Patient Safety in EMS

Dr Heather Tuffin

My "Why"

AMERICAN
NURSE

'It may seem a strange principle to enunciate as the very first requirement in a Hospital that it should do the sick no harm'

Florence Nightingale

Notes on Hospitals, 1859

Patient Safety

Patient safety is defined as “the absence of preventable harm to a patient and reduction of risk of unnecessary harm associated with health care to an acceptable minimum.”

WHO Fact sheet on Patient Safety

Adverse Incidence Rates

SOUTH AFRICA

- 10% HOSPITALISED PATIENTS HARMED
- 2 % (up to 4%) DIE FROM MEDICAL ERROR

Pre-hospital adverse events

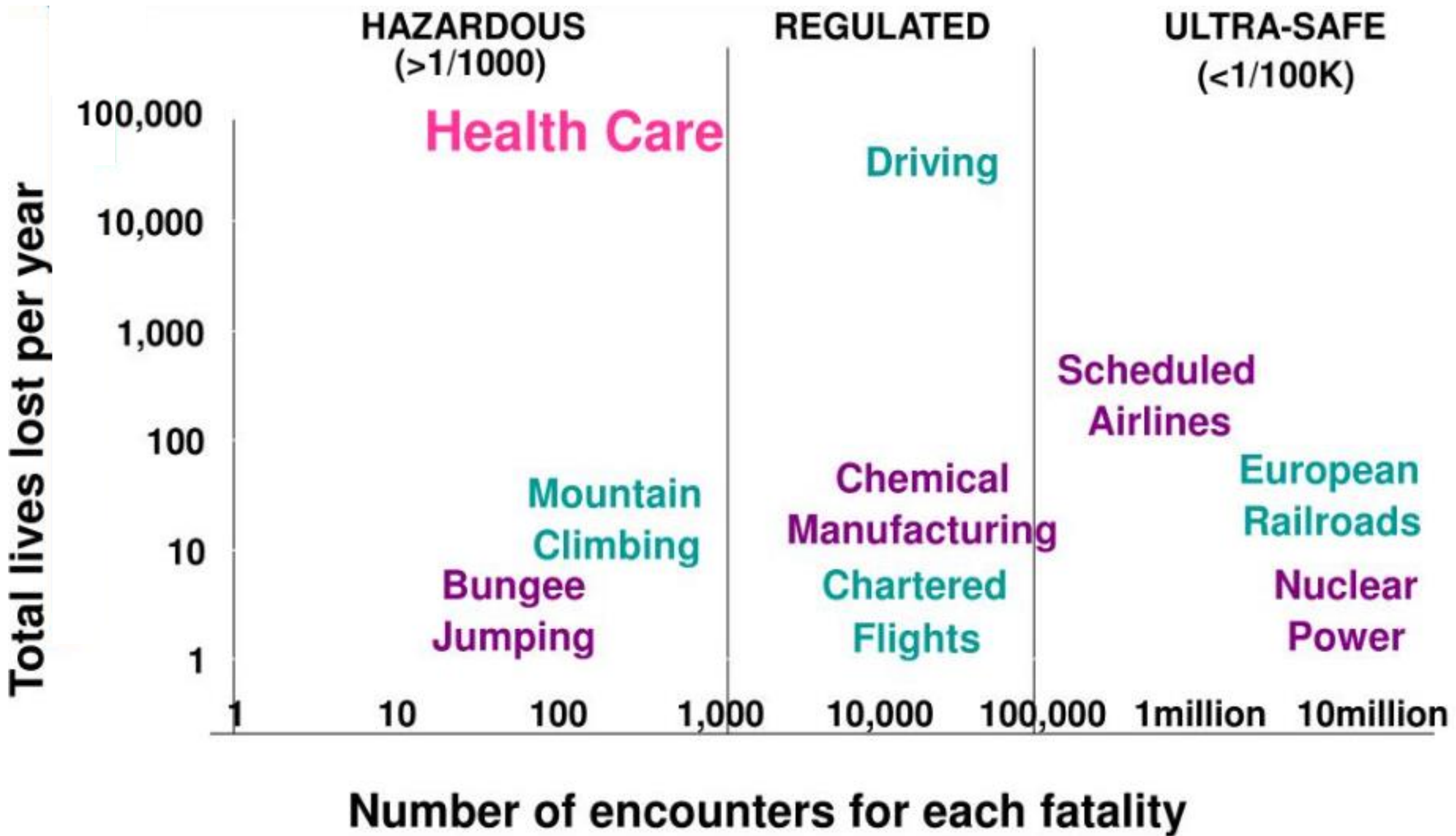
4% Adverse Event rate with a smaller fraction (3 in 1000) causing significant harm.

