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Chapter 3

**Survey Data:  
Sperm Bank Practice**

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## Survey Data: Sperm Bank Practice

**Commercial sperm banks provide donor semen to 52 percent of the physicians in the fertility society sample**, drawn from the American Fertility Society and the American Society of Andrology members, who regularly perform artificial insemination (i.e., more than four insemination patients per year). Hospital-based sperm banks also supply semen (see ch. 2) but not as frequently (see box 3-A). Most of the 15 facilities that responded to the survey store semen for both artificial insemination by husband (AIH) and artificial insemination by donor (AID), although 2 sperm banks reported providing services only for the latter.

Men most commonly apply to store semen in order to preserve their future ability to have children. Reported reasons include “about to undergo vasectomy” (13 of 15 banks), “fear of gamete damage due to radiation or chemotherapy” (13 of 15), unspecified “fear of future infertility” (8 of 15), “fear of damaging occupational exposures” (7 of 15), “geographical separation from spouse” (4 of 15), “back-up for in vitro fertilization or gamete intrafallopian transfer” (4 of 15), and “desire to have children after death” (1 of 15).

Slightly more than half the sperm banks (8 of 15) require consent of a man’s spouse before they will agree to store specimens for possible future use in AIH. All the banks charge an upfront fee of, on average, \$100, but fees may range from \$40 to \$350 and often include the first year of

storage. Fourteen sperm banks reported they will store specimens for as long as requested. The average storage fee was \$84, and ranged from \$12 to \$200.

**In the event of a donor’s death, 12 of 15 sperm banks claim to apply specific protocols to manage specimens stored for artificial insemination by husband.** Almost half (7 of 15) will request instructions from the deceased’s wife or relatives and will respond accordingly. Another 7 of the sperm banks will destroy the specimen in case of a man’s death, and specify no other procedure. However, 12 of 15 banks claimed that they would honor instructions from the donor for postmortem insemination of a spouse or designated representative of the estate.

**The sperm banks in the survey tend to sell samples from anonymous donors to doctors rather than directly to recipients:** Of the 15 facilities sampled, 9 will sell samples only to doctors and 5 will sell samples to both doctors and recipients (1 bank did not respond). (See box 3-B for information on one bank that will teach women self-insemination.) No banks reported selling samples only to recipients. The number of semen samples sold for AID varies widely. Based on their responses, in the course of 1 month an average of 300 semen samples are sold, but the number can range anywhere from 5 to 2,000 samples per month. The standard charge is on average \$83, but it ranges from \$50 to \$125.

### RECIPIENT SPECIFICATIONS

**Almost half the sperm banks (7 of 15) reported that they would reject requests for specimens if the recipient, as reported by her physician or as seen by them, seemed unsuitable.** Two indicated that such recipient qualification decisions are the responsibility of the physician handling the case.

Only 9 facilities responded to the survey question on recipient rejection, however; most that did not respond claimed that they were not involved with recipient selection. The 9 sperm banks **responding were most likely to reject a recipient who is HIV-positive (6 of 9) or who shows evi-**

### Box 3-A.—Hospital-Based Sperm Bank Practice

In the summer of 1986, Dr. William Schlaff of the Johns Hopkins University and Dr. Janet Kennedy of the University of Maryland surveyed hospital-based sperm banks providing artificial insemination by donor. Four hundred facilities associated with obstetrics/gynecology departments around the country were identified and asked to respond to a survey questionnaire concerning their practice and protocols. One hundred and thirty responded, but a number incompletely filled out the survey questionnaire. Thus, the number responding to each question varies somewhat.

The respondents included 35 public facilities in existence an average of 8.4 years (range, 1 month to 25 years) and 32 private facilities in existence an average of 10 years (range, 6 months to 35 years). Overall, these facilities averaged nearly 27 inseminations per month.

Sixty-four of 64 facilities screened donors with an interview, oral genetic history, blood screen, and medical history. Thirty-six of 61 (59 percent) performed a physical examination, and 12 of 64 (19 percent) did a karyotype. These proportions are similar to the 10 of 15 commercial facilities surveyed by OTA that performed a physical examination, and 5 of 15 that did a karyotype.

Donors were also screened for a variety of infectious diseases. Sixty-two of 64 (97 percent) screened for human immunodeficiency virus (HIV) infection, with 36 facilities (56 percent) doing followup testing on average every 4.7 months. Syphilis was screened for by 55 of 62 (88 percent) hospital-based facilities, with 24 (38 percent) doing repeat testing. Fifty-four of 64 (84 percent) screened for hepatitis, with 22 (34 percent) repeating the test within a year. As hospital-based sperm banks, drawing largely on medical staff for donors, the risk of hepatitis infection within the donor pool is particularly acute. Fifty-one of 74 (69 percent) screened for gonorrhea, with 24 (32 percent) doing followup testing. Chlamydia was screened for by 41 of 64 (64 percent), with 18 (28 percent) doing repeat tests. A minority of hospital-based facilities tested for mycoplasma (28 of 64), cytomegalovirus (20 of 64), and herpes (10 of 64).

