**Study on**

# Awareness about Umbilical cord stem cells banking among people.

**By**

**Dr. Nikita Arora**

***Project report submitted in partial fulfilment of the requirements of the degree***

***MBA Hospital and Health Management***

***Academic year, 2019-2021***

**The IIHMR University, Jaipur**

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**TO WHOMSOEVER MAY CONCERN**

This is to certify that **Dr. Nikita Arora**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship under the mentor of IIHMR from 20/04/2020 to 20/06/2020.

The Candidate has successfully carried out the study designated to her during internship and her approach to the study has been sincere, scientific, and analytical.

The Internship is in fulfilment of the course requirements.

I wish her all success in all her future endeavours.

Dean, Academics and Student Affairs

The IIHMR University, Jaipur

Professor

The IIHMR University, Jaipur

The certificate is awarded to

**Dr. Nikita Arora**

In recognition of having successfully completed his
Internship Work from Home
and has successfully completed her Project on

**Study on Awareness about Umbilical cord stem cells banking among people.**

**(20 April 2020 – 20 June 2020)**

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning

We wish her all the best for future endeavours

**Mentor** **President and Dean IIHMR**

**THE IIHMR UNIVERSITY, JAIPUR**

## CERTIFICATE BY SCHOLAR

This is to certify that the Project report titled **Study on Awareness about Umbilical cord stem cells banking among people** and submitted by **Dr. Nikita Arora, Enrolment no :- 0949** under the supervision of **Mr. Anoop Khanna** for award of MBA in Hospital and Health Management of the University carried out during the period from 20/04/2020 to 20/06/2020 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

Dr. Nikita Arora

MBA-HM 24

## DISCLAIMER

This project report has been prepared by the author as an intern under the summer training programme of 2 months. This work is purely **"Work from home"** without the observational learning at the Hospital due to the crises in the country because of global pandemic issue COVID-19.

All the information collected only through the internet source and the work done under the observation of mentor and completely related to the organisation in which intern was placed i.e. CLOUDNINE HOSPITAL,GURGAON. This view expressed in report are of personnel observation of intern and is for the academic purpose only.

This information presented has been prepared using resources believed by the intern to be reliable and accurate. However, author makes no warranty or assumes any legal liability or responsibility for the accuracy or completeness of any information presented. Moreover, the author accepts no responsibility of decisions made by researchers.

## ACKNOWLEDGEMENT

The opportunity provided to do Internship at Work from Home under the mentor of IIHMR was an enriching and valuable experience. I am highly obliged to have contact with so many experience professionals who led me throughout my study period I am sincerely grateful to them for sharing their truthful and illuminating views on several issues related to the project.

I would like to acknowledge, first and foremost **Er. Chandan Gulati (Senior Software Engineer at Ford)** who inspired, guided, and helped me to complete my project, I take this moment to recognize their contribution gratefully.

I am extremely thankful to my faculty at IIHMR- Jaipur and specially my **Mentor Dr. Anoop Khanna (Professor)** for being my support all through the internship.

I recognize this opportunity as a big milestone in the development of my career. I will strive to use the knowledge and skills gained in the best possible way.

Lastly, I want to express my respect and love to my parents, siblings, and my friend **Abhinav Arora** for constant encouragement and motivation in my higher studies.

Sincerely,

Dr. Nikita Arora

## TABLE OF CONTENTS

Contents

## LIST OF FIGURES

## LIST OF ABBREVIATIONS

**UCB:** **Umbilical Cord Banking**

**ICU:** **Intensive Care Unit**

**NICU:** **Neonatal Intensive Care Unit**

**PICU:** **Pediatric Intensive Care Unit**

**OT:** **Operation Theatre**

**IVF:** **In-vitro Fertilization**

**LDR:** **Labour Delivery Room**

**CBR:** **Cord Blood Registry**

**HLA:** **Human Leucocyte Antigen**

**ICMR:** **Indian Council of Medical Research**

**IAP:** **Indian Academy of Pediatrics**

**MSC:** **Mesenchymal Stem Cells**

## ABOUT ORGANIZATION

**Cloudnine** group of **hospitals** are India's leading chain of women , childcare , and fertility (IVF) hospitals. **Cloudnine** care is the best maternity **hospital** in India which offers high standards of health care and assistance for every pregnancy stage. Nurturing and caring the patients for entire duration of pregnancy. They provide the best medical expertise , space of art facilities , a space filled with love and laughter and staff dedicated to the holistic well-being of mother and her baby.

**VISION:** To be the kind of leader in the space of women and health that India has not witnessed yet, by providing premier quality healthcare to women and children.

**MISSION:** Aim is the pursuit of excellence in providing the best maternal and neonatal care by setting higher standards for themselves and striving constantly to achieve them.

**QUALITY:** Achieve clinical excellence by inculcating a culture of continuous quality improvement across all domains with the centre of focus being patient safety.


Fig.1

## There are 9 reason to choose CLOUDNINE HOSPITAL

- ✓ Expert care
- ✓ Hospitality
- ✓ Advanced ICUs
- ✓ Specialized foetal units
- ✓ Take your family along
- ✓ Care @ home
- ✓ Priceless not pricey
- ✓ Parent craft workshops
- ✓ Embrace the natural way

Every department of the hospital is best in its working and choose to put their efforts to fulfil the patients demands.

## There are 7 specialities in the hospital

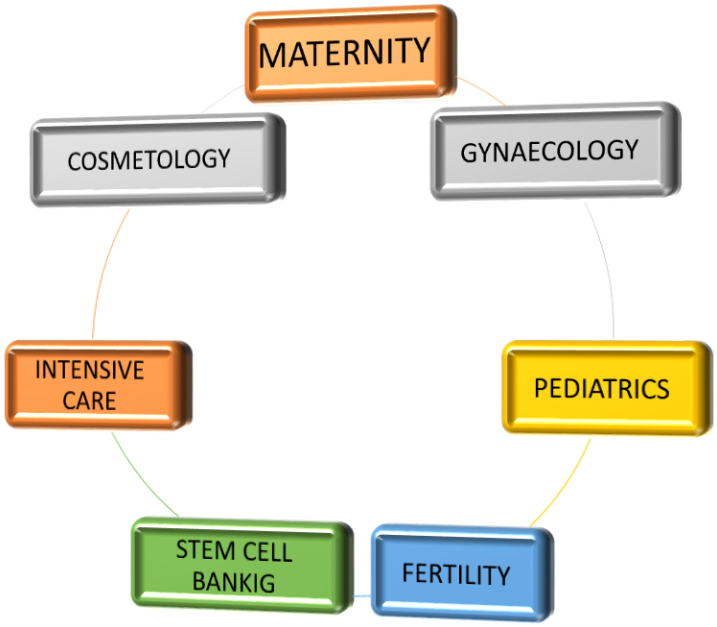



Fig.2

## MATERNITY:

Services are provided under well-educated doctors and skilled nursing staff with advanced technology in the hospital. NICU, Pregnancy support classes, and complementary therapies are provided with all new facilities.

Postnatal care and paediatric care delivered to both mother and neonate. Cloudnine's Maternity Unit includes spacious and comfortable LDRs – Labour, Delivery and Recovery rooms and state-of-the-art Operation Theatres.

## GYNAECOLOGY:

Cloudnine is India's leading hospital for the woman care. With compassionate doctors and skilled staff, they are treating all complex issues of woman health with extra ordinary facilities. Services for woman include: Hysterectomy , Pap smear and Colposcopy , Endometriosis treatment , Fibroids treatment , Urinary Incontinence treatment , Infections treatment , Prolapse treatment , Premenstrual syndrome treatment , Contraception , HPV vaccination , Sexual health counselling.

**Cloudnine also provides comprehensive "Well Woman" check-ups as diagnostics cleaning tools.**

### What is " Well Woman" check-ups?

Now women of all age groups can enjoy good health with preventive Cloudnine health check-ups. Cloudnine offer customized check-ups for different age groups based on their specific needs – ages 12 to 20, 20 to 30, pre-pregnancy, 30-50 and 50+ with Cloudnine health vouchers.

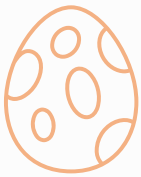
## PEDIATRICS:

Cloudnine celebrating the birth of neonates and delivering the bundle of joy in the country. Cloudnine is giving best pediatric care under best experts. Hospital's pediatric wing provide cheerful and playful environment to kids. With well-equipped NICUs and PICUs offers complete range of medical services 24*7. The Hospital Management Software (HMS) shared by all the consultants, documents details of all children. Hence, whichever doctor examines the child at any stage is fully aware of the child's history. So, there is no reason to worry if your regular Pediatrician is away or not available in times of need.

## INTENSIVE CARE:

Hospital has NICUs and PICUs to deal with all the emergency services. Hospital centres are equipped with Adult High Dependency Unit and Level III NICUs certified by the National Neonatology Forum as the highest level of intensive care.

## FERTILITY:



Cloudnine Hospital's specialized team offers the fertility experts. With highly experienced staff and best of technology provide best treatment. In today's stressed life Cloudnine Fertility is helping their patients to cope up with all the situation and provides a safe, supportive, and comforting environment to help them.

## COSMETOLOGY:

The cloudnine cosmetology offers best aesthetic surgeries for woman and children. Best technological techniques are performed under world best cosmetologist. Cosmetology services for women include rhinoplasty, Facelift , Chin augmentation , Breast lift , liposuction , Dimple creation , Botox etc.

Services for children include: Cleft lip and palate , Ear reconstruction , Separation of joint fingers and toes. On Cloudnine, they have kindled hundreds of stories of confidence through cosmetology, each one certain to inspire patient to embrace the best version of their self.

## STEM CELL BANKING:

Stem cells are the master cells act as building block of the body. These cells speciality to regenerate any type of cells. Stem cells are very tiny, but they have great potential to cure number of blood related diseases. Stem cell banking is also known as **"Umbilical cord banking".** Umbilical cord harbours miracles both during and after pregnancy. Stem cell banking includes the collection of blood from the umbilical cord after delivery and then cells are extracted and stored, and these stem cells has potency to fight against 80 life threatening diseases. These cells are preserved for the future of child as well as entire family. Cells of these life are 21 years. **Cloud nine has world class stem cell banking service.**

With unique and highly advanced storage technology, patients have bio insurance for the life of new-born baby with the world class facility of stem cell banking by cloudnine. Cloudnine is one of the leading hospitals of the India for **Stem cell banking** to do it right.

## ORGANIZATIONAL HIERARCHY

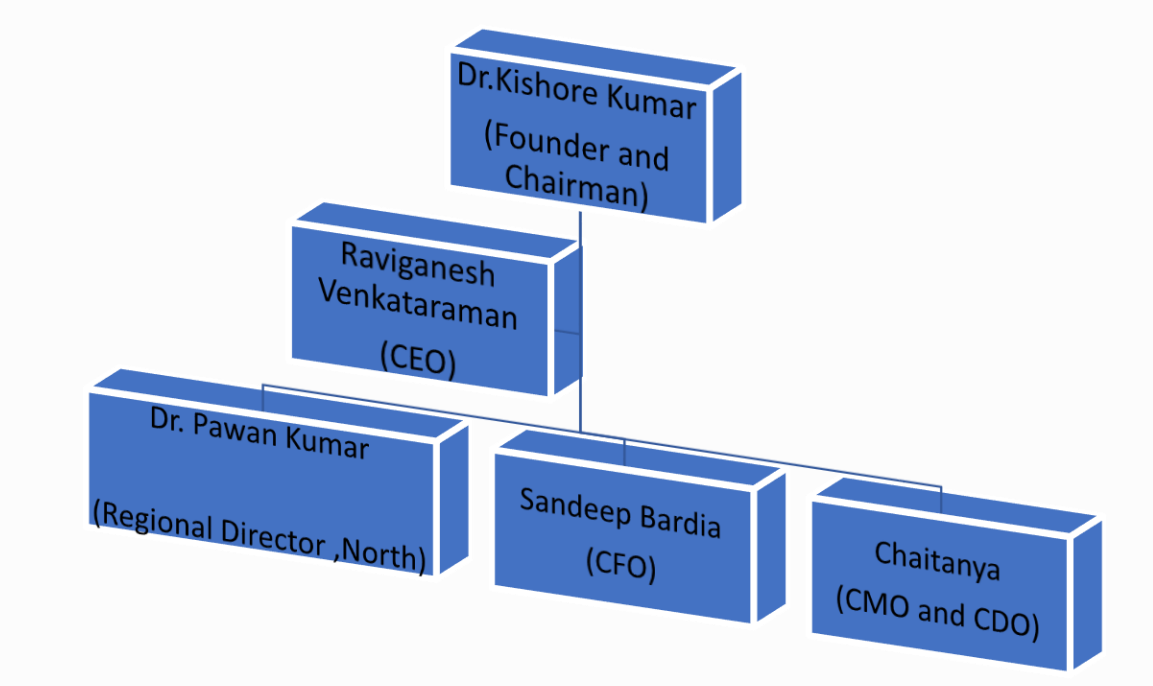



Fig.3

## DATA COLLECTION PROCEDURE-

**Mixed- method approach**

**Primary data:** Online Survey with help of google questionnaire form

**Secondary data:**

1. Through registered records.
2. Through website of organization.
3. Literature available about the organization like magazines, brochures, pamphlets, CDs, and written documents.

## INTRODUCTION

Stem cells have amazing capacity to form different type of cells. Stem cells when divides, each cell have potential to remain same or form other type of cell which specialized in nature and perform specialized function such as muscle cell, bone cell, blood cell, brain cell. Stem cells divide themselves in different way, one is by cell division and other is by experimental conditions. In research scientist claimed that there are two kind of stem cells from humans that is:

**"Embryonic stem cells and Adult stem cells"**

Stem cells can give rise to specialized cells and cell converted from unspecialized to specialize by the process called as differentiation.

**Embryonic stem cells**. The embryonic stem cells used in research today come from unused embryos by the procedure known as in vitro fertilization. They are donated to science. These embryonic stem cells are pluripotent. This means that they can turn into more than one type of cell.

**Adult stem cells.** There are 2 types of adult stem cells. One type comes from fully developed tissues such as the brain, skin, and bone marrow. Stem cells present in these tissues are small in number.

Stem cells which helps to treat the diseases are hematopoietic cells. Stem cells which are immature in nature and converted into mature cells to perform the functions.

Stem cells are also present in the umbilical cord through which baby is attached to mother. The baby can change the lives forever for everyone. New-born's stem cells have potential to change the life, too. The blood from baby's umbilical cord is a rich source of these powerful stem cells. Cord blood stem cells have used in the treatment of 80+ diseases and disorders such as certain cancer, immune disorders, metabolic disorders, blood disorders as a part of transplant medicine. Researchers are very interested to know that how cord blood stem cells may be used in regenerative medicines for things like brain injuries, and auto immune disorders. So, whole family of the new-born could potentially use these awesome cord blood stem cells. When family preserves the new-born cord blood cells with CBR then they are reserved for potential future use by the child or their immediate family. Ultimately, it is up to patient's doctor to decide when and how these stem cells are used, and genetic matching is an important factor. Stem cells have genetic markers that are important in determining who can

use them and in general, the stronger the match is the better one. Baby will always be perfect genetic match to their own unique stem cells. These powerful cells might also be used by immediate family members. Full siblings have up to 75% chance of being at least a partial match. Parents are also partial match and could potentially use the cells, too. In transplant situations, a child would not typically use their own stem cells so doctor would look for a closely stem cell donor, like a matched sibling. Researchers are still exploring the possibilities of regenerative medicine, and current clinical trials are evaluating the use of the child's own cells and cells from matched donor, like matched sibling. To preserve the most possibilities of the future, we think it is good idea to preserve new-born stem cells for each child.

