Once again technology has outpaced legality, and practitioners are looking to an ethical debate to help answer the complex questions that are surfacing in the area of gamete retrieval from the dead, near dead, the terminally ill, or those facing destructive chemotherapy or gonadal ablative procedures.

It is possible to harvest gametes in a variety of conditions, and technology is available to allow for their preservation and future use for procreative purposes. We are therefore faced with an ethical dilemma: Because we can do something, ought we to do it?

We will first explore the technical aspects of gamete retrieval, including the necessary technical expertise and facilities required for gamete storage and rescue. We will outline the various methods available with advantages and disadvantages and explore the ethical implications of these procedures and offer our suggested policy for guidance when faced with the request for gamete retrieval.
including blood tests for HIV-1 and HIV-2 and hepatitis B and C at the time of cryobanking and again after a minimum quarantine of 6 months. Postquarantine testing addresses the occasional inability to detect early-stage disease at the time of sample submission. Second, the safety of liquid nitrogen baths used for storing samples by immersion has been debated since a documented instance of cross-contamination of whole blood samples stored in this manner. The debate has led to the development of a new system for the filling and sealing of cryogenic straws that is designed to be leak-proof (Cryo Bio System, L’Aigle, France). This system, while promising, is not yet accepted by gamete and embryo cryobanks as standard of care. In the interim, a reasonable approach may be to use the results of infectious disease testing to segregate potentially infected samples in a liquid nitrogen vapor tank. Samples maintained below –180°C in liquid nitrogen vapors avoid the apparent dangers associated with immersion of samples in a common bath of liquid refrigerant.

The useful life of such stored specimens is estimated to be 3 to 10 years. The stored sperm may be used for artificial insemination, intrauterine insemination, or in vitro fertilization techniques.

The female requires ovarian stimulation, retrieval of ova via the transvaginal route, and cryopreservation of mature ova. The oocytes are cryopreserved at metaphase II or the germinal vesicle stage for future use or can be fertilized by means of in vitro fertilization techniques and the frozen embryos preserved for future use. Also, ovarian tissue can be retrieved and cryopreserved. On the horizon are methods for the autotransplantation of thawed ovarian biopsy material into a nonpelvic site. Varying degrees of normal ovarian function have been reported with this approach in lambs, primates, and human beings.

Mature oocytes obtained from transplanted tissue could be retrieved by simple needle aspiration and then be fertilized in vitro. In the case of the oncology patient, this approach requires an exploration to determine the involvement of the ovary in the carcinogenic process. These processes simply represent the free and autonomous decisions of capable persons and the participation of willing practitioners.

A special case would be the patient with a high spinal cord lesion. In the patient who cannot ejaculate because of spinal cord trauma, electroejaculation or vibratory stimulation must be used to obtain the specimen. It is presumed that this patient is sentient and cogent and can participate in the decision-making process (Table I).

The difficult situations arise when patients are terminally ill, neurologically devastated with little hope of recovery, diagnosed in persistent vegetative state (PVS), brain dead, recently deceased, or otherwise incapable, and the spouse, significant other, or other family member requests gamete retrieval for future reproductive use.

### Table I. Techniques for male gamete retrieval

<table>
<thead>
<tr>
<th>Patient condition</th>
<th>Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscious, sentient, physically intact</td>
<td>Masturbation</td>
</tr>
<tr>
<td>PVS, brain dead, coma, recent demise</td>
<td>MESA or epididymal biopsy, testicular needle biopsy, open testicular biopsy</td>
</tr>
<tr>
<td>Spinal cord injury</td>
<td>Vibratory stimulation, electroejaculation</td>
</tr>
</tbody>
</table>

MESA, Microscopic epididymal sperm aspiration.

