# TO STUDY AND ANALYSE, THE SOURCES AND CAUSES OF REVENUE LEAKAGE DURING THE PATIENT JOURNEY AT BIRLA FERTILITY & IVF CENTER SECTOR-14 GURGAON

Dissertation Submitted to

**The IIHMR University, Jaipur**

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Gunjan Raghav

Under the Supervision and Guidance of

Dr. (Col) Mahender Kumar

2023

# TO STUDY AND ANALYSE, THE SOURCES AND CAUSES OF REVENUE LEAKAGE DURING THE PATIENT JOURNEY AT BIRLA FERTILITY & IVF CENTER SECTOR-14 GURGAON

Dissertation Submitted to


**The IIHMR University, Jaipur**

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management/Pharmaceutical Management/Development Management

by

**Gunjan Raghav**

Under the Supervision and Guidance of

Dr. (Col) Mahender Kumar

2023

## DECLARATION BY STUDENT

I hereby declare that this dissertation titled **to study and analyse, the sources and causes of revenue leakage during the patient journey at Birla Fertility & IVF centre sector-14 Gurgaon** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Gunjan Raghav

Date:

# Internship Completion Certification

Birla
Fertility
& IVF

22nd May 2023

**To Whomsoever It May Concern**

This is to certify that **Gunjan Raghav** has successfully completed his internship in the department of Operations. She has been associated with Birla Fertility & IVF from **20th Feb 2023** to **19th May 2023**.

During her tenure, we found her to be sincere and hardworking towards the duties assigned to her.

We wish her success for her future endeavors.

Prerna
Vice President, Human Resources
Birla Fertility and IVF
(A unit of CK Birla Healthcare Pvt. Ltd.)

CK Birla Healthcare Pvt Ltd
Plot No. 77B, First Floor, Sector 18, Gurugram 122015, India
+91 11 41592200 | +91 11 42092198 (Fax) | reachus@ckbhospital.com | www.ckbhospital.com
Registered Office: Birla Tower, 8th Floor, 25 Barakhamba Road, New Delhi- 110001, India | CIN No. U74140DL2014PTC272562

## CERTIFICATE

This is to certify that dissertation titled **to study and analyse, the sources and causes of revenue leakage during the patient journey at Birla Fertility & IVF centre sector-14 Gurgaon** is a record of the research work undertaken by Ms. Gunjan Raghav in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

| | |
|---|---|
| Faculty Guide | School Dean |
| IIHMR University, Jaipur | IIHMR University, Jaipur |
| Date: | Date: |

## ABSTRACT

### Introduction

IVF is a series of clinical process that aims to assist individuals with fertility issues, prevent genetic defects and promote successful pregnancy. IVF is considered the most effective and successful method of assisted reproductive technology available. The process typically involves using the couple's own sperm and eggs or utilizing gametes or embryos from a donor, either identified or anonymous. In instances when a gestational carrier is required, an individual is implanted with an embryo in their uterus. The likelihood of a successful pregnancy through in vitro fertilization (IVF) depends on numerous factors, including the underlying cause of infertility as well as the age of the patient.

Research estimates that since 19789 million children have been born worldwide using the IVF procedure. If one puts things into perspective, IVF has contributed to the creation of the whole population of a megacity like New York. One misconception that deters needy couples from contemplating IVF treatment is the belief that it is unaffordable. However, this perception does not reflect reality, as India offers IVF treatment at a cost comparable with global standards. With rates ranging from USD 2000 to 2500 per cycle, IVF is a feasible and affordable option even for the middle-class demographic in India.

The unexpected and unrecognised loss of revenue in a firm is known as revenue leakage. It can also be defined as a missed opportunity to generate revenue by a hospital or any healthcare organization.

One in five enterprises reported their estimation to be two percent when it comes to revenue leakage. However, these figures are far from reality! According to various experts, regardless of the sector, revenue leakage amounts for up to five percent of realized EBITDA. Hence, Leakage in revenue is significant since it can lead to lost profits in the healthcare industry. A healthcare organisation may prevent wealth loss by proactively addressing these areas by identifying where and how leaks occur.

### Objectives

Objectives of the study are:

- To determine and analyse the sources of revenue leakage at Birla Fertility &IVF centre through a patient tracking system within 3 months of time.
- To determine the causes of revenue leakage at Birla Fertility &IVF centre and suggest ways to minimize them.
- To determine the average revenue per ovum pickup (ARPU) at Birla Fertility &IVF centre.

## Methodology

A descriptive and analytical study was conducted at Birla Fertility & IVF centre- Gurugram, wherein all the patients (new and follow-ups) visiting the centre were a part of the study. Patient's prescription, both OPD and IPD were scanned manually to check whether all the services advised by the consultant have been taken in-house or not. Services that were scanned included pharmacy and diagnostics. Once a miss or revenue leakage was detected, it was taken into consideration. Likewise, data was collected in person being present at the centre. Once the data was collected RCA- CAPA was done, and solutions were proposed and implemented at the centre.

## Key Results

We could potentially identify and analyse the sources of revenue leakage at the centre. Also, we could find out the probable causes of revenue leakage. The proposed solutions have been discussed with the management and have successfully been implemented which probably have yielded positive results in reducing the revenue leakage at the same time increase pharmacy and overall revenue at the centre.

## ACKNOWLEDGEMENT

This dissertation report titled **to study and analyse, the sources and causes of revenue leakage during the patient journey at Birla Fertility & IVF centre sector-14 Gurgaon** is the culmination of keen observations and hard work. In accordance with my organisation's data privacy and confidentiality agreements, I'm unable to reproduce any patient specific information. Therefore, disclosing any name and MRN's is not done in the study.

**Inspiration and motivation have always played a key role in the success of any venture.**

I'm blessed to have encouraging mentor **Dr Col Mahendra Kumar**, who has been the driving force of this project.

I'm grateful for all the support I received from my operation's team at the corporate office and colleagues at centre, without their support this project could not be successfully completed. I would like to extend special thanks to my organisation mentor **Mr. Davinder Singh Rawat** for constant support and guidance.

I would also like to thank **Mrs. Sushma** and **Ms. Jaya** for always understanding and considering my viewpoints. They have been a constant driving force of motivation for me throughout this journey.

A special mention and gratitude to **Ms. Meghna Rathi** who has always been there to guide me through her experience and wisdom being a senior and a friend.

Last but not the least with due regards I would like to express my gratitude to my parents who have always been my support system.

