

INTERNSHIP REPORT

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in

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by

Ayan Lahiri

Under the Supervision and Guidance of

Mr. Sudeep Nettur
General Manager
(NOVA IVF Fertility)

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INTRODUCTION:

- My internship at NOVA IVF Fertility began on April 05'2021 as a Management Intern on an internal project of NOVA IVF Fertility.
- I worked on embryo freezing project (cryopreservation) and undertook projects like embryo renewal billing variance.
- Later, I was assigned with another ongoing project of the organization i.e., the cost optimization for materials and the consumables used in the IVF process. The study most aims to increase the efficiency of the IVF clinic by reducing the cost.
- I have undergone various trainings by the organization such as project management etc.

OBJECTIVES OF INTERNSHIP:

- To apply the academic knowledge of operations management to perform the task assigned to me.
- To understand the operational framework of the organization.
- To undergo basic trainings required for the daily operations in the organization.

ORGANISATIONAL PROFILE:

Nova IVF Fertility (NIF) is the among the largest service providers in fertility treatment. NIF aims to provide advanced Assisted Reproductive Technology (ART) in India on par as to what is available globally. While India has seen a significant rise in the number of patients opting for infertility treatments, the numbers are still abysmally low compared to the couples actually requiring medical treatment. One of the major reasons for this is the lack of awareness. People need to be made aware of the basic concept that infertility is a disease that needs to be addressed medically. NIF was launched with the commitment to offer standardised and ethical infertility treatment, as well as addressing the urgent need for an organised institutional provider for fertility treatment.

In addition to providing core procedures such as IUI, IVF and andrology services, NIF offers several state-of-the-art technologies such as vitrification for preserving embryos and eggs, embryoscope and ERA (Endometrial Receptor Array) to find out the timing of the uterus capacity to accept embryos. All these procedures significantly improve the chances of a pregnancy following IVF and ICSI, even in patients who have had multiple failures previously.

NIF also offers an advanced techniques such as IMSI (intracytoplasmic morphologically selected sperm injection) and ICSI (intracytoplasmic sperm injection), where the embryologist carries out the fertilisation of the oocytes (egg) using an extremely high-powered microscope to select the sperm cells with the best morphological quality. With the vast international expertise, NIF offers the same exceptional standard of processes, protocols, and policies in India.

SERVICES PROVIDED BY ORGANIZATION:

1. In Vitro Fertilisation (IVF)

IVF refers to a procedure where the woman's eggs are removed from her ovaries and fertilised with the man's sperm in a laboratory. The embryos formed are then put back into the uterus to achieve a pregnancy.

2. Intra Uterine Insemination (IUI)

IUI is the process of placing processed semen sample containing motile sperms through the cervix into the uterine cavity around the time of ovulation.

3. Intra Cytoplasmic Sperm Injection (ICSI)

Naturally, the fertilisation process involves the penetration of a single sperm from the ejaculate into the egg (called oocyte in scientific terms) released during the menstrual cycle. Said sperm must penetrate the shell of the oocyte (called zona pellucida) to immediately fuse with the female gamete.

Sometimes, either due to physiological deficiencies that may lead to a drastic reduction or absence in the production of gametes or due to poor gamete quality or defects in the interaction, the process of fertilisation can be diminished or even prevented.

ICSI is based on the insertion of a selected sperm into the oocyte, overcoming the limitations that conventional IVF faces with poor semen samples and deficiencies in the interaction between the gametes. Because of this, ICSI has become the most commonly used IVF technique. With the help of an advanced micromanipulation station (including microscope, microinjectors and micropipettes) the sperm has to be individually selected and immobilised. During the microinjection the oocyte has to be held while the sperm is inserted and released inside the inner part of the oocyte. The day after the microinjection, signs of proper fertilisation will be checked in each oocyte.

4. Andrology

Not all cases of childlessness arise due to problems with the woman. In many cases the reason for infertility is due to male infertility issues. This begins with evaluation of factors causing male infertility and male sexual problems such as

- Semen analysis
- Hormonal evaluation
- Doppler ultrasound evaluation for varicocele
- Sperm function tests – DNA fragmentation, HOS test
- Sperm viability testing—MACS (Magnetic Activated Cell Sorting)
- Surgical sperm retrieval by PESA/TESA/TESE/microdissection TESE
- Assessment and medical treatment for male sexual problems

5. Vitrification

Patients who undergo in vitro fertilisation (IVF) may produce several eggs (oocytes) which, if fertilisation takes place, will be developed into embryos. Very often and for very different reasons, one patient may need to freeze (cryopreserve) their oocytes or embryos. Vitrification is an advanced cryopreservation technique for oocytes and embryos that based on the nature of the cryo-protectants used and an extremely fast cooling rate is able to generate a glass-like state preventing the formation of ice crystals during the process. Once stored in liquid nitrogen (-196 degrees Celsius) the cellular activity is essentially brought to a halt, allowing the oocytes/embryos to remain viable indefinitely. When patients decide to attempt a pregnancy with their cryopreserved oocytes/embryos, a reverse process of thawing will be performed whereby the cryo-protectant will be replaced by water rehydrating the cells.

6. Counselling

Infertility is a very emotional experience. The ART treatments and its outcomes can be highly distressing for the couple as well as the family. They recognise various emotions and psycho-social problems faced by such couples and try to resolve them. Services include one mandatory counselling session for IUI and four mandatory sessions for IVF patients.

Services with Mandatory Counselling session for IVF Treatment

- Pre-IVF
- After OPU (Ovum Pick-up)
- Post E.T (Embryo Transfer)
- After their pregnancy test

PROJECT UNDERTAKEN OTHER THAN DISSERTATION:

1. Cost-optimization Project

This project aims to pull down the cost as per the name suggests. In the IVF industry the cost is calculate based on number of OPU (Ovum pickup). This is the ongoing project in the organization which aims to maximize its efficiency by pulling down the cost and hence can increase productivity and revenue. This project looks after the various segments of the process starting from materials and consumables used, tracking of the materials used, emphasizing on those factors which are driving cost higher in the stipulated segment. The auditing processes are carried after extensive research about the utilization process in the IVF industry.

KEY LEARNINGS

- Basics of IVF Industry
- Analysis and Problem-solving technique
- Aspects of cost optimization in IVF industry.
- Secondary Research: Tricks and Tips
- Data interpretation from the MS-Excel as per the industry standard.
- Run a meeting: How to get hold of the MOM (Minutes of Meetings)
- Aspects of Project Management
- Developing different MS-Excel tools and trackers.