Blood collected from umbilical cord is rich source of stem cells. This blood is preserved in a cord blood bank in liquid nitrogen. There is no expiry date of stem cells. But evident exist that they can be stored for about 20 years. Stem cells are first concentrated and then injected to the patient. Once transfused, they produce new cells of every kind. Stem cells taken from umbilical cord blood are almost like those taken from bone marrow. They are capable of producing all types of blood cells: red cells, platelets, immune system cells. These can treat serious illnesses. But given the present state of medicine, they are effective only for around a dozen of them.

Stem cell can work as miracle in future. Once a time, after delivery blood was discarded with placenta. But with time and advances it is great gift to the medicine. It is found that umbilical cord blood has rich source of life saving hematopoietic stem cells and saved many lives in the recent decades. HLA (Human leucocyte antigen) matching is required which will have the potency to save people from various illnesses and malignancies. There are many cord blood banks has been established by private and government healthcare sector and encouraging the parent's and creating awareness among them to donate cord blood cells for the security of their child and family. Umbilical cord blood collected has different from peripheral blood and its properties. It has self-renewal ability.

## CORD BLOOD BANKING

Umbilical cord blood (UCB) is collected after the delivery of the baby. This process does not pose any risk to baby and mother. Blood is collected from the umbilical vein and transferred into sterile bag which have anticoagulant solution in it and then blood is send to the cord blood bank where it is tested, processed, and cryopreserved at lowest temperature. There is chance of loss of blood and cell count at time of processing, so this procedure requires well qualified and trained staff with well-equipped laboratory to minimize the microbial contamination without the loss of the stem cells. There are guidelines of collection of the blood such as UCB should not allow the delayed clamping of cord after delivery and it should be avoided in the case of complicated pregnancy and twins.

## PUBLIC VERSUS PRIVATE CORD BANKING

First cord blood bank was established in New York in 1993. The cord blood was collected at time of delivery and then tested, processed, and stored. Public cord bank is available for all people worldwide. Everyone one can take that cells if they have matched HLA. Donor are not charged because it is not personal by the donors, but recipient is charged for the treatment.

In private UCB donors are charged, they must pay the amount for the collection and storage of their personal use. No other can use the stored stem cells in future excepts donor and family. It is only stored for the particular family which opts for cord blood storage and can be used by the family when the need arises.

**STEM CELL THERAPY**

The role of cord stem cell is still under research and its benefits are speculative. Regenerative medicine research gifts many new treatments in which stem cells is one of them and in experimental stage. Stem cells are collected and differentiated into specific type of cells which helps in repairing of the tissue and cells. Stem cell therapy in case of diabetes, neurological condition like palsy and autism etc. are still under clinical trials and ICMR (Indian council of medical research) guidelines recommend that there is no particular indication for Stem cell therapy yet.

In the era of advancement, still there is lack of awareness and knowledge about this therapy. This procedure is not renowned in common people of India. There are various myths and facts in the minds of the people regarding this.

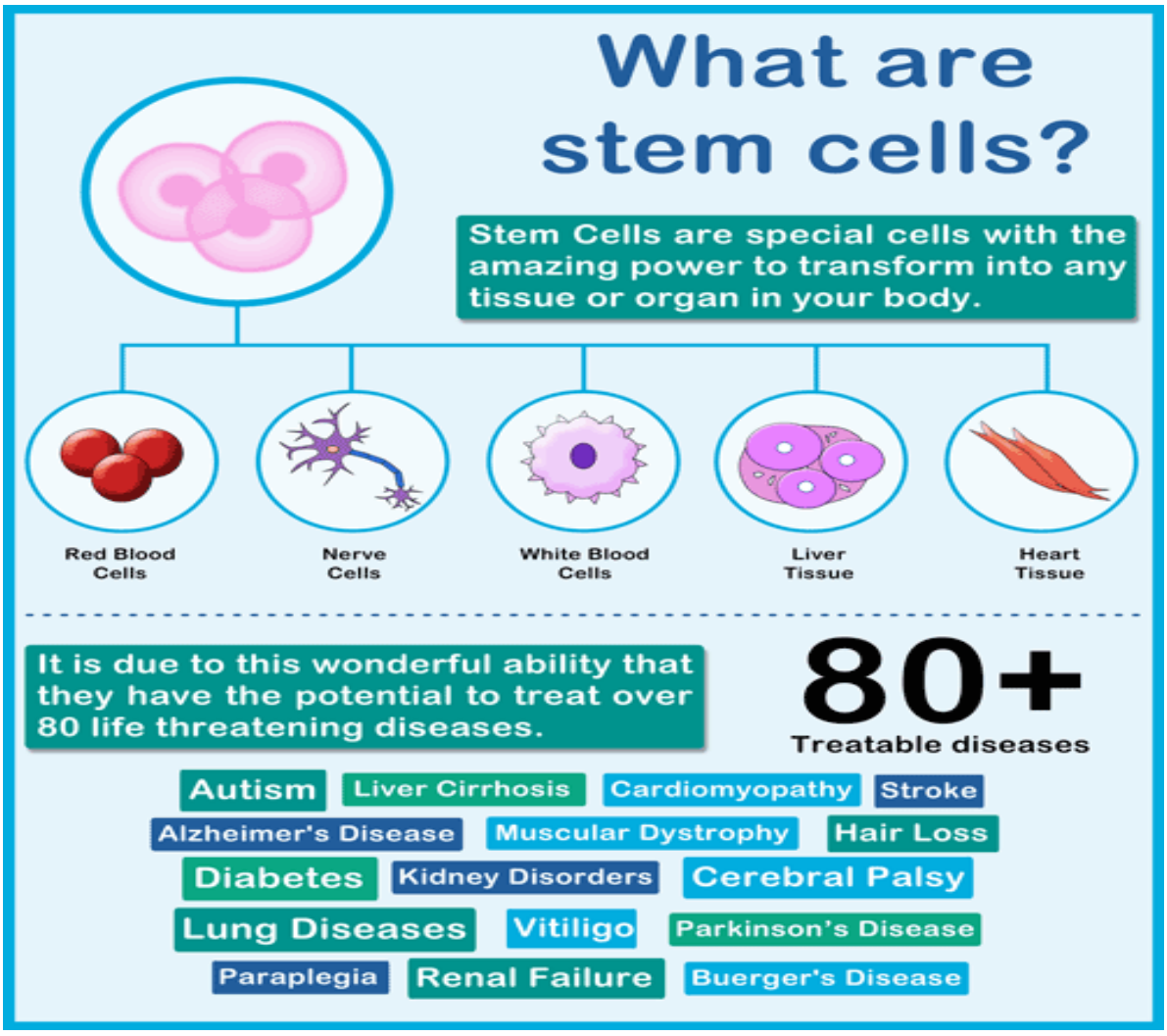


Fig. 4

**There are various guidelines to follow for all the public and private health sectors cord blood banking in India by IAP (Indian academy of pediatrics) which are as follows:**

Umbilical cord blood is a gold mine of hematopoietic stem cells, which have been successfully used for curing various harmful medical conditions which include various malignancies, blood related disorders, primary immune deficiency, and few selected genetic metabolic disorders.

• Blood from Umbilical cord can be safely collected from the placenta without any complications to mother and neonate

• In complicated deliveries cord blood collection is not advised.

• Cord blood banking by public serves with the purpose of preservation, for those children who have no sibling and matched donor at time of need of any stem cell transplant.

• Autologous cord blood stored privately cannot be used for treating one's own genetic conditions in future (including hemoglobinopathies, storage disorders, hemophagocytic lymph histiocytosis, immunodeficiencies, etc.) as the cord stem cells harbour the genetic abnormality leading to the disease.

• For the treatment of haematological malignancies, autologous cord blood is not preferred because it may cause graft versus leukaemia reaction in patient.

• At time for required autologous stem cell transplantation, cord blood storage is not indicated. There is need to promote the public cord banking. Expansion of stem cell banking helps in treating many diseases.

• India, is the country with high birth rate and diverse genetic variation, has a bright prospect in public cord blood banking to increase the chances of finding HLA-matched hematopoietic stem cells for transplant.

• Private umbilical cord stem cell banking is not a 'biological insurance' and its role is still hypothetical in the regenerative medicine.

• It is imperative to spread awareness among the people about hard facts and myths in mind about umbilical cord blood banking (either it is public and private) among the people (by mass campaigning and social advertising) and among the healthcare workers by teaching them in the schools and colleges.

• Marketing for private and public umbilical cord blood banking by various organizations and hospitals (e.g., by using celebrities) are often lying and mislead the parents' feelings and emotions for the money and profit, at the risky period of pregnancy.(**Source: IAP)**

Policymaker, hospitals, private cord banking companies and start-ups should promote the stem cell banking and there is need for awareness among people. True and good use of this new advancement can cure many harmful diseases and protect the child and their family with good will. This breakthrough in medical science should be used ethically as it opens the door for the treatment of various life-threatening illnesses.

## LITERATURE OF REVIEW

**First study** which was done on knowledge of umbilical cord banking among mothers of Anand and Kheda district of Gujrat. To assess the knowledge among the women's in district, verbally questionnaire was dictated to them in their mother tongue. Sample of 100 women were taken and out of that mean average age of the ladies was 26.88 years. 63% of women were unaware of this procedure and remaining have little knowledge about UCB. 15% of them were known to this through newspaper and internet. 11% were told by their doctors and remaining 3% of information from relatives and friends and other 2% from the cord banking agents. Out of those 100 only four opted UCB at time of their pregnancy and 25% out of the shown the willingness to adopt this for the security of their babies. At time of survey mothers were guided about stem cell therapy. So, it was concluded from their study that Despite having knowledge among few mothers, they denied opting this because of the high cost expenditure. With knowledge and being informed they refused as price of storing cells are rising it becomes more business for the banking agents. So, public cord banking will need to be restructured for financial constraint people and policy maker must collaborate with government.[1]

**Second study** was taken from the clinical cases which was treated by stem cell therapy from book of cell biology by University of Malta, Malta. Clinical case was taken in which patients have history of blood disorders.

4 patient who were suffering from chronic immune thrombocytopenic purpura in which 3 were females and 1 was male patient between age of 26-56 years. Disorder was autoimmune caused destruction of platelets in the patients. All the patients with disorder are infused with mesenchymal stem cells intravenously. After the end of second week from infusion, the response was recorded among all four patients. Patient achieved $50*10^9$ platelet/L and two of them achieved $90*10^9$ platelet/L. One patient out of 4 responded sustainable treatment all the way and others 3 were given second infusion and they responded well to the therapy. No side effects were reported in patients. This study shown that stem cells are helping to treat various life-threatening illnesses and people have knowledge among this and they are accepting and responding to the treatments.[2]

**Third Study** was done in five healthcare centres in turkey from February 2014 to June 2014. Sample of the study was mothers between age of 18-49 and total sample was 322 mothers who were registered in healthcare centre. The data was collected by using questionnaire and question were about socio-demographic traits of mothers and level of knowledge attitude towards stem cell banking. Study was done under ethical considerations with privacy principle while collection of data. The process of informed consent was followed, and information used was kept confidential. Participants were mostly belonged to age group 25-34 years. Conclusion drawn from mother's knowledge about cord blood was that 29.8% of mothers said they were known about this cord banking knowledge and they got this information from the internet but they did not know for what purpose it was used for.71.2% did not know the answer and remaining were have just idea about stem cell banking.

**Table 1. Mothers' levels of knowledge about cord blood**

| Knowledge about Cord Blood | N | % |
|---|---|---|
| **General Knowledge about Cord Blood** | | |
| Yes | 29.8 | 96 |
| No | 226 | 70.2 |
| **Source of Knowledge about Cord Blood** | | |
| Media/Internet | 65 | 20.2 |
| Healthcare professionals | 20 | 6.2 |
| Friends | 11 | 3.6 |
| **Knowledge about person/s that give cord blood** | | |
| Infants | 71 | 22.0 |
| Pregnant women | 7 | 2.2 |
| Newborns | 9 | 2.8 |
| Fetuses | 2 | 0.6 |
| Mother during birth | 1 | 0.3 |
| Siblings | 3 | 0.9 |
| Do not know | 229 | 71.2 |
| **Knowledge about the intended purposes of cord blood** | | |
| For the therapy of infant diseases | 42 | 13.1 |
| For cancer treatment (for the infant) | 14 | 4.3 |
| Intelligence tests | 4 | 1.2 |
| For stem cell therapy (for the infant) | 12 | 3.7 |
| Do not know | 250 | 77.7 |
| **Knowledge about the situations in which cord blood should not be taken** | | |
| Mothers with a contagious disease | 9 | 2.8 |
| If the infant is older than eight months | 1 | 0.3 |
| If the mother has a genetic disease | 5 | 1.6 |
| If the infant is sick | 21 | 6.5 |
| Do not know | 286 | 88.8 |

**(Source:- International Journal of Caring Sciences) Fig.5**

It was also found in the study that attitude of mothers towards level of knowledge and educational status was increased. Overall results were that very less population has knowledge about this and those who have knowledge their main source of information was internet and newspapers.[3]

**Fourth study was conducted on stem cells on Department of gynaecology and obstetrics, Catholic University of the Sacred Heart, (2004)**

Research was done on stem cells and which clearly described that stem cells were used for the treatment of gynaecological solid tumours such as ovarian cancer. Umbilical cord which used to keep in waste after delivery is actually rich source of specialised cell and contributing to treat many harmful malignancies and inherited diseases. A feto-maternal cell traffic has recently been demonstrated through the placental barrier during pregnancy, this exchange also contains stem cells from foetus and has capacity which can generate microchimerisms in the mother and contribute to tissue repair mechanisms in different maternal organs. This

study claimed that there are many diseases related to obstetrics and gynaecology can treated with the help of stem cells.[4]

**Fifth study was done by Lowdermilk DL, Perry SE(2007 )** and conducted study was the descriptive study. Two antenatal clinics of Istanbul was taken for the study. Study was done assess the pregnant women's knowledge and attitude toward umbilical cord cell and their banking. Sample consisted of 334 pregnant women during their check-ups. Data was collected in the interview and it was concluded that 86.6% of participants did not have any knowledge about umbilical cord banking. It was observed that most of them wanted to have information before they conceived from their doctors.78.2% women wanted to save the cord blood cells for their child future and they demanded to save it in public cord banks as they felt they could not afford the cost of private cord banks. This study concluded that at time of pregnancy during check-ups, females should be informed about stem cell therapy. They should be counselled in well mannered.[5]

**Sixth study by Cabot,T (2013).** With several authors and researchers found stem cell has great properties and benefits. Main and important benefit concluded from the study was that we can regenerate tissues with the help of the stem cells such as blood vessels and skin. Stem cells therapy can help multiple people in treating the diseases. **In the research experiment was performed on little boy by scientist Anthony Attalla**. He took healthy cell from the broken bladder of the boy and then he took the cells to the laboratory and kept them under nutritious condition and fed them with proteins and allowed them to grow. He collected those grown cells and placed them into collagen balloon and allowing them to get settled. Newly grown bladder was placed into the boy and boy become healthy again.[6]

**Seventh Study** was most recent, researchers performed stem cell therapy in Israel, and it was experimented on covid-19 patients for their treatment and had shown positive results among people. Covid-19 pandemic is so drastic that whole word is suffering from it. Nobody can forget this time in history. COVID-19, as a pandemic, has led many researchers from different biomedical fields to find solutions or treatments to manage the pandemic. Many researchers all over the world are fighting to find its treatment. In that scenario Stem cell gives the ray of hope. Mesenchymal stem cells (MSCs)-based immunomodulation treatment has been proposed as a suitable therapeutic approach and several clinical trials have began. After the infusion of cells intra venously, it is determined that cell accumulates in the lungs and preparing the alveolar epithelial tissue of pulmonary area. In this study, we considered this new approach to improve patient's immunological responses to COVID-19 using MSCs and discussed the aspects of this proposed treatment. However, currently, there are no approved MSC-based approaches for the prevention and/or treatment of COVID-19 patients but clinical trials ongoing. It is concluded that life of human is precious, and covid-19 is very dangerous. MSC-therapy for covid treatment is still away. It could be most ideal or combination for the treatment of this pandemic disease. Research is going on to find the vaccine and therapeutic simultaneously to prevent the world from this life-threatening virus.[7]

## RATIONALE

This study is intended to inspect the knowledge and attitude of the people about umbilical cord cell banking. Main purpose to know the awareness among the people that how the stem cells are becoming the helping hand to fight with harmful diseases. Study aims to enhance the knowledge of Mechanism of this therapy, clinical research, and their use among people. Also focuses to fill the knowledge gap among people of the society and give them direction that cord banking is beneficial for potential future transplantation. They have ability to fight with many harmful diseases.

