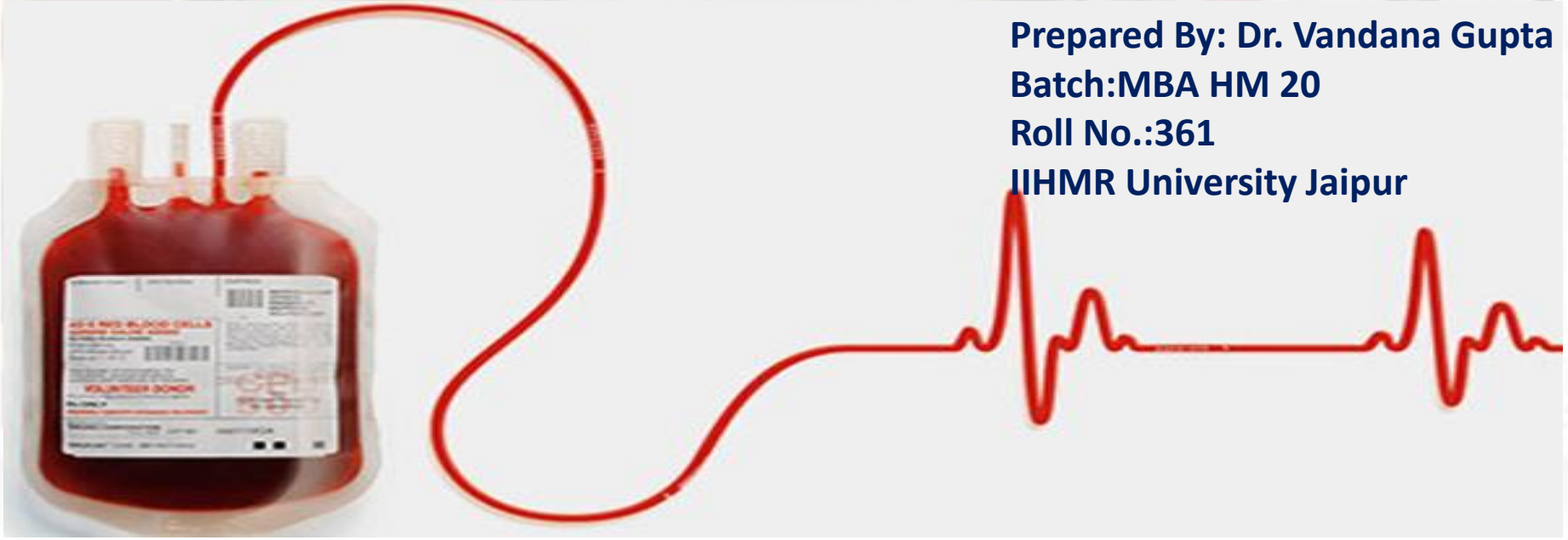
JINDAL INSTITUTE OF MEDICAL SCIENCES

Quality Medical Care at Affordable Cost

Implementation of NABH Standards for Blood Bank



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Introduction

- Blood storage centers are an integral part of health care system.
- Healthcare sector Accreditation has not only become a symbol of recognition but it also an opportunity for the organizations to prove themselves on quality parameters.
- The Standards of NABH for blood transfusion services strives to improve the quality and safety of collecting, processing, testing, transfusion and distribution of blood and blood products.
- Optimum/ideal state of patient care can be achieved by the healthcare institution that focuses on compliance with accreditation standards of NABH and like bodies.

Benefits of Accreditation

Benefits for Users or Patients, Donors

Benefits for Blood storage centers

Benefits for Staff

NABH Standards for Blood Bank

a) Documented policies and procedures are used to guide the rational use of blood and blood components.
b) Documented procedures govern transfusion of blood and blood components
c) The transfusion services are governed by the applicable laws and regulations.
d) Informed consent is obtained for donation and transfusion of blood and blood components.
e) Informed consent also includes patient and family education about the donation
f) The organisation defines the process for availability and transfusion of
g) blood/blood components for use in emergency situations.
h) Post-transfusion form is collected, reactions if any identified and are analysed for preventive and corrective actions.
i) Staff are trained to implement the policies.

Research Question

What are the gaps between the expected and actual status of blood bank as per NABH standards in Jindal Institute of Medical Sciences, Hisar?