### Obtaining male gametes

For the man who is pronounced neurologically devastated with no hope for recovery, brain dead, PVS, or who has suffered sudden death, the obtaining of the sperm specimen requires either testicular biopsy or epididymal biopsy (Table I). Infectious disease screening must be performed before storage of the specimen in the nitrogen bank; but in these special instances, quarantine of the frozen specimens with a follow-up infectious disease screen is abandoned. Appropriate consents for both obtaining and storage of the specimen for future use must be obtained. Sperm produced by testicular or epididymal biopsy will require advanced assisted reproductive techniques, such as intracytoplasmic sperm injection. The pregnancy expectations for posthumous sperm obtained surgically are undetermined but should vary with the interval between death and retrieval of the specimen and the expertise of the storage facility.

Hovatta et al reported a 50% pregnancy rate with sperm retrieved with intracytoplasmic sperm injection techniques. It should be noted that intracytoplasmic sperm injection is necessary to produce fertilization with sperm retrieved by these techniques.

It must be emphasized that this is a team effort and requires the presence of the andrology support team on site. Andrology is the science, expertise, and experience of the laboratory support team that is vital to the success of gamete retrieval, evaluation, storage, and rescue. The andrologist must assess the quality of the specimen obtained and then must perform the delicate task of proper quarantine and preservation of the specimen.

The choice of the retrieval procedure will be governed by the experience of the team and the facilities available in the particular institution.

### Obtaining female gametes

In the case of the woman who is pronounced brain dead or who has suffered sudden death, an operative intervention is the only possible option (Table II). It is necessary to obtain ovarian tissue and then cryopreserve slices of it. For the subjects declared brain dead and on circulatory and respiratory support or for the subject who has ex-
mature ova production.\textsuperscript{7, 8} The mature oocytes could then be demonstrated in vivo maturation of ovarian tissue with transplantation techniques in cynomolgus monkeys have matured ova is not yet available in vitro; however, ovarian trans-
tive and more complicated procedure. The technology to nurture the immature follicles within these slices to mature ova is not yet available in vitro; however, ovarian trans-
plantation techniques in cynomolgus monkeys have demonstrated in vivo maturation of ovarian tissue with mature ova production.\textsuperscript{7, 8} The mature oocytes could then be fertilized by whatever technique is applicable.

It is possible, for the patient in PVS, to institute a cycle of ovarian stimulation and oocyte retrieval. The technical difficulties are formidable and would require an operating room excursion to effect the egg retrieval by means of a vaginal probe sonography. A laparoscopy with retrieval of actual ovarian tissue, which could be cryopreserved for future use, would be more efficacious. Actual laparotomy would also be acceptable and probably more direct and simpler. (Bruce G. Bateman, MD, personal communica-
tion, 2000.) The cooperation of a willing surrogate gesta-
tional surrogate is essential to this process.

Ethical policy

We have reviewed the technical and practical aspects of gamete retrieval and have outlined the various technical aspects and limitations of the procedure. We have demonstrated that, within certain limitations, it can be done. The question now is: ought it be done? How can we establish guidelines that would assure informed consent and respect for the autonomy of the subject whose gametes are to be retrieved?

Let us consider 2 hypothetic cases where surviving relatives are requesting sperm retrieval and preservation for future procreation or oocyte retrieval for a future pregnancy that had been desired or planned.

A 26-year-old man is declared brain dead as a result of massive head injury in a construction accident. His wife requests sperm retrieval in hopes of having a child. They have been married for several years and recently discontinued contraception to attain a much-desired pregnancy. The wife states unequivocally that this would have been her husband’s wish—to father a child to fulfill their love and affection and to assure that the family name and traditions would be carried to future generations.

A 30-year-old woman is in PVS as a result of a ruptured arteriovenous malformation and a massive intracranial hemorrhage. The medical team has given no hope for recovery. A familial decision is made to withdraw supportive therapy. The couple had delayed child-bearing so that the woman could pursue her career as an obstetrical resi-
dent. They had often talked of their desire for a child and had planned a pregnancy as she neared completion of her training. The husband requests ovum retrieval because he is certain that this is what his wife would have wanted. Both the family of the subject and the family of the husband are present and support the proposal.

