0 (0%)	5 (24%)	15 (71%)	0 (0%)
	<i>BC/BS plans-M</i>	0 (0%)	3 (20%)	2 (13%)	10 (67%)	0 (0%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

<sup>b</sup>BC/BS plan-U represents the underwriter population and BC/BS plans-M, the medical director population.

SOURCE: Office of Technology Assessment, 1992.

insurers that offer individual coverage inquired about Tay-Sachs, Huntington disease, sickle cell anemia, and CF in the personal history; 7 insurers inquired about hemophilia in the personal history. However, genetic conditions were of greater interest to HMOs and BC/BS plans. Inquiries in the personal history about hemophilia were the most common.

More than half of commercial insurers (26 of 37) that offer medically underwritten group coverage never inquired about the listed genetic conditions in either the personal or family history. Eight commercial insurers responded that they inquired about all of the genetic conditions in OTA's survey in the personal history. Fewer HMOs and BC/BS plans

Table 3-2—Treatment of Applicants with Specific Conditions: Commercials and HMOS

How would you normally treat either an individual policy applicant or medically underwritten groups that disclosed the following renditions in an examination(s) or application:

	Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver at rated premium	Declined	No response <sup>a</sup>
<b>Individual policies</b>							
Hypertension	Commercials		2 (7%)	2 ( 7%)	13 (45%)	0 (0%)	7 (24%)
	HMOS	2 (18%)	0 (0%)	2 (18%)	0 ( 0%)	1 (9%)	6 (55%)
Diabetes mellitus	Commercials	1 ( 3%)	0 (0%)	2 (7%)	7 (24%)	15 (52%)	4 (14%)
	HMOS	2 (18%)	0 (0%)	1 (9%)	0 ( 0%)	2 (18%)	6 (55%)
Cerebrovascular disease	Commercials	0 ( 0%)	1 (3%)	0 (0%)	5 (17%)	16 (56%)	7 (24%)
	HMOS	1 ( 9%)	0 (0%)	0 (0%)	0 ( 0%)	6 (55%)	4 (36%)
Hemophilia	Commercials	1 ( 3%)	0 (0%)	0 (0%)	0 (0%)	26 (90%)	2 ( 7%)
	HMOS	0 ( 0%)	0 (0%)	0 (0%)	0 (0%)	8 (73%)	3 (27%)
Cystic fibrosis	Commercials	1 ( 3%)	0 (0%)	0 (0%)	0 (0%)	26 (90%)	2 ( 7%)
	HMOS	0 ( 0%)	0 (0%)	0 (0%)	0 (0%)	8 (73%)	3 (27%)
Sickle cell anemia	Commercials	1 ( 3%)	0 (0%)	0 (0%)	0 (0%)	25 (86%)	3 (10%)
	HMOS	0 ( 0%)	0 (0%)	0 (0%)	0 (0%)	7 (64%)	4 (36%)
<b>Medically underwritten group policies</b>							
Hypertension	Commercials	14 (38%)	0 (0%)	3 (8%)	7 (19%)	0 ( 0%)	13 (35%)
	HMOS	11 (55%)	0 (0%)	1 (5%)	1 ( 5%)	2 (10%)	5 (25%)
Diabetes mellitus	Commercials	1 ( 3%)	2 (5%)	1 (3%)	6 (16%)	13 (35%)	14 (38%)
	HMOS	6 (30%)	0 (0%)	1 (5%)	2 (10%)	4 (20%)	7 (35%)
Cerebrovascular disease	Commercials	1 ( 3%)	0 (0%)	0 (0%)	4 (11%)	21 (57%)	11 (30%)
	HMOS	4 (20%)	0 (0%)	1 (5%)	1 ( 5%)	7 (35%)	7 (35%)
Hemophilia	Commercials	0 ( 0%)	1 (3%)	0 ( 0%)	2 (5%)	30 (81%)	4 (11%)
	HMOS	3 (15%)	0 (0%)	2 (10%)	0 (0%)	10 (50%)	5 (25%)
cystic fibrosis	Commercials	0 ( 0%)	1 (3%)	1 (3%)	1 ( 3%)	31 (84%)	3 ( 8%)
	HMOS	2 (10%)	0 (0%)	1 (5%)	2 (10%)	10 (50%)	5 (25%)
Sickle cell anemia	Commercials	0 ( 0%)	0 (0%)	1 (3%)	2 ( 5%)	31 (84%)	3 ( 8%)
	HMOS	4 (20%)	0 (0%)	1 (5%)	2 (10%)	9 (45%)	4 (20%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