# Table of contents

# List of figures

# Abbreviations

- IVF: In Vitro Fertilization
- PGD: Pre-implantation Genetic Diagnostic
- OHSS: Ovarian Hyper Stimulation Syndrome
- ART: Assisted Reproductive Technology
- OPD: Out-patient Department
- IPD: In-patient Department
- ARPU: Average Revenue per Ovum-Pickup
- KPI: Key Performance Indicator
- FET: Frozen Embryo Transfer
- RCA- Root cause analysis
- CAPA- Corrective action Preventive action
- EBITDA: Earnings before Interest, Tax, Depreciation and Amortisation
- MRN: Medical Record Number

# Chapter 1: Introduction

### Invitro Fertilisation

The procedure of combining a “Female’s patient egg with a man's sperm” in a lab dish is known as in vitro fertilization. Outside the body is a term used to describe in vitro. Once fertilised, the sperm has attached to and entered the egg

### Description

Normally, a female patient body is where the egg and sperm are fertilised. 9 months will pass until delivery if the fertilized egg stays connected to the womb's lining and continues to develop. Natural or unaided conception is this procedure.

IVF belongs to the category assisted reproductive technology (ART). This suggests that certain medical treatments are carried out to assist a woman in conceiving a child. This procedure is generally used when more affordable, alternative reproductive therapies have failed. IVF involves five fundamental processes:

Step 1: Super ovulation is another name for stimulation.

- The patient is given “medicines known as fertility medicines” to increase egg production.
- Conventionally, a healthy lady produces 1 egg during a period of 1 month. Fertility drugs helps the ovaries for ovulation of multiple eggs.
- Throughout this stage, the patient “will undergo regular transvaginal ultrasounds to check on her ovaries and blood tests to determine her hormone levels”
- Throughout this step, the women must have to undergo “Transvaginal Ultrasound” to inspect the ovaries and blood check-ups to examine hormone levels.

Step 2: Egg Retrieval

- It is minor procedure known as follicular aspiration. It’s done to take out the eggs from the woman's ovary.
- The doctor's clinic is where this procedure is carried out. The woman will receive medications, so she won't experience any discomfort throughout the process. With the help of USG report, professional will insert a thin needle into the ovary through vagina. The needle is attached with a suction tool which will help in pulling the egg out of ovary.
- Same procedure is done with the second ovary.

- “In some cases, a pelvic laparoscopy might be used to pull out the eggs”.

Step 3: Insemination and fertilization

- “The man's sperm is inserted with the female’s eggs. This process is known as insemination”
- Following that, sperm and eggs are put in a controlled atmosphere. The sperm typically transfuse an egg and fertilises it a few hours after insemination.
- “If the physician believes there is little probability of fertilisation, the sperm may be put straight into the egg. Intracytoplasmic sperm injection (ICSI) is what this is known as.”

Step 4: Embryo culture

- To create an embryo, the fertilised egg divides into two fresh eggs. To guarantee appropriate growth, the embryo will be often examined by laboratory personnel. After around 5 days, a normal embryo contains a large number of cells that are actively dividing.
- Pre-implantation genetic diagnostic (PGD) is an option for couples who have a high chance of passing on a genetic (hereditary) problem to their unborn child. Typically, the surgery is carried out 3 to 5 days following fertilisation. Laboratory researchers collect one or more cells from each embryo, and then test the sample for certain genetic abnormalities.
- The “American Society for Reproductive Medicine” asserts that PGD can assist parents in selecting which embryos to implant. As a result, there is a lower likelihood of transferring a problem to a kid. The method is divisive and not available at all centres.

Step 5: Embryo transfer

- A woman's womb receives the embryos 3-5 days after the egg is removed and fertilised.
- The procedure is performed in front of the lady at the doctor's office. A thin tube (catheter) is “inserted by the doctor into the woman's vagina, up her cervix, and into her womb. Pregnancy happens when an embryo matures and attaches to (implants in) the womb's lining”
- Twins, triplets, or more births are more likely when several embryos are implanted at once. The exact number of transplanted embryos is a complex issue that depends on a number of variables, mainly the age of the woman.
- Unused embryos can be given or saved to be implanted later.

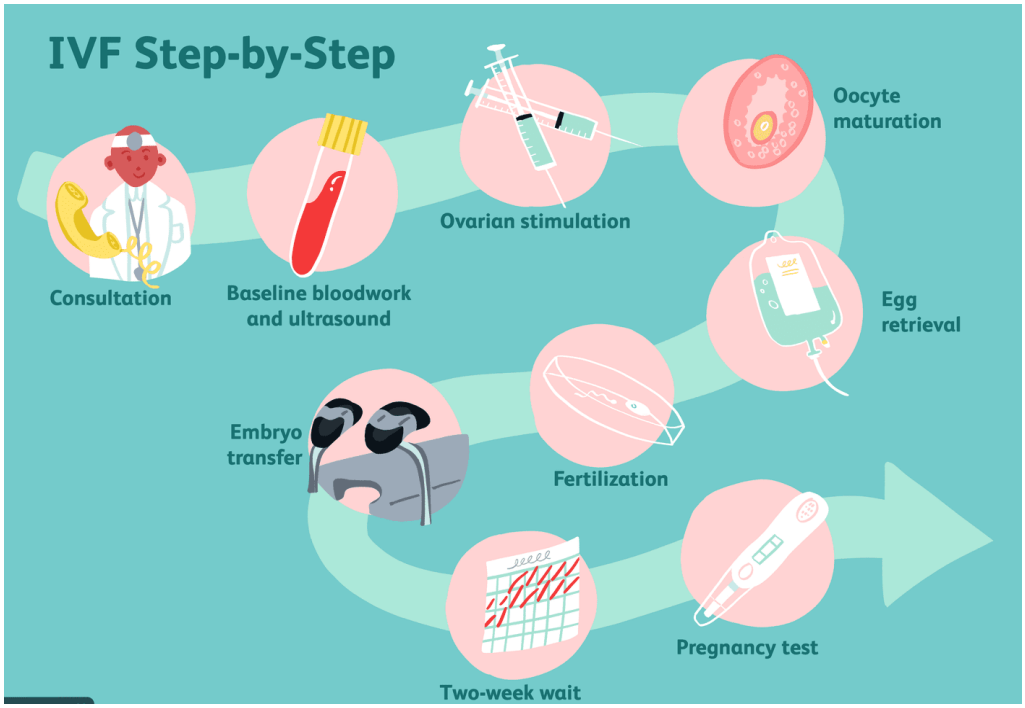



*Figure 1- IVF procedure*

**"Why is the procedure performed"?**

IVF is used to help a woman become pregnant. It is utilised to treat a number of "infertility" problems, including:

- The woman's old age (advanced maternal age)
- Endometriosis
- Infertility caused by the male factor, such as sperm blockage and a decline in sperm count.
- Unexplained infertility

**Risks associated with the procedure:**

IVF requires a significant investment of time, money, and mental and physical effort.
Stress and sadness are common among infertility-affected couples. Bloating, stomach discomfort, mood changes, headaches, and other adverse effects are possible in women using fertility medications. Having several IVF shots might bruise you.