In both of these instances, we have valid surrogate de-

cision-makers. Our first obligation would be to determine whether there is any form of written advance directive, such as a living will or durable power of attorney for health care decisions. If there is no advance directive, we must rely on evidence that can be obtained from the surrogate, perhaps backed up by other family members, that this indeed is the course of action that would be consist-
tent with the wishes of the subject.

In an ideal situation, there would be an advance directive specifically stating that the subject would want this procedure performed in case of sudden death, PVS, or brain death. It is unlikely that any young person, even if they had any form of advance directive, would have included a provision for gamete retrieval. We are then faced with the dilemma of honoring the subject’s right to respect for autonomy and the right to die with dignity or honoring the surrogate’s right to make decisions that are judged by the surrogate to be in the best interests of the incapacitated or brain dead subject.

Some would be very rigid in this situation and would demand that there be a written directive on the part of the subject requesting such a procedure in the case of the terminal and incapacitating conditions as outlined above. This would give absolute preference to the subject’s aut-

omy while denying the rights of the surrogate to offer input. A suggestion could be made that, if the subject had signed an organ donation statement, that could be interpreted as sufficient proof of desire to donate gametes for future use. The objection to this interpretation is that there is a tremendous difference between donating an organ to preserve or prolong the life of another and the donation of a gamete to create a new life. In addition, a new life is being conceived without the dual parental support that is considered the societal norm.

The other view is that requiring an explicit written di-
rective would make the attainment of gamete retrieval vir-

Table II. Techniques for obtaining female gametes

<table>
<thead>
<tr>
<th>Patient condition</th>
<th>Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain dead, sudden recent death (PC) \textsuperscript{5-9}</td>
<td>Laparotomy for retrieval of ovarian slices for cryopreservation</td>
</tr>
<tr>
<td>PVS (PC) \textsuperscript{5-9}</td>
<td>Stimulated ovarian cycle with egg retrieval via vaginal probe sonography or laparoscopic retrieval of ovarian slices for cryopreservation and future maturation</td>
</tr>
</tbody>
</table>

\textsuperscript{5-9}B.G. Bateman, personal communication, 2000.
It was virtually impossible because most young persons would have neither the desire nor the foresight to include such a provision in their advance directive even if they had executed such a document in the first place. The establishment, with some degree of certainty, that this issue had been discussed between the couple, and there was some familial corroboration of this desire, and perhaps even the presence of a family member willing to serve as a surrogate gestational surrogate, could be accepted as clear and convincing evidence. Given this set of conditions, then, absent a specific advance directive, the request of the surrogate could be interpreted to be in the best interests of the subject.

Our task at this point is to enter into an ethical discussion pertinent to this problem. Ethics is not epidemiology. We do not have randomized, blinded, controlled studies. Ethics solves problems by discussion and exploration. In an effort to formulate a policy for our institution, we reviewed the expert opinions offered by persons concerned with the issue. This was accomplished by both a literature review and personal communication and, in a similar fashion, a review of policies in place in other institutions. “Expert opinion” is lightly regarded in the realm of evidence-based medicine; however, lacking Divine guidance, it is often the best source of provocative thought in ethical discussion and decision making.

Expert opinions offered concerning the ethical aspects of gamete retrieval

Schiff\textsuperscript{13} offers the opinion that the process should not be performed unless the wishes of the deceased are clear but does not require that this must be in writing (Table III). The author notes that there are distinct differences between parenting in life and parenting after death and that a person who might wish to become a parent in life may make a different choice if the decision were to create a child posthumously.

\textit{Planned orphanhood} is a term introduced by Landau.\textsuperscript{14} The author raises questions about whether the adults’ desire to give birth to an orphan has priority over the child’s basic right to 2 living parents.