## RESEARCH QUESTION

How much people are aware and have knowledge about Stem Cell Banking?

## OBJECTIVE

**General Objective**: To inspect awareness about Umbilical cord stem cells banking among people.

**Specific Objective**: To assess the knowledge about placental stem cells and its utilization in banking among various mothers.

To study the various benefits of stem cell banking.

## RESEARCH METHODOLOGY

**Type of study:** Observational →Analytical→Crossectional study (mixed-method approach).

**Setting :** Surya Niketan, Anand Vihar , East Delhi.

**Duration of study:** 2 months.

**Sample size:** 100 patients.

**Sampling Technique:** Random sampling.

**Tool for data collection:** *Primary Data-* Online Forums

*Secondary Data-* Online Portals

**Data analysis plan:** MS excel with pie charts and bar graphs

**Data collection procedure:** Mixed- method approach

*Primary data:* Online Survey with help of google questionnaire form. Many questions were asked with appropriate choice of **"Yes or NO"** from patients and their attendants to know their opinion.

*Secondary data:* Through registered records, website of organization and Literature available about the organization like magazines, brochures, pamphlets, CDs, and written documents.

The research design is mixed method research design. The sampling technique adopted was random sampling with sample size of 100 patients. Setting selected was the people of the Surya Niketan society in Anand Vihar , EAST DELHI. Tool used was structured questionnaire to assess the knowledge about placental stem cells. Questionnaire with 3 options and respondent have mark the appropriate response of their knowledge. Data analysis is done with the help of Ms. Excel.

## DATA FINDINGS AND INTERPRETATION

**Graph 1-** Age:

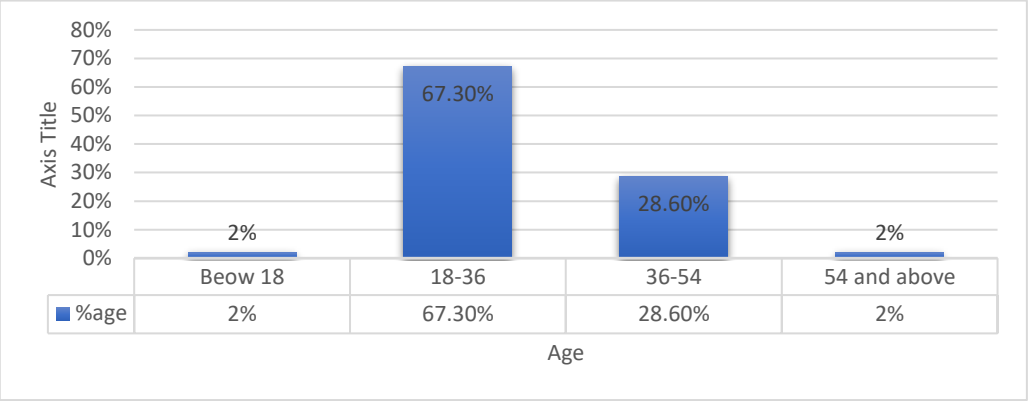
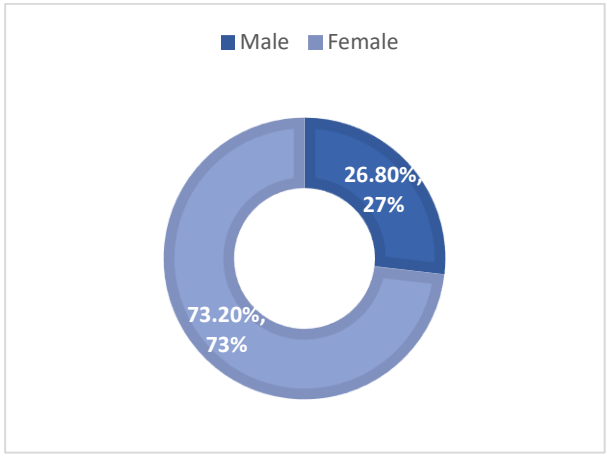



Fig.6

**INFERENCE:** This bar graph shows that about 67.3% respondent in survey belongs to age group of 18-36 and 28.6% respondent belongs to age group 36-54 and rest belongs to below 18 and above 54.

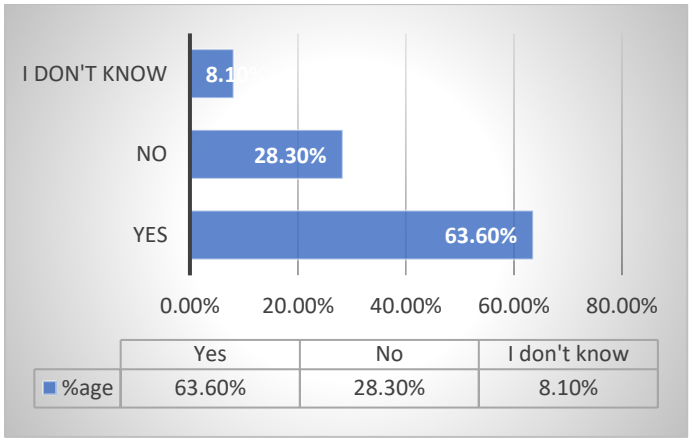
**Graph 2-** Gender:



**INFERENCE:** This pie chart depicts that from total respondents, 73% were female and 27% were male which are selected to response on the interview of stem cell banking.

Fig.7

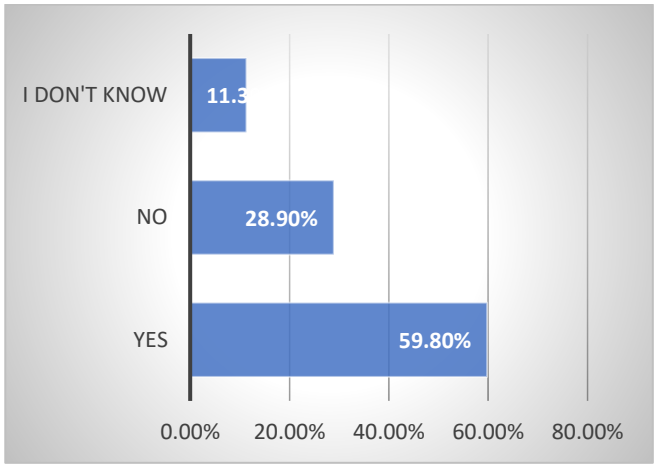
**Graph 3-** Have You Any Idea of What Stem Cells Are?




**INFERENCE:** This graph shows that 63.6% respondents know about stem cells. 28.3% do not know about stem cells and remaining 8.1% do not have any idea about cells.

Fig.8

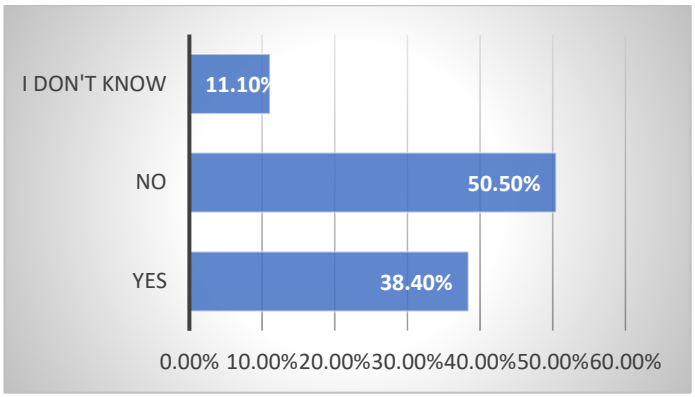
**Graph 4-** Are you aware that stem cells are very beneficial ?




**INFERENCE:** This graph shows that about 60% of people know the benefits of the stem cells and remaining people do not know the importance of stem cells.

Fig.9

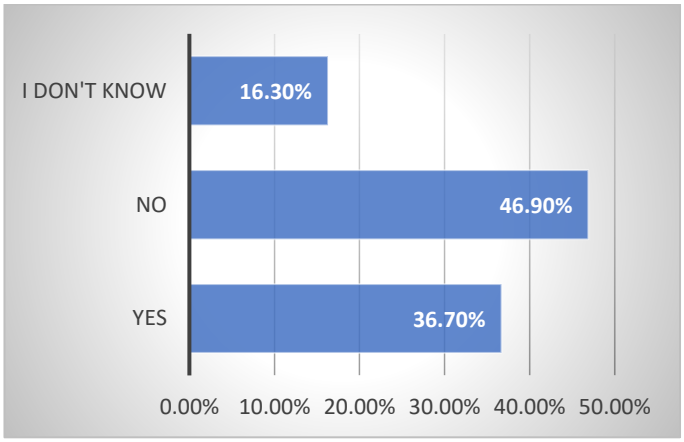
**Graph 5-** Have you heard of dental stem cells?




**INFERENCE:** Respondents were asked about the dental stem cells; this graph depicts that above half of respondent have not hear about the stem cells present in teeth. Only 38.4% people respond it to yes.

Fig.10

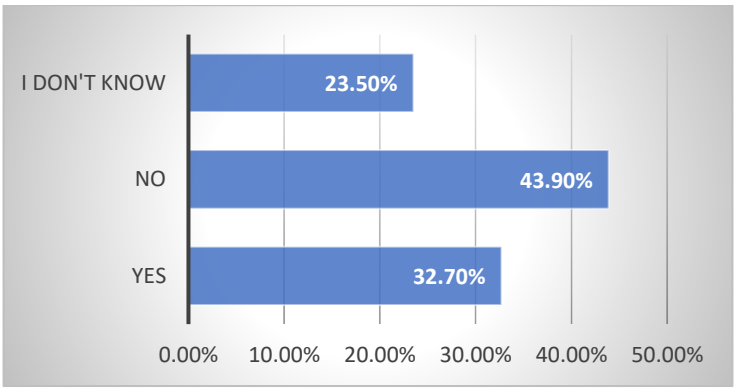
**Graph 6-** Do you know that stem cells from dental tissues are used to treat many diseases?




**INFERENCE**: This picture shows that only about 37% people have idea that stem cells from dental tissues have ability to treat many diseases and remaining participants do not have any idea.

Fig.11

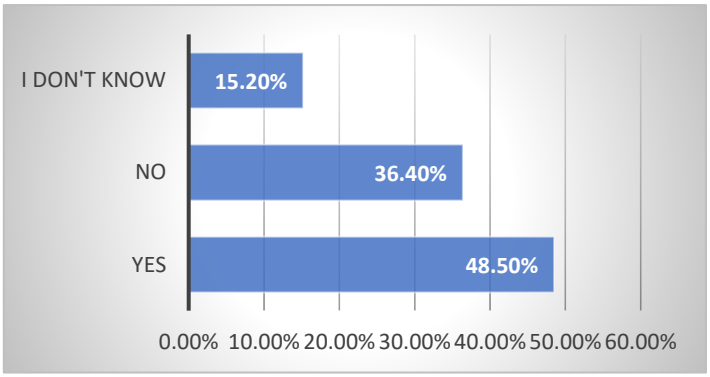
**Graph 7-** Do you think that the tooth if lost can be regenerated using stem cells?




**INFERENCE:** Dental stem cells have ability to regenerate the tooth again. Only 32.7% know this that dental stem has this capacity of regeneration. Remaining respondent do not have any idea about this.

Fig.12

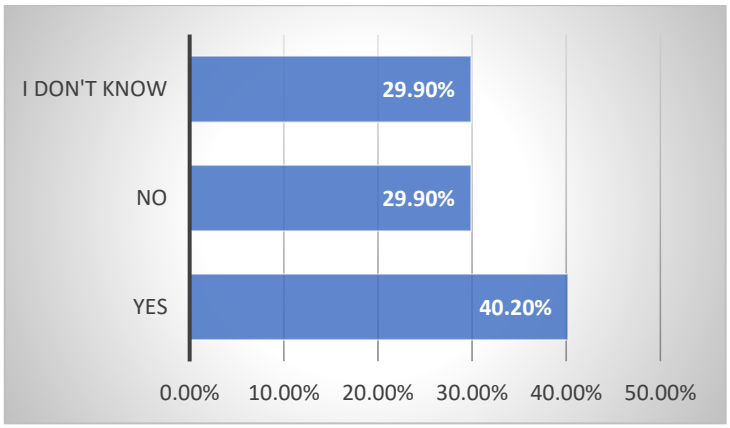
**Graph 8-** Do you know umbilical cord can also be source of stem cell collection?




**INFERENCE:** This figure shows that 48.5% of respondent know that the umbilical cord is the source of stem cells collection.