Followup testing is of interest, because 22 of 67 (33 percent) facilities used fresh semen only, and another 29 (44 percent) used a mix of fresh and frozen; without retesting, it is not possible to be sure that the donor is still free of transmissible diseases, and HIV infection may not be detectable until several months after a donor has had contact with the virus. Therefore, his semen may be carrying the virus even if he tests negative. To avoid this problem, commercial sperm banks surveyed by OTA in 1987 generally quarantined a frozen specimen, releasing it only after the donor retested negative.

Public facilities paid donors an average of \$34 per visit, while private facilities offered an average of \$44. Forty-one of 61 facilities had a limit of 2 to 20 (average, 9) pregnancies that could be initiated by the same donor. Nineteen of 62 facilities would sometimes tell donors whether pregnancies had occurred with their semen, with one facility doing this routinely. However, the genetic parentage might not be readily apparent; 20 of 67 facilities reported that they mix donor semen with that of the recipient's husband.

SOURCE: W. Schlaff, Johns Hopkins University, personal communication. Jan. 5, 1988.

**dence of drug abuse, alcohol abuse, or child abuse (5 of 9) (table 3-1).** Psychological immaturity and diseases such as hepatitis or cytomegalovirus are also conditions that determine rejection for 4 of 9 facilities. Sexually transmitted diseases such as syphilis and gonorrhea were cited by 3 of 9 banks as reasons for rejection.

All 15 of the sperm banks in the survey reported that they would allow recipients or their physicians to provide specifications for particular donor traits. Nearly all the banks (14 of 15) match physical characteristics such as height,

weight, eye color, hair texture, and body type. Similarly, 14 facilities match recipients and donors by race, ethnic group, or national origin (table 3-2). Twelve will match by religion and 11 by educational attainment, special abilities, **hobbies, or interests.** Seven sperm banks are willing to match by intelligence quotient. Income is the characteristic that sperm banks are least willing to match (3 of 15).

Another option available to recipients is sperm separation for preconception sex selection. Slightly more than half the banks (8 of 15)

offer this service. The average charge for preconception sex selection is \$220, and can range anywhere from \$140 to \$400. The survey, being retrospective, cannot substitute for a clinical trial of

the efficacy of sperm separation techniques, but in general the survey data did not indicate that the methods are unequivocally effective.

### Box 3-B.—The Sperm Bank of Northern California

Oakland, CA, is home to the Sperm Bank of Northern California, a feminist-run facility known as one of the minority of sperm banks in the United States committed to providing artificial insemination services to any healthy woman or couple regardless of marital status, sexual preference, age, race, or religion. The most notable fact about the Sperm Bank of Northern California is its commitment to providing services to single and lesbian women.

Unlike some facilities, the Sperm Bank of Northern California offers artificial insemination services as well as distributing semen nationwide. Insemination can be done by sperm bank personnel, or women can choose to be taught to self-inseminate, at home or in a room provided for that purpose at the facility.

Recipient screening and counseling is rather stringent. The facility requires women to attend an orientation session describing the medical and legal risks of artificial insemination, and counseling is available upon request before undergoing insemination. Women are also required to undergo a physical examination to identify any fertility problems or risks associated with pregnancy before insemination is available. The screening process may take as long as a month. Women who are emotionally disturbed or addicted to drugs or alcohol will not be accepted; rather, they are referred for counseling, and may be accepted after completing therapy.

The facility's donor screening practices accord with those of the most rigorous banks, but its donor population is somewhat unique; this facility seeks donors who are willing to donate without pay and to be contacted by their offspring. Although donors who wish to remain anonymous are accepted, information about their willingness to be contacted is provided to recipients before their semen is chosen.

SOURCE : B. Raboy, Director, Sperm Bank of Northern California, Oakland, CA, personal communication, Dec. 22, 1986.

