Staying Connected: Successful Strategies For Patient Retention In Male Fertility Preservation For Cancer Patients

Hailie N. Ciomperlik M.D., Megan V. Alexander M.D., Luwam Ghidei, M.D., Laura Detti, M.D., Larry L. Lipshultz, M.D., Laurie J. McKenzie, M.D

Introduction/Background

Cancer and Infertility

- Approximately 1 in 3 cancer patients are of reproductive age at the time of diagnosis
- Gonadotoxic treatments can permanently impair spermatogenesis, making fertility preservation prior to treatment a critical opportunity

Sperm Cryopreservation

- Sperm banking before treatment is the gold-standard fertility preservation strategy for male patients
- Despite being a well-established intervention, many patients fail to return for their specimens or disengage from long-term follow-up

The Retention Challenge

- Patients living with cancer face significant barriers to follow-up
- High rates of unclaimed cryopreserved specimens represent missed reproductive opportunities

Research Question/Hypothesis

To evaluate factors contributing to the rates of unclaimed cryopreserved sperm samples among oncology patients, identifying best practices that enhance patient retention and opportunities for utilization.

Methods

Study Design

- Retrospective cohort study at a single academic institution

Inclusion Criteria

- Male patients who underwent sperm cryopreservation for a cancer indication
- Banked between January 2010 and October 2020

Definitions

- Loss to follow-up (LTFU): inability to contact a patient after three documented attempts over a 12-month period
- Deceased patients were analyzed separately

Data Collected

- Demographic characteristics, cancer diagnoses, specimen utilization rates, and length of follow-up
- Institutional clinic practices reviewed to evaluate retention strategies

Results

Patient Population

- 725 patients underwent sperm banking for a cancer indication during the 10-year study period (January 2010 – October 2020)
- Cancer diagnoses included hematologic malignancies, testicular cancer, and other solid tumors

Loss to Follow-Up Rates

- Overall LTFU: **3.03%**
- LTFU excluding deceased patients: **3.14%**
- These rates are remarkably low for an oncology-based fertility preservation population

Specimen Utilization

- 76.15% of patients continued active banking at time of analysis
- 7.5% utilized specimens via IVF or IUI
- 13.65% requested specimen destruction
- 3.02% lost to follow-up with unclaimed specimens

Key Retention Factors Identified

- Consent forms requiring **multiple secondary contacts** (phone numbers and email addresses) were the primary driver of low LTFU rates
- Integration of a **user-friendly patient portal** allowed patients to access results and update contact information independently
- Low LTFU in the deceased patient subgroup reflects effective communication with next of kin

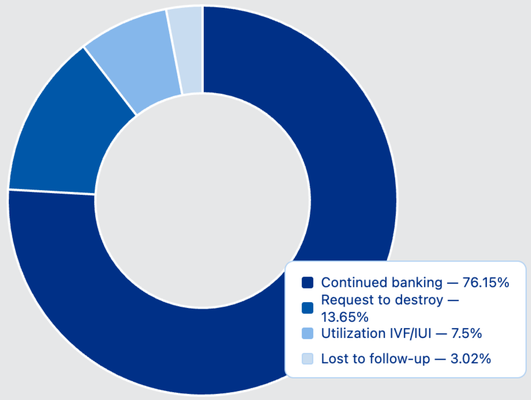
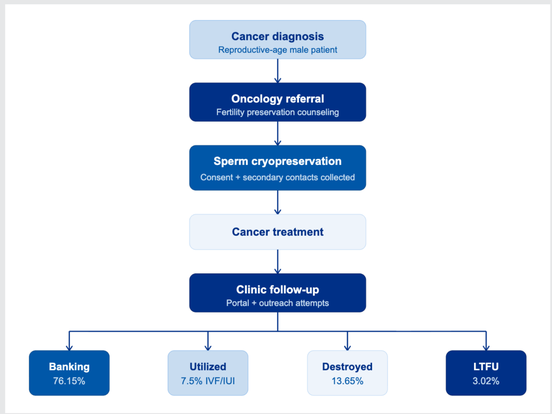


Figure 1: Disposition of Cryopreserved Sperm Specimens



Flowchart 1: Proposed flowchart of patient sperm utilization

Discussion

- A 3.03% overall LTFU rate represents a meaningful benchmark
- Many fertility clinics struggle with patient engagement in this population due to the demands of cancer treatment
- The low loss to follow up observed at our institution is attributable to systematic, low-cost strategies embedded in the clinical workflow
- Requiring multiple contact points at the time of consent ensures that clinics retain the ability to reach patients even as life circumstances change
- The patient portal empowers patients with autonomy and reduces the need for phone-based follow-up

Conclusion

- Proactive institutional systems can achieve low loss to follow up rates, even in a vulnerable population with high treatment burden
- Comprehensive consent forms requiring **multiple secondary contacts** are an impactful retention strategy
- User-friendly **digital patient portals** enhance patient autonomy and ensure contact information remains current
- These low-cost, scalable strategies should be adopted broadly at fertility preservation programs serving cancer patients to prevent missed reproductive opportunities

References

- Tran KTD, Valli-Pulaski H, Colvin A, Orwig KE. Male fertility preservation and restoration strategies for patients undergoing gonadotoxic therapies. Biol Reprod. 2022;107:382-405.Loren AW, et al. Fertility Preservation for Patients with Cancer. J Clin Oncol. 2013;31(19):2500-2510.
- Nangia AK, Krieg SA, Kim SS. Clinical guidelines for sperm cryopreservation in cancer patients. Fertil Steril. 2013;100:1203-1209. 10.1016/j.fertnstert.2013.08.054
- Oktay K, Harvey BE, Partridge AH, et al. Fertility preservation in patients with cancer: ASCO clinical practice guideline update. J Clin Oncol. 2018;36:1994-2001. 10.1200/JCO.2018.78.1914
- Ethics Committee of the American Society for Reproductive Medicine. Fertility preservation and reproduction in patients facing gonadotoxic therapies: an ethics committee opinion. Fertil Steril. 2018;110:380-386. 10.1016/j.fertnstert.2018.05.034
- Shankara-Narayana N, Di Pierro I, Fennell C, et al. Sperm cryopreservation prior to gonadotoxic treatment: experience of a single academic centre over 4 decades. Hum Reprod. 2019;34:795-803.