SOURCE: Office of Technology Assessment, 1992.

that offered medically underwritten group coverage were interested in the genetic conditions than the HMOS and BC/BS plans that offered individual coverage. More than half of all HMOS did not inquire about the listed conditions in either the personal or family history. Similar numbers were found from responding underwriter and medical directors of BC/BS plans (table 3-4).

### *Effect of Genetic Test Results on Insurability*

Do genetic test results have an effect on insurability? When presymptomatic testing reveals the likelihood of a serious, chronic future disease (e.g.,

Huntington disease) 17 of 29 commercial insurers would decline an individual applicant, while 8 would accept the applicant at standard rates (table 3-5). Fifteen of 37 commercial insurers that cover medically underwritten groups would decline the applicant, however, 10 insurers would accept the group at standard rates (table 3-5).

Underwriters at 11 of 25 BC/BS plans that provide individual coverage said they would decline an applicant if presymptomatic testing revealed a likelihood of disease (e.g., Huntington disease); 6 would accept the applicant at standard rates. The

**Table 3-3—Treatment of Applicants with Specific Conditions: BC/BS plans**

How would you normally treat either an individual policy applicant or medically underwritten groups that disclosed the following conditions in an examination(s) or application:

Individual policies	espo de	Accepted with standard rates		Accepted with exclusion waiver at standard rates		Accepted with exclusion waiver at rated premium		Accepted without exclusion waiver or waiting period/ rated premium		Accepted with waiting period at rated premium		Declined	No response*
		with standard rates	with exclusion waiver at standard rates	with exclusion waiver at standard rates	with exclusion waiver at rated premium	with exclusion waiver or waiting period/ rated premium	with exclusion waiver or waiting period/ rated premium	with waiting period at rated premium					
<b>Individual policies</b>													
Hypertension	BC/BS plans-U <sup>b</sup> BC/BS plans-M	4 (16%) 3 (17%)	6 (24%) 4 (22%)	3 (22%) (28%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (6%)	2 (8%) 2 (11%)	5 (20%) 3 (17%)	
Diabetes mellitus	BC/BS plans-U BC/BS plans-M	0 (0%) 0 (0%)	4 (16%) 2 (11%)	0 (0%) (11%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 2 (11%)	14 (56%) 9 (50%)	3 (12%) 3 (17%)	
Cerebrovascular disease	BC/BS plans-U BC/BS plans-M	0 (0%) 0 (0%)	5 (20%) 0 (0%)	0 (0%) (17%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (6%)	16 (64%) 14 (78%)	0 (0%) 0 (0%)	
Hemophilia	BC/BS plans-U BC/BS plans-M	0 (0%) 0 (0%)	2 (8%) 0 (0%)	0 (0%) (17%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (6%)	21 (84%) 13 (72%)	0 (0%) 1 (6%)	
Sickle cell anemia	BC/BS plans-U <sup>c</sup> BC/BS plans-M	1 (4%) 0 (0%)	4 (16%) 0 (0%)	0 (0%) (17%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (6%)	18 (72%) 13 (72%)	0 (0%) 1 (6%)	
<b>Medically underwritten group policies</b>													
Hypertension	BC/BS plans-U BC/BS plans-M	5 (24%) 2 (13%)	1 (5%) 0 (0%)	5 (24%) 4 (27%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (10%) 3 (20%)	1 (5%) 0 (0%)	1 (5%) 0 (0%)	1 (5%) 2 (13%)	6 (29%) 4 (27%)	
Diabetes mellitus	BC/BS plans-U BC/BS plans-M	1 (5%) 0 (0%)	0 (0%) 0 (0%)	3 (14%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	1 (5%) 3 (20%)	1 (5%) 0 (0%)	4 (19%) 2 (13%)	4 (19%) 4 (27%)	8 (38%) 6 (40%)	4 (19%) 4 (27%)	
Cerebrovascular disease	BC/BS plans-U BC/BS plans-M	1 (5%) 0 (0%)	1 (5%) 0 (0%)	2 (10%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 2 (13%)	0 (0%) 0 (0%)	2 (10%) 1 (7%)	2 (10%) 1 (7%)	13 (62%) 12 (80%)	2 (5%) 0 (0%)	
Hemophilia	BC/BS plans-U BC/BS plans-M	1 (5%) 0 (0%)	0 (0%) 0 (0%)	1 (5%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (7%)	0 (0%) 1 (7%)	2 (10%) 1 (7%)	2 (10%) 1 (7%)	17 (80%) 12 (88%)	0 (0%) 1 (7%)	
Sickle cell anemia	BC/BS plans-U BC/BS plans-M	1 (5%) 0 (0%)	0 (0%) 0 (0%)	1 (5%) 0 (0%)	1 (5%) 0 (0%)	1 (5%) 0 (0%)	1 (5%) 1 (7%)	1 (5%) 1 (7%)	2 (10%) 1 (7%)	2 (10%) 1 (7%)	15 (70%) 12 (80%)	0 (0%) 1 (7%)	