Objectives

- To analyze the gaps in existing process of Blood Bank.
- To Implement the necessary tools of documentation and fulfillment of other Requirements in Blood Bank (According to NABH standards)
- To measure the effectiveness of implementation by calculating key performance indicators of Blood Bank.

Methodology

- **Study Design**- Descriptive study
  Study was done in 2 Phases
  Phase:1- Gap Analyses
  Phase:2- Implementations and Monitoring of Key Performance Indicators

- Study Area- 600 bedded multispecialty tertiary care Charitable Hospital.

- **Study Population** - Records of Patients who received Blood and Blood component transfusion .

- **Sampling Technique and Sample Size** - All transfusion cases were Studied for Phase 1.
  In Phase 2: All Transfusion Cases
  cases were included for KPI(23,24,25)
  For KPI 26 : Random Sampling was done
  (300 SAMPLES WERE TAKEN)

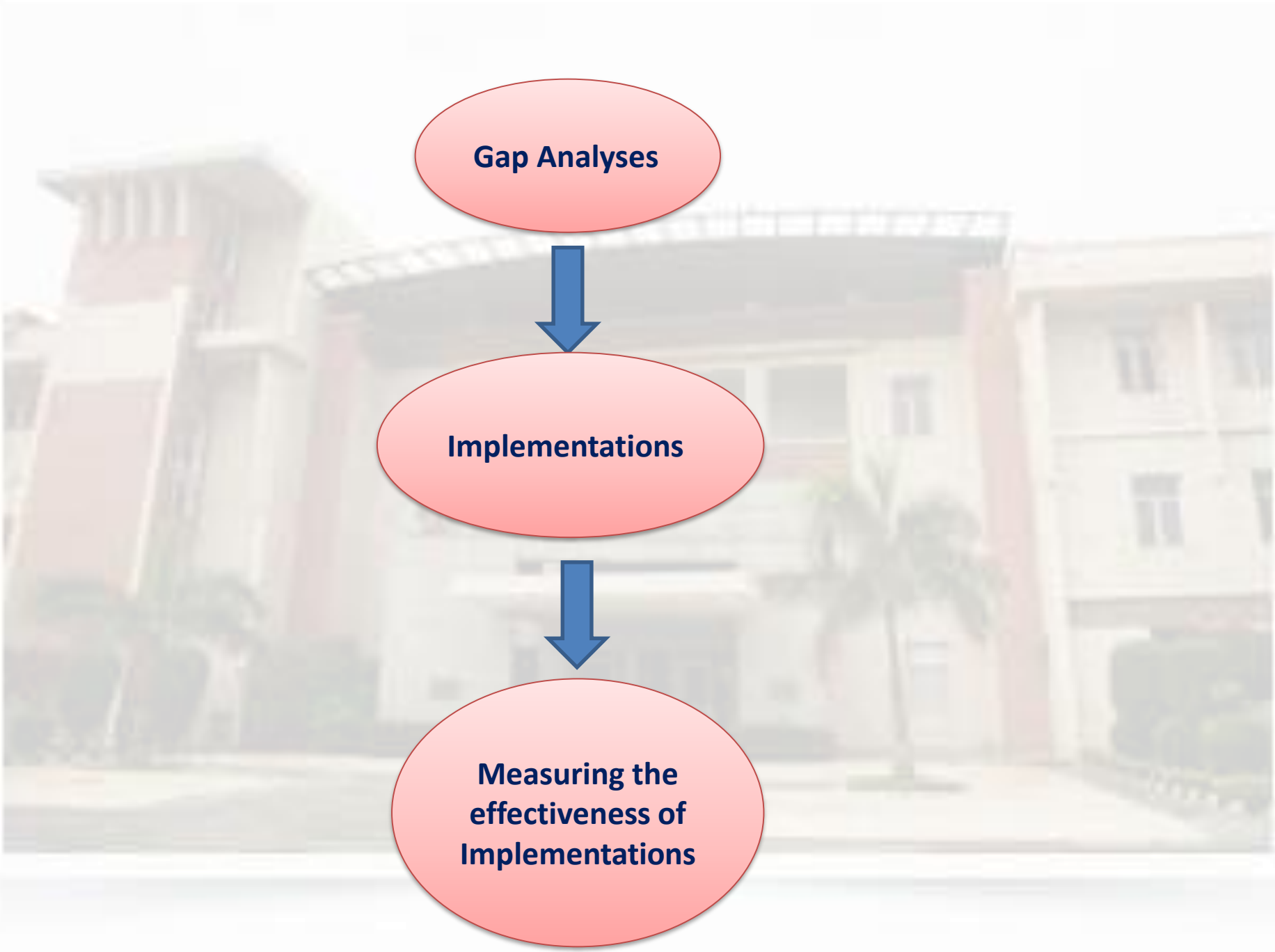
SR. NO.	Key Performance Indicators	STANDARD	PARAMETER
1	23	CQI 3 f	Percentage of Transfusion Reaction
2	24 a	CQI 3 f	Percentage of wastage of Blood and Blood components (ward level)
3	24 b	CQI 3 f	Percentage of wastage of Blood and Blood components (blood bank)
4	25	CQI 3 f	Percentage of component used
5	26	CQI 3 f	Turnaround time for issue of blood and blood components