Fig.13

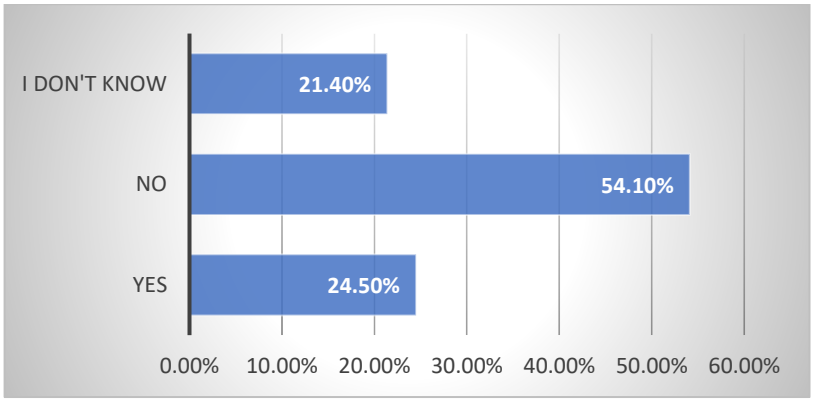
**Graph 9-** Would you like to donate umbilical cord during delivery?




**INFERENCE:** This graph depicts that only 40.2% of respondents would like to donate their umbilical cord cells at time of delivery. About 30% respondents would not like to donate and remaining do not know about this.

Fig.14

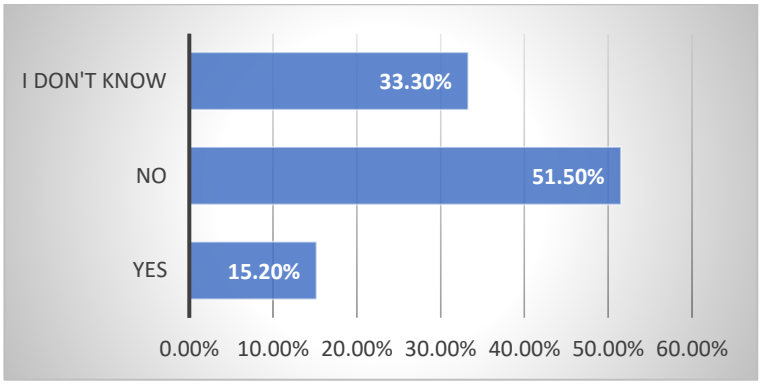
**Graph 10-** Do you know the nearby place where you have the stem cells banking facility available?




**INFERENCE:** This figure shows that only 24.5% participants know about stem cell banking facility and others do not know about this.

Fig.15

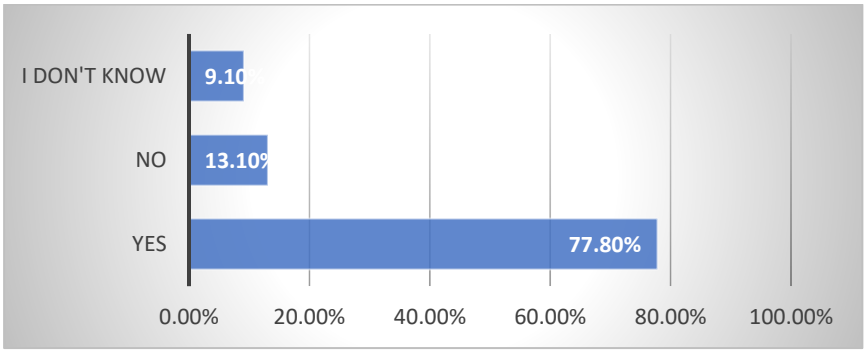
**Graph 11-** Do you think the procedure of collecting stem cells is invasive?




**INFERENCE:** This graph depicts that 15.2% respondent believe that collection of stem cells is invasive procedure and 51.5% think that it is not invasive and remaining 33.3% do not know about this procedure.

Fig.16

**Graph 12-** Would you like to have more information on stem cell banking?




**INFERENCE:** This graph shows that about 78% of participant would love to know about stem cell banking therapy. They want more knowledge about all this and remaining are not interested to have knowledge.

Fig.17

## DATA ANALYSIS

- Analysis and interpretation of data were based on the study done in area of Delhi and primary method of data collection was chosen.

- Data was analysed with the graphical representation mentioned above in the report.

- Data collected was analysed to fulfil the objective of the study and analysis and interpretation was organized according to the objective of the study.

- Interpretation was done for making the sense of result and its implication.

- It was found that more than half had no knowledge about the stem cell banking and its utilization, and the rest had very basic knowledge. The awareness and attitude among people were not appropriate. The above findings were supported by many studies. Study was conducted after going through of various other studies related to stem cell banking.

- Similar study conducted in the Surya Niketan society of East Delhi and concluded that 63.6% respondents were known to stem cell banking and rest were clueless about this. Out of them only 48.5% people were aware that umbilical cord is also source of stem cell collection.

- 38.4% respondent know about dental stem cell and rest had not even hear about dental stem cells.

- About 78% of participants of the study would like to have more knowledge about stem cells. They want education from doctors about stem cells collection procedure and their use in future.

- 15.2% participants believed that stem cell collection procedure is invasive procedure, and this is also reason of not opting the stem cell banking. They have misconception of invasive procedure.

- For the secondary data collection various papers were reviewed and 7 studies were extracted from them.

- It was interpreted that inadequate number of people were aware about the umbilical cord banking and rest had no knowledge. People had gained knowledge from the source of internet and newspapers.

- Many studies revealed about the stem cell therapy uses and explained how they are helping in treating in the life-threatening illnesses.

- One of the recent researches done in Israel revealed that umbilical cord cells may help in the treatment of the coronavirus and prevent its infection.

## RECOMMENDATIONS

- Stem cells present in the human have great properties and it will be the best weapon to fight with harmful diseases in the future. So, the research on it should be continue and utilization of the cells should be encouraged.

- Stem cells are on leading edge in the research, so the research on the adult and embryonic stem cells should be at avant-garde.

- There are many new lines which can researched from stem cells and can be learned also.

- Doctors and gynaecologist should educate the mothers about stem cell banking storage. As, in many studies it was found that people were unaware about this, they did not have knowledge about stem cells.

- Stem cell therapy should also be publicly funded as many participants in studies responded that they had knowledge, but they had not opted this because it costs very high which was not affordable by them.

- Cord blood banking should follow the guidelines of Indian academy of pediatrics and educate the parents under ethical considerations rather than misadvise them.

## CONCLUSION

The present study call attention on stem cells in countries like India so, doctors should convey utility of umbilical cord banking to the expectant parents who are still not aware about this technology. They should advise them in best way about the donation and its storage and its purposes in future. The survey done concluded that people are not much aware about UBC. Moreover, the major factor is affordability of this technique. People are willing to donate the umbilical cord cells, but cost becomes main hurdle element. It is also let out that if government take initiative to acknowledge and encourage this cause then it would be increased among people of India. Government should modulate this industry and take up projects to establish the stem cell storage banks. Publicly funded banks will be more affordable, and people will willingly understand the importance of UCB. India will show the

exceptional future as people are assured well by the physicians about its benefits of terminating  of various inoperable diseases.

There is need for the strong blooming so that government hospitals can have access cord blood banks for making it available to people of country irrespective of their financial circumstances.

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***Study of Online Course on National Accreditation Board of Hospitals and Healthcare***

***By***

***Nikita Arora***

***Project report of course submitted in partial fulfilment of the requirements of the degree***

***MBA Hospital and Health Management/***

***Academic year, 2019-2021***
***Work from Home***

***Under guidance of IIHMR mentor***


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The certificate is awarded to

**Dr. Nikita Arora**

In recognition of having successfully completed his
Internship Work from Home
and has successfully completed her Project on

***Study of Online Course on National Accreditation Board of Hospitals and Healthcare***

**(20 April 2020 – 20 June 2020)**

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning

We wish her all the best for future endeavours

**Mentor**

**President and Dean IIHMR**
**THE IIHMR UNIVERSITY, JAIPUR**

## CERTIFICATE BY SCHOLAR

This is to certify that the Project report titled **Study of Online Course on National Accreditation Board of Hospitals and Healthcare By "The Medvarsity"** and submitted by **Dr. Nikita Arora, Enrolment no :- 0949** under the supervision of **Mr. Anoop Khanna** for award of MBA in Hospital and Health Management of the University carried out during the period from 20/04/2020 to 20/06/2020 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

Dr. Nikita Arora

MBA-HM 24

**CERTIFICATE OF ONLINE COURSE COMPLETION**

**BY MEDVASRITY**

## TABLE OF CONTENTS

## LIST OF FIGURES

## ACKNOWLEDGEMENT

The opportunity provided to do Internship at Work from Home under the mentor of IIHMR was an enriching and valuable experience. I am highly obliged to have contact with so many experience professionals who led me throughout my study period I am sincerely grateful to them for sharing their truthful and illuminating views on several issues related to the project.

I would like to acknowledge, first and foremost **Er. Chandan Gulati (Senior Software Engineer at Ford)** who inspired, guided, and helped me to complete my project, I take this moment to recognize their contribution gratefully.

I am extremely thankful to my faculty at IIHMR- Jaipur and specially my **Mentor Dr. Anoop Khanna (Professor)** for being my support all through the internship.

I recognize this opportunity as a big milestone in the development of my career. I will strive to use the knowledge and skills gained in the best possible way.

Lastly, I want to express my respect and love to my parents, siblings, and my friend **Abhinav Arora** for constant encouragement and motivation in my higher studies.

Sincerely,

Dr. Nikita Arora

## PROJECT REPORT ON ONLINE COURSE

## "NATIONAL ACCREDITATION BOARD FOR HOSPITALS AND HEALTHCARE"

### COURSE DESCRIPTION

The National Accreditation Board for Hospitals and Healthcare Providers (NABH) standards help in building a quality culture at all levels and across all the functions of a healthcare facility.

NABH offers an accreditation program for Indian hospitals and healthcare providers. NABH is a constituent board of Quality Council of India (QCI) and a member of the International Society for Quality in Healthcare (ISQua) Accreditation Council. The NABH standards offer a rigorous framework for patient care and quality improvement in the hospitals to achieve accreditation. This course provides an insight into the framework.

The **NABH Pro** Course from **Medvarsity** is designed to provide the knowledge and insights that can prove critical in achieving NABH accreditation for healthcare organization. The course offers practical guidelines and tips to overcome accreditation challenges that hospitals and other healthcare facilities encounter while getting them accredited.

### CORSE LEARNING OUTCOMES:

- Overview of NABH accreditation.
- NABH accreditation process.
- NABH standards.
- NABH documentations requirements.

This course is designed to help to develop competence and confidence to carry out Clinical Audits

### COURSE OBJECTIVES:

1. To understand clinical audit process. To help clinicians decide exactly why they are doing a particular audit and what they want to achieve through carrying out the audit.
2. To determine, how clinical audit relates to other activities related to accountability for the quality and safety of patient care.
3. To select the right subject for audit.
4. To use evidence of good practice in designing clinical audits.
5. To help clinicians formulate measures of quality based on evidence of good practice, as the basis for data collection and also to develop data collection protocols and tools and advise on data collection for clinical audits.
6. To help in understanding how to handle data protection issues related to clinical audit.

7. To understand use of statistics for analysing and presenting findings of data collection and thus help clinicians to analyse causes of problems that are affecting the quality of care. This helps in applying principles and strategies for taking action to achieve changes in clinical practice.

8. To help clinicians manage review of clinical audit findings with their colleagues.

9. To be able to prepare clinical audit reports.

10. To recognize and handle ethics issues related to clinical audit.

## COURSE AIM

The **aim** of the programme is to develop Internal Counsellors within the hospitals for helping them to work towards implementation of quality and patient safety standards, achieving accreditation and maintaining the same.

## METHODOLOGY

Online learning course is also known as Web-based instructions and internet-based instructions. In online education system there is curriculum that needs to be learnt by learner. The technique of learning or teaching this content is method. Some examples of methods are lectures, project-based learning, and problem-based learning.

## INTRODUCTION

Hospital should pursue accreditation to demonstrate that organization meets a set of quality and safety standards and is in compliance with all regulatory requirements. Achieving accreditation reflects your dedication and commitment to meet these standards, and it demonstrates a higher level of performance and patient care.

Though accreditation used to be a voluntary initiative, it is now gaining wider popularity because of requirements by Insurance Regulatory and Development Authority (IRDA) of India that all empanelled hospitals meet the pre-accreditation entry-level standards laid down by the National Accreditation Board of Hospitals and Healthcare Providers (NABH) by a stipulated date.

Accreditation is an achievement. It allows to have vision. Most importantly, with accreditation, the patients, and communities whom the hospital serves can be certain they are receiving the best care.

## BENEFITS

By NABH accreditation your hospital/healthcare organization gets other substantial benefits including:

- Demonstrate the commitment to patient safety. Accreditation is considered as one of the key benchmarks for measuring the quality of care and patient safety.
- Create distinction among the competition. Differentiating the hospital from other healthcare providers can show dedication to improve patient outcomes and safety.
- Drive continuous improvement and learning. Accreditation establishes the hospital's commitment to being compliant with standards, containing costs, providing a continuous learning opportunity, and practicing performance improvement.

## ABOUT NABH

National Accreditation Board for Hospitals and Healthcare Providers (NABH) offers accreditation programme for Indian hospitals and healthcare providers. NABH is a constituent board of Quality Council of India (QCI) and a member of International Society for Quality in Healthcare (ISQua) Accreditation Council.

NABH accredits a hospital in a non-discriminatory manner regardless of their ownership, legal status, size, and degree of independence.

The NABH standards offer a rigorous framework for patient care and quality improvement in the hospitals to achieve accreditation. These standards help to build a quality culture at all level and across all the functions of the hospital.

## NABH STANDARDS

The NABH accreditation standards comprise of ten chapters incorporating 105 standards and 683 objective elements. The standards are organized to cover two major components of healthcare delivery—patient-centred functions (chapter 1-5) and healthcare organisation-centred functions (chapter 6-10). To comply with the NABH standards, the hospital will need to have a process-driven approach for all its clinical and governance

aspects with clear and transparent policies and protocols. In summary, NABH aims to streamline the entire operations of the hospital.