Ovarian hyperstimulation syndrome (OHSS), a rare condition, may be brought on by fertility medicines. In this condition, the chest and abdomen fill up with fluid. Among the signs and symptoms include pain in abdomen, rapid weight gain, decreased urine production despite consuming a lot of water, nausea, vomiting, and shortness of breath. Bed rest is used to treat mild instances. In more severe situations, the fluid needs to be drained using a needle, and hospitalisation may be necessary.

Egg harvesting has several risks, including anaesthesia-related side effects, haemorrhage, infection, and harm to the ovaries' surrounding tissues, such as the gut and bladder.

When more than one embryo is inserted into the womb, the possibility of multiple pregnancies exists. Premature birth and low birth weight are more likely when more than one baby is being carried simultaneously. (However, even one IVF-born child is more likely to be premature and have a low birth weight.)

**Post procedure**

The mother may be instructed to relax the rest of the day after the embryo transfer. Unless there is an elevated risk for OHSS, complete bed rest is not required. The next day, most women resume their regular activities.

Progesterone must be administered daily through injections or tablets to IVF patients' partners for 8 to 10 weeks following embryo transfer. The ovaries normally generate progesterone, a hormone that gets the uterine lining ready for an embryo to attach. Progesterone aids in the growth and establishment of an implanted embryo in the uterus. After becoming pregnant, a patient may continue taking progesterone for another 8 to 12 weeks. Early in a pregnancy, too little progesterone might cause a miscarriage.

**Prognosis**

- Statistics must be carefully examined because they differ from clinic to clinic. However, because patient populations vary from clinic to clinic, reported pregnancy rates cannot be used to conclusively compare one clinic to another.
- Pregnancy rates are a reflection of the proportion of women who utilised IVF to conceive. However, not every pregnancy ends in a live birth.

The live birth rate is a measure of the proportion of pregnancies that result in an infant who is still alive.

Future live birth rates are dependent on several variables, including mother's age, previous live births, and IVF's single embryo transfer. One reason why success rates have altered over time is that single embryo transfers are being used more frequently. To lower the possibility of 2 pregnancies, which have a higher risk for problems than singleton pregnancies, IVF facilities have emphasised single embryo transfers. Un-transferred embryos may be frozen and stored. Frozen embryo transfer cycles (FET) are the procedures used to thaw and transfer the frozen embryos.

**Revenue leakage**

Unexpected and unrecognised loss of revenue in a firm is known as revenue leakage. It can also be defined as a missed opportunity to generate revenue by a hospital or any healthcare organization. Revenue leakage is frequently caused by incorrect pricing, a failure to register client changes, and manual processing.

One in five enterprises reported their estimation to be two percent when it comes to revenue leakage. However, these figures are far from reality! According to various experts, regardless of the sector, revenue leakage amounts for up to five percent of realized EBITDA. Hence, Revenue leakage is significant since it leads to lost profits in the healthcare industry. A healthcare organisation may prevent wealth loss by proactively addressing these areas by identifying where and how leaks occur.

The phrase "revenue leakage" refers to situations where a medical practitioner treats and serves a patient but does not get payment for their work. Accounts receivable, or unpaid payments for care and services rendered, frequently cause revenue leakage when they are neglected over a lengthy period of time.

Healthcare providers are less likely to receive payment—even partially—the longer an account receivable (AR) goes unpaid. Providers should only anticipate receiving ten cents of every dollar in reimbursement if the AR cycle is greater than 120 days.

There is no one solution that can address the causes of leakage because the procedures utilised by clinicians, patients, or payors may be at fault. However, “a comprehensive strategy or outsourcing to a company that specialises in revenue cycle management (RCM) can minimise revenue loss and the ensuing financial impact”

**What kind of revenue opportunity do these leaks offer to the providers?**

Healthcare revenue leaks can come from a variety of places, but the effects are always the same: slowed growth, missed goals, and monetary losses. Instead of dealing with the consequences of revenue leakage, organization should proactively enhance their documentation procedures to avoid such problems.

**Leading Causes of Healthcare Revenue Leakage**

Numerous factors may contribute to revenue leakage, but figuring out the main ones enables healthcare providers to discover remedies. Acc. to Effy, a company that uses big data analysis for healthcare companies, there are 10 primary causes of income leakage:

- Incomplete registration information
- Without payor approval before providing care
- Improper registration of treatment-related materials
- Checking insurance coverage incorrectly when taking a patient in
- Incorrect or insufficient medical procedure documentation
- Billing mistakes
- Payor-provider agreement mistake
- Obtaining medical care without insurance
- Refusals to compensate payors
- Errors or delays while codifying claim filing procedures

**What can be done to stop revenue leakage?**

Healthcare providers can rely on the following four main strategies to assist them reduce or stop revenue leakage:

- Process improvement
- Price Tracking
- "Big data" analytics
- Outsourcing revenue and AR cycle management to other companies

Process improvement

Even before the patient's revenue cycle starts can there be incidents that result in revenue leakage. Providers run the risk of payors rejecting claims immediately away if staff members enter patient and health insurance information inaccurately. Making errors when adding line items for services provided and equipment utilised to claims further increases the likelihood that a claim will be denied.

Follow-Ups on AR

Providers must pay to remind payers and patients of unpaid bills. The enhancement of processes for tracking ARs includes techniques like

- Before the patient's initial appointment, get accurate information about their personal and insurance coverage and confirm their eligibility.
- Call patients to remind them of their appointments and let them know what their anticipated fees are in advance.

- Stress to front desk employees the necessity of collecting patient co-payments right away after care.
- Remove the AR ageing brackets from statements, as they give patients the impression that they can delay payments.
- Prior to deciding to use phone calls, mail no more than two notices.
- Run monthly reports on ageing ARs and compare them to earlier years.

Big Data Analysis

Large data sets that have been compiled from several sources and indicate trends and patterns but are too complicated to be handled by a conventional computer are referred to as "big data." Providers can utilise big data analytics to identify errors that result in income leakage and discover new methods of payment.

Big data analytics enables service providers to compile reports highlighting problems like:

- Inaccurate insurance data
- Payor reimbursement adjustments and underpayments for comparable services
- Consistent claim denial causes, such as incorrect codes

Big data analytics has assisted providers in increasing revenue by 30% while reducing costs by 10%.

# Research question

What are sources and causes of revenue leakages at the Birla Fertility & IVF centre and what are the probable ways to minimize them?

**Purpose of research**

Revenue leakage may occur throughout the patient journey at various stages of the treatment and when summed may result in significant amount.

In the past 2-3 months there has been a dip in patient conversion rates at the BFI centre and hence, there was a need of root-cause analysis of the same. Revenue leakage was one of the probable causes of the decrease in revenue generated. Hence there was a significant need to analyse what are sources and causes of revenue leakages at the Birla Fertility & IVF centre and what are the probable ways to minimize them?