\*Percentages may not add to 100 due to rounding.

<sup>b</sup>BC/BS plans-U represents the underwriter population and BC/BS plans-M, the medical director population.

<sup>c</sup>Due to an editing error, "cystic fibrosis" was inadvertently dropped from the survey instrument that was mailed to the BC/BS populations.

SOURCE: Office of Technology Assessment, 1992.

Table 3-4-inquiries About Genetic Conditions

Question	Respondent	Personal history	Family history	Neither	No response
<b>Does your company specifically inquire, for each category of coverage, about the following conditions in the application for health insurance in the personal history, family history, or neither:</b>					
<b>individual policies</b>					
Hemophilia	<i>Commercials</i>	7 (24%)	0 (0%)	21 (73%)	1 (3%)
	<i>HMOS</i>	6 (55%)	0 (0%)	4 (36%)	1 (9%)
	<i>BC/BS plans-U</i>	14 (56%)	0 (0%)	9 (36%)	2 (8%)
	<i>BC/BS plans-M</i>	7 (39%)	0 (0%)	11 (61%)	0 (0%)
Tay-Sachs	<i>Commercials</i>	5 (17%)	0 (0%)	23 (79%)	1 (3%)
	<i>HMOS</i>	4 (36%)	2 (9%)	5 (46%)	1 (9%)
	<i>BC/BS plans-U</i>	10 (40%)	0 (0%)	13 (52%)	2 (8%)
	<i>BC/BS plans-M</i>	8 (44%)	0 (0%)	10 (56%)	0 (0%)
Huntington disease	<i>Commercials</i>	5 (17%)	0 (0%)	23 (79%)	1 (3%)
	<i>HMOS</i>	4 (36%)	1 (9%)	5 (46%)	1 (9%)
	<i>BC/BS plans-U</i>	10 (40%)	0 (0%)	13 (52%)	2 (8%)
	<i>BC/BS plans-M</i>	7 (39%)	0 (0%)	11 (61%)	0 (0%)
Sickle cell anemia	<i>Commercials</i>	5 (17%)	0 (0%)	23 (79%)	1 (3%)
	<i>HMOS</i>	5 (46%)	1 (9%)	4 (36%)	1 (9%)
	<i>BC/BS plans-U</i>	12 (48%)	0 (0%)	12 (48%)	1 (4%)
	<i>BC/BS plans-M</i>	8 (44%)	0 (0%)	10 (56%)	0 (0%)
Cystic fibrosis	<i>Commercials</i>	5 (17%)	0 (0%)	23 (79%)	1 (3%)
	<i>HMOS</i>	5 (46%)	1 (9%)	4 (36%)	1 (9%)
	<i>BC/BS plans-U</i>	13 (52%)	0 (0%)	11 (44%)	1 (4%)
	<i>BC/BS plans-M</i>	8 (44%)	0 (0%)	10 (56%)	0 (0%)
<b>Medically underwritten group policies</b>					
Hemophilia	<i>Commercials</i>	8 (22%)	2 (5%)	26 (70%)	1 (3%)
	<i>HMOS</i>	6 (30%)	1 (5%)	12 (60%)	1 (5%)
	<i>BC/BS plans-U</i>	11 (52%)	0 (0%)	9 (43%)	1 (5%)
	<i>BC/BS plans-M</i>	7 (47%)	0 (0%)	8 (53%)	0 (0%)
Tay-Sachs	<i>Commercials</i>	8 (22%)	2 (5%)	26 (70%)	1 (3%)
	<i>HMOS</i>	5 (25%)	1 (5%)	13 (65%)	1 (5%)
	<i>BC/BS plans-U</i>	9 (43%)	0 (0%)	11 (52%)	1 (5%)
	<i>BC/BS plans-M</i>	7 (47%)	0 (0%)	8 (53%)	0 (0%)
Huntington disease	<i>Commercials</i>	8 (22%)	2 (5%)	26 (70%)	1 (3%)
	<i>HMOS</i>	5 (25%)	1 (5%)	13 (65%)	1 (5%)
	<i>BC/BS plans-U</i>	9 (43%)	0 (0%)	11 (52%)	1 (5%)
	<i>BC/BS plans-M</i>	7 (47%)	0 (0%)	8 (53%)	0 (0%)
Sickle cell anemia	<i>Commercials</i>	8 (22%)	2 (5%)	26 (70%)	1 (3%)
	<i>HMOS</i>	7 (35%)	1 (5%)	11 (55%)	1 (5%)
	<i>BC/BS plans-U</i>	11 (52%)	0 (0%)	10 (48%)	0 (0%)
	<i>BC/BS plans-M</i>	7 (47%)	0 (0%)	8 (53%)	0 (0%)
cystic fibrosis	<i>Commercials</i>	8 (22%)	2 (5%)	26 (70%)	1 (3%)
	<i>HMOS</i>	6 (30%)	1 (5%)	12 (60%)	1 (5%)
	<i>BC/BS plans-U</i>	11 (52%)	0 (0%)	10 (48%)	0 (0%)
	<i>BC/BS plans-M</i>	7 (47%)	0 (0%)	8 (53%)	0 (0%)