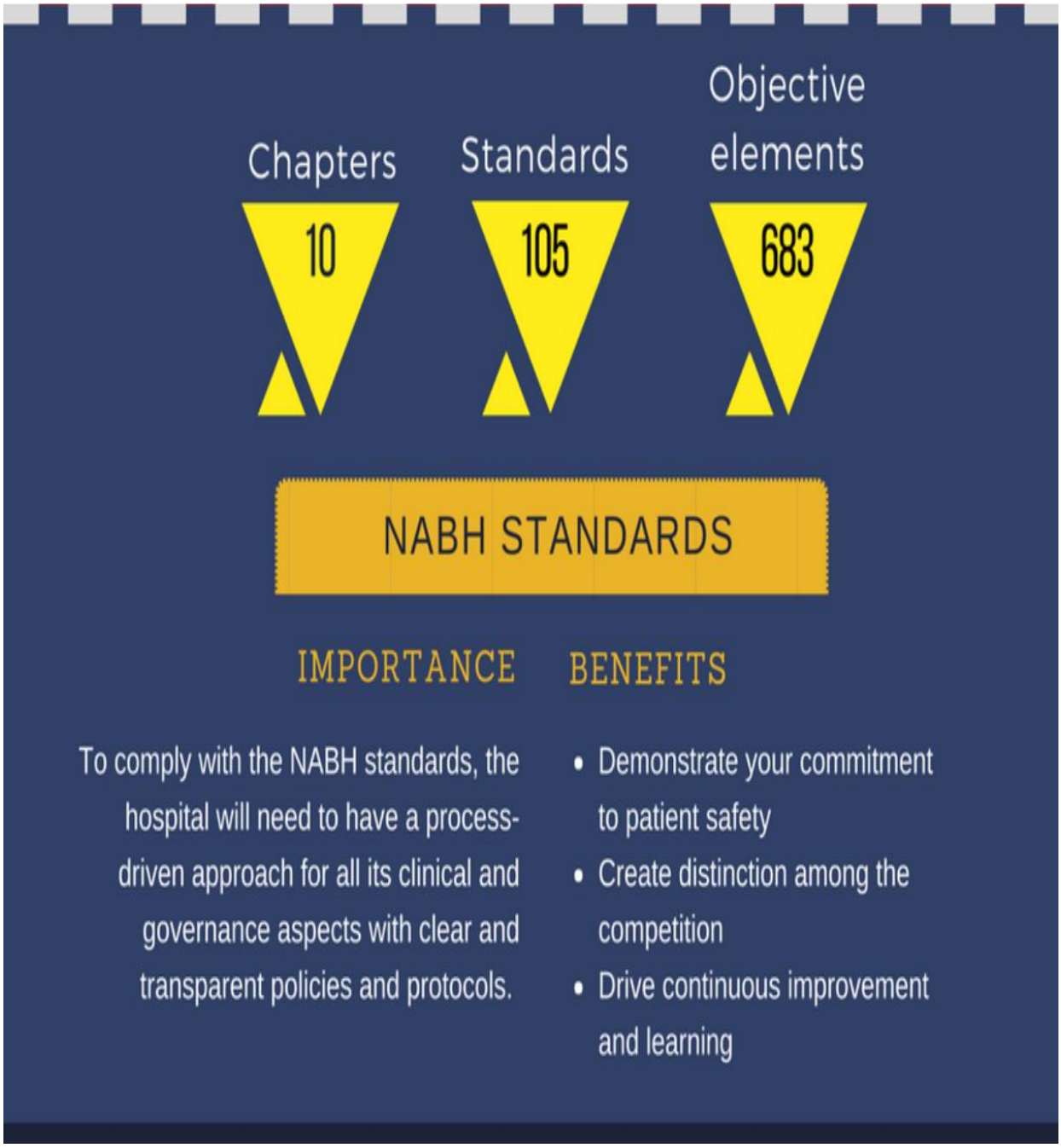


Fig.1

## Preparing for NABH Accreditation

When the hospital management considers securing accreditation for its hospital from NABH, it is essential to create a specific plan of action for achieving certification and designate a responsible person for coordinating all the activities. The nominated official should be well-versed with the current hospital quality assurance systems.

The hospital must acquire a copy of the standards from the NABH Secretariat after payment. Additional clarifications about the standards can be obtained from the NABH Secretariat either in person, through the post, via email or across the telephone.

The hospital must understand the procedure of NABH assessment and ensure that all the standards are incorporated into the organization.

The hospitals can download the application form for NABH Accreditation from the website. The applying hospital must have assessed itself against NABH standards, at least three months prior to applying for accreditation.

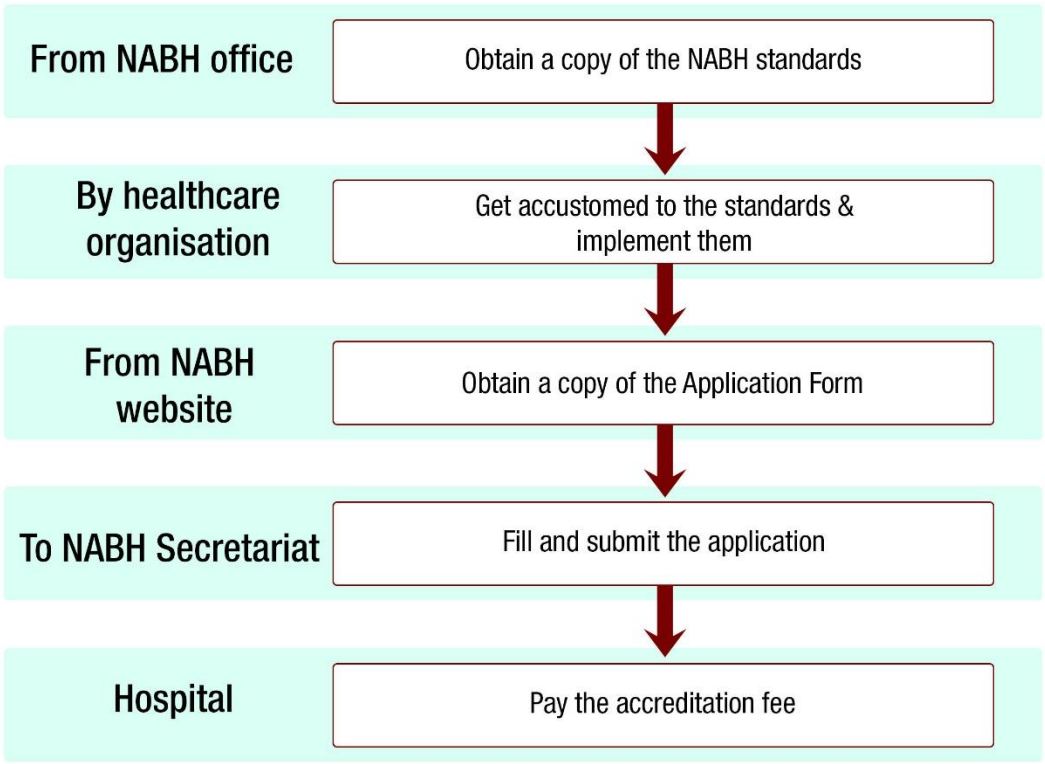


Fig.2

# NABH Accreditation Procedure

The technical committee of NABH has devised standards needed for the assessment of hospitals for issuing accreditation. These standards offer a model for 'quality of care' for patients and improving quality of hospitals.

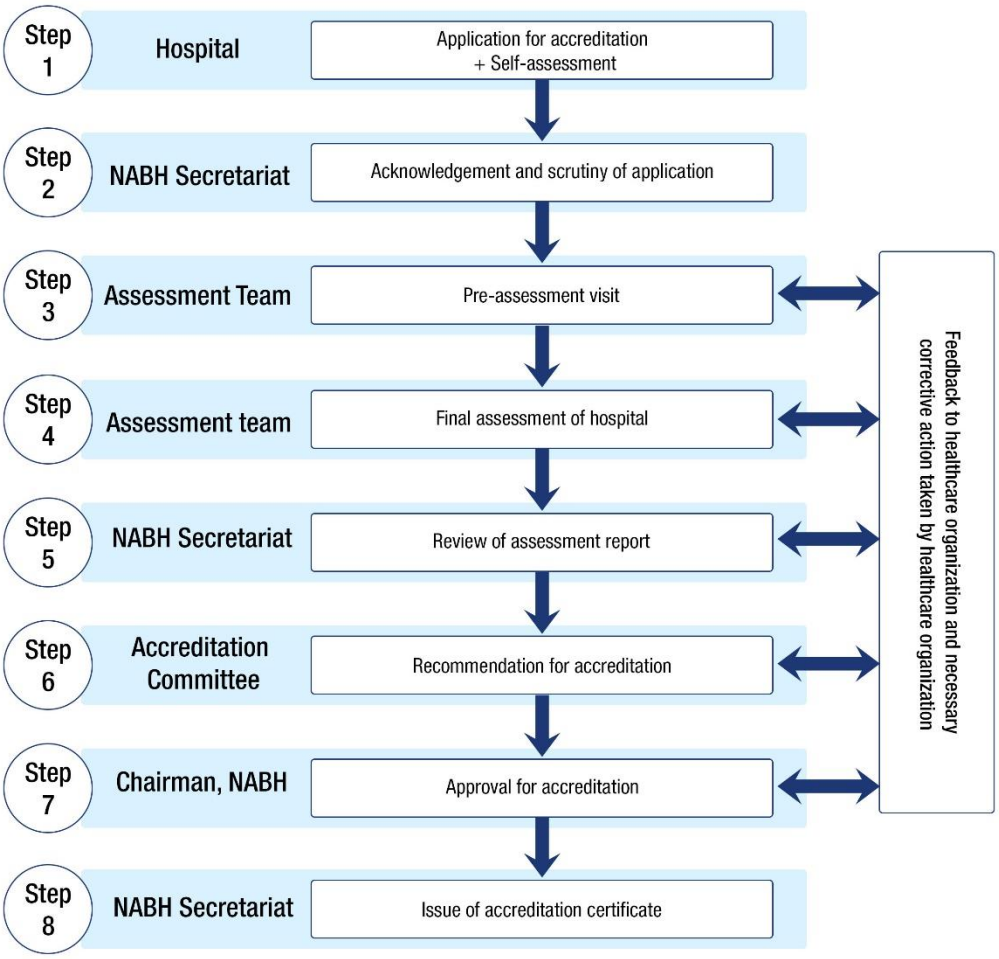


Fig.3

## Step 1: Application for Accreditation

The hospital may apply to NABH in the recommended application form. The request may be accompanied by the following:

- A recommended application fee as mentioned in the application form
- A signed copy of 'Terms and Conditions for Maintaining NABH Accreditation,'
- Completed Self-Assessment Toolkit
- Manuals and documents as per standards of NABH

The purpose of the self- assessment toolkit is for the hospital to assess itself in comparison to the NABH standards. Rigorous self-assessment is recommended. At the time of pre-assessment, if significant deviations are observed then, the final assessment is deferred for a further six months.

## Step 2: Scrutiny of Application

Once the application is received by the NABH secretariat, it is scrutinized for its thoroughness. A letter of acknowledgment will be given to the hospital with a specific reference number. The reference number must be quoted in all the correspondences with NABH in the future.

## Step 3: Pre-Assessment

A Principal Assessor/ Assessment Team, nominated by the NABH, receives the application form, procedures, Self-assessment toolkit, and other documents and conducts the pre-assessment of the healthcare organization.

**The objective of pre-assessment:**

- Verify the readiness of the hospital towards final assessment.
- Review the scope of accreditation and assure the requirement of the number of assessors and the duration of the certification.
- Review the documentation system of the hospital.
- Ascertain the methodology for assessment.

The Principal assessor should submit a pre-assessment report in the format mentioned in the document ' Pre-Assessment Guidelines and Forms.' A duplicate of the report is given to the organization after the assessment, and the original copy will be sent to the Secretariat of NABH. The hospital must pay the suitable annual fee before the final evaluation.

## Step 4: Final Assessment

The hospital is advised corrective actions for the non-conformities observed during the pre-assessment. The final assessment contains an in-depth review of the functions of clinic and services. NABH shall empanel an assessment team. The team will include Principal assessor (initially appointed) and the assessors. The total number of nominated assessors vary on the number of services and beds provided. The date of last assessment will be decided by the hospital management and assessors. The evaluation shall be done in hospital's department and services.

Principal assessor prepares the assessment based on assessment by the assessors in a format mentioned by NABH.

Information regarding non-conformities noticed by the Principal assessor and detailed assessment report will be sent to NABH.

## Step 5—7: Scrutiny of Assessment Report

NABH will analyse the assessment report. The report will be put-forth before the accreditation committee. Based on score and compliance with the standard, the award of accreditation will be decided.

The information on which the award of assessment will be determined are:

***Pre-accreditation entry level***

**Conditions needed for this award are:**

- All the legal regulatory requirements must be carefully met.
- No specific standard must have more than two zeroes.
- The minimum score for individual standard must not be less than 05.
- The minimum score for individual chapter must be more than 05.
- The total average rating for all standards should cross 05.

The valid period for pre-accreditation entry stage starts from a minimum of six months to a maximum of eighteen months. That means a hospital put under this award cannot go for assessment in the first six months.

***Pre-accreditation progressive level***

**Conditions required for passing this award are:**

- All the legal regulatory requirements must be carefully met.
- No specific standard must have more than two zeroes.
- The minimum score for individual standard must not be less than 05.
- The minimum score for individual chapter must be more than 06.
- The total average rating for all standards should cross 06.

The valid period for accreditation entry stage starts from a minimum of three months to a maximum of twelve months. That means a hospital put under this award cannot go for assessment in the first three months.

## Step 8: Issue of Accreditation Certificate

**Conditions for qualifying accreditation are:**

- All the legal regulatory requirements must be fully met.
- No specific standard must have more than two zeroes.
- The minimum score for individual standard must not be less than 05.
- The minimum score for individual chapter must be more than 07.
- The total average rating for all standards should cross 07.

The validity period for accreditation is three years subject to terms and conditions.

The validity of awards will be only until the following assessment or till the last date of validity, or the one which comes earlier. Awards CANNOT be reviewed. Based on progress, the institution can either get a pre-accreditation entry-level award, or pre-accreditation progressive level award or can be certified. If during the stage of pre-accreditation entry-level and pre-accreditation progressive level, the institute does not show any advancement during the following assessment, they will be encouraged to reapply. NABH will give Accreditation certificate to hospitals with a valid period of three years. The certificate will contain a unique number and validity date and will be accompanied by accreditation. The applying hospital must pay all the amount due to NABH before the certificate is issued. All the decisions taken by NABH concerning accreditation's grant will be open to decision by the hospitals, to NABH chairman.

## Surveillance and Re-assessment Accreditation

Accreditation to a hospital will be valid for three years.

- NABH conducts **one surveillance of the accredited hospitals in one accreditation cycle of three years**. Visit for monitoring will be planned during the second year (after eighteen months) of accreditation.
- The hospitals can apply for **renewal of accreditation at least six months prior to the expiry of accreditation's validity** for which, the reassessment will be performed.
- NABH may call for a **surprise visit based on any concern or serious event** reported by either an individual, institution or media.

## NABH ASSESSMENT GUIDE

Accreditation is a motivation to improve your commitment to providing quality care to every patient.

In India, The National Accreditation Board for Hospitals and Healthcare Providers (NABH) gives third-party accreditation to Health Care organizations. NABH guarantees the performance of hospitals in all sectors. An Indian culture-specific accreditation system preserves the national health care systems better than the international ones.

The assessment team of Principal Assessor and enlisted NABH assessors conducts the assessment. The assessment is carried out systematically for a comprehensive review of your hospital services, functions, and quality management system.

The assessment report forms the basis

- for the recommendation of the hospital to the Accreditation Committee
- for assisting the hospital in performance improvement

That said, the assessment is not directed at enlisting non-conformances/deficiencies as an evidence to justify denial of accreditation.

