ETHICAL, LEGAL AND SOCIAL IMPLICATIONS

Question 42: What is known about stigmatization, discrimination, privacy/confidentiality and personal/family social issues?

Question 43: Are there legal issues regarding consent, ownership of data and/or samples, patents, licensing, proprietary testing, obligation to disclose, or reporting requirements?

Question 45: What safeguards have been described and are these safeguards in place and effective?

ETHICAL, LEGAL AND SOCIAL IMPLICATIONS

Question 42: What is known about stigmatization, discrimination, privacy/confidentiality and personal/family social issues?

One of the remaining ELSI issues is a fundamental question about the purposes or prenatal cystic fibrosis screening. A public health view might consider whether there is a discernable impact on birth prevalence of cystic fibrosis. A cost-effectiveness approach would take into account the costs expended on the testing program (including costs of carrier testing, prenatal diagnosis of the fetus, and pregnancy termination) in comparison to the costs saved on treatment due to births averted. Yet, it is questionable whether there is a public consensus on the appropriateness of these measures to evaluate the success or merits of a prenatal screening program. In fact, there is broad societal distaste for any prenatal programs that have eugenic goals and for any cost calculations that might lead to economic pressures on women to terminate pregnancies. For these reasons, genetic counselors and bioethicists have made it an article of dogma that all prenatal testing decisions must be completely voluntary, autonomous and based on full information. Endpoints of clinical utility would then seem to involve measures of patient satisfaction and risks of psychosocial injury due to testing.

Research on genetic counseling in a prenatal setting suggest that satisfaction is uniformly expressed (Wertz), while psychological theory suggests that when important and unalterable decisions are made, the decision-maker generally bolsters and supports that decision in post-hoc evaluations. These factors make patient satisfaction itself an endpoint of limited usefulness. In addition, considerably more data exist about decisions to accept or decline an offer of prenatal screening for cystic fibrosis than in regard to the effect of these decisions. But with those caveats taken into account, it would appear that there is little support for a view that offering cystic fibrosis prenatal screening leads to long-term psychological harm in those screened. While the issue of stigmatization of those who find out they are carriers of cystic fibrosis is often mentioned as a potential risk of screening, data that test this concern are lacking. This is an area in which long-term monitoring could play an important role.

Considerable concern has been expressed about the risks of discrimination in health insurance for those who find out they are CF carriers and their unaffected children – carriers and non-carriers alike. This is an important concern, but one which is currently supported primarily by anecdotal accounts. The limited research data that exist uniformly lack a measure of comparison. That is, while incidents of alleged insurance discrimination related to genetic issues can be found, the magnitude of the problem cannot be assessed without (1) confirmation of these events and (2) comparable data about alleged incidents of health insurance discrimination ***not*** purported to be based on genetics. This is another area in which data collection and long-term monitoring is vital.

Another worthwhile aspect of monitoring would have to do with the quality of the informed consent decision. Assessment might include the couple's understanding of the nature of the disease and the nature of the decision they are being asked to make. The data which exist already strongly suggest that information about cystic fibrosis is not being effectively communicated in informed consent discussions. If this is to be considered an endpoint in

monitoring clinical utility, it is then even more important that mechanisms be put in place to make it possible for an informed consent process to succeed. These include good educational materials for patient and provider and a mechanism that encourages and allows health care providers to spend the time necessary to a full informed consent discussion of a topic for which neither they, nor the patient, may have much eagerness – the potential of the screening test to lead to an abortion decision.

One of the benefits of a prenatal screening program for cystic fibrosis could be cascade testing of relatives of those found to be carriers. Such testing, however, involves several difficult logistic problems. For example, the relatives of the proband are likely not to be patients of the physician who ordered the original testing. How, then, is the information about the advisability of testing to be conveyed? There would appear to currently be some consensus that it is probably not the role or the right of the physician to convey such information without the permission of his/her patient, although opinion on this subject is not unanimous. It would appear, however, that there is agreement that the preferred method is to provide the proband with information to be shared with her/his family. This problem – which will emerge increasingly as a concomitant of various types of genetic testing – needs to be addressed if the widest use is to be made of prenatal screening. The degree to which information is shared with relatives of the proband and the extent to which cascade testing occurs is an important endpoint for monitoring and assessing the possible success of a cystic fibrosis screening program.