This study will help in tracking revenues generated by various services and identify ways to improve them. This will help improvising and enhancing the patient journey and satisfaction on a larger scale.

# Objectives of the study

- To determine and analyse the sources of revenue leakage at Birla Fertility &IVF centre through a patient tracking system within 3 months of time.
- To determine the causes of revenue leakage at Birla Fertility &IVF centre and suggest ways to minimize them.
- To determine the average revenue per ovum pickup at Birla Fertility &IVF centre.

# Chapter 2: Review of Literature

| Authors (Year) | Study Location | Sample Size | Sampling Technique | Salient Features |
|---|---|---|---|---|
| Senior Director of Revenue Integrity at R1 RCM, Johnny Pezzuto | United States | Secondary Research (0) | Literature Review of various research papers | The study identified four universal errors: 1) limiting revenue recovery to rejections and underpayments; 2) managing payer contracts in isolation; 3) relying too heavily on one source for leakage discovery; and 4) failing to invest in a long-term solution. Additionally, the study identified the significant advantages of preventing income leakage and recommended R1's income Integrity Solutions. |
| Baljit Singh, MTatva (July 13, 2016) | India | Secondary Research (0) | Literature review of various research papers | The researcher determined through an analysis of several study publications that the average OP to IP Conversions in metro cities are 13%, 15%, and 18%, respectively. According on the speciality and month of the year, the typical recommended tests in OPD in hospitals range from 20% to up to 50%. He noted the normal hospital patient flow, income loss, and the need to detect leakage. Then a leakage reduction strategy was suggested. He offered a two-pronged strategy using Health PIE, the fatal answer. |
| Alcidion Corporation report: "Patient complexity- the key to reducing revenue leakage in private hospitals" (2017) | Australia | Report | Whitepaper | The whitepaper includes an introduction of current fund billing procedures, information on the significance of patient complexity, strategies for maximising private hospital data, benefits and drawbacks of patient complexity understanding, implications, and a summary. One of the main variables the author found for reducing |

| | | | | |
|---|---|---|---|---|
| | | | | revenue leakage in private hospitals is patient complexity. |
| Emma Bardin, About Healthcare (March 16, 2022) | Minnesota | 138 healthcare executives | Lenient Sampling technique | ”In order to analyse the situation of patients departing for other healthcare systems, their motivations for doing so, and what is being done to stop the leaking, About Healthcare issued their annual patient leakage and keeping report that polled 138 healthcare executives. The researcher reported that 62% of hospitals actively train staff on how to keep patients and prevent them from leaving for other healthcare systems, while 41% of healthcare systems worked hard to reduce the number of patients lost in the previous five years, and 60% are those who actively working to reduce leakage saw results after two years” |
| Celeste Sauls, University of the Witwatersrand (June 2016) | Johannesburg, South Africa | A hospital with 347 govt. approved beds & daily medical intake of 45 patients/day. | Simple random sampling | Over the course of the research period (January 2011 through June 2014), 32,368 packets of medications totaling 68 distinct ATC classes expired. The most classes that expired were those used to treat diabetic mellitus (9%, n=2856), anti-epilptics (7%, n=2332), and antibacterials for systemic use (16%, n=5067) and antivirls for systmic use (15%, n=4970). Even though just 1% (n=337) of the muscle relaxants were out-of-date, this class was more expensive than 10% of the time.<br><br>The EML contained more than 80% of the expired medications, with antibacterials and antivirals for systemic use having the greatest rates of expiration (16%, n=5067 and 15%, n=4970, respectively). Additionally, injections made up more than 20% of the medications, |

| | | | | |
|---|---|---|---|---|
| | | | | costing the most per unit. nearly the course of the research, Ofloxacin injectable accounted for nearly 10% (R92 507) of the medications that went bad, folowed by Dantrolne sodium for infusiion (9%, R82 848) and Acetylcysteine injectable (7%, R59 763). |
| Public clinical centre Ali Darvishi, Reza Goudarzi, Viktoria Habib Zadeh, Afzalipour, and private infertility clinic Najmiyeh, Kerman (2020 Jul 14) | Kerman and Isfahan, Iran | 638 | Simple Random Sampling | "The costs of one cycle of IUI and IVF treatments were 19,561,140 and 60897610 IRR, respectively, according to analytical results, while the corresponding WTP was 15,941,061 and 29535410 IRR. This showed that the WTP was significantly lower than the actual costs of one cycle of IUI and IVF and revealed a lack of positive net benefits as it came from NPV and BCR results.<br>The average WTP for one IVF cycle ranged from $6135 to $13,561 according to the findings of a study done by Settumba et al. (2018) in Australia, while the average WTP for one year of IVF treatment ranged from $17,080 to $31,006.<br>The study's findings demonstrated that, from the social perspective of Iranians, the real costs of two advanced infertility treatments outweighed their benefits. The most significant economic factors in this regard included low average expected income and the relatively high costs of these ART treatments" |

# Chapter 3: Methodology

- **Study design:** Cross-sectional analytical study
- **Study location:** Sector 14 of Gurgaon's Birla Fertility & IVF Centre will be the site of the study's operations.
- **Study population:**
  - **Inclusion criteria:** All the patients registered at Gurgaon sector-14 BFI centre.
  - **Exclusion criteria:** Patients of feeder centres.
  - **Study tools:** Patient tracker system on Excel and a questionnaire (Patient feedback for those who do not avail inhouse services).

- **Duration of the study**: 3 Months (from 20th February 2023- 19th May 2023)

- **Sample size: 175 patients**

- **Sampling techniques*:*** Simple random sampling.