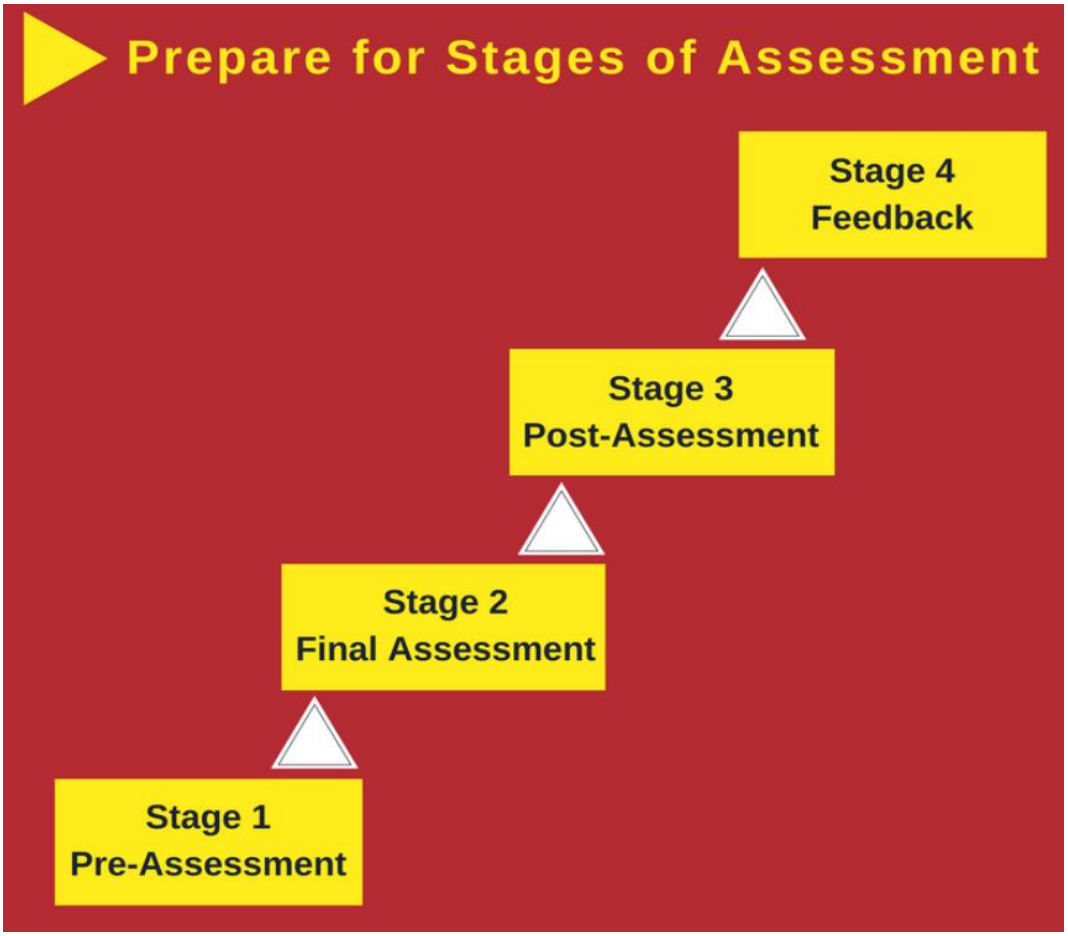


Fig.4

**Role of Assessment Team:**

NABH assessment team must perform an on-site assessment of your hospital and issue the report to NABH.

The objective of the on-site assessment is to get a proof of compliance with regards to NABH standards and other policy documents.

The team must check conformance with the NABH standards during the appraisal. The team would be required to exercise their scientific judgmental skill and form their opinion regarding the extent of conformance with respect to accreditation criteria.

Apart from the strength of the NABH system, the achievement of accreditation relies on the assessing team conducting the on-site assessment and hence, plays a vital role in regulating the integrity and value of the accreditation.

The team chiefly consists of a Principal Assessor leading a group of assessors. Sometimes, a technical expert may join the team to support on a specific area. The team will preserve the confidentiality of the reports and subjects related to your hospital.

NABH Secretariat on communication from the hospital about the readiness to take up pre-assessment, delegates a Principal Assessor from the NABH assessor database. The scope and type of the hospital are kept in mind while selecting the Principal Assessor. For carrying out the pre-assessment, the Principal assessor may also be accompanied by assessors. The number of assessors varies with the size of your hospital.

The hospital will receive the names of the Principal Assessor, assessor(s) and their institutions for consent. The following forms are given to the assessment team for conducting the assessment:

- An application from the hospital
- A copy of the submitted self-assessment toolkit
- A Quality Manual and various other documents relevant to NABH
- Guidelines and forms of Pre-Assessment
- Confidentiality form
- Travel expenses form

Pre-Assessment is conducted to check the readiness of the hospital to go through the assessment and to analyse the scope of accreditation.

The duties of Principal Assessor are to explain the need for the assessment. She/he reveals the methodology followed by the team during the assessment. Things are explained in detail with the management of the hospital during the opening meeting of the pre-assessment.

## ON SITE- ASSESSMENT

A methodology like Pre-Assessment is followed for final assessment of your hospital. The number of assessors varies on the size of your hospital.

You will receive the names of the Principal Assessor, assessor(s) and their institutions for your consent. NABH ensures that the team will not have a competing position with your hospital. It also assures that assessors are not having any direct or indirect relationship with your hospital.

After confirming the date(s) of the assessment from the Principal Assessor and other assessors consorting the evaluation, a written correspondence is sent to your hospital and the assessment team with the following forms:

- Application form of your hospital
- Pre-Assessment report
- Corrective action report
- Self-assessment submitted by the organization
- Hospital/SHCO instruction books/documents of your hospital
- Confidentiality form

Assessment team meets and strategizes assessment programme. This may contain the distribution of work between the Assessors.

**Opening Meeting**

Principal Assessor and the team will have an initial meeting with your hospital representatives where they get used to your hospital, departments, sections, and their locations.

The Principal Assessors will explain the goals and range of assessment and what is anticipated from your hospital in the evaluation.

The Principal Assessor shall put-forth an assessment schedule to your hospital representatives. The hospital/SHCO will be advised to appoint co-coordinator to go with each assessor.

Your hospital must not contact the team of assessment for concluding 'non-conformance' while the evaluation is still in progression.

**Assessment**

The tasks of assessment are:

- **Orientation of assessors to the organization's services:** The assessment process will begin with an opening meeting. The assessors familiarise themselves with the process of assessment. Any possible changes in the strategy of assessment are discussed.
- **Document review:** This contains an analysis of policies, proof of compliance with the policies, proof of committees and NABH standards.
- **Functional Interview**:
    - Interview with Leadership
    - Interview with Infection control
    - Interview with the management of data/patient forms
    - Interview of the qualifications of staff and their academics
- **Visit patient care areas and selected department:** The team will analyse the process for patient care in various settings in your hospital.
- **Facility tour**
- **Special interview/issue resolution**

### Compilation of assessment report

Principal Assessor collates the observations from the assessors and summary on 'non-compliance' from every individual assessor.

The Principal Assessor provides an assessment's synopsis of her/his final document. The papers must contain a signature of the certified endorser of your hospital.

Finally, the consulting Principal Assessor along with the team completes the score sheet and sends to NABH along with the report. This remains a secret document, and the duplicate of it will not be given to your hospital.

### Guidelines for evaluation

Assessment is established on the scoring over a scale of 0, 5 and 10 by the following information:

- Compliance with the requirement: 10
- Partial compliance with the requirement: 5
- Non-compliance with the requirement: 0
- Not Applicable: NA

The assessor must give the information of deficiency both with regards to non-conformity and partial conformity.

### Criteria for Evaluation

No individual standard should have more than one zero to qualify. However, no zero is accepted in the regulatory/legal requirements:

- The average score for individual standard must not be less than 5
- The average score for individual chapter must not be less than 7
- The overall average score for all standards must exceed 7

### Closing Meeting

The Principal Assessor and assessors meet the representative of your hospital to share their observations and thank your hospital for your support. Your hospital will also receive a duplicate of the document—conclusion of non-compliances (HAF 3).

## POST ASSESSMENT

- Principal Assessor must send the document back to NABH at the earliest levels of convenience.
- NABH then analyses the assessment report from the Principal Assessor and seek clarification your hospital.
- NABH will submit the assessment report and corrective action to the Assessment Committee for its consideration.

## FEEDBACK

Two 'Feedback Forms' are collected by NABH after the assessment is completed:

1. Feedback on performance of the assessment team by your hospital
2. Feedback on performance of other assessors by the Principal Assessor

**Following policy guidelines are applicable on all organizations applying for NABH accreditations.**

| S.No | Accreditation steps | Approx. time line |
|---|---|---|
| 1. | Submission of application (along with fee amount) + self assessment toolkit + documents + Signed copy of Terms and Conditions. | - |
| 2. | 1) Registration and acknowledgement to HCO along with unique reference no.<br>2) Reflect same on website. | Within 10 days of receiving application form and fees |
| 3. | Pre assessment | Within 3 months of deposition |
| 4. | Take corrective action and send report to NABH secretariat. | Within 3 months of of assessment |
| 5. | Final assessment | Within six months of PreAssessment |
| 6. | Take corrective action on non conformities raised during final assessment and send report to NABH secretariat. | Within three months of final assessment |
| 7. | Review by accreditation committee. | - |
| 8. | Verification Assessment (as and if decided by AC) | - |
| 9. | Surveillance Assessment | Within 15-17 months Accreditation |
| 10. | Take corrective action on non conformities raised during surveillance assessment and send report to NABH secretariat. | Within 1.5 months of surveillance visit |
| 11. | Reassessment | Before 6 months of expiry of accreditation |

Fig.5

## Committees for NABH Accreditation

**Suggested list of committees:**

- Quality improvement/ core committee
- CPR committee (Code Blue Team)
- Hospital infection control committee
- Pharmaco therapeutic committee
- Safety committee
- Hospital ethics committee
- Anti-sexual harassment committee
- Management review committee
- Disaster management committee
- Purchase committee
- Grievance redressal committee
- Medical records committee
- Blood transfusion committee

## QUALITY IMPROVEMENT COMMITTEE

**The roles and responsibilities of a Quality Improvement/ Core Committee are:**

- To ensure compliance with the Institution's mission, vision, and values. And to take necessary steps to achieving the same.
- To ensure necessary resource availability to implement and monitor NABH standards.
- To identify the gaps w. r. t NABH standards and take necessary action for compliance with the NABH requirements.
- To establish Policies and Procedures related to clinical and non-clinical activities and implement the same.
- To establish Quality Improvement Program for the Institute and prepare the action plan for implementation.
- To ensure compliance with the laid down and applicable legislation and regulations
- To ensure that the Patients, as well as Employees grievances, have been taken care and protect Patients as well as Employees' Rights.

## CPR COMMITTEE

**The roles and responsibilities of a CPR Committee are:**

- Defining the role and composition of resuscitation team.
- Ensuring resuscitation equipment for clinical use is made available.
- Ensuring appropriate resuscitation drugs (including those for peri-arrest situations) are available.
- Planning adequate provision of training in resuscitation.
- Determining requirements for and choice of resuscitation training equipment. All policies relating to resuscitation and anaphylaxis.
- Auditing of resuscitation outcomes.
- Recording and reporting critical incidents in relation to resuscitation.

**Points to be checked (but not limited to) by CPR Committee during post CPR Event Analysis:**

- Availability and use of equipment
- Availability of cardiopulmonary arrest and peri-arrest drugs
- Cardiopulmonary arrest outcomes
- Critical incidents leading to cardiopulmonary arrest or occurring during every event of resuscitation attempt.

## HOSPITAL INFECTION CONTROL COMMITTEE

**The roles and responsibilities of the Hospital Infection Control Committee are:**

- To develop a mechanism for supervising infection control measures in all phases of activities in the institute.
- In case of an outbreak of HAI, Infection Control Committee (ICC) shall identify the root cause(s) and take appropriate Corrective and Preventive action.
- To provide inputs to the NABH Core Committee meeting (whenever required) regarding Infection Control aspects.
- To analyse, interpret and disseminate data arising out of surveillance and to recommend remedial measures and to ensure follow up action.
- To ensure the conduct of sterilization and disinfection practices and to ensure the central sterile supply services, housekeeping, laundry, engineering maintenance, food sanitation and waste management are in conformity with the infection control policies of the institution. The necessary procedures to be evaluated and revised periodically.
- To guide the scope and content of the Employee health program.
- To support in orientation and continuing education of all new and old employees as to the importance of infection control policies and procedures.
- To act upon recommendations related to infection control, received from the administrative departments, services and other committees of the Institute.

## PHARMACO-THERAPEUTIC COMMITTEE

**The roles and responsibilities of a Pharmaco Therapeutic Committee are:**

- To formulate and implement policies and procedures relating to pharmacy services and medication usage.
- To formulate & implement the hospital formulary and update the same at regular interval.
- To oversee effective and efficient operation of the formulary system.
- To communicate the defined policies and procedures among the Doctors, Nurses, & Pharmacist and other staff.
- To define and establish a framework for reporting of Adverse Drug Events.
- To analyse the Adverse Drug Events and modify the policies to reduce Adverse Drug Events.
- To design and implement methods for ensuring the safe prescribing, distribution, administration, and monitoring of medications.

- To ensure that the pharmacy services have complied with the applicable laws and regulations.
- To formulate Antibiotic policy and implement the same.
- To evaluate the rate of antibiotics used in this Institution and to suggest suitable solutions for improving the present status.
- To document the policies and procedures to guide the usage of Narcotic drugs and psychotropic substances in the institution.
- To define policies and procedures including safe storage, preparation, handling, distribution, and disposal of radioactive drugs.
- To participate in Quality improvement Activities and monitor various Quality Indicators for further improvement.
- To report to top management / Core committee as and when necessary.

## SAFETY COMMITTEE

**The roles and responsibilities of a Safety Committee are:**

- To identify the potential safety and security risks to patients, staff, and visitors in all phases of activities (including the areas of WHO Patient Safety Solutions).
- To conduct facility inspection rounds to ensure safety (minimum twice a year) in patient care area and minimum once in a year in non-patient care area.
- To conduct an exercise of Hazard Identification and Risk Analysis (HIRA) associated with (but not limited to) the following:
    - Sharp bends in passages
    - Protruding or dangling element in passageway
    - Sudden swing or swing doors
    - Ramps
    - Hazardous materials management (e.g. ETO gas leakage, spillage of blood samples, spillage of acids)
    - Patient Transport (Internal & External)
    - Variation of floor heights which may cause fall/injury
    - Electrical hazards in workplaces (e. g. working with autoclaves, electrical cautery machine, etc)
- To identify root cause(s), to take appropriate corrective/preventive action for the gaps identified through facility inspection rounds.
- To study process failure, Sentinel events and Near misses take appropriate actions.
- To coordinate for development, implementation and monitoring of the safety plan, policies, and procedures.
- To analyse, interpret and disseminate data arising out of Internal Quality Audit/Inspection Rounds and to recommend remedial measures and to ensure follow up action.
- To monitor Patient Safety Device Management including identification, procurement, installation, utilization, updating and maintenance (example of Patient Safety Devices—grab bars, bed rails, signposting, safety belts in stretchers and wheelchairs, alarms both visual and auditory where applicable, warning sign like radiation or biohazard, call bells and fire safety devices).
- To ensure staff are educated on safety through training program and such training program are effective.

## HOSPITAL ETHICS COMMITTEE

**The roles and responsibilities of a Hospital Ethics Committee are:**

To ensure that the research protocols carried out in the hospital:

- Do not compromise safety and well-being of the patients.
- Are conducted under the expertise and supervision of medical person.
- Include a patient who has voluntarily agreed and given a written informed consent prior to participation.
- Will review research project when it is necessary.
- Will keep a list of projects submitted, approved/disapproved along with their outcomes.