Table 3-1.—Criteria for Rejection: Recipients<sup>a</sup>

(Question 10b):<sup>b</sup> Have you ever rejected or would you be likely to reject a request for artificial insemination from a potential recipient because she was /has:

	Have rejected	Would be likely to reject	Not likely to reject
Over 40 years old . . . . .	1 <sup>c</sup>	0	5
Less than average intelligence . . . . .	1	0	5
Less than high school degree . . . . .	1	0	5
Gonorrhea . . . . .	2	1	4
Cytomegalovirus . . . . .	1	3	4
Syphilis . . . . .	1	2	4
Genital herpes. . . . .	1	1	4
Welfare dependent . . . . .	0	2	4
Less than 18 years old . . . . .	1	3	3
Hepatitis . . . . .	1	3	3
History of serious			
genetic disorders . . . . .	1	2	3
Criminal record . . . . .	1	2	3
Evidence of drug abuse . . . . .	2	3	2
Evidence of alcohol abuse . . . . .	2	3	2
Psychologically immature . . . . .	1	3	2
HIV (HTLV) positive . . . . .	1	5	0
Evidence of child abuse . . . . .	1	4	0

<sup>a</sup> The sample is the sperm bank sample.

<sup>b</sup> The code number of the question in the survey instrument (see app. B)

<sup>c</sup> Responses are not weighted. Not all sperm banks answered all questions

SOURCE: Office of Technology Assessment, 1988

Table 3-2.—Specific Donor Characteristics<sup>a</sup>

(Question 11):<sup>b</sup> Which of the following donor characteristics are you normally willing to try to match, if requested?

	Willing	Not willing
Race . . . . .	14 <sup>c</sup>	0
Body type . . . . .	14	0
Weight . . . . .	14	0
Eye color . . . . .	14	0
Height . . . . .	14	0
Hair texture . . . . .	13	0
Complexion . . . . .	13	1
Ethnic/national origin . . . . .	13	1
Religion . . . . .	12	3
Educational attainment . . . . .	11	3
Special abilities . . . . .	11	3
Hobbies or interests . . . . .	11	3
Age . . . . .	10	4
I.Q. . . . .	7	7
Income . . . . .	3	11

<sup>a</sup> The sample is the sperm bank sample

<sup>b</sup> The code number of the question in the survey instrument (see app. B).

<sup>c</sup> Responses are not weighted. Not all sperm banks answered all questions.

SOURCE: Office of Technology Assessment, 1988

## DONOR SELECTION

Sperm banks obtain donors using a variety of formal and informal methods (table 3-3). Almost all (13 of 15) state that "word of mouth" is a useful means of acquiring donors. Another common method (reported by 9 of 15 banks), especially for facilities located near universities, is various advertising vehicles such as student newspapers or magazines. Referrals from other sperm banks, physicians, other health care professionals, or other donors were also cited as a method to recruit donors.

Table 3-3.-Obtaining Donors <sup>a</sup>

(Question 15): <sup>b</sup> How do you obtain donors? <sup>c,d</sup>	
Word of mouth . . . . .	13
Advertisement in student newspapers or magazines . . . . .	9
Advertisement in general interest newspapers or magazines . . . . .	4
Flyers . . . . .	3
Direct mail or telephone solicitation . . . . .	3
Referral from another sperm bank . . . . .	2
Referral from physicians . . . . .	5
Other . . . . .	7

a The sample is the sperm bank sample

b The code number of the question in the survey instrument (see app. B).

c Answers not mutually exclusive

d Responses are not weighted Not all sperm banks answered all questions

SOURCE: Office of Technology Assessment, 1988

Because sperm banks are most often located in or near universities and hospitals, their inventories are characteristically dominated by donors who live or work in these areas. All the facilities mentioned that their inventories contain samples from students (undergraduate, graduate, or medical); in some cases almost 90 percent of a sperm bank's inventory is specimens from students. Other common sources include physicians, hospital personnel, and nonhospital personnel.

A majority of sperm banks claim that their inventories contain an overrepresentation of donor characteristics such as "college or graduate degree holder" (12 of 15), "better than average IQ" (8 of 15), and "better than average occupational status/achievements" (7 of 15) (table 3-4) (see box 3-C). There is, however, an "about normal" representation of religious groups or nationalities, as stated by 12 of 15 banks.

Table 34.-Sperm Donor Characteristic Inventory

(Question 14): <sup>b</sup> Are the following characteristics deliberately overrepresented in your inventory, deliberately underrepresented, or about normal? <sup>c</sup>				
	Over- represented	Under- represented	About normal	Not sure
College/graduate degree holder . . . . .	12 <sup>c</sup>	0	2	0
Better than average IQ . . . . .	8	0	5	1
Better than average occupational status/achievements . . . . .	7	0	6	1
Greater than average height for ethnic group . . . . .	0	0	12	1
Better than average athlete . . . . .	1	0	11	2
Better than average looks . . . . .	4	0	7	2
Better than average artistic ability . . . . .	0	0	12	2
Member of a particular religious group . . . . .	0	0	12	2
Member of a particular nationality . . . . .	1	0	12	1

a The Sample is the sperm bank sample

b The code number of the question in the survey instrument (see app B)

c Responses are not weighted Not all sperm banks answered all questions

SOURCE: Office of Technology Assessment, 1988

## DONOR SCREENING

All the facilities reported they require some form of screening before accepting donors. Out

of the 15 banks in the survey, 11 require screening only of men whose semen is to be used for