a Percentages may not add to 100 due to rounding.

<sup>b</sup>BC/BS plans-U represents the underwriter population and BC/BS plans-M, the medical director population.

SOURCE: Office of Technology Assessment, 1992.

Table 3-5-Effect of Genetic Test Results on Insurability: Commercials and HMOS

How would individual policies and medically underwritten policies normally be affected by the following findings:							
Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver at rated premium	Declined	No response <sup>a</sup>	
<b>Individual policies</b>							
Presymptomatic testing reveals the likelihood of a serious chronic future disease	Commercials	8 (28%)	1 (4%)	0 (0%)	0 (0%)	17 (59%)	2 (8%)
	HMOS	2 (18%)	0 (0%)	0 (0%)	0 (0%)	4 (36%)	5 (46%)
Risk oriented testing reveals that an individual carries markers associated with a serious, chronic future disease	Commercials	12 (41%)	2 (7%)	2 (7%)	5 (17%)	5 (17%)	3 (10%)
	HMOS	4 (36%)	0 (0%)	1 (9%)	0 (0%)	1 (9%)	5 (46%)
Carrier testing reveals the possibility that offspring may have a serious, chronic condition or disease	Commercials	16 (55%)	3 (10%)	1 (4%)	0 (0%)	6 (21%)	3 (10%)
	HMOS	6 (55%)	0 (0%)	1 (9%)	0 (0%)	0 (0%)	4 (36%)
Prenatal diagnosis reveals fetus affected with a serious, chronic condition or disease	Commercials	6 (21%)	2 (7%)	0 (0%)	0 (0%)	19 (65%)	2 (7%)
	HMOS	1 (9%)	0 (0%)	0 (0%)	0 (0%)	4 (36%)	6 (55%)
<b>Medically underwritten group policies</b>							
Presymptomatic testing reveals the likelihood of a serious chronic future disease	Commercials	10 (27%)	3 (8%)	0 (0%)	1 (3%)	15 (40%)	8 (22%)
	HMOS	6 (30%)	0 (0%)	1 (5%)	1 (5%)	5 (25%)	7 (35%)
Risk oriented testing reveals that an individual carries markers associated with a serious, chronic future disease	Commercials	21 (57%)	3 (8%)	0 (0%)	2 (5%)	4 (11%)	7 (19%)
	HMOS	10 (50%)	0 (0%)	1 (5%)	0 (0%)	3 (15%)	6 (30%)
Carrier testing reveals the possibility that offspring may have a serious, chronic condition or disease	Commercials	22 (59%)	3 (8%)	0 (0%)	0 (0%)	4 (11%)	8 (22%)
	HMOS	9 (45%)	0 (0%)	2 (10%)	1 (5%)	3 (15%)	5 (25%)
Prenatal diagnosis reveals fetus affected with a serious, chronic condition or disease	Commercials	6 (16%)	1 (3%)	0 (0%)	1 (3%)	24 (65%)	5 (13%)
	HMOS	4 (20%)	0 (0%)	0 (0%)	0 (0%)	8 (40%)	8 (40%)