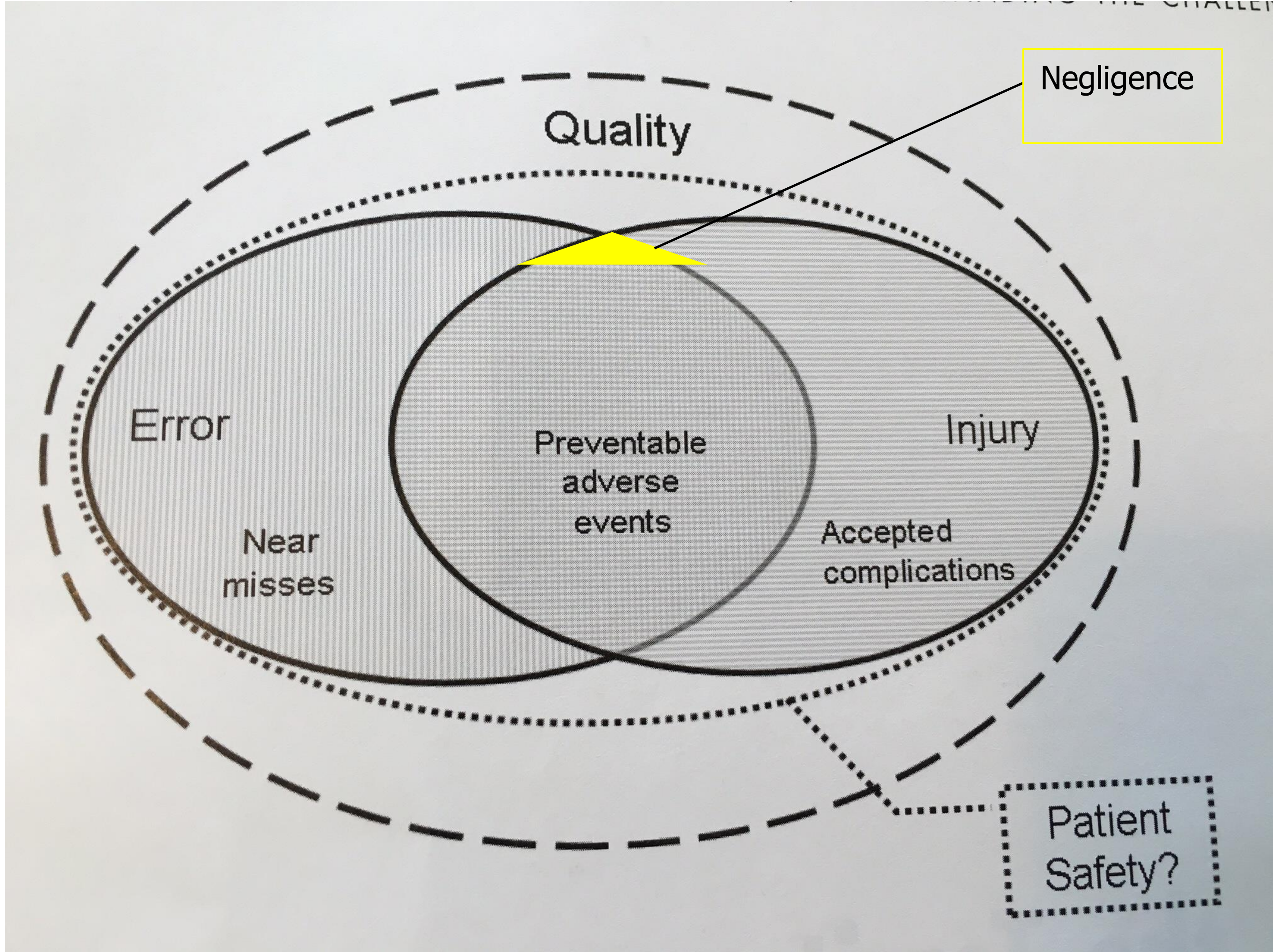
P1 – 16,5% AE

HEMS – 27,7% AE, 3.5% harm

Adverse Incidents Rates World-wide

16 Jumbo Jets a day!


HAZARDOUS
(>1/1000)
REGULATED
ULTRA-SAFE
(<1/100K)
Total lives lost per year
100,000
10,000
1,000
100
10
1
Health Care
Driving
Scheduled
Airlines
European
Railroads
Mountain
Climbing
Chemical
Manufacturing
Bungee
Jumping
Chartered
Flights
Nuclear
Power
1
10
100
1,000
10,000
100,000
1million
10million
Number of encounters for each fatality


Negligence
Quality
Error
Near misses
Preventable adverse events
Injury
Accepted complications
Patient Safety?

Quality is a STEEEP mountain

Safe

Timely

Effective

Efficient

Equitable

Patient-Centred

THE RIGHT CARE BY

THE RIGHT PERSON FOR

THE RIGHT PERSON IN

THE RIGHT PLACE WITH

THE RIGHT TOOLS AT

THE RIGHT TIME

ALL THE TIME

EVERY TIME

Death or Harm

No Harm Event

No actual harm but potential exists

Near Miss

An incident which did not reach the patient (detected in time)

Dangerous Situations

Errors and Deviations

29 July 2021 – 11:30

Dear Mr EMS Manager

Thank you for receiving Head of EC's phone call earlier today. As they discussed with you, I would like to bring the following matter to your urgent attention.

This morning we received Mr Patient from Local CHC via EMS transport. The attending ECP was and he was accompanied by ILS practitioner arrival the crew failed to follow the following unit policies:

1. Failing to enter through designated Patient Under Investigation (PUI) entrance

Patient was brought through a patient waiting area, via the non-urgent are, past the paediatric area as well as the nursing desk, before reaching a safe entrance area. The policy has been communicated to EMS personal on numerous occasions over the last 18 months. If a particular crew is not familiar with our emergency centre, we would expect that they enquire around procedures at our unit, before brining a PUI into our centre.

2. Use of CPAP in the unit

Per protocol, we do not allow the usage of CPAP in our EC given the risk prosed by COVID-19 and this has been our policy since the start of the pandemic. CPAP or high flow O2 administration is only to be used inside in designated, safe areas inside the hospital.

3. Complete documentation handover

The EMS crew failed to hand in the Patient Report Form (PRF) form at the administration desk.

During hand-over of the patient the flowing worrying, unsafe practices were observed:

1. Removal of CPAP mask, whilst ventilator was still ventilating. This is an extremely high-risk manoeuvre, that will cause aerolisation and endanger staff as well as other patients.

2. IV line was removed during transport. There was no attempt made to replace the line, nor were we informed that the IV line was no longer in situ. Vital drugs (fluid and IV salbutamol) were to be administered through this line. This endangered the patient's life.

Wat is further worrying is the lack of professionalism that was displaced by ECP . Although the points as described above were pointed out to him, he chose to display a non-compliant attitude through ignoring to engage with the accepting doctors. This does not display mutual professional respect, nor does it harbour a safe working environment.