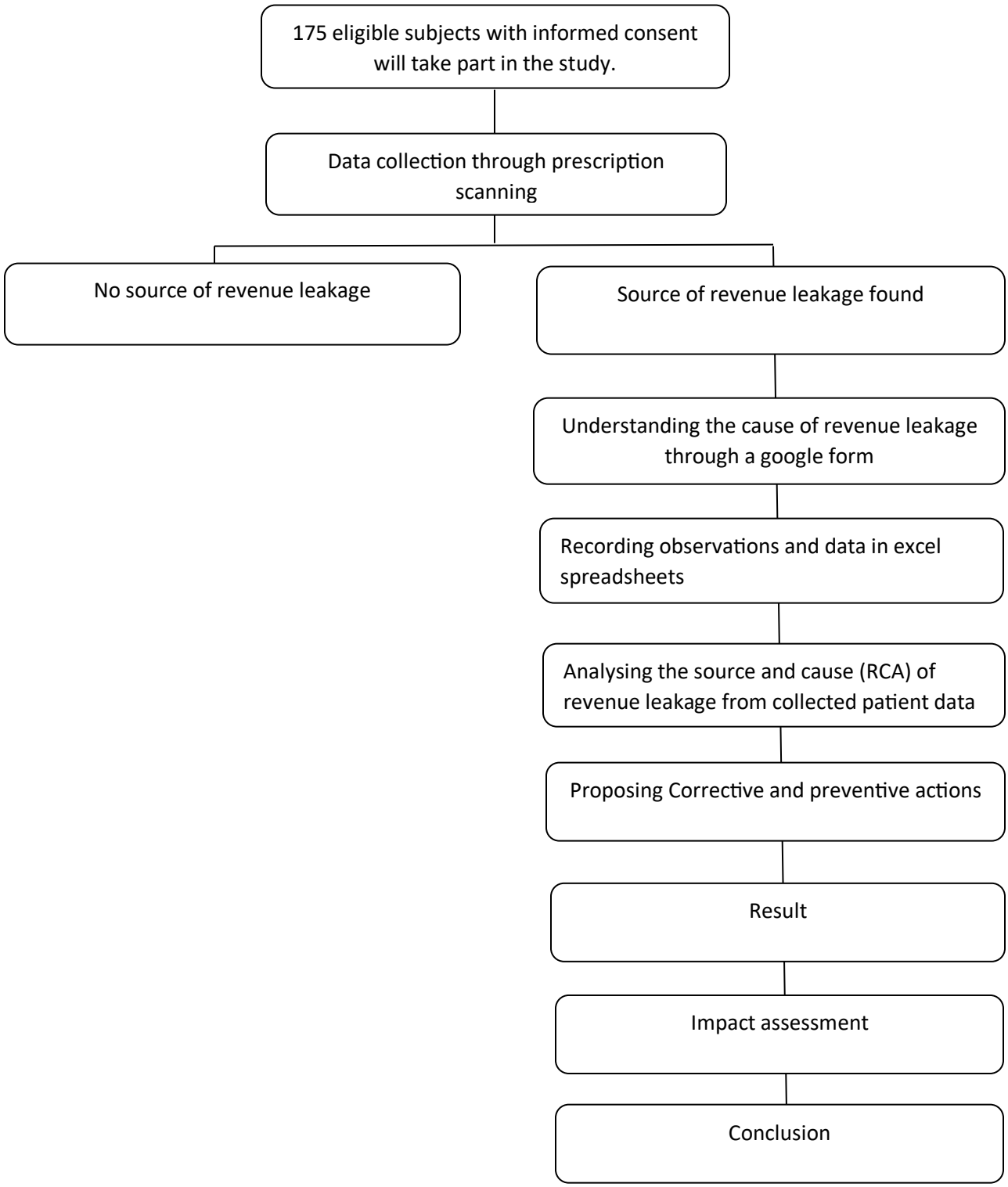
- **Data collecting process:** At the centre, all of the data will be manually monitored and gathered using Microsoft Excel. A separate questionnaire will be made to analyse the cause of not availing the inhouse services from the centre.

- **Study instruments:**

  - Laptop
  - Questionnaire
  - Notebook and pen

- **Ethical considerations:**
  - Patient's personal details such as name, age, sex, MRN is kept confidential in the study.
  - The participating patients verbally provided their consent after being informed.
  - All the patient's health and treatment related information has been kept confidential as per the organization's policy and ART rules and regulations.

## Flow chart for the procedure of the study



# Chapter 4: Result

A sample size of 175 patients was taken, excluding patients from the feeder centres. When classified 175 patients, 133 were OPD patients and 42 were IPD patients.

Out of 175 patients, 23 patients were tracked who did not avail the in-house services and contributed revenue leakage.

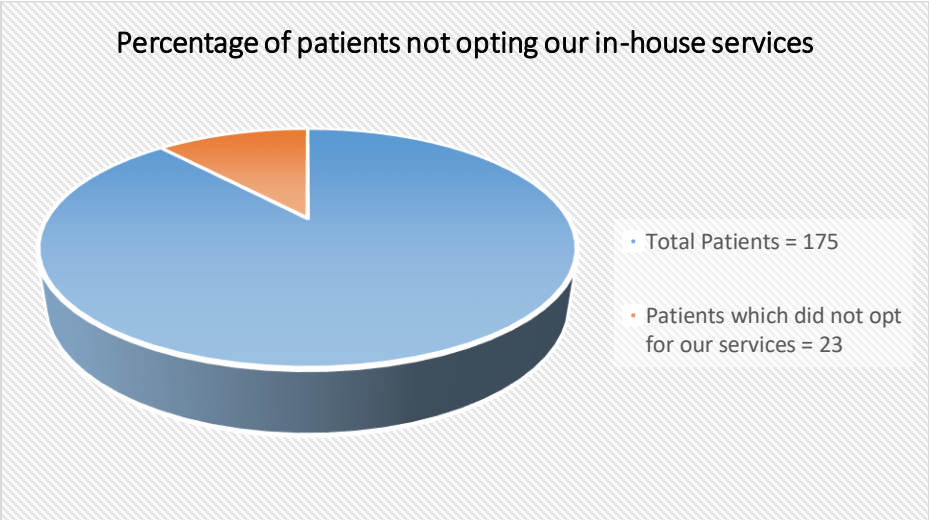



*Figure 2- Percentage of patients availing and not availing in-house services*

Out of theses 23 patients who did not avail the in-house services, as per the source of revenue leakage- 1 patient did not avail diagnostic service, 21 patients did not avail pharmacy services and 1 patient combinedly did not avail both pharmacy and diagnostic services.

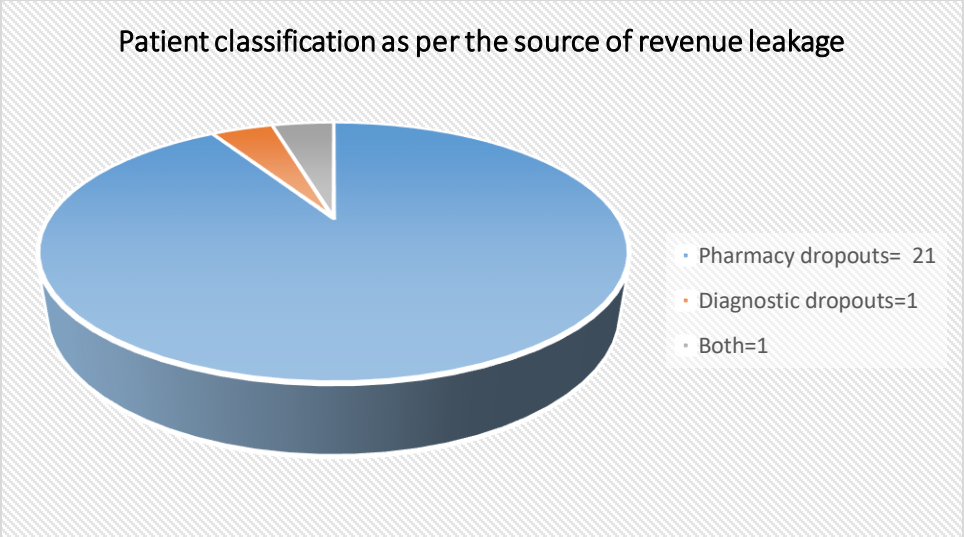



*Figure 3-Patient classification as per the source of revenue leakage*

Total revenue lost was Rs. 141701 out of which pharmacy's share was Rs. 135191 and Diagnostics contributed Rs. 6510.