<sup>a</sup> Percentages may not add to 100 due to rounding.

SOURCE: Office of Technology Assessment, 1992.

effect of such a test result would cause a medically underwritten group application to be declined by 9 of 21 underwriters at BC/BS plans (table 3-6).

Medical directors at 8 of 18 BC/BS plans said they would decline individual coverage if presymp-

tomatic testing revealed predisposition for future, chronic disease predisposition, while 5 would accept the applicant at standard rates. Six of 15 BC/BS plans would decline medically underwritten group coverage because of presymptomatic test results, and 3 would accept the applicant at standard rates.

**Table 3-6—Effect of Genetic Test Results on Insurability by BC/BS plans**

How would individual policies and medically underwritten policies be affected by the following information?	Affected by the following information						Declined	No response
	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with waiting period at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver or waiting period/rated premium	Accepted with waiting period at rated premium		
<b>Individual policies</b>								
Presymptomatic testing reveals the likelihood of a serious chronic future disease	BC/BS plans-U <sup>b</sup> 6 (24%)	2 ( 8%) 2 (11%)	3 (12%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	11 (44%) 8 (44%)	3 (12%) 2 (11%)
Risk oriented testing reveals that an individual carries markers associated with a serious, chronic future disease	BC/BS plans-U 8 (44%)	2 ( 8%) 1 ( 6%)	5 (20%) 2 (11%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	5 (20%) 5 (28%)	3 (12%) 2 (11%)
Carrier testing reveals the possibility that offspring may have a serious, chronic condition or disease	BC/BS plans-U 7 (39%)	2 ( 8%) 2 (11%)	6 (24%) 2 (11%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 1 ( 6%)	0 ( 0%) 0 ( 0%)	3 (12%) 3 (17%)	4 (16%) 3 (17%)
Prenatal diagnosis reveals fetus affected with a serious, chronic condition or disease	BC/BS plans-U 3 (17%)	1 ( 4%) 1 ( 6%)	1 ( 4%) 0 ( 0%)	0 (0%) 0 (0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 1 ( 6%)	14 (56%) 10 (56%)	4 (16%) 3 (17%)
<b>Medically underwriter group policies</b>								
Presymptomatic testing reveals the likelihood of a serious chronic future disease	BC/BS plans-U 4 (27%)	0 ( 0%) 1 ( 7%)	3 (14%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 1 ( 7%)	9 (43%) 6 (40%)	3 (14%) 3 (20%)
Risk oriented testing reveals that an individual carries markers associated with a serious, chronic future disease	BC/BS plans-U 5 (33%)	1 ( 5%) 1 ( 7%)	5 (24%) 0 ( 0%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 3 (20%)	0 ( 0%) 0 ( 0%)	4 (19%) 3 (20%)	2 ( 9%) 3 (20%)
Carrier testing reveals the possibility that offspring may have a serious, chronic condition or disease	BC/BS plans-U 4 (27%)	0 (10%) < ( 7%)	4 ( 9%) 1 ( 7%)	0 ( 0%) 0 ( 0%)	0 ( 0%) 2 (13%)	0 ( 0%) 0 ( 0%)	3 (14%) 2 (13%)	3 (14%) 5 (33%)
Prenatal diagnosis reveals fetus affected with a serious, chronic condition or disease	BC/BS plans-U 1 ( 7%)	0 ( 0%) 0 ( 0%)	1 ( 5%) 1 ( 7%)	0 ( 0%) 0 (0%)	1 ( 5%) 0 ( 0%)	1 ( 5%) 0 ( 0%)	13 (62%) 9 (60%)	2 ( 9%) 3 (20%)