- Study Tool - Internal Audit Checklist, Request form for Transfusion, Post Transfusion Feedback Performa, Surveillance Register in Clinical Units, Surveillance Register in Blood Bank, Blood & Component Issue Registers, Blood & Component Wastage Register.

- Data Collected By- Management Trainee operations (Dr. Vandana)

- Patient Inclusion Criteria- Patients who were receive transfusion (Blood and Blood Components) from JIMS (Jindal Institute of Medical Sciences) Blood Bank

- Patient Exclusion Criteria - Patients who brought blood from outside (Other than JIMS blood bank) were not Included in Study


Gap Analyses
Implementations
Measuring the effectiveness of Implementations

Gaps In Pre Existing System of Blood Bank

Sr.No.	Agenda	Compliance PC=Partial Compliance NC=Non Compliance C=Compliance
1.	Indication of Transfusion (Blood & Blood components) documented in Requisition form.	NC
2.	Inventory and ordering schedule documentation at the time of request of (Blood & Blood components)	NC
3.	Cold Chain Maintenance- intra Hospital Transportation of Blood & Blood components	NC
4.	Consent for Transfusion From Patient or from Patient Attendant (in case when Patient is unconscious or altered sensorium or not in a state of giving consent) .	NC

7.	Process in case of transfusion reaction.	NC
8.	Donor consent before Blood Donation.	NC
10.	family Education about Blood donation.	NC
11.	Turnaround time of reaching of Blood & Blood components	NC
12.	Process of Availability of Blood & Blood components in case of Emergency	PC
13.	Equipment Calibration	NC
14.	Biomedical waste management practice	PC
15.	Post Transfusion Feedback submission in blood bank (reporting of Transfusion	NC

13.	Wastage of Blood & Blood component in clinical units and blood bank documentation.	NC
14.	Crash cart with Life saving Drugs.	PC
15.	Code Blue ,Code Red Training	NC
16.	Pest control Preventive measure in Blood Bank.	PC
17.	Hand hygiene practice	PC

Implementations of Standards with Respect to Gaps Analyzed:

- Implementation of Process flow from ordering of Blood and Blood components till Reaching the same in clinical units by needful documentations at Every Step.
  - ✓ Blood Requisition
  - ✓ Emergency blood waiver form
  - ✓ Patient Consent
  - ✓ Post Transfusion Feedback Performa (Transfusion policies)
  - ✓ Issue record
  - ✓ Donor Consent
  - ✓ Donor Questionnaires)

  } **Donor Polies**

- Monitoring of Transfusion Reactions .

Monitoring of Wastage of Blood & Blood components at ward level and blood bank.