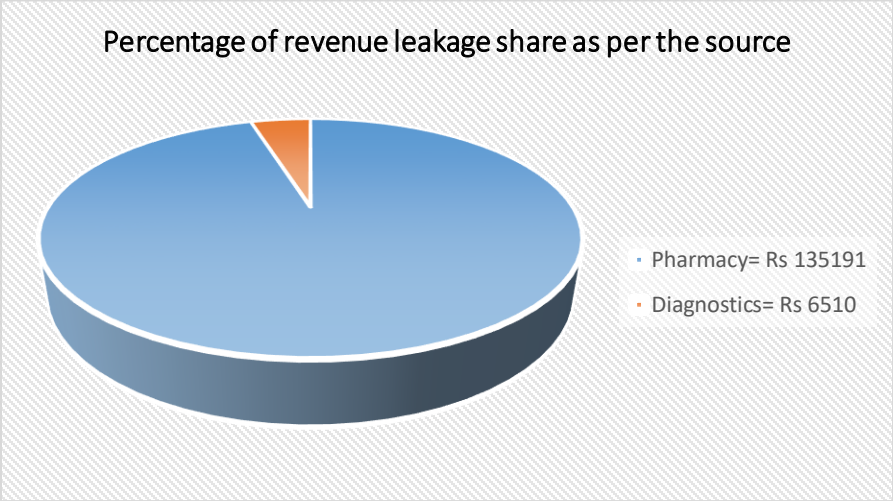



*Figure 4- Percentage of revenue leakage as per the source of revenue leakage*

While understanding the reasons for not availing the in-house services at the BFI centre, patients quoted the following reasons:

- Will buy from our own source due to no discounts available at BFI pharmacy – 17 Patients
- New drug was advised by the consultant which was not available in the pharmacy. 3 patients
- Patient has empanelment with some other healthcare provider- 1 patient
- Drug was not available at the pharmacy due to stock outs- 2 patients

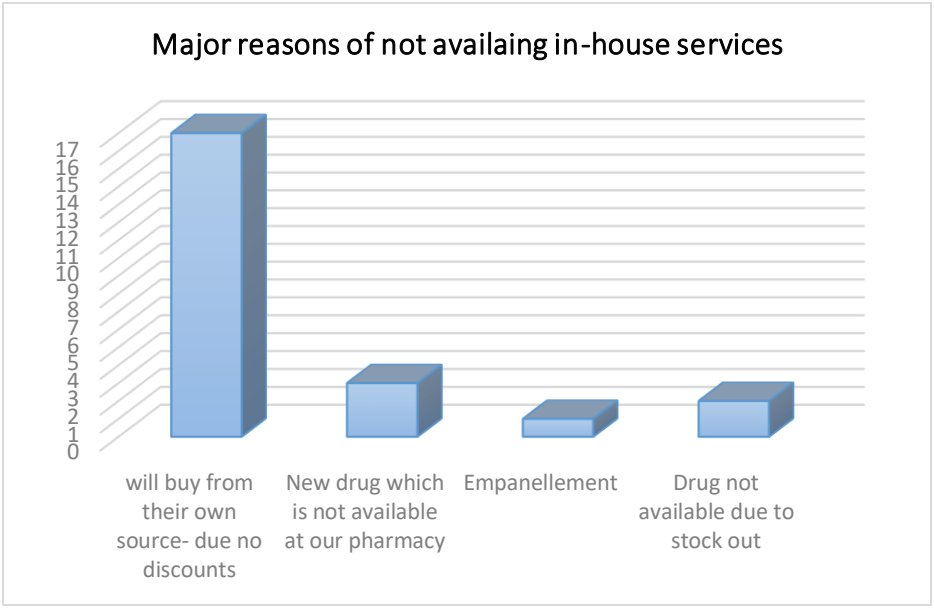



*Figure 5- Classification of reasons by patients for not availing in-house services*

## Stages at which revenue leakage is taking place are:


*Figure 6- Possible stages of revenue leakage during patient journey*

After proposing discounts of 10%, we could convert two potential patients into successful buyers. Total revenue that was prevented from leakage was Rs. 45,457.

*Table 1- Revenue leakage prevented after discount proposition*

| Patient Name | Pharmacy Bill |
|---|---|
| Neha Soni | 30,379 |
| Jyoti Yadav | 15,078 |
| **Total** | **45,457** |

# Root Cause Analysis

## Problem area: Revenue leakage

## Root cause:

After understanding and analysing the problem, I came up with the following root causes that were leading to revenue leakage at the BFI centre.

- **Lack of patient prescription monitoring:**
  There is no patient prescription monitoring at the centres to check weather all the advice written by the doctor have been followed, medicines have been purchased, tests have been done, any consultation charge that needs to be taken, etc.
- **Low discounts proposed**:
  There is a small percentage of discounts proposition as compared to other service providers in the market. Due to this patient tends to avail services such as diagnostics and pharmacy from outside rather than inhouse services available at the centre.
- **Lack of staff promptness:**
  In case of awareness of a patient not availing in-house services, there was a lack of prompt behaviour of the staff to convince the patient and make him understand the benefits of doing so.
- **Lack of visible signage:**
  The presence of pharmacy at the centre is not visibly prominent. A small board of pharmacy is present but due to its position on the door, it gets away from vision of patients when the door is open. This leads to patient being unaware of presence of pharmacy at the centre.
- **Lack of patient guidance:**
  Lack of patient coordination with the staff. Once a patient is out of consultation, staff is not involved in guiding the patient to the next service or ask the patient about consultant's advice.
- **Underbilling:**
  This happens when services excluding the packages are taken by the patient and the billing executive is unaware about them and generates bill without charging for those services.

## Consequences:

- **Missed revenue:**
  The above causes may lead to missed revenue, that could have been billed otherwise. Summing up monthly and yearly this adds up to a decent percentage of missed revenue.
- **Reduction in ARPU (Average revenue per ovum-pickup):**
  This is one of the KPI's of BFI centres performance. Missed or leaked revenue reduces ARPU and decreases the performance of the centre.
- **Low patient satisfaction:**
  When a patient is not properly communicated by the staff it leads to lower P-Sat and negative feedbacks.