[This section has not yet been completed. Your comments are appreciated and may include suggested topics, references, gaps in knowledge and specific data relevant to these topics]

ETHICAL, LEGAL AND SOCIAL IMPLICATIONS

Question 43: Are there legal issues regarding offering and conducting CF screening tests, ownership of data and/or samples, patents, licensing, proprietary testing obligation to disclose, or reporting requirements?

Summary

Civil liability risks to primary care physicians offering prenatal care include:

- failure to offer (or make available) prenatal cystic fibrosis screening
- testing without patient consent
- referring tests to a laboratory known or suspected of not being qualified
- breaching patient confidentiality

Civil liability risks to laboratories offering prenatal cystic fibrosis testing include:

- failure to perform the test according to accepted standards and guidelines
- failure to educate the physician/patient about the test's performance
- breaching patient confidentiality or inappropriate use of left-over samples
- liability due to not obtaining appropriate licensing for applicable patents

Laboratories offering prenatal cystic fibrosis screening need to obtain clinical certification from appropriate federal/state agencies

The potential sources of civil liability for the primary care physician in connection with prenatal screening for cystic fibrosis fall generally into four categories:

First, a primary care physician may be liable if the standard of care dictates that a screening test should be offered to a patient and the physician fails to offer it.[i] Such a failure to comply with an applicable standard of care falls under the heading of ordinary professional negligence. Standard of care has traditionally been determined by courts on a case-by-case basis, from evidence about how physicians in the same geographic area where the challenged treatment occurred commonly handle similar problems.[ii] Now, however, most courts rely on evidence of national standards, when such evidence is available.[iii] In the case of screening for cystic fibrosis, The American College of Obstetricians and Gynecologists (ACOG) now recommends the following:[iv]

- Testing will be made available to all couples, whatever their risk for carrying the cystic fibrosis gene, through information brochures on cystic fibrosis given to couples seeking preconception or prenatal care. These materials explain the relative risks for carrying cystic fibrosis, screening options, and what steps are next should a couple learn that they carry the cystic fibrosis gene.

- For couples in ethnic or racial groups considered at higher risk for carrying the cystic gene -- Caucasians, particularly those of European or Ashkenazi Jewish descent -- physicians will specifically offer screening and will follow up with inquiries about the couple's decision on whether to be screened.

ACOG, in collaboration with the American College of Medical Genetics (ACMG), has also issued a set of guidelines for physicians, entitled *Preconception and Prenatal Carrier Screening*

for Cystic Fibrosis.[v] The existence of guidelines like these is not, in itself, determinative of the standard of care, especially within the first several months after they are issued. Many courts recognize practice guidelines as evidence of the standard of care, however, and compliance is a good (but by no means absolute) safeguard against civil liability.[vi]

Second, primary care physicians can also be liable if they cause screening tests to be conducted without securing the patient's consent, after providing the patient with sufficient information about (a) the risks and benefits of the test, and (b) the significance of the possible results to allow the patient to make an informed choice.[vii] This sort of error also falls into the category of professional negligence, but is more specifically a failure to secure informed consent. Precisely what information should be conveyed has generally been determined by reference to a standard of care, although in recent years some courts have begun analyzing informed consent in terms of the patient's need to know information, based on whether a reasonable person in the patient's position would attach significance to the information.[viii]

ACOG and ACMG have taken substantial steps toward establishing a standard for informed consent to CF screening by developing and distributing to practicing obstetricians in the United States, brochures designed to provide patients with the relevant information. ACOG's and ACMG's *Cystic Fibrosis Carrier Testing: The Decision is Yours* uses a question-and-answer format to help patients sift through information about their chances for carrying the disease and whether they should have testing, and it includes a form for taking a patient's informed consent to CF screening.[ix] *Cystic Fibrosis Testing: What Happens If Both My Partner and I Are Carriers?* uses a similar format to explain the implications of test results and to direct patients to appropriate counseling experts.[x]

The promulgation of these brochures establishes, in effect, that patients who consent to screening after having been provided with the information contained in them will be considered to have given informed consent to the testing. In other words, here again, following the advisories issued by ACOG and ACMG can serve as powerful evidence of compliance with the applicable standard of care.