<table>
<thead>
<tr>
<th>Author</th>
<th>Brief statement of opinion</th>
<th>Written document required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schiff\textsuperscript{13}</td>
<td>Wishes of subject are clear; stresses differences between parenting in life and parenting after death</td>
<td>No</td>
</tr>
<tr>
<td>Landau\textsuperscript{14}</td>
<td>“Planned orphanhood” not justified; wrong to use persons as a means to an end but only as end in themselves</td>
<td>Should not be done under any circumstances</td>
</tr>
<tr>
<td>Aziza-Shuster\textsuperscript{15}</td>
<td>Lacks human values of nurturing and rearing children; society should set policies to guide practitioners</td>
<td>No opinion</td>
</tr>
<tr>
<td>Strong\textsuperscript{16}</td>
<td>Explores differences between explicit consent and reasonably inferred consent</td>
<td>Accepts either written or reasonably inferred consent</td>
</tr>
<tr>
<td>Berger (PC)*</td>
<td>Stresses difference between organ donation (no responsibility to recipient) versus gamete donation for reproductive purposes</td>
<td>Requires explicit written consent</td>
</tr>
</tbody>
</table>

* \textsuperscript{*R. Berger, personal communication, 2000.}

Table III. Summary of expert opinions

Does this desire justify the creation of a person who will never have the opportunity to know the missing parent?

Landau explores the Kantian maxim interdicting the use of persons as a means to an end and not as ends in themselves. She would discourage planned orphanhood so as to avoid violating this principle.

Aziza-Shuster\textsuperscript{15} concludes that posthumous reproduction lacks the human values of nurturing and rearing children. She further states that “in a society which already views babies as ‘consumer products’ and women as ‘fetal containers’ for men’s reproductive needs, posthumous reproduction may further the view that women (and children) are expendable.” Aziza-Shuster recommends that medical organizations responsible for delivery of health care should set policies and guidelines for physicians to follow in implementing assisted reproductive technologies.

Strong\textsuperscript{16} explores the differences between explicit consent and reasonably inferred consent. In doing so, he raises the issue of the unique value of human reproduction and whether it has a special significance that requires explicit written consent.

The author’s conclusion is that either method of ascertaining the wishes of the deceased would be respectful of his autonomy. Strong, along with Aziza-Shuster\textsuperscript{15} urges the adoption of a policy that requires either explicit consent or reasonably inferred consent.

Richard Berger, MD, from the University of Washington, (personal communication, 2000) notes that the donation of gametes for the creation of a new life seems quite different from the donation of a body part for the prolongation of another person’s life. Surrogate consent for organ donation is for the benefit of the one treated whereas gamete retrieval is for the sole benefit of the surviving partner. He demands a higher standard of consent for gamete retrieval than that in place for organ donation. Berger requires clear and convincing evidence that the donor clearly wanted to have sperm harvested and a child conceived after death and that this must be demon-
strated in the form of an explicit written consent. He outlines his policy:

1. Explicit written consent from the subject before the subject’s loss of competency.
2. The consent must specify in writing that the donor wished to have his sperm harvested and donated after his death or in case of terminal illness and loss of competency.
3. Proxy consent or reports of previous verbal consent by the sperm donor will not be adequate consent for the harvesting of sperm.

**Legal precedents**

In Great Britain, the Human Fertilization and Embryology Act of 1990 requires consent in writing for sperm retrieval and that a sperm donor whose sperm is used after his death will not be considered the father of the resulting offspring.

In France, the fate of stored gametes is based on the wishes of the donor and not governed by any rules of contracts.

In the United States, there appear to be no clear prohibitions; property rights and inheritance rights are unclear; murky lacking written consent or without clear and explicitly expressed wishes of the subject; varies on a state by state basis.

**Legal precedents**

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In France, Fate of stored gametes is based on the wishes of the donor and not governed by any rules of contracts.