- **Loss of opportunity:**
  Every time a patient walks out without availing in-house facility is a loss of opportunity in terms of revenue, patient satisfaction, facility providing,
- **Lesser patient facility awareness:**
  The above stated causes lead to reduced awareness of in-house facilities and their benefits to the patients. Every time a patient visits for follow-up, he will be unaware and will lead to series of loss of revenue.

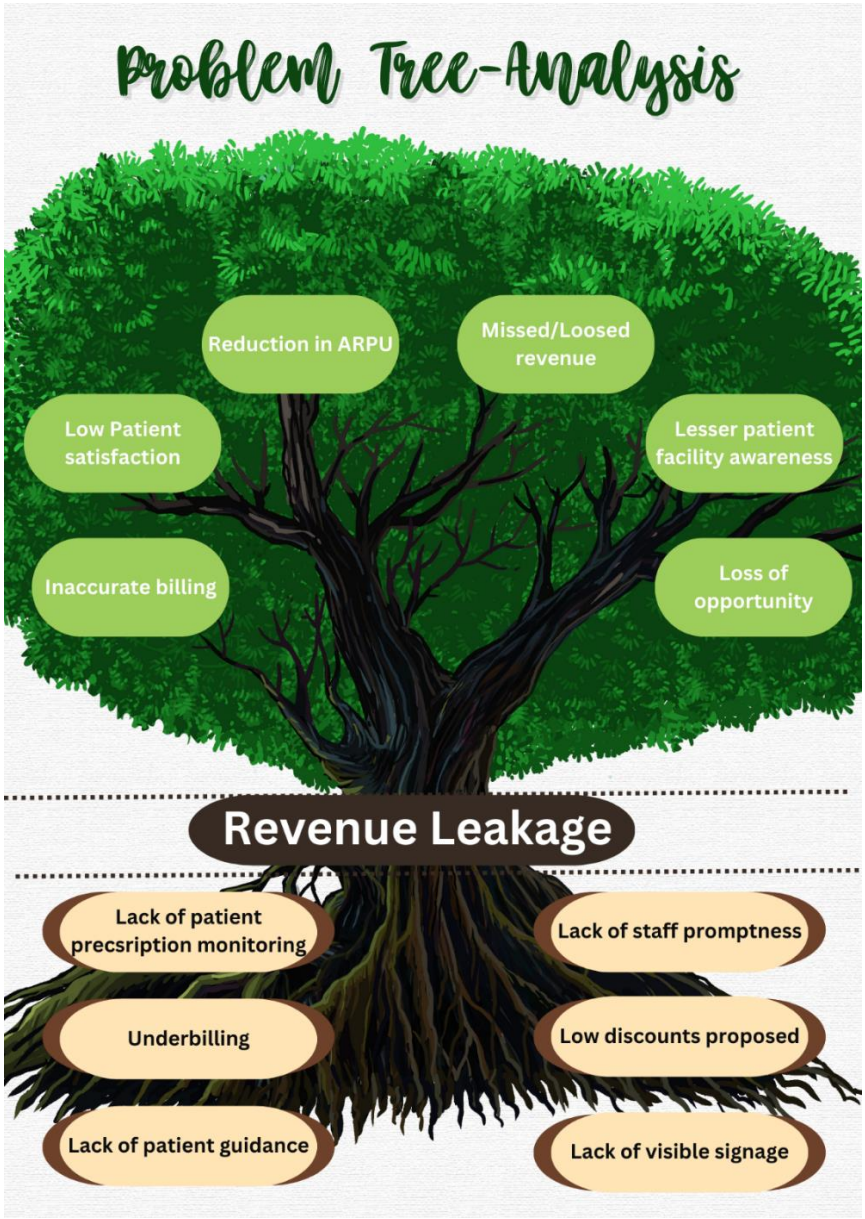



*Figure 7- Root Cause Analysis of revenue leakage at BFI centre*

## Corrective and Preventive Actions:

After a detailed root cause analysis, corrective and preventive actions to reduce revenue leakage have been proposed.

**Corrective actions:**

- **Training of staff:**
  A continuous training program must be initiated for all the staff members to enact promptly when attending and communicating with patients and their families. Patient attending scripts should be revised at regular intervals and must be practiced promptly to provide services available at the centre.
- **Discount proposition:**
  According to the analysis post FET, patients are advised medicines of approximately 15000, which is a large ticket size. Hence offering discounts to such patients will ensure patient is purchasing from in-house pharmacy. Discount of 5-10% can be proposed.
- **Prescription scanning:**
  Staff should be attentive to make sure to scan patient's prescription before leaving the centre, ensuring consultant's advice have been properly conveyed and no service is left unattended. This will also ensure that all the services (consultation, scan, clinical test, etc.) have been charged and billed.

**Preventive actions:**

- **Prescription audits:**
  Prescription audits must be conducted at regular intervals. By doing so, we can analyse the most and least used services by the patients. Also, we can track how many patients were billed accurately for those services and who were not. It will also provide a view of source which is leading to maximum revenue leakage.
- **Patient journey tracker sheet:**
  A patient tracker will help in understanding the patient journey better and be able to track all the services availed by the patient and will facilitate accurate billing.
- **Promptness by the staff:**
  Patient coordinator must be aware of every patient visiting the centre and must reach out to the patient once he is out of consultation. Guide him/her to next right destination. In case of any query by the patient regarding any of the services, patient coordinator should be able to answer and solve them.

# Impact Assessment

The whole analysis report was presented and submitted to the organisation management, where they understood and took the suggestive actions into consideration and motivated me to implement them on BFI Gurgaon centre.

According to the analysis, IPD patient who visit the centre for Frozen embryo transfer (FET) are advised post operative medicines which approximately amount to Rs. 15000/patient. When calculated this was 87.93% of the total revenue lost i.e., Rs. 1,24,598. Being big ticket size payment patients prefer comparing the in-house pharmacy prices with the other local pharmacies present in the market, who provide approximately 25% discounts along with home delivery service. Hence, to compete with the market there was an immediate need for an action to tackle the situation.

Corrective action proposed for this was approved by the management by proposition of 5-10% discount offered to patients who are buying medicines above 10,000 and are resistant to buy the medicines from in-house pharmacy.

This was successfully implemented at the centre and a positive impact was observed. Now, when patient asks about the pricing and discount, pharmacist can approve a variable discount of 5-10% to patients purchasing medicines above 10,000.

Since we started to roll out discounts to patients, we could successfully convert two potential patients. Out these two patients one patient was followed up twice with medicines above 10,000 both the times and was given discounts. This also helped us in patient retention while ensuring the patient is purchasing medicines from the in-house pharmacy every time he is advised by the consultant. Total revenue that was prevented from leakage by proposing 10% discount was RS. 45,457. This is just the beginning, going forward this initiative will yield positive results in minimizing the revenue leakage at BFI Gurgaon sector-14. These initiatives can be expanded to all the BFI centres which will help in minimizing revenue leakage on a larger scale.