## ANTI-SEXUAL HARASSMENT COMMITTEE

**The roles and responsibilities of an Anti-Sexual Harassment Committee are:**

- Prevent discrimination and sexual harassment in the institution.
- Deal with cases of discrimination and sexual harassment against women, in a time bound manner, aiming at ensuring support services to the victimized and termination of the harassment.
- Recommend appropriate punitive action against the guilty party to the Chairperson.

## DISASTER MANAGEMENT COMMITTEE

**The roles and responsibilities of a Disaster Management Committee are:**

- To establish and review the Disaster Management Plan of the Institution.
- To ensure adequate training of the personnel.
- To ensure availability of adequate resources.
- To test the documented disaster management plan and take corrective actions.

## MANAGEMENT REVIEW COMMITTEE

**The roles and responsibilities of a Disaster Management Committee are:**

- To review the whole management team.
- To ensure about their training and education.
- To give them continuous support.

**Remaining other committees work for their respective departments as per scheduled to them.**

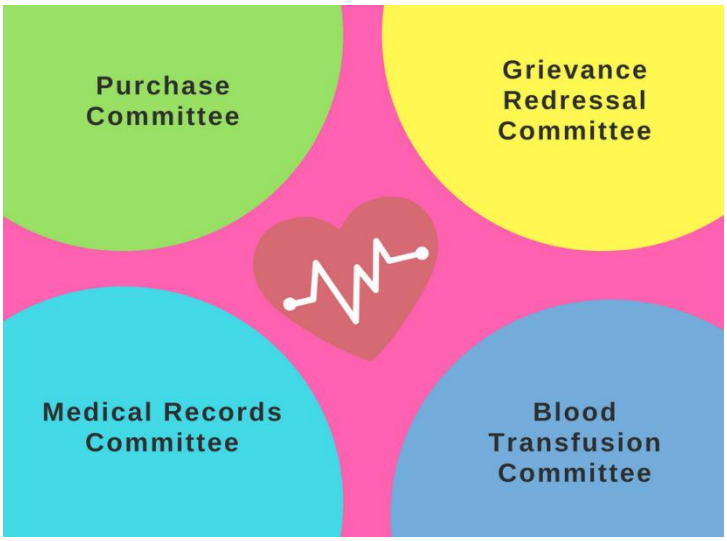


Fig.6

## NABH STANDARDS


Fig.7

## PATEINT -CENTERED SATNDARDS

### Access, Assessment and Continuity of Care (AAC)

- Patients are informed about the services that an institution your hospital provides. This will allow for a sensible matching of patients with the resources of the system. Those patients who can be cared for are admitted to your hospital. Emergency patients will get life-stabilizing treatment and are either given an admission or shifted to your hospital that contains facilities to care for such patients. Out-patient who do not match the institution's resources are likewise referred to organizations which have similar resources.

- Patients that match your hospital's resources will be given an admission using a systematic process. Patients will go through an established primary assessment and systemic and regularized reassessments.

- Assessments entail planning for using laboratory and imaging services. The laboratory and imaging services are procured by qualified personnel in a safe environment for the staff and patients.

**Summary of Standards**

| | |
|---|---|
| **AAC.1.** | The organisation defines and displays the healthcare services that it provides. |
| **AAC.2.** | The organisation has a well-defined registration and admission process. |
| **AAC.3.** | There is an appropriate mechanism for transfer (in and out) or referral of patients. |
| **AAC.4.** | Patients cared for by the organisation undergo an established initial assessment. |
| **AAC.5.** | Patients cared for by the organisation undergo a regular reassessment. |
| **AAC.6.** | Laboratory services are provided as per the scope of services of the organisation. |
| **AAC.7.** | There is an established laboratory quality assurance programme. |
| **AAC.8.** | There is an established laboratory safety programme. |
| **AAC.9.** | Imaging services are provided as per the scope of services of the organisation. |
| **AAC.10.** | There is an established quality assurance programme for imaging services. |
| **AAC.11.** | There is an established safety programme in the imaging services. |
| **AAC.12.** | Patient care is continuous and multidisciplinary in nature. |
| **AAC.13.** | The organisation has a documented discharge process. |
| **AAC.14.** | Organisation defines the content of the discharge summary. |

Fig.8

- Your hospital should provide equal care to all patients in various settings. These settings include care given outpatient departments, diverse categories of intensive care units, wards, operation theatre and procedure rooms. When corresponding care is provided in these varied settings, care delivery will be consistent. Strategies, methods, suitable laws and regulations handbook of emergency and ambulatory services, cardio-pulmonary resuscitation (CPR), utilizing blood and blood components, care of patients in intensive care and high dependency units.

- Policies, amicable laws, procedures and regulations do care for assailable patients (mentally-able, children, elderly and physically-weak), chronic obstetrical patients, pediatric patients, patients experiencing medium sedation, administering anaesthesia, patients going through surgical procedures, patients with constraints, research activities and terminal life care.

- Pain management, nutrition therapy, and services offering rehabilitation are also discussed to give comprehensive health care.

- The standards are targeted at guiding and encouraging patient safety as the whole principle for assisting care to patients.

**Summary of Standards**

| | |
|---|---|
| COP 1: | Uniform care to patients is provided in all settings of the organisation and is guided by the applicable laws, regulations and guidelines. |
| COP 2: | Emergency services are guided by documented policies, procedures applicable laws and regulations. |
| COP 3: | The ambulance services are commensurate with the scope of the services provided by the organisation. |
| COP 4. | The organisation plans for handling community emergencies, epidemics and other disasters. |
| COP 5: | Documented policies and procedures guide the care of patients requiring cardio-pulmonary resuscitation. |
| COP 6: | Documented policies and procedures guide nursing care. |
| COP 7: | Documented procedures guide the performance of various procedures. |
| COP 8: | Documented policies and procedures define rational use of blood and blood components. |
| COP 9: | Documented policies and procedures guide the care of patients in the intensive care and high dependency units. |
| COP 10: | Documented policies and procedures guide the care of vulnerable patients. |
| COP 11: | Documented policies and procedures guide obstetric care. |

| | |
|---|---|
| COP 12: | Documented policies and procedures guide paediatric services. |
| COP 13: | Documented policies and procedures guide the care of patients undergoing moderate sedation. |
| COP 14: | Documented policies and procedures guide the administration of anaesthesia. |
| COP 15: | Documented policies and procedures guide the care of patients undergoing surgical procedures. |
| COP.16 | Documented policies and procedures guide organ transplant programme in the organisation. |
| COP 17: | Documented policies and procedures guide the care of patients under restraints (physical and/or chemical). |
| COP 18: | Documented policies and procedures guide appropriate pain management. |
| COP 19: | Documented policies and procedures guide appropriate rehabilitative services. |
| COP 20: | Documented policies and procedures guide all research activities. |
| COP 21: | Documented policies and procedures guide nutritional therapy. |
| COP 22: | Documented policies and procedures guide the end of life care. |

Fig.9


- Your hospital should have an organised and a safe medication process. This contains policies, procedures, safe storage of therapeutics, prescriptions, administering and delivering medications.
- The standards promote the integration of medications into daily functioning of clinics and patient care. Your pharmacy must have an overview of all the medicines given and must ensure proper storage (with regards to temperature, light), dates of expiry and documentation maintenance.
- The availability of emergency medication is emphasized strongly. Your hospital should have a decent structure to ensure the standardisation of emergency medications across the organisation, readily available and replaced promptly. The mechanism should be

adequately monitored to assure that the medicines are not kept beyond their expiry dates.

- Every chance medication order must be verified by a qualified person to ensure correctness of the dose, frequency, and the path of administration. The "appropriate person" could either be a doctor, a registered nurse, or a pharmacist. Procedures and policies guide the harmless use of dangerous medication like narcotics, chemotherapeutic drugs, and radioisotopes.

**Summary of Standards**

| | |
|---|---|
| MOM 1: | Documented policies and procedures guide the organisation of pharmacy services and usage of medication. |
| MOM 2: | There is a hospital formulary. |
| MOM 3: | Documented policies and procedures guide the storage of medication. |
| MOM 4: | Documented policies and procedures guide the safe and rational prescription of medications. |
| MOM 5: | Documented policies and procedures guide the safe dispensing of medications. |
| MOM 6: | There are documented policies and procedures for medication administration. |
| MOM 7: | Patients are monitored after medication administration. |
| MOM 8: | Near misses, medication errors and adverse drug events are reported and analysed. |
| MOM 9: | Documented procedures guide the use of narcotic drugs and psychotropic substances. |
| MOM 10: | Documented policies and procedures guide the usage of chemotherapeutic agents. |
| MOM 11: | Documented policies and procedures govern usage of radioactive drugs. |
| MOM 12: | Documented policies and procedures guide the use of implantable prosthesis and medical devices. |
| MOM 13: | Documented policies and procedures guide the use of medical supplies and consumables. |

Fig.10

## Patient Right and Education (PRE)

- Your hospital delineates the patient and family's rights and duties. Your staffs are mindful of these rights and trained to safeguard them. Patients have spoken abreast about their responsibilities at the time of admission. They are also educated about the diseases and the expected outcomes in the decision-making process. Finances involved in the process are told vividly to patient and family. Patients are briefed about the ways to be followed to express any discomforts or complaints.
- A structures process for attaining patient and family's permission is in place for informed decision making regarding their care.
- Patients and their families have authority to deduce information and education about their healthcare requirements in a language and fashion that is understood by them.

## Hospital Infection Control (HIC)

| | |
|---|---|
| PRE 1: | The organisation protects patient and family rights and informs them about their responsibilities during care. |
| PRE2: | Patient and family rights support individual beliefs, values and involve the patient and family in decision making processes. |
| PRE3: | The patient and/or family members are educated to make informed decisions and are involved in the care planning and delivery process. |
| PRE4: | A documented procedure for obtaining patient and/or family's consent exists for informed decision making about their care. |
| PRE5: | Patient and families have a right to information and education about their healthcare needs. |
| PRE6: | Patients and families have a right to information on expected costs. |
| PRE7: | The organisation has a mechanism to capture patient's feedback and redressal of complaints. |
| PRE8: | The organisation has a system for effective communication with patients and / or families. |

Fig. 11

- The standards guide for allowance of a useful healthcare-associated infection mitigating and control programme in the institution. The application is structured and is targeted at decreasing risks to patients, visitors, and healthcare providers.

- The institution estimates and implements a corrective measure to prevent the dangers of Healthcare Associated Infection (HAI) in patients, and its personnel.
- The institution gives adequate facilities and appropriate resources to bolster the "Infection Control Programme."
- The institution has adequate antimicrobial management program via frequently updated antibiotic policy based on regional data and watches its implementation. The program also consists surveillance of antimicrobials utilization in the organization.
- The program contains a plan of action to control infection outbreaks, disinfection/ sterilization procedures, biomedical waste management (BMW), giving training to staff and personnel health.

**Summary of Standards**

| | |
|---|---|
| HIC 1: | The organisation has a well-designed, comprehensive and coordinated Hospital Infection Prevention and Control (HIC) programme aimed at reducing/eliminating risks to patients, visitors and providers of care. |
| HIC 2: | The organisation implements the policies and procedures laid down in the Infection Control Manual in all areas of the hospital. |
| HIC 3: | The organisation performs surveillance activities to capture and monitor infection prevention and control data. |
| HIC 4: | The organisation takes actions to prevent and control Healthcare Associated Infections (HAI) in patients. |
| HIC 5: | The organisation provides adequate and appropriate resources for prevention and control of Healthcare Associated Infections (HAI). |
| HIC 6: | The organisation identifies and takes appropriate action to control outbreaks of infections. |
| HIC 7: | There are documented policies and procedures for sterilization activities in the organisation. |
| HIC 8: | Biomedical waste (BMW) is handled in an appropriate and safe manner. |
| HIC 9: | The infection control programme is supported by the management and includes training of staff. |

Fig.12

Organisation-centred Standards

## Continual Quality Improvement (CQI)

- The standards promote an environment of continuous quality improvement. The quality and safety programme must be recorded and contain all the areas of institution and personnel. The system should gather information on structures, procedures, and outcomes, specifically in areas of high-risk conditions.
- The collected data must be pooled, reviewed, and utilized for further persistent advancements. The quality plan for the diagnostic services must be incorporated into the institution's quality plan. "Infection-control" and "patient-safety" must also be embedded into the quality plan of the organization.

### Summary of Standards

| | |
|---|---|
| CQI 1: | There is a structured quality improvement and continuous monitoring programme in the organisation. |
| CQI 2: | There is a structured patient-safety programme in the organisation. |
| CQI 3: | The organisation identifies key indicators to monitor the clinical structures, processes and outcomes, which are used as tools for continual improvement. |
| CQI 4: | The organisation identifies key indicators to monitor the managerial structures, processes and outcomes, which are used as tools for continual improvement. |
| CQI 5: | There is a mechanism for validation and analysis of quality indicators to facilitate quality improvement. |
| CQI 6: | The quality improvement programme is supported by the management. |
| CQI 7: | There is an established system for clinical audit. |
| CQI 8: | Incidents are collected and analysed to ensure continual quality improvement. |
| CQI 9: | Sentinel events are intensively analysed. |

Fig.13

## Responsibilities of Management (ROM)

- The standards encourage the governance of your hospital in a professional and ethical manner. The responsibilities of your management are defined. Your hospital complies with all applicable regulations and is led by a suitably qualified and experienced individual. The responsibilities of the leaders at all levels are defined. The services provided by each department are documented.
- Your heads should ensure that patient-safety and risk-management issues are an integral part of patient care and hospital management.

### Summary of Standards

| | |
|---|---|
| ROM 1: | The responsibilities of those responsible for governance are defined. |
| ROM 2: | The organisation is responsible for and complies with the laid-down and applicable legislations, regulations and notifications. |
| ROM 3: | The services provided by each department are documented. |
| ROM 4: | The organisation is managed by the leaders in an ethical manner. |
| ROM 5: | The organisation displays professionalism in management of affairs. |
| ROM 6: | Management ensures that patient-safety aspects and risk-management issues are an integral part of patient care and hospital management. |

Fig.14

## Facility Management and Safety (FMS)

- The standards guide the provision of a safe and secure environment for patients, their families, staff, and visitors.
- Your hospital shall take steps to ensure this, including proactive risk mitigations.
- To ensure this, your hospital conducts regular facility inspection rounds and takes the appropriate action to ensure safety. Your hospital provides for safe water, electricity, medical gases, and vacuum systems.
- Your hospital has a programme for medical and utility equipment management.
- Your hospital plans for emergencies within the facilities.
- Your hospital is a no-smoking area and manages hazardous materials in a safe manner.
- Your hospital works towards measures of being energy efficient.