### Box 3-C.-The Repository for Germinal Choice

Escondido, CA, is home to one of the only sperm banks known to specialize in offering semen samples from unusually well educated donors. Erroneously known as the "Nobel Prize Winners' Sperm Bank," the Repository for Germinal Choice in fact does not have any specimens from such prizewinners. Rather, its inventory largely consists of men who have impressed the sperm bank's director, retired optometrist Robert Klark Graham, with their reported accomplishments, primarily in the "hard" sciences. One donor is an accomplished athlete.

The staff is small, consisting of Dr. Graham, his assistant Ms. Vaux, and one to two physicians retained when needed. From its opening in 1979 through the end of 1986, the Repository had recorded 35 births resulting from its services. There has been no formal study of the children.

Donors are solicited by letter or telephone by the Repository. If they choose to participate, they are asked to complete a lengthy questionnaire concerning their health, genetic histories, and personal accomplishments. Evidence of serious genetic disorders in the family result in exclusion. So too does evidence of the potential donor's own homosexuality, or a strong family history of homosexuality. If accepted to this point, donors are asked to see a local physician, who is to do a physical examination and blood tests, although as of December 1986 no blood test for HIV infection was required; direct semen tests were preferred. Direct semen testing is not reliable.

If physicians retained by the Repository are satisfied by the test results, a donor is accepted. It is not necessary to travel to Escondido in order to donate a specimen. The donor is supplied with instructions, express post packages, and liquid nitrogen storage tubes. No compensation is offered for the samples.

Recipients are not sought, but are chosen from those who contact the Repository by telephone or letter. They are screened almost as rigorously as donors for evidence of disease or genetic disorders. Single or lesbian women are not accepted. If a recipient is approved, she is given samples at no charge. The Repository is financed by the "Foundation for the Improvement of Man," rather than by user fees.

SOURCE: R.K.Graham, Director, Repository for Germinal Choice, Escondido, C.A. personal communication, Dec. 30, 1986.

Table 3-5.-Donor and Client Depositor Screening <sup>a</sup>

(Question 21):<sup>b</sup> Prior to acceptance as a donor, do you normally require the following from heterologous donors only, homologous donors only, both, or neither?<sup>c</sup>

	Heterologous <sup>d</sup>	Homologous <sup>e</sup>	Both	Neither
Family medical and genetic history .....	13	0	2	0
Personality assessment .....	13	0	0	2
Personal medical history .....	11	0	4	0
Physical examination .....	10	0	2	2
Fertility history .....	8	0	5	2
Karyotyping .....	5	0	0	9

<sup>a</sup> The sample is the sperm bank sample

<sup>b</sup> Th, code number of the question in the survey instrument (see app. B)

<sup>c</sup> Responses are not weighted Not all sperm banks answered all questions

<sup>d</sup> "Heterologous" donors are those whose semen will be used for artificial insemination by donor

<sup>e</sup> "Homologous" donors are client depositors whose semen will be used by them at some future time for artificial insemination by husband

SOURCE: Office of Technology Assessment, 1988

anonymous donation; the remaining 4 always require screening, whether the semen is to be used for AIH or AID (table 3-5). Although all the facilities require some sort of testing, the nature and extent of the tests vary. All the banks require a donor's personal and family medical history, as well as his genetic history. In addition, a donor's fertility history, a physical examination, and a personality assessment are required by 13 of the 15 banks. Over two-thirds of the facilities have

rejected a man whose semen was to be used for AID because he had a history of serious genetic disorders, was over 40 years old, or showed evidence of alcohol abuse. Other reasons for rejection encountered by a majority of facilities have been hepatitis infection, HIV infection, psychological immaturity, low intelligence quotient, lack of education, or evidence of risk factors for HIV infection (table 3-6).

