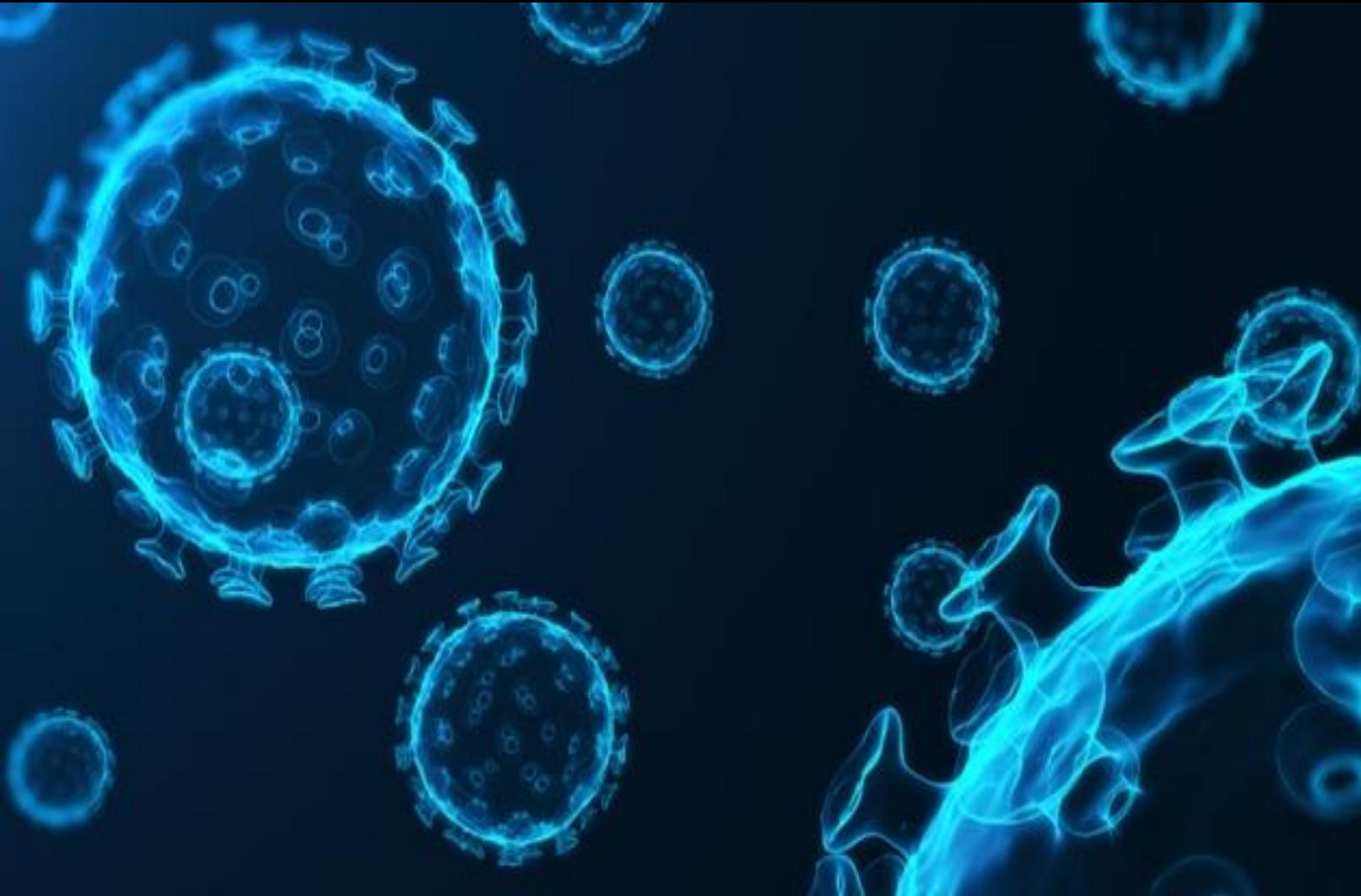




SUMMER TRAINING REPORT

PRESENTED BY-

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MBA HM 24

SUMMER TRAINING AT IIMR UNIVERSITY

MAY 1, 2020 TO JUNE 30, 2020

RESEARCH PROJECT AND ONLINE COURSE

UNDER GUIDANCE OF
DR. SAMEER PHADNIS
IIMR UNIVERSITY

MBA HOSPITAL AND HEALTH MANAGEMENT
2019-2021



PART A

WORK FROM HOME REPORT

UNDER MENTOR GUIDANCE

TOPIC

A REVIEW ON HOSPITAL ACQUIRED INFECTIONS
AND ITS CONTROL IN INDIA

INTRODUCTION

- ❑ Hospital infections are also called hospital-acquired infections caused by bacterial, viral, and fungal infections.
- ❑ At least one out of 25 hospital patients have and HAI at any random day, according to CDC.
- ❑ HAIs are infections that occur in a hospital patient or other health-care facility in which the infection was not present or incubating at the time of admission.
- ❑ The CDC estimated that there are approximately 1.7 million cases of HAI every year, affecting as many as 10 per cent of hospital patients.
- ❑ HAI is a major patient safety issue, and has a high morbidity and mortality impact.
- ❑ HAI is a very common cause of adverse patient outcome.
- ❑ Affects 5-15% of all hospital patients and 40% patients in ICU.

- ❑ WHO estimates mortality from health care associated infections ranges anywhere from 12-80%
- ❑ Study says HAI is a significant safety issue for healthcare providers and patients with an estimated 15.5/100 patient incidence in developing countries.
- ❑ For a HAI, it is not necessary to have the infection before someone is under medical care. One of the most common wards in which HAIs occur is the intensive care unit (ICU), where doctors treat severe illnesses. As medical attention becomes more complex and antibiotic resistance increases, HAI cases will grow.
- ❑ India has no national surveillance system for monitoring HAI and there are no universally accepted guidelines on the use of antibiotics for common infections. In India HAI and SSI were reported to be high.
- ❑ HAI, the infection must occur:
 - ✓ Up to 48 hours after admission into hospital
 - ✓ Up to 3 days after discharge
 - ✓ Up to 30 days post surgery

RESEARCH QUESTION

Research Analysis on Hospital Acquired Infections and its Control in India During Last 5 Years (2015-2020)

OBJECTIVES

To ascertain the prevalence of hospital acquired infection in India

To assess the practices related to prevention of hospital acquired infection in India

METHODOLOGY

- ❑ Study based on literature review
- ❑ Search Engine used PubMed (MeSH) and Google Scholar
- ❑ Some data collected from other websites like CDC
- ❑ Inclusion Criteria – Indian Research Papers, published in the period of last 5 years 2015-2020,