- Implementing Crash cart and Emergency drugs in Blood Bank.
- Equipment calibration.
- Implementation of Infection control practices in Blood Bank(Hand Hygiene, fumigation, spill management, BMW practices)
- Monitoring Turnaround time For Blood Bank Services:

1. **Turnaround time for issue of blood & blood components from Blood Bank**
2. **Turnaround time for Reaching of Blood & Blood Component to clinical unit**

PERCENTAGE OF TRANSFUSION REACTION

$$\frac{\text{NO. OF TRANSFUSION REACTION}}{\text{NO. OF UNITS TRANSFUSED}} \times 100 \Rightarrow \frac{10}{1047} \times 100$$

= 0.95 %

PERCENTAGE OF WASTAGE OF BLOOD AND BLOOD COMPONENT (WARD LEVEL)

$$\frac{\text{NO. OF BLOOD \& BLOOD COMPONENT WASTED AMONG THOSE ISSUED}}{\text{NO. OF UNITS ISSUED FROM BLOOD BANK}} \times 100$$

$$\frac{1}{1047} \times 100$$

$$= 0.095\%$$

PERCENTAGE OF WASTAGE OF BLOOD AND BLOOD COMPONENT (BLOOD BANK)

$$\frac{\text{NO. OF BLOOD \& BLOOD COMPONENT WASTED AT BLOOD BANK (total discarded)}}{\text{NO. OF UNITS STORED IN BLOOD BANK}} \times 100 = \frac{48}{1174} \times 100 = 4.088\%$$

$$\frac{\text{NO. OF BLOOD \& BLOOD COMPONENT WASTED AT BLOOD BANK (Excluding Reactive units)}}{\text{NO. OF UNITS STORED IN BLOOD BANK}} \times 100 = \frac{24}{1174} \times 100 = 2.044\%$$

REACTIVE UNIT WASTAGE = 2.044%

Root Cause Analyses of Discarded Blood and Blood Components

Discarded Reactive Units : 24

Name of unit	No. of Discarded Unit	Cause of Discard
Whole Blood	2	1 HCV Positive 1 HPB Positive
PRBC	11	1 HIV Positive 10 HCV Positive
FFP	11	1 HIV Positive 10 HCV Positive

Discarded Other Units : 24

Name of unit	No. of Discarded Unit	Cause of Discard
Whole Blood	5	2 Expired 3 Clotted
PRBC	3	Clotted
PLATELETS	4	Expired
FFP	12	7 Broken 5 Leakage