Table 3-6.-Criteria for Rejection: Donors <sup>a</sup>

(Question 24): <sup>b</sup> Have you ever rejected a donor because he was/has: <sup>c</sup>	Have rejected homologous donor <sup>d</sup>	Have rejected heterologous donor <sup>e</sup>	Have never rejected for this reason
History of serious genetic disorders . . . . .	0	12	0
Over 40 years old . . . . .	0	11	2
Evidence of alcohol abuse . . . . .	0	10	3
Genital herpes. . . . .	1	9	2
Hepatitis . . . . .	1	9	3
Evidence of drug abuse . . . . .	0	9	2
Less than 18 years old . . . . .	0	9	3
HIV (HTLV) positive . . . . .	2	8	3
Psychologically immature . . . . .	1	8	3
Homosexual contacts . . . . .	0	8	3
Less than average intelligence . . . . .	0	8	3
Less than high school degree . . . . .	1	7	5
Multiple heterosexual partners . . . . .	0	7	6
Sexual contact with AIDS cases . . . . .	0	7	4
Cytomegalovirus. . . . .	1	6	7
Gonorrhea . . . . .	1	6	4
Intravenous drug use . . . . .	0	6	5
Syphilis . . . . .	1	5	6
Criminal record . . . . .	0	5	6
Evidence of child abuse . . . . .	0	4	7
Welfare dependent . . . . .	0	3	8
Less than average height . . . . .	0	3	10
Residence in high AIDS area . . . . .	0	2	10
Married . . . . .	0	1	10

a The sample is the sperm bank sample.

b The code number of the question in the survey instrument (see app. B).

c Responses are not weighted. Not all sperm banks answered all questions.

d "Homologous" donors are client depositors whose semen will be used by them at some future time for artificial insemination by husband

e "Heterologous" donors are those whose semen will be used for artificial insemination by donor.

SOURCE: Office of Technology Assessment, 1988

In addition to heritable diseases or HIV infection, the following donor characteristics would lead to donor rejection by at least 7 sperm banks: "less than 18 years old," "over 40 years old," "psychological immaturity," "less than average intelligence," "less than high school degree," "evidence of drug abuse," "evidence of alcohol abuse," "homosexual contacts," and diseases such as hepatitis or genital herpes.

It is interesting to note that sperm banks report rarely, if ever, rejecting men who store semen for future use in AIH, despite histories of child, alcohol, or drug abuse. These conditions are the basis for frequent rejection of recipient requests for artificial insemination (see ch. 2).

**Thirteen sperm banks screen donors for genetic defects or diseases that tend to be of ethnic origins, such as Tay-Sachs disease (in Jewish donors), sickle cell anemia (in black donors), and**

thalassemia (in donors of Mediterranean origins). Twelve banks reported that they perform diagnostic testing for a range of sexually transmitted diseases, including syphilis, gonorrhea, and herpes.

**All 15 sperm banks reported that they screen donors for antibodies to human immunodeficiency virus, regardless of whether their semen is intended for use in artificial insemination by husband or by donor.** One facility would screen for HIV only if the donor were considered to be from a high-risk group; the other 14 banks routinely screen all donors for HIV, regardless of supposed risk group status. All 15 banks use diagnostic testing, rather than reliance on a donor's personal statement, to screen for exposure to the virus. Part of the screening procedure for HIV antibodies often involves the routine quarantine of samples so that the donors may be periodically



retested to see if the virus is present later. **If a donor tests negative to the presence of HIV antibodies, 13 banks quarantine the sample pending further donor testing, which will occur, on average, every 1.9 months but which may range anywhere from every 1 to 6 months.** Current American Association of Tissue Banks (AATB) standards for sperm banking require a minimum 3-month quarantine, and American Fertility Society, Centers for Disease Control, and Food and Drug Administration guidelines recommend 6-month quarantines, as noted in chapter 2.

**In the event that a donor tests positive for HIV, every bank surveyed reported it would notice the donor of the test results. The 12 banks that responded to questions concerning HIV testing and semen storage for AIH differed on whether to inform the spouse or partner of a man who tests positive for HIV and other infectious diseases (table 3-7).** Three banks claimed they would inform the spouse if the donor tests positive for HIV, 4 said they would not inform the spouse, and 5 were “not sure.” Of the 14 banks that responded to the same question regarding HIV testing of men offering to become anonymous sperm donors, 7 banks reported that they “would inform,” 5 claimed that they “would not inform,” and 2 were “not sure” (table 3-8). So far, 8 banks report that they have already rejected someone as an anonymous donor because he tested positive for the HIV antibody, and 2 banks have refused to store semen from an HIV-positive man (table 3-6). In addition, 7 banks reported rejecting donors because of indicated “multiple heterosexual partners” or “sexual contact with HIV cases.”

To determine which heritable characteristics would disqualify a donor, the survey asked sperm banks to report whether they would accept a donor with a particular disorder, reject a donor who has it, or reject a donor whose family history includes someone with the disorder (table 3-9). **In general, the survey found that sperm banks are reluctant to accept donors with even a family history of genetic disorders, including those that are correctable, avoidable, or socially tolerated. In a number of cases, a majority of sperm banks would reject donors with family histories of dis-**

orders that are not widely recognized as predominately genetic.