- ❑ Exclusion Criteria – Not Relevant topic, duplicate articles, data of countries other than India, some articles were rejected on the basis of abstract review.
- ❑ Keywords – Hospital Acquired Infection, Cross Infection, SSI, Surgical Wound Infection, Catheter- UTI, Central line blood stream infection, VAP, Hospitals, India.

❑ PubMed Searching Strategy as follows:

- “Surgical wound infection” [MeSH], AND “India” which shows 95 results then selection of free full text and 5 years found 14 research papers found. 10 papers were removed on the basis of reviewing title and abstract. 4 results were selected for final full paper review.
- “Healthcare- Associated Pneumonia” [MeSH], AND “Pneumonia, Ventilator-Associated” [MeSH], AND “India” which shows 32 results, selecting 5 years and free full text come up with the result of 7 research papers. Three papers were selected for final full review others removed because not relevant for the study.

LITERATURE SURVEY

CLABSI

There were two research papers were included in the study which is related to central line associated blood stream infections.

1. A Prospective study of 2016 by Shilpa Tomar et al.

The most common type of line used was triple lumen central line and the most common site of central line insertion was femoral vein. There was no relationship between those variables and CLABSI in the study. Important risk factors associated with CLABSI were the frequency of central line access / day and the one-time or more change of triple lumen central line.

Important risk factors included change of the central line, particularly triple lumen, and frequent access to the central line

2. A prospective observational study of 2017 by CK Chudasama et al. revealed

There was 3.69 per 1000 central line days of CLABSI. More CLABSI was seen with underlying medical co morbid conditions.

LITERATURE SURVEY

CAUTI

There are 3 papers were reviewed for catheter associated urinary tract infections.

1. A study by Areena Hoda Siddiqui et al. in 2017 conducted by 1874 foleys catheter cases followed for 3 months revealed that the most common isolate was E. coli (28.57%) followed by Klebsiella Pneumoniae (19.05%).

3. A retrospective analysis study of 2019, by Stacey Podkovic et al. supports that patients with elevated temperatures should have a clinical workup of all alternative etiologies prior to testing for a urinary source unless the clinical suspicion is high.

2. A 2018, study by Nashra A. et al. The CAUTI rate was analysed for 6 months. Findings of the study are
The CAUTI rate 4.20 per 1000 device days before implementation and the rate after implementation was reduced to 3.22 per 1000 device days. The personnel's checklist performance improves from a rate of 57.77% to 83% after the CAUTI has been implemented through care bundle approach.