The third source of potential liability for the primary care physician can arise from the act of referring a patient (or sending a patient's sample) to a laboratory for testing. Even where the primary care physician has made the patient aware of an appropriate screening test, if the test is directed to a laboratory known or suspected to not be qualified, the physician may be liable for negligent referral.[xi] Guidelines for the licensing and certification of testing laboratories are in place at both the state and federal levels. ACMG and the College of American Pathologists (CAP) also accredit laboratories. A primary care physician who causes a screening test to be conducted by a laboratory without the appropriate accreditation, certification or licensure risks direct liability to the patient if the laboratory errs.

Finally, the primary care physician can be liable for breach of patient confidentiality in connection with the mishandling of confidential patient information or patient samples.[xii] Guidelines for the treatment of patient records are established by both state and federal statutes and regulations. The most comprehensive of these, however, are the privacy guidelines published by Department of Health and Human Services (HHS) in July of 2001.[xiii] The

guidelines require, generally, that most doctors, hospitals, or other health care providers obtain a patient's written consent before using or disclosing the patient's personal health information to carry out treatment, payment, or health care operations. There are exceptions to the general rule, however, for certain uses of patient health information, including reporting to public health authorities and (with conditions) use of personal health information for research purposes.[xiv] Under these guidelines, a physician who breaches a patient's confidentiality faces not only potential civil liability, but also potential criminal prosecution. Full compliance with the guidelines is not required until April 14, 2003.

Civil liability risks to the testing laboratory.
Although the testing laboratory usually will not have a direct physician-patient relationship with the primary care physician's patient, the testing laboratory faces its own set of civil liability considerations separate from, but overlapping, the primary care physician's.

First, like the primary care physician, the laboratory faces risks associated with the failure to perform screening tests according to the standard of practice among laboratories performing similar tests.[xv] With respect to CF screening, there are several sets of guidelines, recommendations and checklists to which courts are likely to look in order to determine the applicable standard of care. Perhaps the most basic of these are the proposed CLIA regulations on Genetic Testing,[xvi] the CAP checklist, and for laboratories which test samples from New York State, the New York State Department of Health Laboratory Standards. The New York State standards have the force of law, and the updated CLIA regulations will also have the force of law, once they are finally adopted. Statutes and regulations governing the conduct of laboratory testing, while not conclusive, are persuasive evidence of the applicable standard of care.[xvii] Although other published guidelines (e.g., CAP checklist, ACOG's Standards and Guidelines for Clinical Genetics Testing, ACMG's Laboratory Standards and Guidelines for CF Carrier Screening) are not directly enforceable, they are also evidence of the standard of care applicable to laboratories conducting cystic fibrosis screening tests.[xviii]

Because few laboratories develop a direct relationship with the patients whose samples they test, there is rarely a duty on the part of the laboratory to secure the patient's informed consent to screening. Nevertheless, depending on the circumstances of the testing (e.g., whether the laboratory takes the sample directly from the patient or has the sample delivered to it from the primary care physician and whether the laboratory communicates results directly to patients or to their physicians), testing laboratories could face liability risks associated with failing to educate patients about the meaning of test results and the risks of false negative and false positive screening results before the patient consents to proceed with the screening test. Even where the physician has already secured the patient's consent, the laboratory may be liable if that consent was not fully informed. Again, published standards like the ACOG/ACMG booklets described above, are the most predictable source of evidence about what information patients should be getting as part of the informed consent process, whatever the source.

Also like the primary care physician, the laboratory may incur liability if it mishandles confidential patient information or patient samples. In the ordinary course, however, because the laboratory does not have a direct relationship with the patient, it will not be subject to the restrictions imposed by the privacy guidelines promulgated by HHS under HIPAA. Instead, the

liability of laboratories for breach of confidentiality will be primarily a matter of state law, and therefore cannot be defined uniformly.