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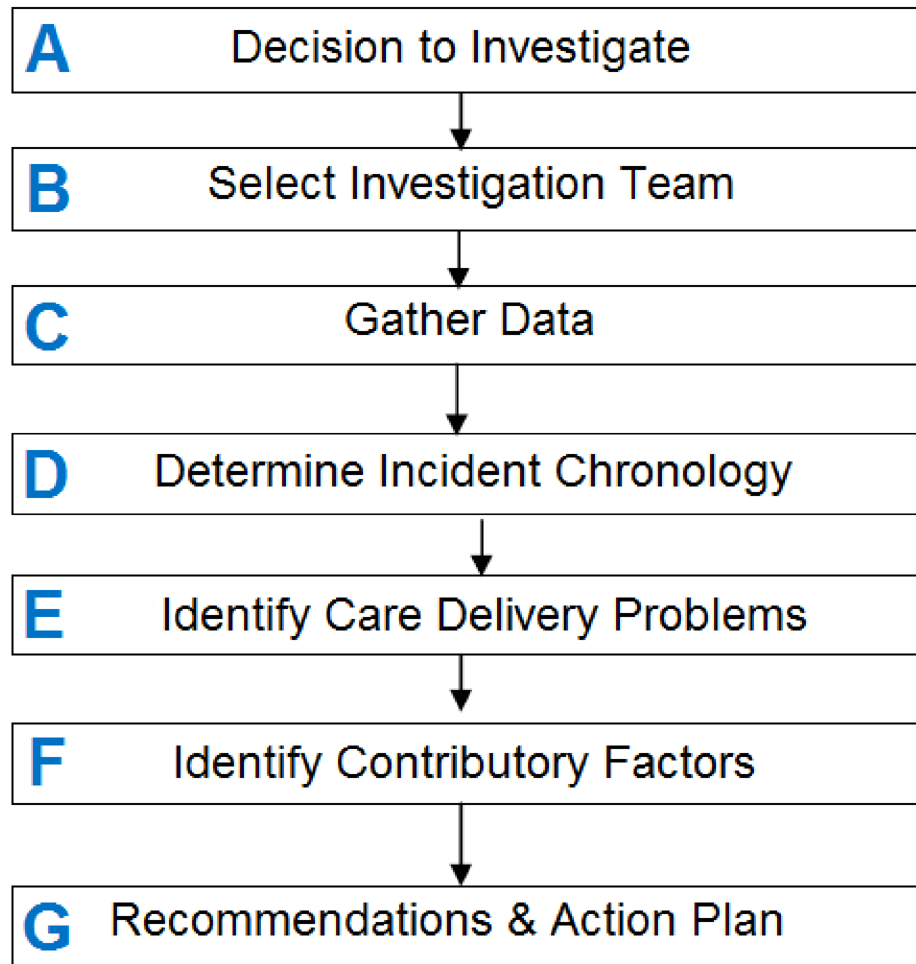
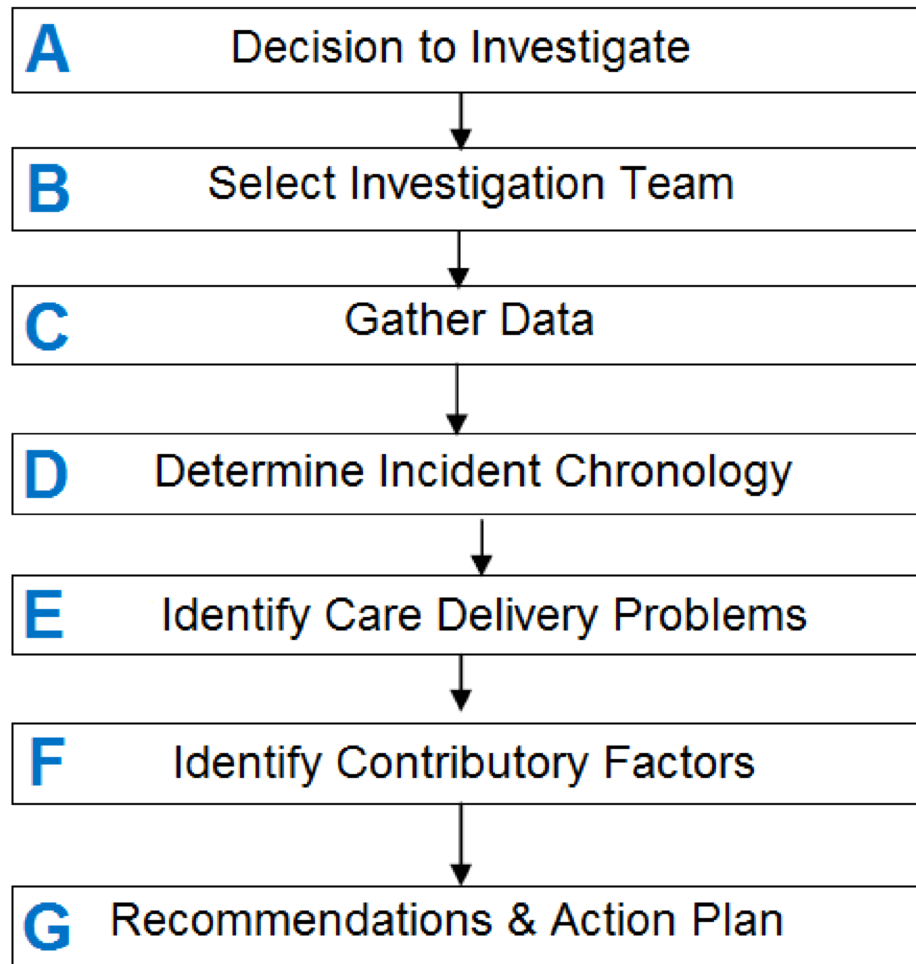
Systems Analysis



Adapted from "Systems Analysis of Clinical Incidents - The London Protocol" by S. Taylor-Adams & C. Vincent

Systems Analysis



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Sequence of events

11:30am

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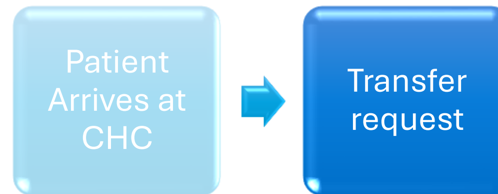
Sequence of events