LITERATURE SURVEY

SSI

There are three papers were reviewed for surgical site infections.

1. A study by Cecilia Lindsjo et al. in 2015 found the common risk factor OR=2.6 vs OR=1.96, pre and intervention periods, respectively. Intervention period for being a woman OR=2.18, renal disease 3.61, diabetes 4.43, smoking 2.14.

2. A 2018 RCT study by Pinit Noorit et al. suggests the four predictors were significantly associated with SSI. Presence of diabetes, incisional length > 7cm, fecal contamination and operative time > 75 min with OR of 2.6, 2.8, 3.6 and 3.4 respectively.

3. Findings from Review Article by A Arora et al. are Preop bathing with Chlorhexidine gluconate, Preop surgical Antibiotic prophylaxis, SSP, Antibiotic coated suture (triclosan-coated), Incisional wound irrigation and Optimal timing for wound drain removal.

LITERATURE SURVEY

VAP

There are three papers were reviewed for ventilator associated pneumonia.

1. A tertiary level prospective observational study by Ashu Sara Mathai et al. found incidence of 40.1 episodes of infection/1000 mechanical ventilation days. These were caused mainly by Gram- negative bacteria, especially the Acinetobacter genus (58 isolates, 53.2%)

2. An observational cross sectional study by Somi Patro et al. identified 35% prevalence rate of VAP. 66 %Enterobacteriaceae, 20% S. aureus were prevalent in early onset while 50 % non fermenters and 40.61% Enterobacteriaceae predominated in late onset of VAP

3. Cohort study by Vijay et al. revealed VAP in children undergoing MV in PICU and Gram negative bacilli (Acinetobacter and Pseudomonas) is a common complication in the main causative agents.

LITERATURE SURVEY

HIC

Three papers were reviewed on the topic of hospital infection control

1. An cross sectional surveys by Velu Nair et al. revealed the prevalence of HAI should be 3.76%. Study showed prevalence rate of surgical unit is 25%, medical ICU 20% and burn wards 20%. Four rounds were conducted in which prevalence of HAI wsas 5.6 % in first round and 1.6 % in last round.

2. A study by Sudhir Chanra Joshi et al. in identified prevailing practices, problems and suggested environmental hygiene measures in hospitals.

3. Cross sectional assessment by Mukta Tyagi et al. revealed 23% hand hygiene in new born care unit, 44% private care unit and 12 % in public facilities. In labour wards compliance are better in private (100%) than public (27%).

TYPES OF HOSPITAL ACQUIRED INFECTIONS

There are four main types of HAI

1. CLABSI (Central Line Associated Blood Stream Infections)
2. CAUTI (Catheter Associated Urinary Tract Infections)
3. SSI (Surgical Site Infection)
4. VAP (Ventilator Associated Pneumonia)

CAUSATIVE PATHOGENS

Name of the Infection	Most Common Pathogen	Other Causative Pathogens
CLABSI	Coagulative negative staphylococci	Enterococcus spp., Klebsiella pneumoniae, E.coli.
CAUTI	E. coli	Klebsiella, Enterococcus, P. mirabilis, P. aeruginosa.
SSI	S. aureus	S. epidermis, Enterococcus, E. Coli, P. aeruginosa.
VAP	S. aureus and P. aeruginosa.	Enterobacteriaceae, H. influenzae, S. Pneumonia, MRSA, Extended spectrum beta-lactamase (ESBL)- producing Enterobacteriaceae, A. baumannii.

INFECTION CONTROL FOR HAI

Proper
hand
hygiene
practice

Use Sterile
Barriers
(gloves,
Gowns,
caps, masks
and drapes)

Make sure the
skin prep agent
had dried
completely
before inserting
the central line

Once the central
line is in place follow
the central line
maintenance
practices and wash
hands before and
after touching the
line with soap and
water, or an alcohol-
based hand rub

Apply
appropriate
aseptic to
skin

CLABSI

Remove
central line
as soon as
no longer
needed.