<sup>a</sup> Percentages may not add to 100 due to rounding.  
<sup>b</sup> BC/BS plans-U represents the underwriter population and BC/BS plans-M, the medical director population.  
 SOURCE: Office of Technology Assessment, 1992.

Of the 11 HMOS that cover individuals, 4 would decline an applicant if presymptomatic testing revealed the likelihood of a chronic, future disease and 2 would accept the applicant at standard rates. Six of 20 HMOS that cover medically underwritten groups would do so at standard rates, while 5 HMOS would decline the application.

When risk-oriented testing reveals that an individual carries markers associated with a serious, chronic future disease (e.g., predisposition to heart disease) 12 of 29 commercial insurers would accept individual applicants at standard rates; 5 would decline coverage. The use of an exclusion waiver to exclude the condition would be used by four plans, while five plans would use a rated premium rather than an exclusion waiver. More than half of commercial insurers (21 of 37) that cover medically underwritten groups would accept the applicant at standard rates, 8 would offer standard rates but would have an exclusion waiver for the specific condition.

If an individual applicant is found to carry markers for a chronic, future disease, 10 of 25 BC/BS plans represented by an underwriter survey would accept the application at standard rates, while 5 would decline coverage. Similar proportions were found for medically underwritten group coverage, with underwriters at 9 of 21 BC/BS plans responding that an application would be accepted at standard rates, and 4 responding that coverage would be declined.

The results of risk-oriented testing did not affect individual insurability at 8 of 18 BC/BS plans represented by the medical director population, as they would be accepted with standard rates. However, medical directors at 5 of 18 plans said they would decline coverage because of evidence of disease markers. One-third of underwriters at BC/BS plans (5 of 15) that cover medically underwritten groups said they would accept such groups at standard rates even if disease markers were detected within the group; 3 would decline such applications.

Four of 11 HMOS that accept individuals for coverage would still do so at standard rates even if risk-oriented testing revealed the possibility of a serious, chronic future disease. Half of the HMOS (10 of 20) that cover medically underwritten groups would do so at standard rates in light of such risk-oriented testing results; 3 would deny the application.

When carrier tests reveal the possibility that children may have a serious, chronic condition or disease, 16 of 29 commercial insurers would accept the applicant with standard rates, but 6 would decline the applicant. Three commercial insurers would accept the individual applicant with an exclusion waiver (presumably for the specific condition revealed by carrier testing). Over half of commercial insurers that provide coverage to medically underwritten groups (22 of 37) would accept the applicant with standard rates, while 8 would decline coverage.

Ten of 25 BC/BS plans represented by the underwriter population would accept an individual applicant at standard rates even if carrier tests revealed that children might have a serious condition or disease; 3 would decline coverage. A waiting period would be used by six BC/BS plans for individual applicants. Nine of 21 BC/BS plans represented by a medical director survey would provide coverage at standard rates to medically underwritten groups with members who had carrier test results; 4 would require a waiting period.

Results of carrier testing would not affect insurability or rating for individual applicants at 7 of 18 BC/BS plans represented by a medical director survey, while 2 plans would require an exclusion waiver and 2 would require a waiting period. Similar proportions were found for medical directors at BC/BS plans (table 3-6).

Carrier test results would not cause any of the 11 HMOS that accept individual applicants to decline coverage; 6 would accept at standard rates and one HMO would accept the applicant with an exclusion waiver and charge a rated premium. Nine of the 20 HMOS that provide medically underwritten group coverage would do so at standard rates in light of carrier test results, and three would decline coverage.