Sometime around midnight

Sequence of events

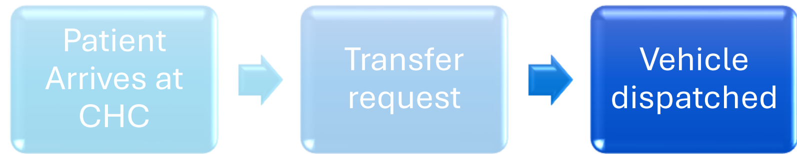


Sometime around midnight

01:50am

Urgent Resp illness: acute asthma

Sequence of events



Sometime around midnight

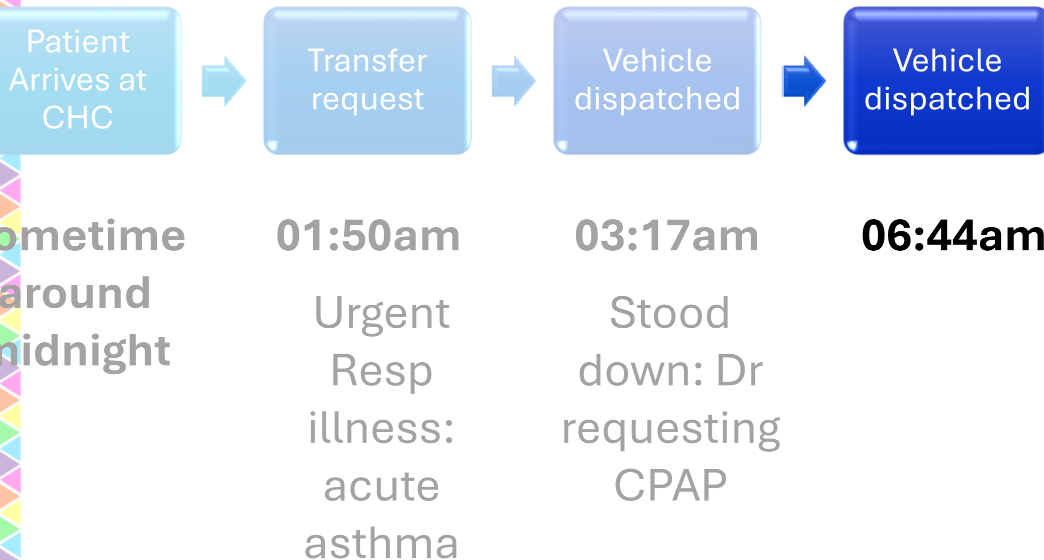
01:50am

Urgent Resp illness: acute asthma

03:17am

Stood down: Dr requesting CPAP

Sequence of events



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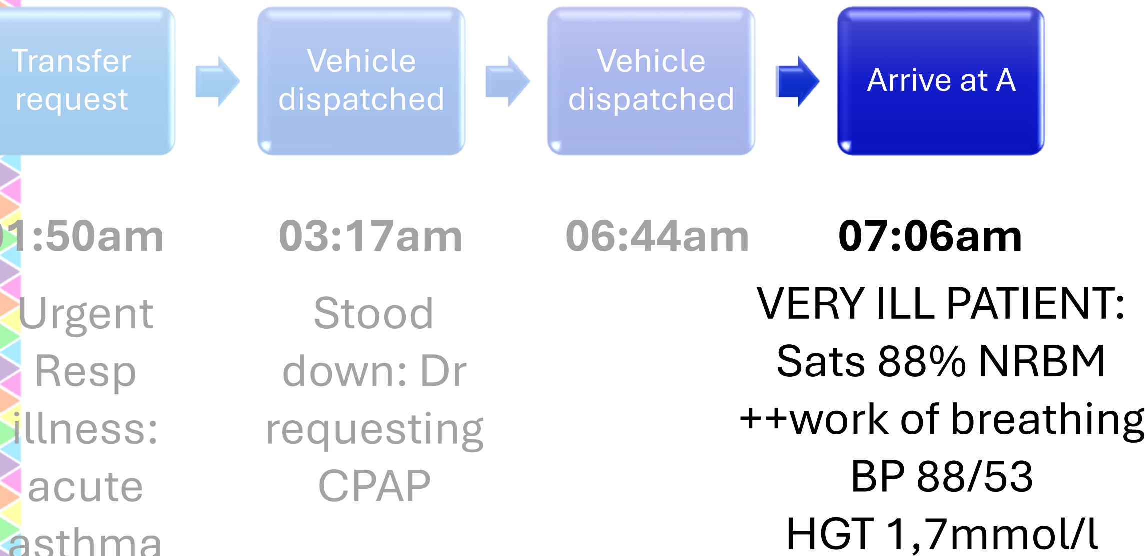

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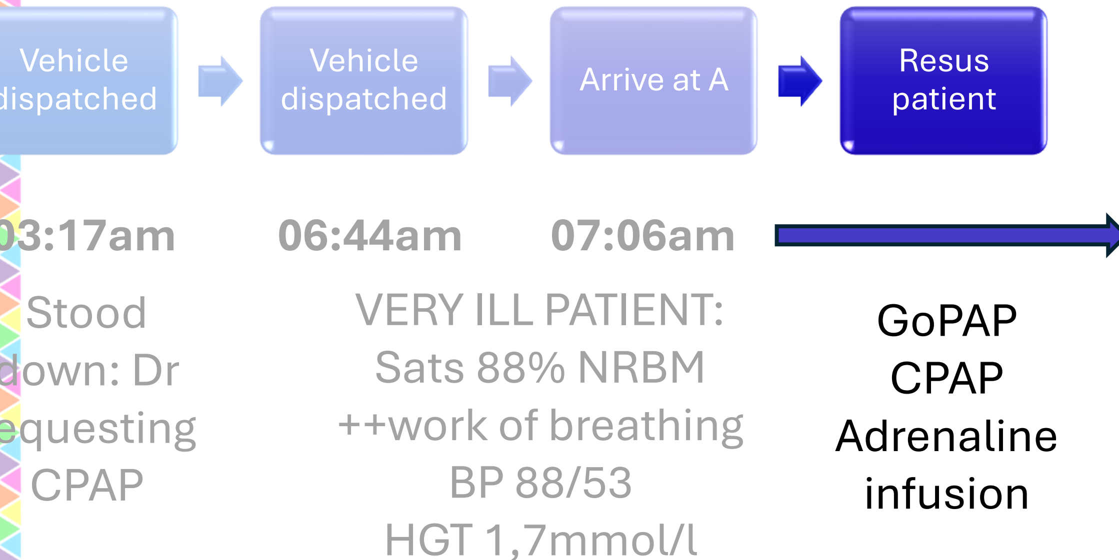