Avoid Using
Urinary
Catheters

Use aseptic
technique,
sterile
equipment
and proper
hand washing

Use Sterile
Barriers
(Sterile gowns,
sterile gloves,
caps, masks
and drapes)

Maintain
closed
drainage and
un obstruct
urine flow

Insertion by
properly
trained person
in acute
hospital
setting

Routine
Hygiene

Not cleaning the
periurethral
area with
antiseptic while
the catheter is
in place to
prevent CAUTI

CAUTI



VAP

Infection control like hand hygiene, gloves, mask should be used

Regular Suction

Elevation of the head of the head (30-45 degree) of the bed in ventilated patient

Care of oral hygiene for ventilated patients

ABCDE (Awakening, Breathing, Coordination, Delirium and Early Mobility) can be effective in shortening ventilation time

CONCLUSION

This is secondary data descriptive study done with the help of Research Articles and Published papers on PubMed and Google Scholar for last 5 years (2015-2020). The relevant articles and papers were selected on the basis of keywords. There are four major HAIs as CLABSI, CAUTI, SSI and VAP. Infection control practices for them are following standard precaution as gloves, gown, masks and maintain proper hand hygiene. Other than these remove central line as early as possible. Avoid UTI until required, Use sterile equipment, and once foleys catheter inserted do not change it frequently. Use chlorohexidine before surgery, maintain glycaemic and normothermia to prevent SSI. Use ABCDE bundle for shortening VDs, elevation of 30-45 degree of head side of the bed. Regular Suction and Oral hygiene.

PART B

ONLINE COURSE REPORT

COURSE NAME:

LEADING HEALTHCARE QUALITY AND SAFETY

WEBSITE:

www.coursera.org

COURSE DESCRIPTION

- ❑ Course offered by 'The George Washington University, Washington, DC'.
- ❑ The course takes a global view of patient safety and quality, linking participants to research and resources from the World Health Organization (WHO), the United States Agency for Research and Quality in Healthcare (AHRQ), the Joint Commission, and other international organizations. Highlights of the course include personal stories, lessons learned from other industries and interviews with the President of the National Committee for Quality Assurance (NCQA) and other leaders in the movement for quality.
- ❑ There are two main instructors
 - Jean Johnson, Professor, GW School of Nursing and Executive Coach.
 - Gregory Pawlson, Clinical Professor of Medicine and Adjunct Professor, GW School of Nursing Executive Coach.

OBJECTIVES

To study the essential features and expected results of safe , high quality healthcare.

To examine the criticality of patient safety in healthcare and the science that underlies patient safety.

To study the key attributes of healthcare measures and measuring process characteristics in order to provide useful reflection of the quality of care.

To identify opportunities for quality improvement and its significance and benefits of team-based approaches to QI.

To obtain the value of Health Information Technologies and other innovations to improve the quality of health care.

To exploring the importance of leadership in promoting and improving quality and safety.

To discuss the strategies contributing to a quality health care culture.

The study to examine the different models of organizational change that's leads to quality and safety initiates.