In addition, a number of sperm banks would reject donors with family histories of hemophilia or Duchenne’s muscular dystrophy but who were themselves healthy, despite the fact that the diseases are sex-linked and therefore cannot be passed on by a man not himself suffering from it (table 3-9).

Sperm banks also frequently screen out healthy donors with family histories of Tay-Sachs disease, sickle cell anemia, or thalassemia. These autosomal recessive disorders are identifiable by biochemical testing. Sperm banks could

**Table 3-7. - Informing Spouse of Homologous Donor of Donor’s Health Status.**

(Question 31a):<sup>b</sup> Would you inform the wife or partner of a *homologous* donor, if tests indicated that the donor had:<sup>c,d</sup>

	Would inform	Would not inform	Not sure
HIV positive . . . . .	3	4	5
ARC* or full-blown AIDS . . . . .	3	4	5
Other infectious disease . . . . .	4	3	5
High risk of severe genetic defect for offspring . . . . .	5	2	5

a The sample is the sperm bank sample  
 b The code number of the question in the survey instrument (see app. B).  
 c Responses are not weighted. Not all sperm banks answered all questions.  
 d “Homologous” donors are client depositors whose semen will be used by them at some future time for artificial insemination by husband  
 e “ARC” is AIDS-related complex, a collection of diseases suffered in conjunction with HIV-infection  
 SOURCE: Office of Technology Assessment, 1988

**Table 3-8. - Informing Spouse of Heterologous Donor of Donor’s Health Status.**

(Question 31b):<sup>b</sup> Would you inform the wife or partner of a *heterologous* donor, if tests indicated that the donor had:<sup>c,d</sup>

	Would inform	Would not inform	Not sure
ARC* or full-blown AIDS . . . . .	8	5	1
High risk of severe genetic defect for offspring . . . . .	8	4	2
HIV positive . . . . .	7	5	2
Other infectious disease . . . . .	7	4	3

a The sample is the sperm bank sample.  
 b The code number of the question in the survey instrument (see app. B).  
 c Responses are not weighted. Not all sperm banks answered all questions.  
 d “Heterologous” donors are those whose semen will be used for artificial insemination by donor  
 e “ARC” is AIDS-related complex, a collection of diseases suffered in conjunction with HIV-infection  
 SOURCE: Office of Technology Assessment, 1985

**Table 3-9. - Medical Conditions and Donor Rejection <sup>a</sup>**

(Question 25):<sup>b</sup> For each of the following conditions, would you be likely to reject a heterologous donor only if he had the condition, if anyone in the donor's immediate family had the condition, or would you not reject a donor even if he had the condition?<sup>c,d</sup>

	Reject only if donor has history	Reject if family has history	Not reject even if donor has
Tay-Sachs <sup>e</sup> . . . . .	5	11	1
Diabetes . . . . .	11	8	0
Hemophilia . . . . .	6	13	0
Depression . . . . .	8	9	2
Asthma . . . . .	7	6	5
Cystic fibrosis . . . . .	5	14	0
Mental retardation . . . . .	6	13	0
Obesity . . . . .	6	6	5
Huntington's chorea . . . . .	5	14	0
Duchenne muscular dystrophy . . . . .	5	14	0
Sickle cell anemia . . . . .	6	11	0
Thalassemia . . . . .	6	11	0
Hypercholesterolemic heart disease . . . . .	6	12	1
Neurofibromatosis . . . . .	4	14	0
Malignant melanoma . . . . .	6	8	1
Alzheimer's disease . . . . .	3	12	2
Severe astigmatism . . . . .	7	5	3

a The sample is the sperm bank sample.

b The code number of the question in the survey instrument (see app. B).

c Responses are not weighted. Not all sperm banks answered all questions

d "Heterologous" donors are those whose semen will be used for artificial insemination by donor

e Responses not mutually exclusive

f Items in order as on survey instrument

SOURCE: Office of Technology Assessment, 1988

do such testing to limit the potential donors rejected to those who actually carry the trait, but this survey indicates that a number of banks screen out all at-risk donors on the basis of a family history. Some autosomal recessive disorders, such as cystic fibrosis, have no reliable car-

rier test, and all but one surveyed sperm bank would exclude donors with a family history of this most common of genetic disorders among American caucasian children. Fourteen of 15 sperm banks also excluded potential donors with a family history of Huntington's chorea, which, due to its late onset and complicated carrier status diagnosis, is difficult to detect. (This can be compared to the two-thirds of individual physicians who responded that they would screen out a donor with a family history of Huntington's.) As an autosomal dominant, the disorder can be passed on to a child even if only one parent carries the trait.