Finally, if the testing process is itself subject to patent protection or its use is otherwise restricted by contract, statute or common law, the laboratory may face liability to the owner of the test unless it is properly licensed. At present, only two entities hold United States Patents with potential application to CF screening. Roche Diagnostics holds a series of patents covering the polymerase chain reaction ("PCR") process.[xix] As a consequence, any laboratory using PCR as part of a CF screening protocol should investigate whether a license is required. Perhaps more significantly, the HSC Research Development Corporation (an affiliate of the Hospital for Sick Children in Toronto, Ontario) holds a patent on the Cystic Fibrosis gene.[xx] The patent is broadly worded, and it is likely that most CF screening that relies on DNA sequencing will be covered, and will therefore require a license.

Regulatory restrictions on prenatal screening tests for cystic fibrosis

While there do not appear to be any state or federal regulations addressed specifically to the conduct of prenatal screening tests for Cystic Fibrosis, a number of state and federal regulations address more generally the certification of medical laboratories, and even the conduct of genetic testing specifically. The most notable and comprehensive set of such regulations appears at 42 C.F.R. Part 493 (Laboratory Requirements), which establishes a set of uniform guidelines for the certification of laboratories under Sections 1861 (e) and (j) of the Federal Clinical Laboratory Improvement Amendments of 1988 ("CLIA"). Further, as noted above, additional regulations on the specific subject of genetic testing under CLIA are proposed.

Most states also have clinical laboratory licensing or certification regulations, but their content varies widely. In addition to the regulations that apply to the conduct of testing, some states (notably New York and California) also establish requirements for reporting test results to state public health authorities.

ETHICAL, LEGAL AND SOCIAL IMPLICATIONS

Question 44: What safeguards have been described and are these safeguards in place and effective?

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[i] 2 D.W. Louisell & H. Williams *Medical Malpractice*, ¶ 17G.07 at p. 17G-42 (2001).

[ii] *Restatement of the Law 2d, Torts 2d* § 299A (1965).

[iii] Prosser & Keaton *The Law of Torts* (5th Ed. 1984) § 32 at pp. 187-188.

[iv] American College of Obstetricians and Gynecologists. *ACOG NEWS RELEASE – Ob-Gyns Offering Large-Scale Cystic Fibrosis Testing*. Washington, DC: American College of Obstetricians and Gynecologists; December 12, 2001.

[v] American College of Obstetricians and Gynecologists, American College of Medical Genetics. *Preconception and Prenatal Carrier Screening for Cystic Fibrosis: Clinical and Laboratory Guidelines*. Washington, DC: American College of Obstetricians and Gynecologists; 2001.

[vi] 4 *Medical Malpractice*, ¶ 29.03[4].

[vii] *The Law of Torts* § 32 at p. 190.

[viii] *The Law of Torts* § 32 at p. 191.

[ix] American College of Obstetricians and Gynecologists, American College of Medical Genetics. *Cystic Fibrosis Carrier Testing: The Decision is Yours*. Washington, DC: American College of Obstetricians and Gynecologists; 2001.

[x] American College of Obstetricians and Gynecologists, American College of Medical Genetics. *Cystic Fibrosis Testing: What Happens If Both My Partner and I Are Carriers?* Washington, DC: American College of Obstetricians and Gynecologists; 2001.

[xi] *See Estate of Tranor v. Bloomsburg Hospital*, 60 F.Supp. 2d 412 (M.D.Pa. 1999) (lawsuit permitted to proceed against primary care physician for negligent referral to specialist).

[xii] 2 *Medical Malpractice* ¶ 17G.07[1] at p. 17G-42.

[xiii] 45 CFR Parts 160 and 164.

[xiv] 45 CFR § 164.512 (b), (i).

[xv] 2 *Medical Malpractice* ¶ 17G.07[5] at p. 17G-49 (citing *Curlender v. Bio-Science Laboratories*, 106 Cal. App. 3d 811, 165 Cal. Rptr. 477 (1980).

[xvi] *Federal Register* 2000; 65: 25928-24934

[xvii] 4 *Medical Malpractice* ¶ 29.03[3].

[xviii] 4 *Medical Malpractice* ¶ 29.03[4].

[xix] U.S. Patent Nos. 5,994,056; 6,171,785 B1.

[xx] U.S. Patent No. 6,201,107.