In the USA (PC)*, No clear prohibitions; property rights and inheritance rights are unclear; murky lacking written consent or without clear and explicitly expressed wishes of the subject; varies on a state by state basis.


**Table V. Policies at different institutions**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohl/University of Michigan</td>
<td>Accept clear and convincing evidence; do not require written advanced directive; decline if there is any evidence of ambiguity</td>
</tr>
<tr>
<td>Sparks/University of Iowa (PC)*</td>
<td>Require written consent; must specifically identify the recipient in the written consent; deny consent by surrogates or reports of previous verbal consents</td>
</tr>
<tr>
<td>Vereb/Lahey Clinic (PC)†</td>
<td>Requires explicit and notarized written consent; accepts documented consent in the medical record attested to by health professional with no interest in the process; intended recipient must be identified; otherwise require judicial authorization</td>
</tr>
<tr>
<td>Schlegel/NY Hospital/Cornell (PC)‡</td>
<td>Deny if: Any hint of familial disagreement; lack of expertise; history of genetic disease; mandatory 1-y quarantine Accepts reasonable evidence and does not require written directive.</td>
</tr>
</tbody>
</table>

† M.J. Vereb, personal communication, 2000.
‡ P.N. Schlegel, personal communication, 2000.

**Review of policies for gamete retrieval at different institutions**

A review of the policies in place in different institutions shows that most of the attention has been directed toward sperm retrieval and that most of the comments specify male gamete retrieval (Table V). The complexity and technology lag attendant on female gamete retrieval have made this a less likely sought after option. Technology is evolving to allow for maturing of stored primordial follicles and for their fertilization. We would propose that the comments and resulting guidelines would be applicable to both male and female gamete retrieval efforts.

Ohl et al. explores the experience at the University of Michigan where they have been asked to retrieve sperm in 7 instances. The request was honored in 2 of the cases. Ohl discusses all 7 cases in detail and concludes that it is incumbent on the health care team to assess what the wishes of the deceased would have been. The author does not go as far as to say that this needs to have been documented in writing but that all individuals who may have knowledge of the wishes of the deceased should be involved in the decision-making process. If ambiguity is discovered, the wisest choice would be to decline to perform the procedure.

Ohl denies equating posthumous sperm donation to that of organ donation. Organ donors do not have any moral or legal responsibility to care for the recipient or
their donated organs. Parents, on the other hand, have a very great responsibility to their children.

At the University of Iowa, Amy E.T. Sparks, PhD, HCLD, (personal communication, 2000) offers that their policy requires explicit written consent. This consent must specify in writing that the donor wishes to have his sperm harvested after his death or after the onset of a terminal illness or comatose state. Additionally, the sperm donor must specifically identify the sperm recipient in the consent. Proxy consents (surrogate decision-makers) or reports of previous verbal consent by the prospective sperm donor are not adequate consent for harvesting of sperm.

According to Margaret J. Vereb, PhD, (personal communication, 2000) the policy established by the Lahey Clinic for sperm retrieval from dead or irreversibly comatose patients requires explicit written consent (notarized) for sperm retrieval on the part of the subject. If this is not available, then there must be a documented consent for retrieval and future use in the subject’s medical record attested to by a health care professional who does not have an interest in the outcome. Both of these written forms of consent must also specify the intended recipient and that the donor was competent at the time of consent. If either of these forms is absent, judicial authorization is required.

Peter N. Schlegel, MD, Cornell, New York, NY, (personal communication, 2000) related the policy guidelines at New York Hospital-Cornell University Medical Center, which are based on 3 situations in which sperm retrieval would not be performed:

1. If there is any disagreement between family members, the procedure will not be performed. The next of kin should be the wife (or husband) and there has to be “reasonable evidence” to suggest that the deceased wanted to have children with his/her partner.

2. Retrievals should not be performed if there are no facilities or expertise for cryopreservation or if the subject had a family history of genetic disease or was diagnosed with HIV.