COURSE CONTENT

Module 1 Establishing a
framework for quality and safety

Module 2 Safety as a first
principle of quality

Module 3 Measures and
Measurement

Module 4 Quality and Safety
Improvement

Module 5 Leadership for Quality
and Safety

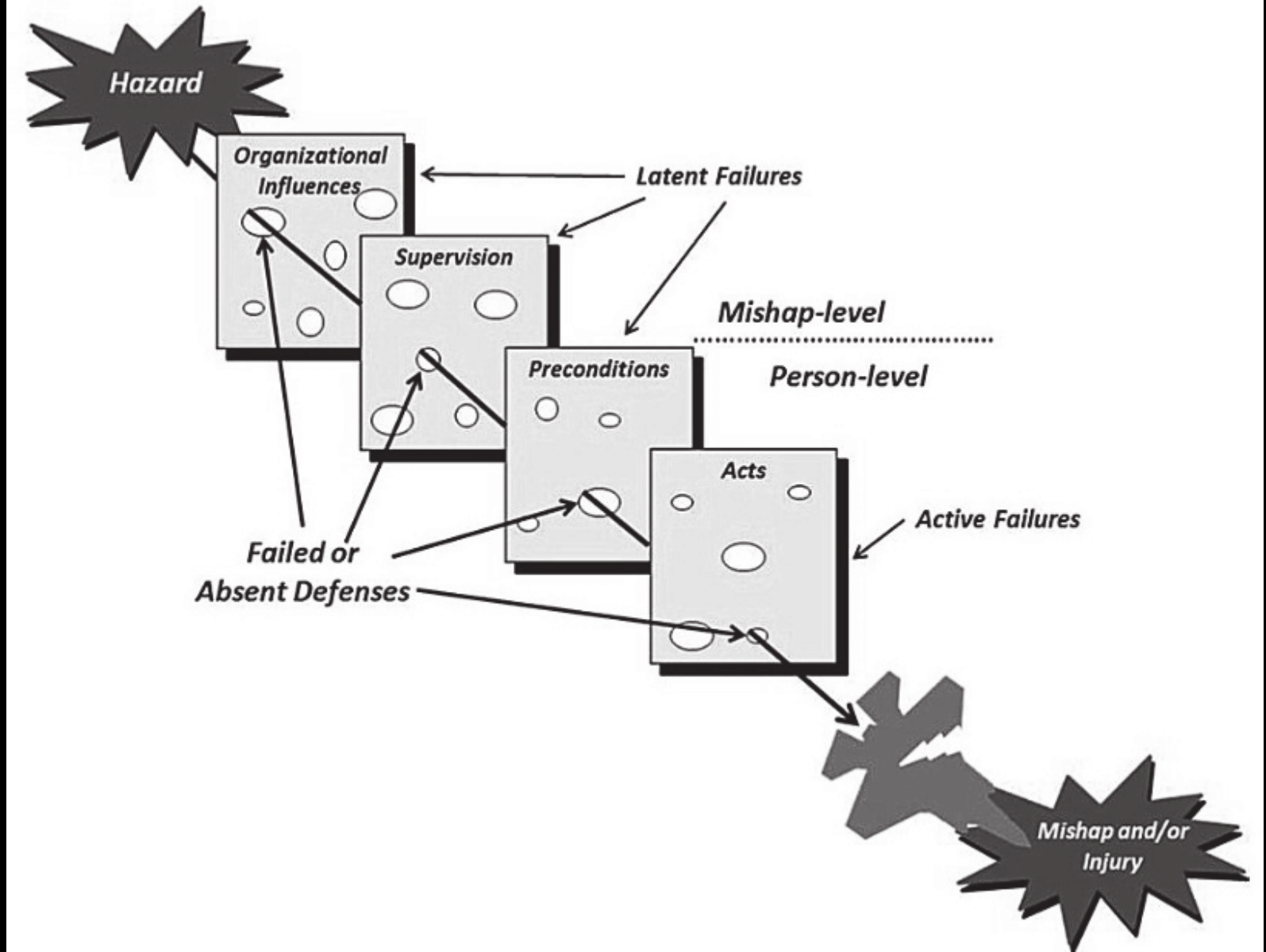
LEARNINGS METHODOLOGY USED IN THE COURSE

- ☐ Video Lectures
- ☐ Interviews
- ☐ Presentation
- ☐ Reading & Resources
- ☐ Discussion
- ☐ Practice Quizzes