If prenatal diagnosis reveals a fetus is affected with a serious, chronic condition or disease, 19 of 29 commercial insurers would decline an applicant. Six commercial insurers would accept the individual applicant at standard rates. It should be noted however, that if a pregnant woman is already covered, her baby is covered at birth (1), so the prenatal diagnosis would affect coverage only for pregnant women who are not currently covered. Twenty-four of 37 commercial insurers that cover

Table 3-7—Effect of Genetic Test Information on Insurability by: Commercial and HMOs

For individual policy applicants only, how would the application normally be treated if a policy applicant was asymptomatic but had a family history of:

	Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver but at rated premium	Declined	No response <sup>a</sup>
Hemophilia	Commercials	26 (90%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)	2 (7%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
Tay-Sachs	Commercials	25 (86%)	1 (3%)	0 (0%)	0 (0%)	1 (3%)	2 (7%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
Huntington disease	Commercials	17 (59%)	3 (10%)	0 (0%)	0 (0%)	6 (21%)	3 (10%)
	HMOs	9 (82%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)	1 (9%)
Sickle cell anemia	Commercials	23 (79%)	1 (3%)	0 (0%)	1 (3%)	2 (7%)	2 (7%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
Cystic fibrosis	Commercials	26 (90%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)	2 (7%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
Duchenne muscular dystrophy	Commercials	23 (79%)	2 (7%)	0 (0%)	0 (0%)	1 (3%)	3 (10%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
ADA deficiency	Commercials	25 (86%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)	3 (10%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)
Down syndrome	Commercials	27 (93%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (7%)
	HMOs	10 (91%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (9%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

SOURCE: Office of Technology Assessment, 1992.

medically underwritten groups would decline coverage, while 6 would accept at standard rates.

Underwriters at 14 of 25 BC/BS plans would decline coverage to individual applicants if prenatal diagnosis revealed the fetus had a serious condition or disease, 5 would accept the applicant at standard rates. Thirteen of 21 BC/BS plans represented by the underwriter population would decline a medically underwritten group application as a result of such a prenatal diagnosis. A similar distribution of medical directors would decline coverage due to prenatal test results (table 3-6).

Four of 11 HMOs that offer individual coverage would decline an applicant if prenatal test results revealed a fetus had a serious condition, and only 1 would accept the applicant at standard rates. Eight of 20 HMOs that cover medically underwritten groups would decline the application, while 4 HMOs would accept the application with standard rates.

### *Effect of Genetic Information on Insurability*

How do health insurers treat applicants that are asymptomatic but have family histories of genetic

conditions? OTA found that a family history of a genetic condition did not always mean the applicant would be declined. In fact, the majority of such applicants would be accepted at standard rates. The majority of commercial insurers accepted individual applicants at standard rates when a family history of a genetic condition was revealed (table 3-7). Applicants for commercial health insurance who had a family history of hemophilia, Tay-Sachs, sickle cell anemia, CF, ADA deficiency (“Bubble Boy disease”), and Down syndrome all would be accepted at standard rates more than 80 percent of the time. Fifty-nine percent of individual applicants for commercial insurance with a family history of Huntington disease and 79 percent with a history of Duchenne muscular dystrophy would be accepted at standard rates. The majority of HMOs accepted individual applicants at standard rates when they were asymptomatic, but had a family history of a genetic condition (table 3-7). The majority of underwriters and medical directors from BC/BS plans responding to the OTA survey accepted individual applicants at standard rates regardless of family history for genetic conditions (table 3-8).

**Table 3-8—Effect of Genetic Information on Insurability: BC/BS plans**

For individual policy applicants only, how would the application normally be treated if a policy applicant was asymptomatic but had a family history of:

	Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with waiting period at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver or waiting period/ rated premium	Accepted with waiting period at rated premium	Declined	No response <sup>a</sup>
Hemophilia	BC/BS plans-U <sup>b</sup>	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Tay-Sachs	BC/BS plans-U	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Huntington disease	BC/BS plans-U	15 (60%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	3 (12%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Sickle cell anemia	BC/BS plans-U	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Cystic fibrosis	BC/BS plans-U	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Duchenne muscular dystrophy	BC/BS plans-U	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
ADA deficiency	BC/BS plans-U	16 (64%)	0 (0%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	1 (7%)
Down syndrome	BC/BS plans-U	17 (68%)	1 (4%)	6 (24%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (4%)
	BC/BS plans-M	9 (60%)	0 (0%)	3 (30%)	0 (0%)	0 (0%)	0 (0%)	1 (7%)	1 (7%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

<sup>b</sup>BC/BS plans-U represents the underwriter population and BC/BS plans-M, the medical director population.