3. There is a mandatory 1-year quarantine of the sperm, and the wife would have to undergo psychologic evaluation and counseling before release of the sperm.

Differing expert opinion and varying policies at institutions demonstrates that there is not unanimity or consensus on the subject of posthumous gamete retrieval. Most of the commentary to date is based on sperm preservation. The technology is evolving for female gamete retrieval and preservation of ovarian tissue for future gamete maturation. This makes all statements concerning male gamete retrieval and preservation also relevant to female processes. We would note that there is a difference in the implications and execution of female gamete retrieval compared with the process in a man. For a woman, the process is more invasive, technically more difficult, and perhaps more importantly much more complex when viewed from a familial and sociologic viewpoint. Male sperm are produced in the millions and can be used for reproductive purposes by simple deposition in the vagina or uterus. Maturing the female gamete to a mature ovum and then fertilizing it is a technology that is still unfolding. After this, a surrogate host must be available to accept the embryo and to nurture it to term. Perhaps the requirements for participation in female gamete retrieval should differ from those required for the process in a man.

Some would allow for a “reasonable evidence” standard that the previously expressed wishes and desires of the subject are being fulfilled. Some would raise the standard to convincing evidence “beyond a reasonable doubt.” Others would demand an explicit, written (and notarized) statement expressing the subject’s desires and designating a specific recipient. All are agreed that gamete retrieval requires a higher standard of consent than the consent acceptable in organ donation programs.

As a result of our investigation and deliberation, we have formulated a potential policy to be submitted to the Ethics Committee of the University of Virginia Health Sciences Center for their evaluation and possible adoption.

Introduction to the proposed policy for gamete retrieval from comatose, persistent vegetative state, brain dead, and proximately deceased subjects at the University of Virginia Health Sciences Center

It is technically possible to retrieve and store, for future fertilization, sperm from persons in the above states for purposes of future procreation. The technology is currently available to harvest eggs from female subjects and to fertilize and store them for future use in a surrogate host. The technology is evolving to make it possible to store frozen eggs and bring them to maturity and/or to store ovarian tissue and stimulate the formation of fertilizable eggs.

The availability of these technologies forces us to consider whether these procedures should be performed and, if so, under what circumstances.

There are no federal or state legislative guidelines enacted or legal guidelines established that can be gotten from previous court cases in this area.

Comment

Evelyne Shuster reviews the subject of posthumous gamete retrieval and preservation and comes to the final conclusion:

Posthumous reproduction that separates children from their genetic parents is a destructive practice that subverts the very notion of parenthood. It is unfair to children and undermines the value and meaning of human reproduction. If the welfare of children is taken seriously, uniform state legislation should forbid the use of gametes for posthumous reproduction...
It is unlikely that the subject for recovery of whose gametes a request is being made will have executed a written directive explicitly addressing this matter.

The desire of the surviving partner or family to preserve the lineage by retrieving gametes contrasts with the desires of the subject to control his/her genetic lineage. It is intuitive that no attempt would be made if it were known that it was the expressed wish of the subject that no such attempt be entered into. The difficulty arises when there is no written expression of the subject’s wishes. We must then rely upon the evidence offered by the surviving spouse, partner, and/or family members.

The religious convictions and persuasions of the subject should be honored. For instance, the official position of Roman Catholicism is that procreation outside of conjugal love is prohibited. Jewish tradition is less clear. Muslim tradition prohibits posthumous gamete retrieval. These several examples are given to emphasize the necessity for consideration of religious conviction in this matter.