It is interesting to note three disorders that would not disqualify a donor at 20 to 30 percent of the banks. One, severe astigmatism, is probably heritable, and tolerance for donors with the condition may reflect its prevalence and the public's comfort with corrective lenses. Family history of obesity would lead 6 of the banks to reject a donor, but 5 would accept a donor even if he were himself obese. There is widespread suspicion that some individuals have a genetic predisposition to obesity, but environmental factors make it impossible at this time to state with certainty the precise genetic relationship. Asthma was another trait that would cause rejection at some banks and not at others. Some forms of asthma are autosomal dominant, although its genetic transmission is complex, and environmental factors may make the symptomatology vary greatly. Therefore, it is interesting that 5 of the banks would accept a donor who himself suffered from the disease.

## RECORDKEEPING

At least 11 of the 15 sperm banks keep detailed records for each donor, which often includes information such as the number of women inseminated, number of pregnancies achieved, number of children born, the donor's physical examina-

tion, the donor's family genetic history, and any followup examinations of the donor. **The majority of facilities will not allow offspring, recipi-**

**ents, recipients' partners, or the donors themselves access to these records** (table 3-10).

Partial access, however, such as providing donor records without the donor names, is granted by some banks. Although a few will permit access without donor names to the donor (3 of 15) or to offspring (2 of 15), recipients and their partners are more likely to be able to obtain these records

**Table 3-10.-Access to Donor Records <sup>a</sup>**

(Question 37):<sup>b</sup> Would you permit access to donor records, including the name of the donor, only excluding the name of the donor, or not at all, to: <sup>c</sup>

	Access with name	Access without name	No access
Research scientists . . . . .	0	8	5
Public health department . . . . .	1	7	5
Recipient . . . . .	0	7	7
Judicial requests . . . . .	2	6	5
Recipient partner . . . . .	0	5	9
Donor . . . . .	2	3	9
Offspring of insemination . . . . .	1	2	11

a The sample is the sperm bank sample

b The code number of the question in the survey instrument (see app. B).

c Responses are not weighted. Not all sperm banks answered all questions

SOURCE: Office of Technology Assessment, 1988

(5 to 7 of 15). Public health departments, researchers, and courts are most likely to be able to obtain nonidenti&fyng records.

## QUALITY ASSURANCE

The sperm banks surveyed have generally adopted professional guidelines and procedures as part of their protocols for artificial insemination, with most using those set forth by the American Association of Tissue Banks (see box 3-D) or the American Fertility Society. Members of the AATB are bound by their standards of practice.

Despite adherence to professional guidelines, 4 banks indicated that the current practice of artificial insemination does not sufficiently protect the safety of the recipient or the rights of the offspring (table 3-11). Six said that there is "less than adequate" protection of physicians in terms of their liability for the practice of artificial insemination. Thirteen, however, regarded protec-

### Box 3-D.-AATB Standards of Sperm Bank Practice

The American Association of Tissue Banks publishes and periodically revises its *Standards for Tissue Banking*, including special addendum material from AATB's Reproductive Council concerning semen banking.

As of 1988, AATB directed its member sperm banks to maintain complete donor records, but to ensure that the donor's actual identity never be revealed. Donor selection requires a personal, physical, sexual, and genetic history of the individual. Abuse of alcohol or drugs is grounds for automatic rejection. So are a variety of genetic conditions present in the donor or his family, including mental retardation (unless of intrauterine or environmental origin), diabetes before age 50 in a first- or second-degree relative, heart disease before age 50 in a first - or second-degree relative, schizophrenia or manic depressive disorder in a first-degree relative, muscular dystrophy (unless a known dominant with full penetrance or sex-linked), and "any medical problem which has a possible genetic etiology." The AATB directs member banks to do a minimum of two-generation (and preferably three-generation) family history for its genetic screening, with biochemical tests done when indicated by a family history of such diseases as Tay-Sachs and thalassemia.

Semen is to be tested for sperm count, motility, morphology, and other indicators of fertility. It is also to be tested for evidence of gonorrhea, and donors' blood is to be tested for syphilis, hepatitis, and human immunodeficiency virus antibodies. No donor semen may be used until after a 3-month quarantine period at the end of which the donor has been rechecked for HIV antibodies. Retesting for hepatitis and syphilis is also required for long-term, repeat donors.

SOURCE: America Association Of Tissue Banks, *Standards for Tissue Banking* (Arlington, VA: 1%8).

Table 3-11.—Adequacy of Professional Standards<sup>a</sup>

(Question 41):<sup>b</sup> How adequate do you think that present professional practices of artificial insemination are in terms of protecting the:<sup>c</sup>

	More than adequate	Adequate	Less than adequate
Donor's privacy . . . . .	2	11	1
Offspring's rights . . . . .	2	8	4
Recipient's safety . . . . .	1	9	4
Physician's liability . . . . .	1	7	6

<sup>a</sup> The sample is the sperm bank sample.