SOURCE: Office of Technology Assessment, 1992.

**Table 3-9-Coverage of a Family Member with Family History of Disease: Commercials and HMOS**

For individual policy applicants only, how would the coverage of a family member (e.g., spouse or adopted child) be affected if the policy applicant was negative, but the family member was asymptomatic but had a family history of:

	Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver but at rated premium	Declined	No response <sup>a</sup>
Hemophilia	Commercials	26 (90%)	1 ( 3%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
Tay-Sachs	Commercials	25 (86%)	2 ( 7%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
Huntington disease	Commercials	18 (62%)	3 (10%)	0 ( 0%)	0 ( 0%)	5 (17%)	3 (10%)
	HMOS	7 (64%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 9%)	3 (27%)
Sickle cell anemia	Commercials	25 (86%)	1 ( 3%)	0 ( 0%)	1 ( 3%)	0 ( 0%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
Cystic fibrosis	Commercials	26 (90%)	1 ( 3%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
Duchenne muscular dystrophy	Commercials	25 (86%)	1 ( 3%)	0 ( 0%)	0 ( 0%)	1 ( 3%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
ADA deficiency	Commercials	26 (90%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 3%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)
Down syndrome	Commercials	26 (90%)	0 ( 0%)	1 ( 3%)	0 ( 0%)	0 ( 0%)	2 ( 7%)
	HMOS	8 (73%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 (27%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

SOURCE: Office of Technology Assessment, 1992.

How would coverage decisions be handled for a family member on an individual insurance policy when the applicant had a family member who was asymptomatic but had a family history of genetic conditions? Commercial insurers appear to handle applications the same whether it is a family member or the individual applying for the policy who has the family history of genetic disease (table 3-9): The majority of applications would be accepted at standard rates regardless of the specific genetic condition. Similar results were found for responding HMOS, as well as underwriters and medical directors from BC/BS plans (table 3-10).

## CHAPTER 3 REFERENCES

1. Payne, J., Health Insurance Association of America, Inc., Washington, DC, personal communication, January 1992.
2. U.S. Congress, Office of Technology Assessment, *Medical Testing and Health Insurance, OTA-H-384* (Washington, DC: U.S. Government Printing Office, August 1988).
3. U.S. Congress, Office of Technology Assessment, *Cystic Fibrosis and DNA Tests: Implications of Carrier Screening, OTA-BA-532* (Washington, DC: U.S. Government Printing Office, August 1992).

**Table 3-10—Coverage of a Family Member with a Family History of Disease: BC/BS plans**

For individual policy applicants only, how would the coverage of a family member (e.g., spouse or adopted child) be affected if the policy applicant was negative, but the family member was asymptomatic but had a family history of:

Respondent	Accepted with standard rates	Accepted with exclusion waiver at standard rates	Accepted with waiting period at standard rates	Accepted with exclusion waiver at rated premium	Accepted without exclusion waiver or waiting period/rated premium	Accepted with waiting period at rated premium	Declined	No response <sup>a</sup>
Hemophilia	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
Tay-Sachs	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
Huntington disease	15 (60%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	3 (12%) 2 (13%)	1 (4%) 1 (7%)
Sickle cell anemia	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
Cystic fibrosis	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
Duchenne muscular dystrophy	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
ADA deficiency	16 (64%) 9 (60%)	0 (0%) 0 (0%)	6 (24%) 3 (20%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	2 (8%) 2 (13%)	1 (4%) 1 (7%)
Down syndrome	17 (68%) 9 (60%) <sup>a</sup>	1 (4%) 0 (0%)	6 (24%) 3 (30%) <sup>a</sup>	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 1 (7%)	0 (0%) 1 (7%)	1 (4%) 1 (7%)

<sup>a</sup>Percentages may not add to 100 due to rounding.

<sup>b</sup>BC/BS plans-U represents the underwriter population and BC/BS plans-M, the medical director population.

SOURCE: Office of Technology Assessment, 1992.