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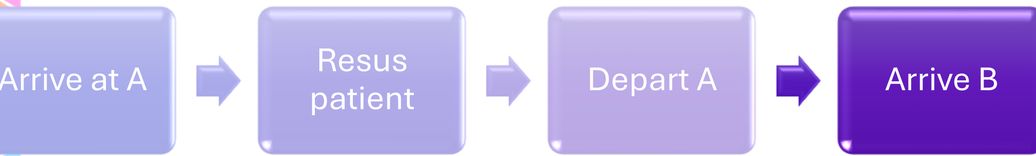


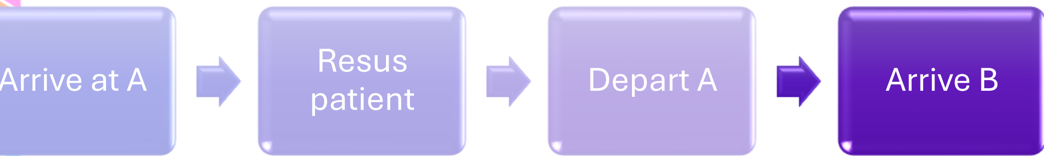
7:06am | 08:36am | **09:04am**

ATIENT:
NRBM
reathing
53
mol/l

GoPAP
CPAP
Adrenaline infusion

En route
Confused, restless, thirsty
BP 83/54 (on Adrenalin)
Sats 61% on FiO2 100%, PEEP 7cmH_2O

Sequence of events



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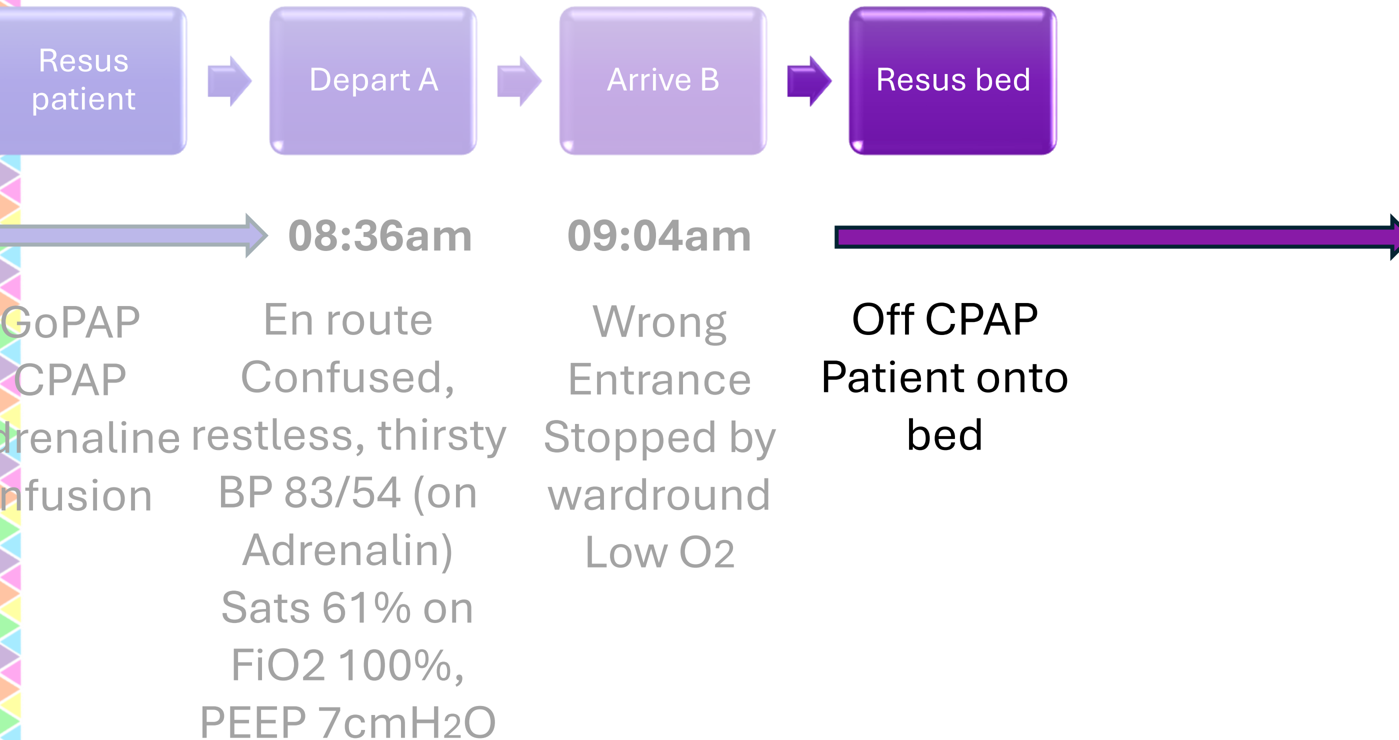
Confused, restless, thirsty
BP 83/54 (on Adrenalin)
Sats 61% on FiO_2 100%, PEEP $7cmH_2O$