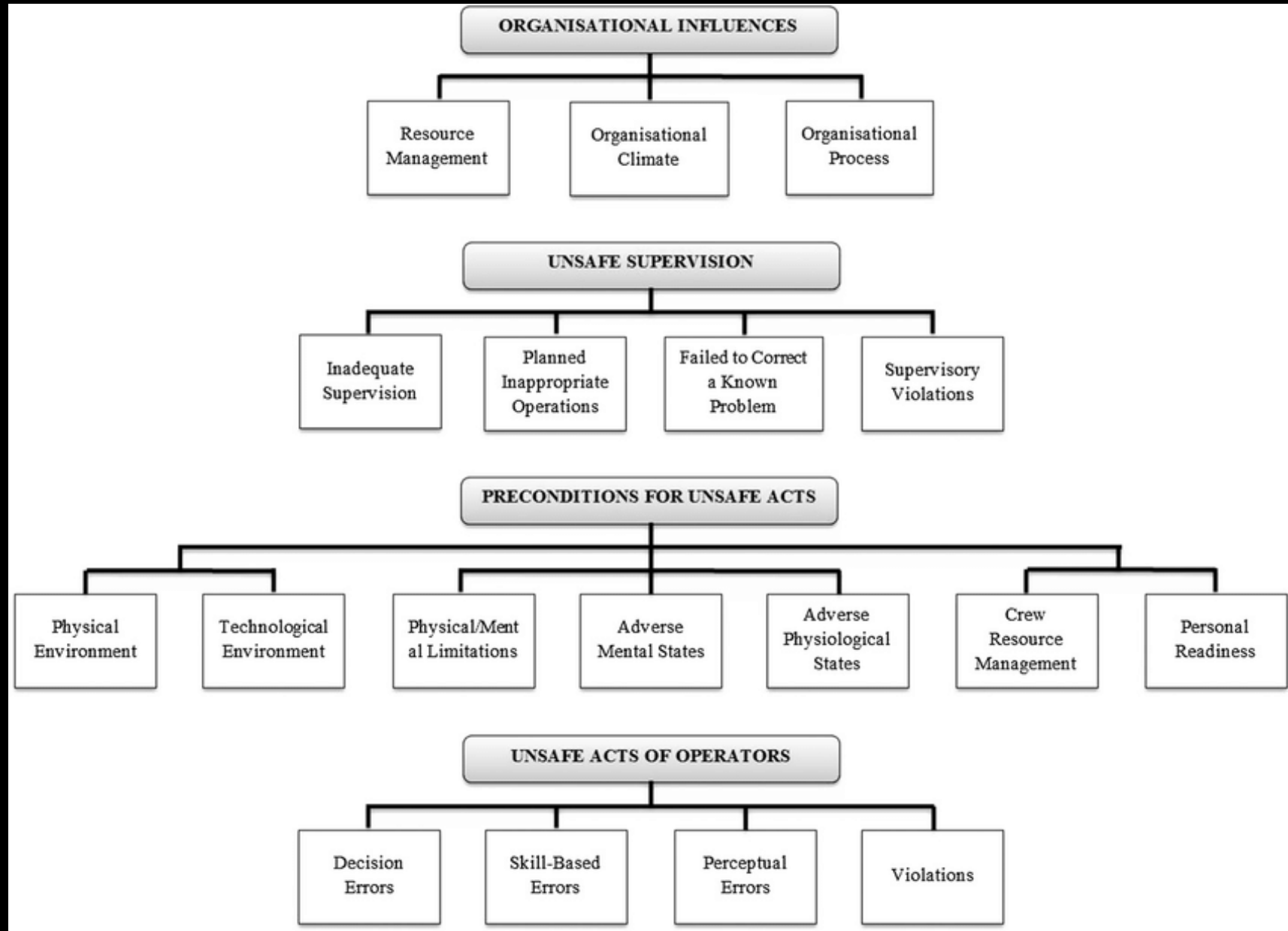
KEY LEARNINGS

- ❑ Measuring the quality of care provided is a key to knowing the level of care actually delivered.
- ❑ The desirable characteristics of high quality healthcare systems using the acronym STEEP (Safe, Timely, Effective, Efficient, Equitable and Patient Centered).
- ❑ A Lewis Blackman Story.
- ❑ The Science of Patient Safety.
- ❑ Typology of harms other than sentinel events
 - ✓ An adverse event
 - ✓ A no harm event
 - ✓ A close call or near miss
 - ✓ A hazardous condition
- ❑ The Swiss Cheese Model: Organizational influences, Supervision, Preconditions and Specific Actions

THE SWISS CHEESE MODEL



HFACS (Human Factor Analysis Classification System)



- ❑ A measure in healthcare is simply a defined tool used to quantify healthcare processes, outcomes, patient perceptions and the healthcare delivery system. While measurement or more precisely good measurement, is the process of applying:
 - ✓ The right measure
 - ✓ To the right situation
 - ✓ In the right way
- ❑ Avedis Donabedian identifies the three important construct to characterize quality



PDSA CYCLE

- What changes are to be made?
- Next cycle?

ACT

PLAN

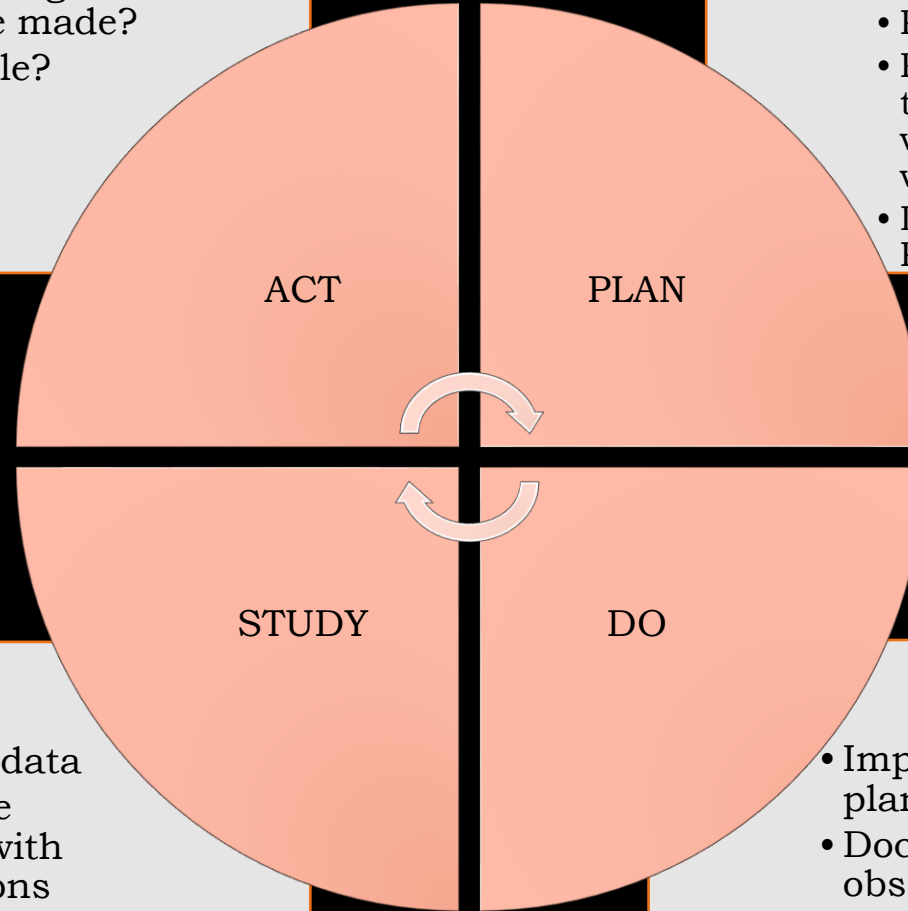
- Objective
- Predictions
- Plan to carry out the cycle who, what, when and where
- Data collection Plan