<sup>b</sup> The code number of the questions in the survey instrument (see app. B).

<sup>c</sup> Responses are not weighted. Not all sperm banks answered all questions.

SOURCE: Office of Technology Assessment, 1988.

tion of the donor's privacy as adequate or more than adequate.

**Establishing national standards (unspecified as voluntary or mandatory) for donor insemination** would be favored by most banks, with 14 supporting national standards for donor screening, 13 favoring standards for recordkeeping, and 11 favoring standards for recipient screening (table 3-12).

Involvement by national medical societies and Federal public health agencies to assure the safety and quality of artificial insemination practice is more favored than involvement by

Table 3-12.—National Standards for Sperm Banks<sup>a</sup>

(Question 43):<sup>b</sup> Would you tend to favor or oppose the establishment of national standards for artificial insemination for:<sup>c</sup>

	Favor	Oppose
Donor screening . . . . .	14	1
Recordkeeping requirements . . . . .	13	2
Recipient screening . . . . .	11	4

<sup>a</sup> The sample is the fertility society sample.

<sup>b</sup> The code number of the question in the survey instrument (see app. B).

<sup>c</sup> Responses are not weighted.

SOURCE: Office of Technology Assessment, 1988.

**peer review organizations** (table 3-13). Practically all the banks wanted the involvement of these two groups either increased or to remain the same. Involvement of State public health agencies also received support from 10 banks. Only about half the facilities supported the involvement of local medical boards, with 4 recommending elimination of such involvement. More than half also favored reducing or eliminating the involvement of hospital professional review organizations. Finally, the involvement of courts evoked a mixed response, with 8 recommending elimination, and 7 recommending that it remain the same.

## ATTITUDES

Those responding for the sperm banks generally disapproved of facilities that specialize in donors with intellectual, artistic, or athletic gifts, despite the fact that their own donor pools and screening processes tend to overrepresent educational attainment (table 3-14). They did, however, split evenly on screening recipients for social characteristics, such as marital status or

sexual orientation. A smaller proportion of sperm banks than of physicians (see ch. 2) viewed self-insemination as a reasonable alternative to physician-assisted insemination. Like physicians, however, they overwhelmingly believed that children conceived by AID should not be permitted to know the identity of their genetic fathers.

Table 3-13.- Roles in Quality Assurance.

(Question 42): "For each of the following agencies, would you like to see their involvement in the quality assurance of artificial insemination procedures increased, remain the same, decreased, or eliminated?"

	Increased	Remain the same	Decreased	Eliminated
National medical societies . . . . .	6	8	1	4
Federal public health agencies . . . . .	2	10	2	1
State public health agencies . . . . .	2	8	1	4
Local medical boards . . . . .	1	7	3	4
Hospital PROs <sup>d</sup> . . . . .	1	5	1	7
courts . . . . .	0	7	0	8

a The sample is the fertility society sample.

b The code number of the question in the survey instrument (see app. B).

c Responses are not weighted. Not all sperm banks answered all questions.

d "PROs" are peer review organizations.

SOURCE: Office of Technology Assessment, 1988

Table 3-14.-Attitudes Toward Artificial Insemination Practice<sup>a</sup>

(Question 46):<sup>b</sup> "How do you feel about the following general statements concerning artificial insemination? For each statement, please indicate whether you agree strongly, agree somewhat, disagree somewhat, or disagree strongly."<sup>c</sup>

	Agree strongly	Agree somewhat	Disagree somewhat	Disagree Strongly
Artificial insemination should be more widely used to treat infertility <sup>d</sup> . . . . .	5	8	1	0
Physician acceptance of recipients should be based solely on health issues . . . . .	5	1	5	3
Self insemination is a reasonable alternative to physician assisted insemination in many cases . . . . .	1	2	3	8
Patient requests for artificial insemination should be honored. regardless of marital status or sexual orientation . . . . .	4	4	4	3
Offspring of artificial insemination should have a right to communicate with their genetic fathers . . . . .	0	0	1	14
Patient requests for artificial insemination frequently raise moral issues for physicians . . . . .	1	9	2	3
There is nothing wrong with sperm banks which specialize in donors with intellectual, artistic, or athletic gifts . . . . .	1	2	5	7

a The sample is the sperm bank sample

b The code number of the question in the survey instrument (see app B)

c Responses are not weighted. Not all sperm banks answered all questions

d Items in order as on survey instrument

SOURCE: Office of Technology Assessment, 1988