09:04am

Wrong Entrance
Stopped by wardround
Low O_2

Sequence of events



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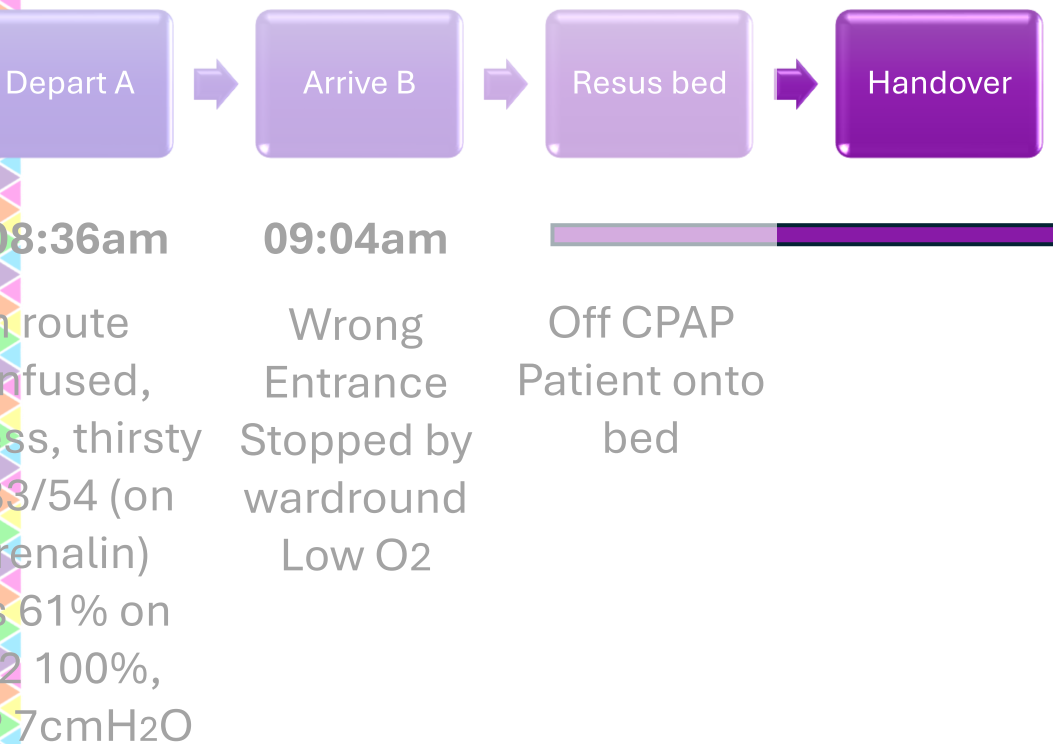

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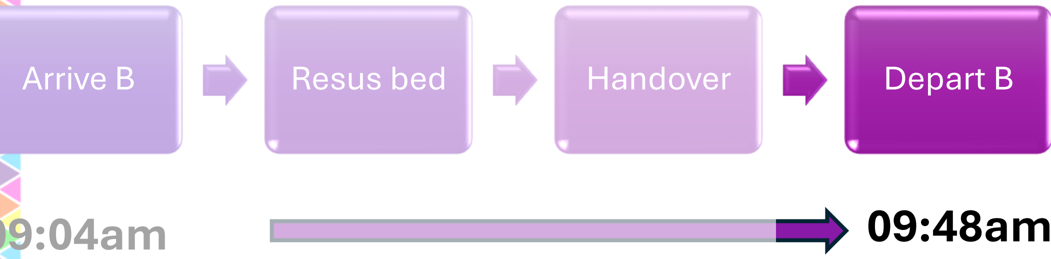
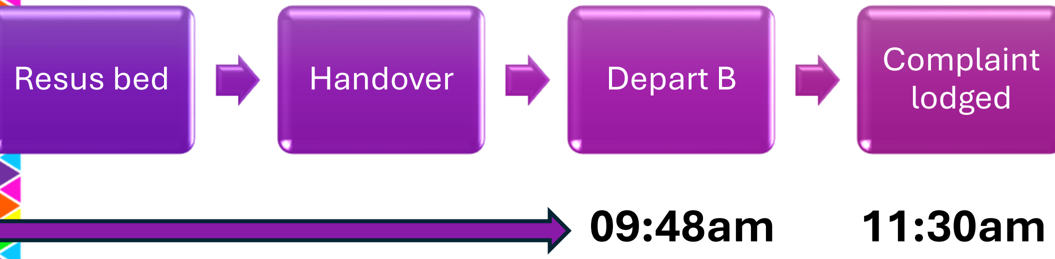