## Summary of Standards

| | |
|---|---|
| FMS 1: | The organisation has a system in place to provide a safe and secure environment. |
| FMS 2: | The organisation's environment and facilities operate in a planned manner to ensure safety of patients, their families, staff and visitors and promotes environment friendly measures. |
| FMS 3: | The organisation has a programme for engineering support services and utility system. |
| FMS 4: | The organisation has a programme for bio-medical equipment management. |
| FMS 5: | The organisation has a programme for medical gases, vacuum and compressed air. |
| FMS 6: | The organisation has plans for fire and non-fire emergencies within the facilities. |
| FMS 7: | The organisation has a plan for management of hazardous materials. |

Fig.15


- The most important resource for your hospital is the human resource. Human resources are an asset for the effective working of your hospital. Without an equally effective human resource management system, all other inputs like technology, infrastructure and finances come to halt. Human resource management is concerned with the —"people dimension" in management.
- The goal of human resource management is to acquire, provide, retain, and maintain competent people in right numbers to meet the needs of the patients and community served by your hospital. This is based on the organisation‘s mission, objectives, goals and scope of services.

Effective human resource management involves the following processes and activities:

- Acquisition of Human Resources which involves human resource planning, recruiting and socialisation of the new employees
- Training and development relate to the performance in the present and future anticipated jobs. The employees are provided with opportunities to advance personally as well as professionally
- Motivation relates to job design, performance appraisal and discipline
- Maintenance relates to safety and health of the employees

The term, employee, refers to all salaried personnel working in your hospital. The term, staff, refers to all personnel working in your hospital including employees, medical professionals, part-time workers, contractual personnel, and volunteers.

## Summary of Standards

| | |
|---|---|
| HRM 1: | The organisation has a documented system of human resource planning. |
| HRM 2: | The organisation has a documented procedure for recruiting staff and orienting them to the organisation's environment. |
| HRM 3: | There is an ongoing programme for professional training and development of the staff. |
| HRM 4: | Staff are adequately trained on various safety-related aspects. |
| HRM 5: | An appraisal system for evaluating the performance of an employee exists as an integral part of the human resource management process. |
| HRM 6: | The organisation has documented disciplinary and grievance handling policies and procedures. |
| HRM 7: | The organisation addresses the health needs of the employees. |
| HRM 8: | There is documented personal information for each staff member. |
| HRM 9: | There is a process for credentialing and privileging of medical professionals, permitted to provide patient care without supervision. |
| HRM 10: | There is a process for credentialing and privileging of nursing professionals, permitted to provide patient care without supervision. |

Fig.17

## Information Management System (IMS)

- Information is an important resource for effective and efficient delivery of healthcare. Provision of health care and its continued improvement is dependent to a large extent on the information generated, stored, and utilised appropriately by your hospital.
- Ensure data and information meet the organisation's needs and support the delivery of quality care and service. Provision of patient care is a complex activity that is highly dependent on the communication of information. This communication is to and from the community, patients and their families, and other health professionals.
- Failures in communication are one of the most common root causes of patient safety incidents. The goal of Information management in a hospital is to ensure that the right information is made available to the right person. This is provided in an authenticated, secure, and accurate manner at the right time and place. This helps achieve the ultimate organisational goal of a satisfied and improved provider and recipient of any healthcare setting.

- An effective Information management system is based on the information needs of your hospital. The system can capture, transmit, store, analyse, utilise, and retrieve information as and when required for improving clinical outcomes as well as individual and overall organisational performance.
- Although a digital-based information system improves efficiency, the basic principles of a good information management system apply equally to a manual/paper-based system. These standards are designed to be equally compatible with non-computerised systems and future technologies.

## Summary of Standards

| | |
|---|---|
| IMS 1: | Documented policies and procedures exist to meet the information needs of the care providers, management of the organisation as well as other agencies that require data and information from the organisation. |
| IMS 2: | The organisation has processes in place for effective control and management of data. |
| IMS 3: | The organisation has a complete and accurate medical record for every patient. |
| IMS 4: | The medical record reflects continuity of care. |
| IMS 5: | Documented policies and procedures are in place for maintaining confidentiality, integrity and security of records, data and information. |
| IMS 6: | Documented policies and procedures exist for retention time of records, data and information. |
| IMS 7: | The organisation regularly carries out review of medical records. |

Fig.18

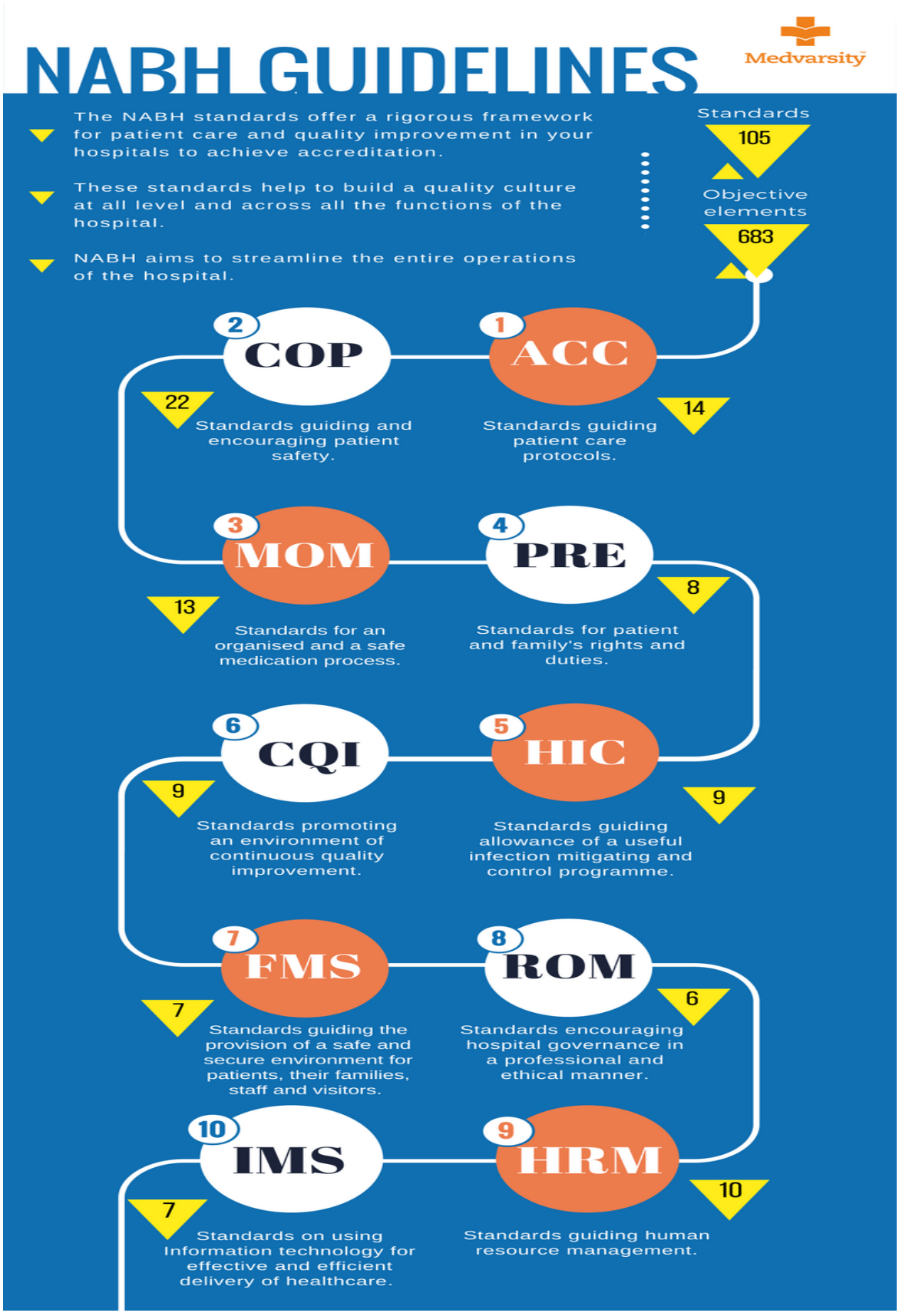
NABH GUIDELINES
Medvarsity
The NABH standards offer a rigorous framework for patient care and quality improvement in your hospitals to achieve accreditation.
These standards help to build a quality culture at all level and across all the functions of the hospital.
NABH aims to streamline the entire operations of the hospital.
Standards
105
Objective elements
683
2 COP
22
Standards guiding and encouraging patient safety.
1 ACC
14
Standards guiding patient care protocols.
3 MOM
13
Standards for an organised and a safe medication process.
4 PRE
8
Standards for patient and family's rights and duties.
6 CQI
9
Standards promoting an environment of continuous quality improvement.
5 HIC
9
Standards guiding allowance of a useful infection mitigating and control programme.
7 FMS
7
Standards guiding the provision of a safe and secure environment for patients, their families, staff and visitors.
8 ROM
6
Standards encouraging hospital governance in a professional and ethical manner.
10 IMS
7
Standards on using Information technology for effective and efficient delivery of healthcare.
9 HRM
10
Standards guiding human resource management.

Fig.19


## Importance of documentation for your hospital and healthcare organization

During many NABH assessments, documentation emerged as the topmost deficiency scoring areas. A messy documentation is linked with messy care. The answer is NOT to avoid or shy away from the documentation. It is a tool to:

- Documentation is vital component in the delivery of healthcare.
- Ensure continuity of care as it serves as a communication tool among healthcare providers.
- Plan and evaluate a patient's treatment.
- Create a permanent record for the patient's future care.
- Create a database to evaluate effectiveness of treatment.
- Facilitate research.
- Substantiate billing.
- Recollect a memory and/or justify/defend care provided.


Fig.20

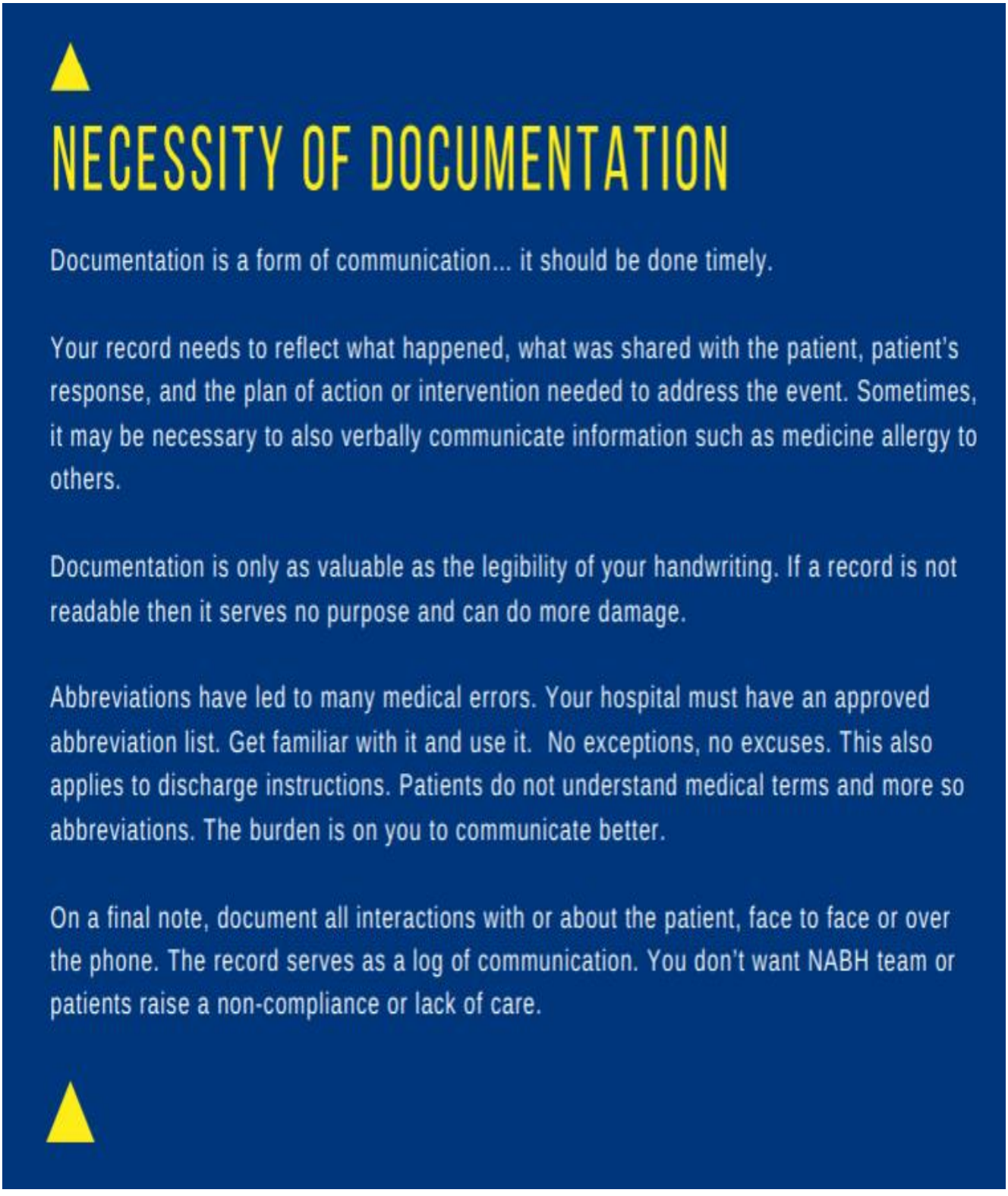
NECESSITY OF DOCUMENTATION
Documentation is a form of communication... it should be done timely.
Your record needs to reflect what happened, what was shared with the patient, patient's response, and the plan of action or intervention needed to address the event. Sometimes, it may be necessary to also verbally communicate information such as medicine allergy to others.
Documentation is only as valuable as the legibility of your handwriting. If a record is not readable then it serves no purpose and can do more damage.
Abbreviations have led to many medical errors. Your hospital must have an approved abbreviation list. Get familiar with it and use it. No exceptions, no excuses. This also applies to discharge instructions. Patients do not understand medical terms and more so abbreviations. The burden is on you to communicate better.
On a final note, document all interactions with or about the patient, face to face or over the phone. The record serves as a log of communication. You don't want NABH team or patients raise a non-compliance or lack of care.

Fig.21

- It allows you to achieve the goal of good healthcare
- Standard operating procedures (SOPs) are a specific set of manuals/ practices documented by your hospital that your staffs are required to initiate and follow. There is a popular misconception that SOPs are standardised across healthcare organisations. The very nature of an SOP is that it is not universally applied, but rather your hospital has procedures/instructions written for your hospital only.
- The emergency department at your hospital should have a SOP, for example, to facilitate patient handoff between your staffs at the emergency room and the ambulance service.

## SOP and NABH

- SOPs help to link evidence-based medicine, clinical practice, and the actualities at the point-of-care.
- NABH recommends that to create SOPs for each chapter of NABH standards. Also, all such SOPs should be prominently accessible in the consulting room, various departments, wards, and places related to patient care.
- SOPs are written keeping with the goal of good healthcare. With SOPs, the quality of patient care will significantly improve.

**Suggested list of SOPs for NABH accreditation**:

- Access Assessment and Continuity of Care.
- Policies & Procedures on Care of Patients Management of Medication.
- Policy and Procedures to Protect Patient Rights and Education.
- Hospital Infection Control Manual.
- Policies & Procedures on Continuous Quality Improvement.
- Policies & Procedures on Responsibilities of Management.
- Policies & Procedures on Facility Management and Safety.
- Policies & Procedures on Human Resources Management.
- Policies and Procedures on Information Management System.