# Chapter 5: Discussion

In accordance with the hypothesis taken in the beginning of this project has proven to be right and has yielded positive results. Revenue leakage might be of different percentages in different organisations and might happen at various other stages and departments. Though being a small percentage, but when it comes to revenue at a larger picture this can have impact on profits margins of the organisation. Hence, an organisation should be able to track and identify these sources of the revenue leakage and work upon to reduce these.

As per the observations one of the key identifiers was revenue leakage from the in-house pharmacy and specifically from the post ET patients. Pharmacy in any IVF hospital plays a huge role in revenue collection due to high prices of the medicines and exclusiveness in availability. Therefore, it's important to identify these key leakages and implement corrective actions accordingly.

Another initiative taken to tackle these leakages was preparation of post procedure medicine kits. This preparation of medicine kits was possible as majorly medicines prescribed are similar for all the patients and according to the formulary of the hospital. In this initiative, we prepared the kits a day prior to the procedure as per the OT schedule. After the ET, the prepared kits were handed over to the patients and their attendants in the recovery room itself. So, this ensured that patient is purchasing medicines from the in-house pharmacy itself and another value-added service that was provided was- explanation of dosage and method of use by the nursing staff in the presence of pharmacist to enhance the patient experience which was earlier done by the pharmacist at the pharmacy counter. Billing was done through portable billing machines and hence ensuring no or minimum leakage possible.

Offering discounts along with the pre-formed medicines kits have not only proven to reduce the revenue leakage by significant amounts, in fact have enhanced the patient experience at the IVF centre also. This research has helped positively in bringing insights of the sources and causes of revenue leakages at the BFI centre. The strategies formulated and implemented have proven to mitigate them. This study has helped in identification of revenue missed/lost and ways to improve it. This study will also significantly facilitated in understanding the key priority areas in terms of revenue leakage where maximum attention was required. On a larger scale this has initiated a way in increasing ARPU at the BFI centre.

Going forward, impact and progress of this project will be tracked, and many more improvements will be made according to the needs of the hospital. The aim and vision of the project have come up positively and will surely create huge impact in future years

# Chapter 6: Conclusion

Identifying the sources and causes of revenue leakage is very important for an organisation to increase their profit margins by reducing the inputs and increasing the sales at the same time. As per the hypothesis taken that the major sources of revenue leakages at the IVF hospitals are IVF potential patient dropouts, diagnostic and pharmacy department in the hospital with most probable cause of high pricing at hospital. In accordance with this we have successfully identified that pharmacy contributes to maximum revenue leakage in the hospital.

Considering pharmacy plays a crucial percentage of revenue in IVF hospitals, it becomes important to identify these sources as well as the stages from where the leakages are happening. Prioritizing the key sources and analysing the root cause of the issue should be done by the management and make sure that right corrective and preventive actions are implemented.

From the study I could identify all the potential stages of a patient journey where revenue leakage can take place. RCA and CAPA was done and approved by the management with lots of guidance and motivation. The results have been positive and significant in reducing the revenue leakage at the same time increasing the overall and department sales.

If we cannot correct all the sources of revenue leakage but prioritize a few key ones which have larger impact will also be beneficial to significantly reduce the revenue leakage at the organization. It will bring about awareness of where the organization is losing revenue.

Considering patients as one of the key stakeholders, they must be at priority of the service, and by bringing positive changes will surely enhance the patient experience and satisfaction towards the hospital. Further there is always a scope of improvement in any project or study, I’m open to all the suggestions.

# Chapter 7: References


1. Bardin, E. (2022) *New report shows that preventing patient leakage could boost hospital revenue by 17%, MedCity News*. Available at: https://medcitynews.com/2022/03/new-report-shows-that-preventing-patient-leakage-could-boost-hospital-revenue-by-17/ (Accessed: 12 May 2023)
2. mTatva, B.S.- (2018) *Reducing leakage in admissions, Pharmacy and diagnostics at Hospitals, mTatva Health-PIE*. Available at: https://www.mtatva.com/en/spl-health/reducing-leakage-in-admissions-diagnostics-and-pharmacy-at-hospitals-whitepaper/ (Accessed: 12 May 2023).
3. 4 *Controlling revenue leakage - f.hubspotusercontent20.net*. Available at: https://f.hubspotusercontent20.net/hubfs/4941928/WP20-RevenueLeakage.pdf?hsCtaTracking=5ae82c31-e396-434d-857f-4ff98b80aaa2%7C47e34841-72ce-43b6-b4e4-7a7d54c4a82b (Accessed: 12 May 2023).
4. *Documenting patient complexity to improve revenue and safety - alcidion*. Available at: https://alcidion.com/wp-content/uploads/2019/07/190730-Alcidion-June-2019-investor-presentation.pdf (Accessed: 12 May 2023).
5. *In vitro fertilization market revenue trends and growth drivers* (no date) *MarketsandMarkets*. Available at: https://www.marketsandmarkets.com/Market-Reports/in-vitro-fertilization-market-89198891.html?gclid=CjwKCAjwo7iiBhAEEiwAsIxQETggFcp3EfCSbSr7yURxYWA1RKK72bht5lGXdVtdCfOG_t9is1g0ShoCTGgQAvD_BwE (Accessed: 12 May 2023).
6. *In vitro fertilization (IVF): Medlineplus medical encyclopedia* (no date) *MedlinePlus*. Available at: https://medlineplus.gov/ency/article/007279.htm (Accessed: 12 May 2023).
7. NetSuite.com (no date) *What is revenue leakage? causes and how to prevent, Oracle NetSuite*. Available at: https://www.netsuite.com/portal/resource/articles/accounting/revenue-leakage.shtml#:~:text=Revenue%20leakage%20can%20affect%20services,be%20accounted%20for%20when%20billing. (Accessed: 12 May 2023).
8. www.ETHealthworld.com (2022) *Indian fertility industry to witness huge growth in coming years - et healthworld, ETHealthworld.com*. Available at: https://health.economictimes.indiatimes.com/news/industry/indian-fertility-industry-to-witness-huge-growth-in-coming-years/91487508 (Accessed: 12 May 2023).
9. *India in vitro fertilization services market statistics, forecast, 2030* (no date) *Allied Market Research*. Available at: https://www.alliedmarketresearch.com/india-ivf-services-market#:~:text=The%20India%20IVF%20services%20market,implanting%20it%20in%20the%20uterus (Accessed: 12 May 2023).
10. *Booming IVF market in India* (no date) *Scribd*. Available at: https://www.scribd.com/document/201109175/Booming-IVF-Market-in-India (Accessed: 12 May 2023).
11. *In vitro fertilization market revenue trends and growth drivers* (no date) *MarketsandMarkets*. Available at: https://www.marketsandmarkets.com/Market-Reports/in-vitro-fertilization-market-89198891.html (Accessed: 12 May 2023).