Wrong
ntrance
opped by
ardround
Low O2

Off CPAP
Patient onto
bed

Sequence of events



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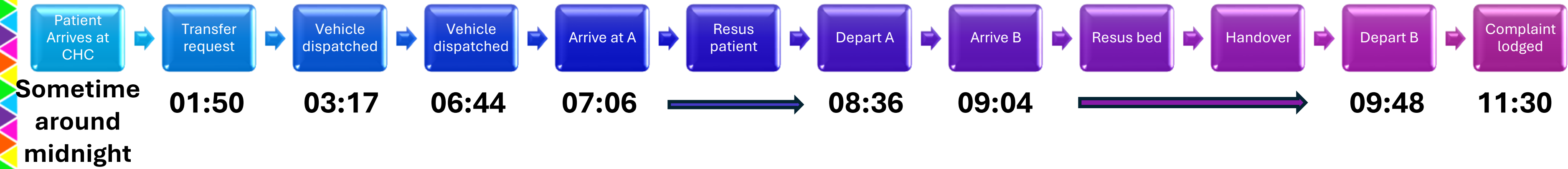
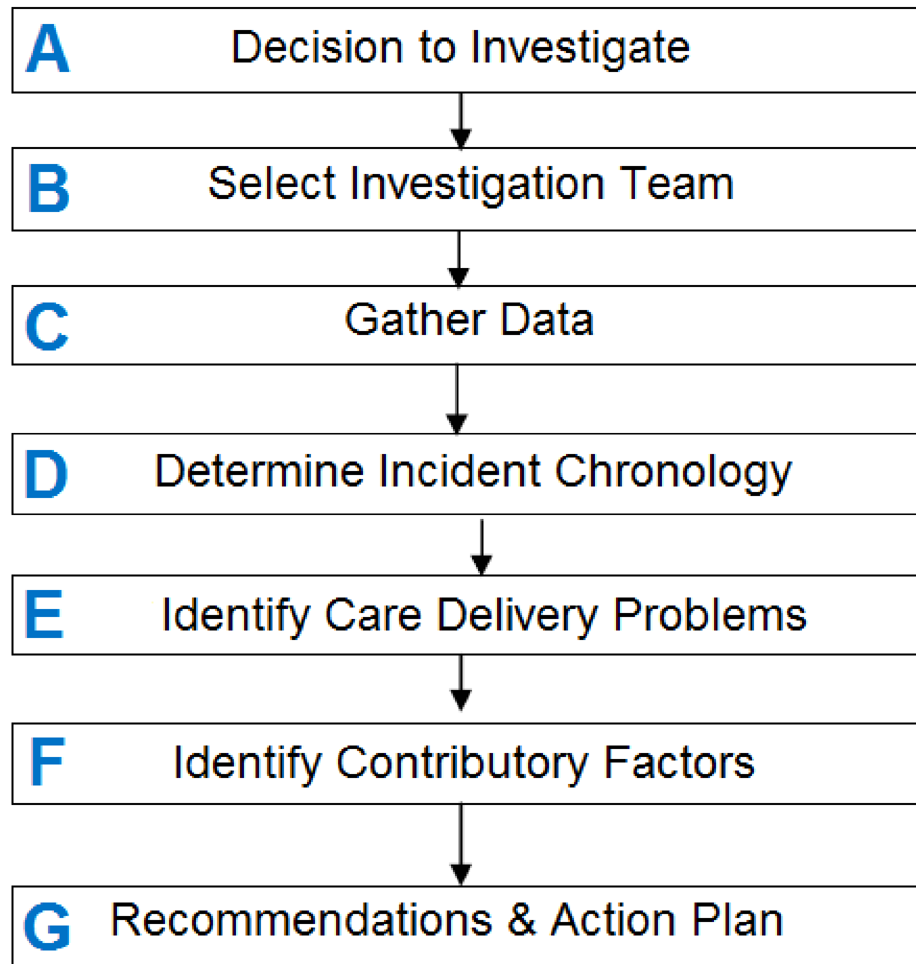
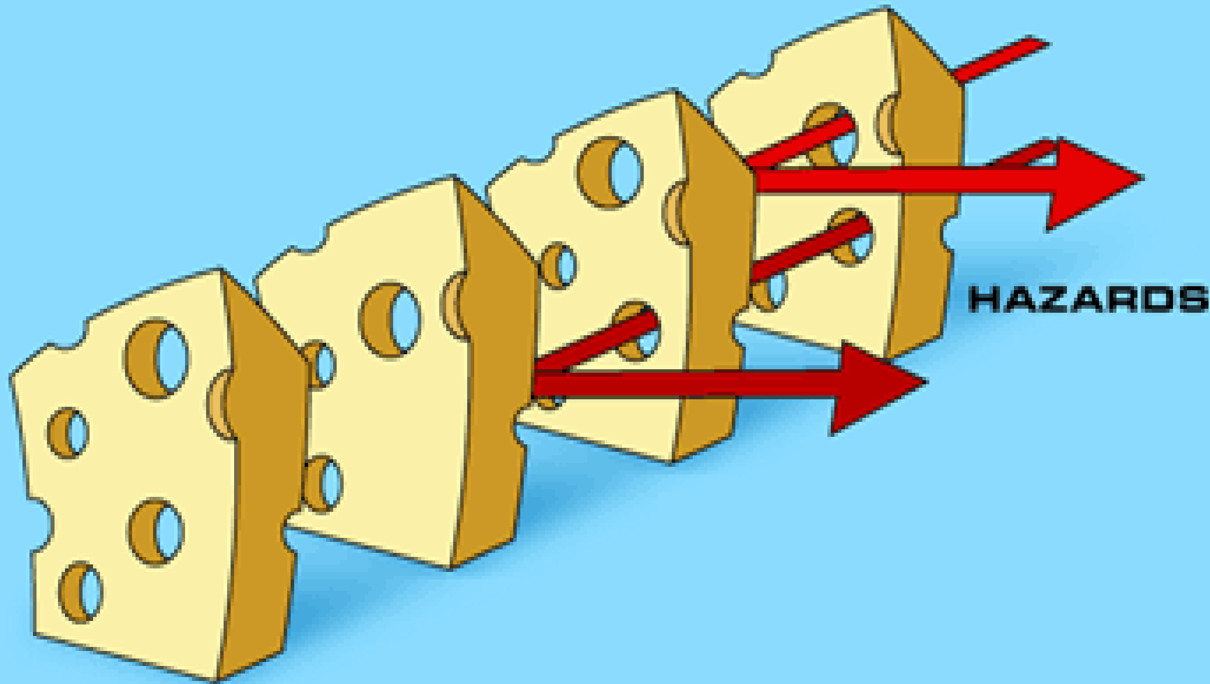
atient onto
bed