STUDY

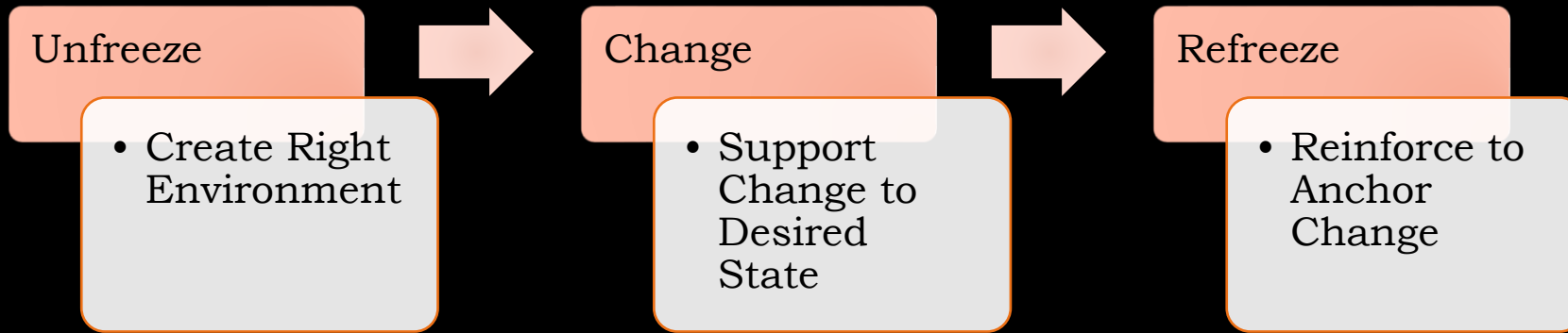
DO

- Analyse data
- Compare results with predictions
- Summarize

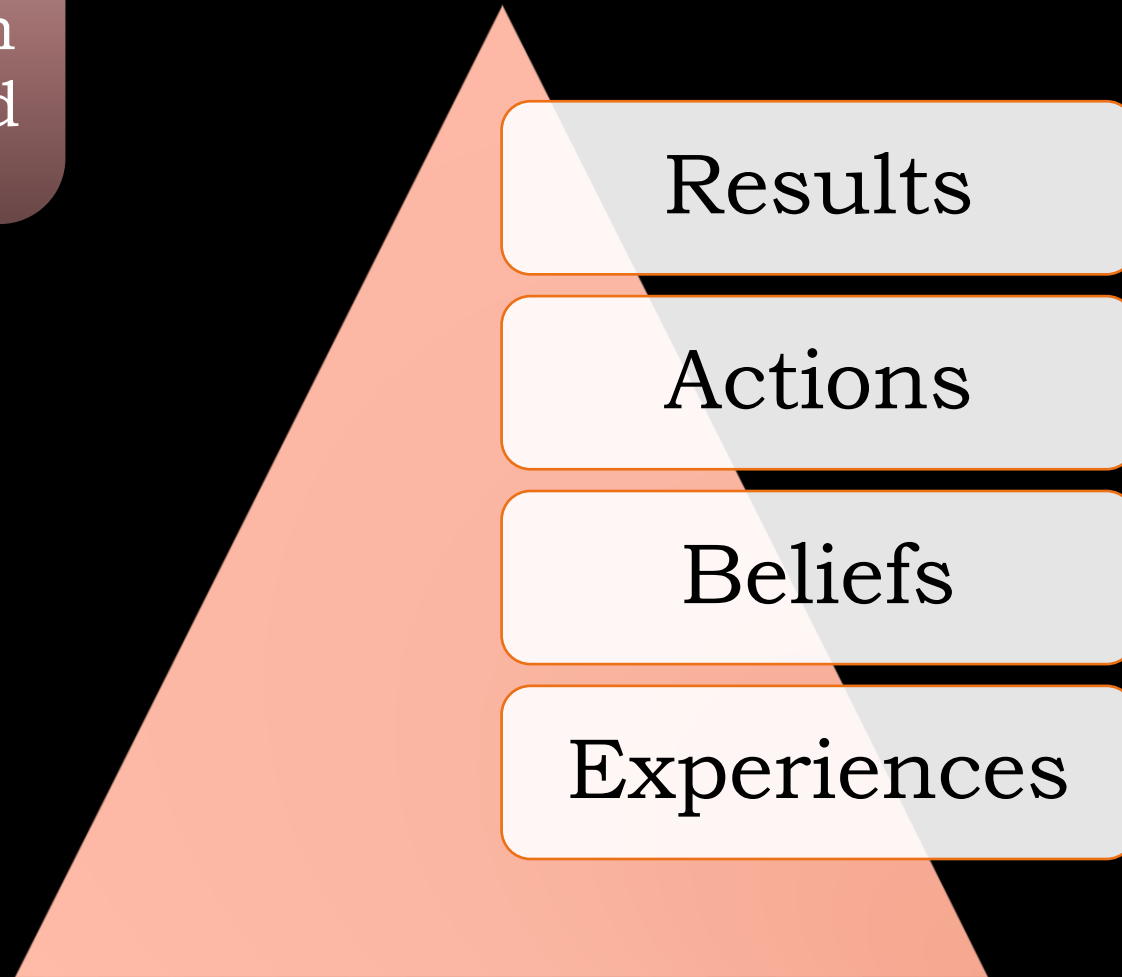
- Implement plans
- Document observation
- Record Data



Kurt Lewin Change Model (1950s)



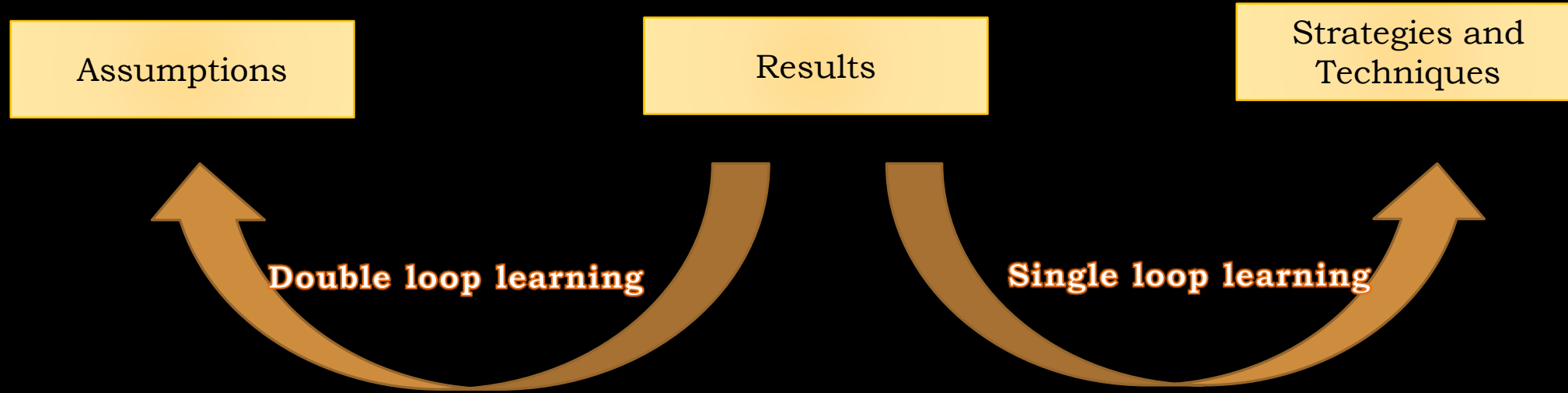
Roger Conners
And Tom Smith
results Pyramid



John's Kotter 8 Step-Model (Step by Step Approach)

Implementing and Sustaining for Change	8. Make it Stick
	7. Build on the Change
Engaging and enabling the organization	6. Create quick wins
	5. Empower action
	4. Communicate the vision
Creating the Climate for Change	3. Create a vision for change
	2. Form a powerful coalition
	1. Create Urgency

Argyris and Schon propose



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