**The proposed policy for retrieving male or female gametes from dead subjects, comatose persons, persons in persistent vegetative state or brain dead subjects**

Gamete retrieval for preservation and future fertilization may be considered from the above class of subjects only if:

1. The subject or person is 18 years of age or older.
2. Prior written documentation from the donor is available stating that the donor authorizes retrieval under these circumstances. The documentation must also state the name of the adult person who is to be the recipient of the gamete donation.
3. Alternatively, lacking written documentation, gamete retrieval may be considered if at least 1 of the subject’s health care providers, who is not an interested party in the gamete retrieval, can provide documentation in the medical record of the donor’s authorization for posthumous gamete retrieval. This documentation must include the name of the person who is the intended recipient.
4. If the requirements listed in #2 or #3 are not fulfilled, then judicial authorization for gamete retrieval will be required.
5. Every effort must be made to respect the religious and traditionalist directives and beliefs of the subject.
6. There should be a mandatory 1-year quarantine of the sperm, and the spouse would have to undergo psychological evaluation and counseling prior to release of the gametes.

The person requesting gamete retrieval will be responsible for contacting and contracting for the appropriate gathering, preparation, and storage facility for the gametes. That party shall also be responsible for all charges, fees, and expenses incurred during execution of the procedure and future storage.

Storage and release of any gametes collected by the University of Virginia Health Sciences Center will be the responsibility of the storage facility authorized by the person requesting the retrieval and will not be the responsibility of the University of Virginia Health Sciences Center.

Every effort will be made to honor the wishes of the gamete donor; however, in the case of conflict between interested parties, parties involved will be advised to seek judicial resolution.

No University of Virginia Health Sciences professional will be forced to participate in gamete retrieval if doing so would violate her or his religious, professional, or personal integrity.

Prior to gamete retrieval, the person authorizing the procedure will sign a consent form acknowledging understanding of their responsibilities and the limits of responsibility for the University of Virginia Health Sciences Center.

We thank JoAnn V. Pinkerton, MD, for her critical and editorial assistance in preparing this manuscript and John Schnorr, MD, for his insight and comments on the current status of techniques for maturing ovarian follicles to mature ova.

**REFERENCES**

to abide by the quarantine period for the gametes for acute situations or bypass that and, if we do, are we going hepatitis B, hepatitis C, gonorrhea-chlamydia in these place? In other words, should we be screening for HIV, screening for normal gamete donors that is currently in your concerns about the sexually transmitted disease Would that change your policy?

cess are asking for this, and they have written consent. if they have no marriage partner, the parents of the de-
examples used a deceased marital partner. What happens

would advise a marital relationship defining the next of

several of the protocols, and in some states there are legislatively mandated lists. A quarantine pe-
period of 6 months followed by a second screen for the same tests is typical for living patients with longterm storage goals. However, there are circumstances where the quarantine must be abandoned. Postmortem procurement of sperm is the prime example. It is important to note that not all test kits are approved for use with postmortem tissues, and this detail should be addressed in advance.

There is a separate issue that comes into play with in-
fectious diseases and cryopreservation. There is a debate concerning the possibility that viruses can migrate be-
tween samples that are submerged in liquid nitrogen. It is common practice to store the samples from hundreds of patients in a common bath. Although the case that brought this to light involves a gross contamination arising from a broken blood bag, there is still a fear that some vials and straws used to store semen may also permit cross-contamination when submerged. It has been our practice to use the infectious disease screen to segregate positive-testing samples into a special liquid nitrogen tank in which the vials or straws are suspended in cold vapor rather than submerged directly in the liquid.1-4

Answer to Dr. Nunley: This poses a real dilemma. In preparing this policy, we reviewed the policies in place at many other institutions and the opinions expressed by commentators. I would feel safe in reporting that most would advise a marital relationship defining the next of kin as a husband or wife. If there is no marital partner and the parents are asking for the retrieval of gametes for some plan of procreation, I would be very hesitant to participate. Procreation is still best nurtured within the loving bond of the familial unit whenever possible or, at least, with one partner of that union. I would like to quote from an article by Drs. Goettenger and Nagler:

Clearly, there is no situation in which the parents’ request for sperm acquisition should be honored!

This prohibition should stand even if there is a written will or consent by the deceased to do so, both for genetic or ethical reasons.7