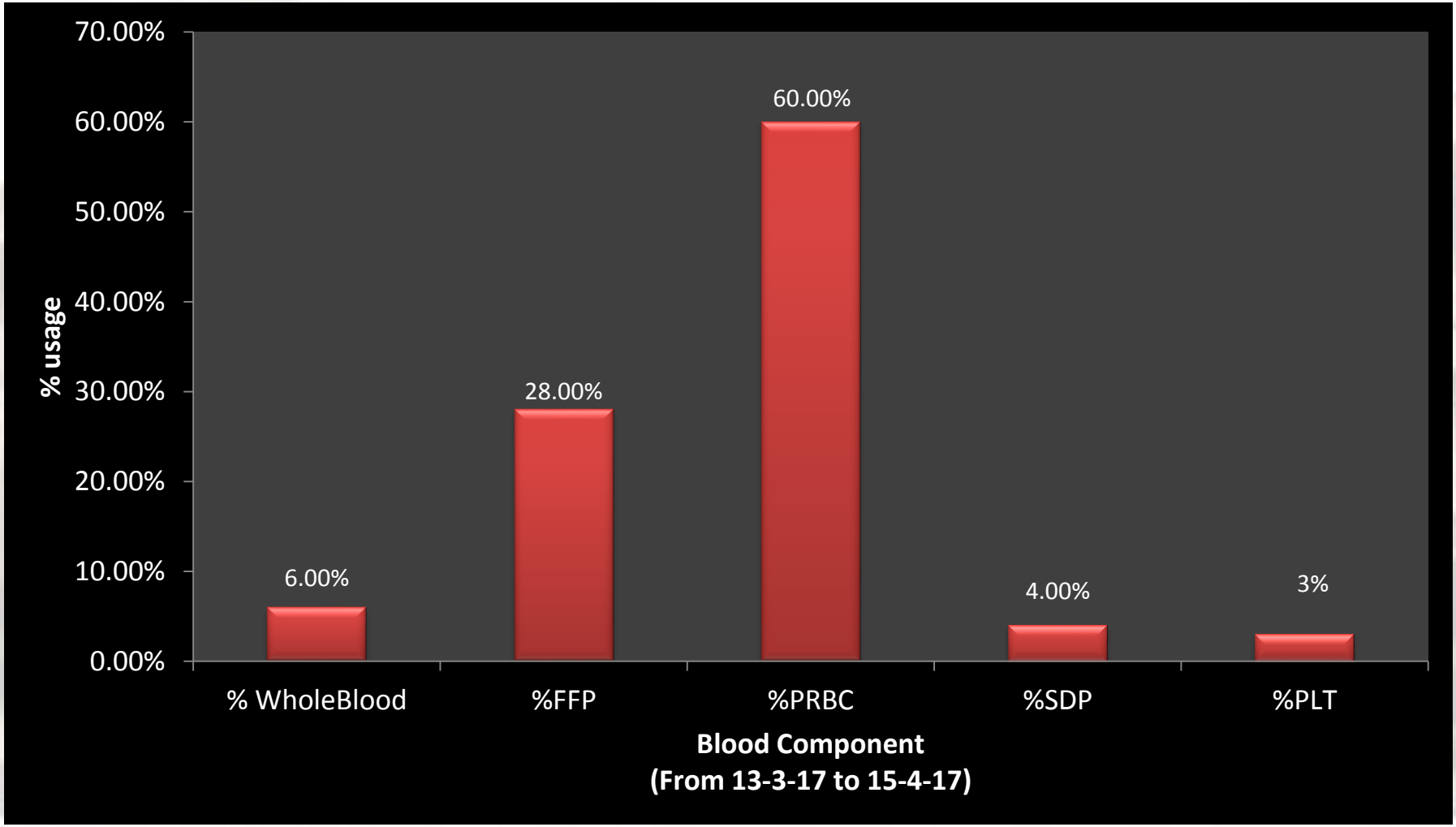
PERCENTAGE OF BLOOD COMPONENT USAGE

$$\frac{\text{NO. OF COMPONENT USED}}{\text{NO. OF BLOOD AND BLOOD PRODUCT USED}} \times 100 \quad \frac{981}{1047} \times 100$$

$$= 93.69\%$$

- PERCENTAGE OF WHOLE BLOOD = 66/1047 × 100 = 6.30%
- PERCENTAGE OF FFP =291/1047 × 100=27.7%
- PERCENTAGE OF PRBC = 619/1047 × 100 =59.12%
- PERCENTAGE OF SDP =41/1047 × 100=3.91%
- PERCENTAGE OF PLATELETS =30/1047 × 100 =2.86 %

PERCENTAGE OF BLOOD COMPONENT USAGE



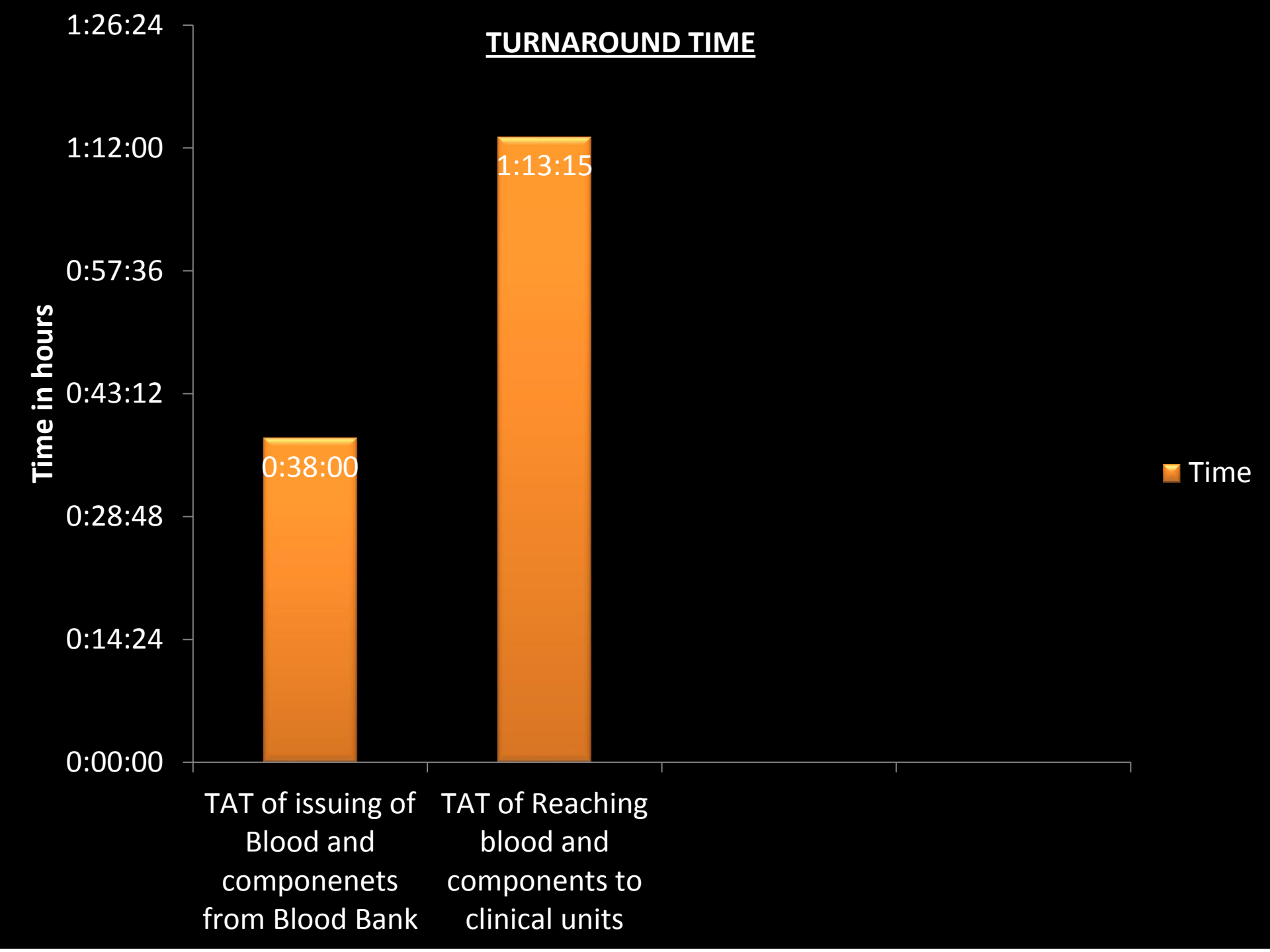
Turnaround Time

TURNAROUND TIME FOR ISSUE OF BLOOD AND BLOOD COMPONENT (time when request slip filled by staff to the time when component reaching in clinical unit)

Sum of Time Taken / Total Number of Blood & blood Component Issued → 366:17 / 300 → 1:13:15

TURNAROUND TIME FOR ISSUE OF BLOOD AND BLOOD COMPONENT (Time when order is raised to the issue of Blood & Blood component from Blood Bank)

Sum of Time Taken / Total Number of Blood & blood Component Issued → 193:30 / 300 → 00:38:42


TURNAROUND TIME
1:26:24
1:12:00
0:57:36
0:43:12
0:28:48
0:14:24
0:00:00
Time in hours
0:38:00
1:13:15
Time
TAT of issuing of Blood and componenets from Blood Bank
TAT of Reaching blood and components to clinical units

Training for emergency codes of Hospital:

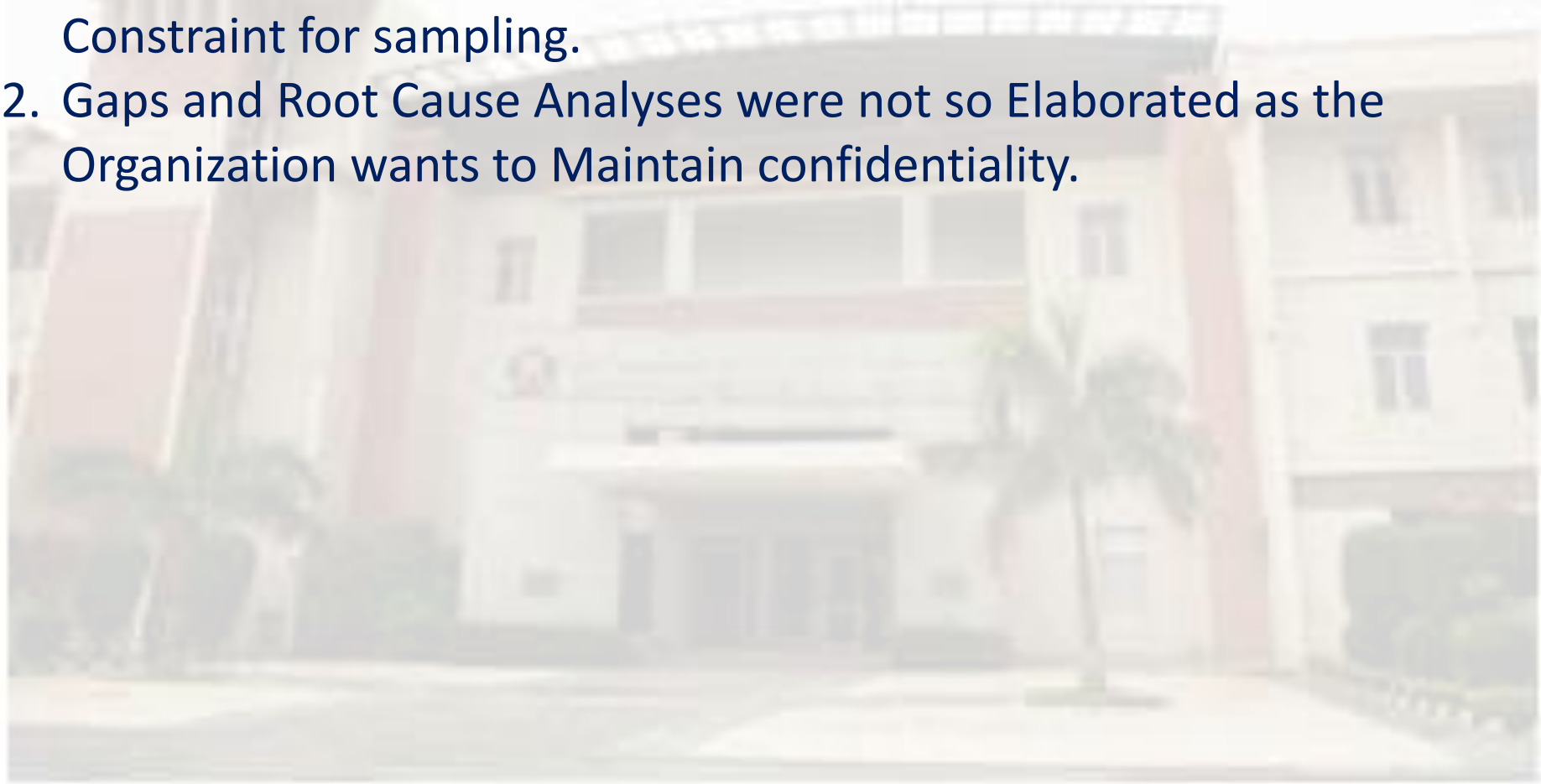
Situation	Code Assigned	Contact Number	Phone Received By	Response Team	Message
Fire	Code Red	222	PA System	Fire safety officer,security Guard,Engineer Department,Maintenanace Department,Disaster Management,Incharge,Supervisor Hospital Authorities	Code Red<Location>& Assembly Point
Cardio Pulmonary Arrest	Code Blue	222	PA System	CMO,Intensivist,Physiscian,Resident medical Officer of the Floor Area,ICU Nurse	Code Blue<Location>
Abduction	Code Pink	222	PA System	Nurse and Ward Incharge of the area,Security office & Guard	Code Pink -Brief description of child
External Disaster	Code Grey	222	PA System	Operator Emergency	Code Grey- “Assembly to Emergency Department

Conclusion

- ✓ Now after Implementation of various tools its easy to track Transfusion and Transfusion Reactions, Wastage of Blood /Components and Root cause Analyses can be Done and further strategies can be made for quality Improvement.
- ✓ consent before administering blood products. This includes explaining to the patient the relative benefits and risks of receiving and not receiving the blood product, as well as any reasonably viable alternatives and it is also important for legal and ethical considerations.
- ✓ Donor polies (Donor Consent, Donor Questionnaire) would help in selection of quality donor.
- ✓ Tracking of Turn around Time for Blood Bank services would help in further improvement of Service Standards .
- ✓ Bio Medical waste management, Hand Hygiene practice (WHO-8 step practices)will help in better Infection control.

Limitations of Study

1. Time Duration and Engagement with other projects were the Constraint for sampling.
2. Gaps and Root Cause Analyses were not so Elaborated as the Organization wants to Maintain confidentiality.




Thank
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