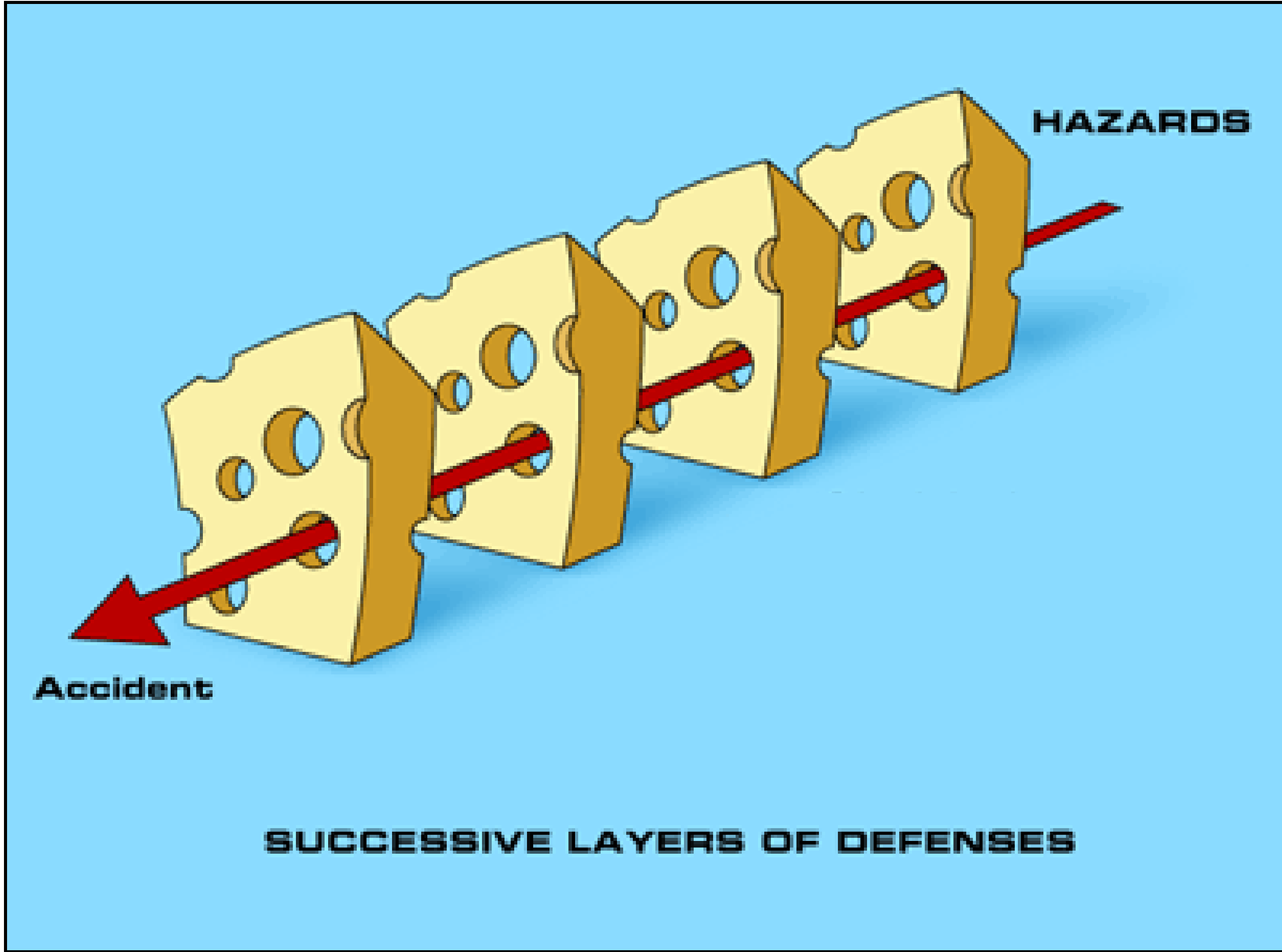
Sequence of events



Systems Analysis

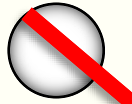



HAZARDS
SUCCESSIVE LAYERS OF DEFENSES
James Reason

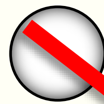

HAZARDS
Accident
SUCCESSIVE LAYERS OF DEFENSES

Hazard: Failure to rescue

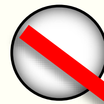
Diagnosis and treatment



Transfer to Definitive care

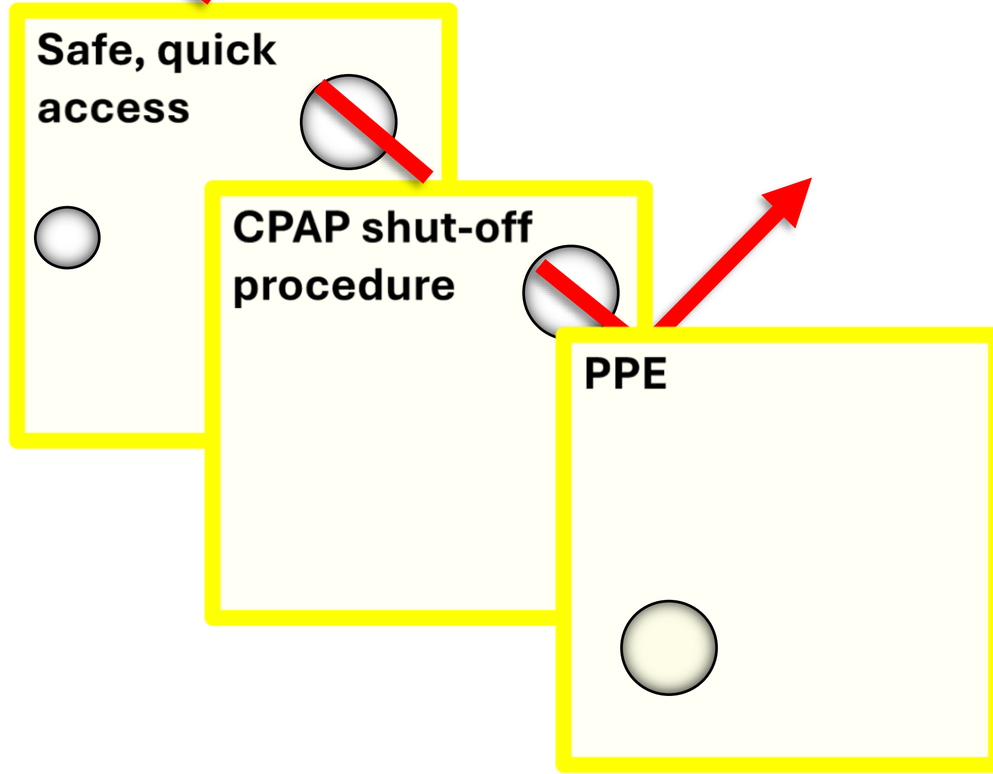
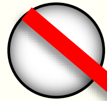
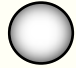


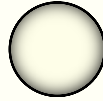
Safe Transfer onto hospital trolley



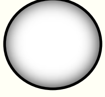
Handover

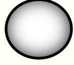
Documentation


Infection risk to staff and patients
Safe, quick access
CPAP shut-off procedure
PPE





Diagnosis and treatment





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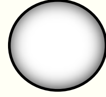
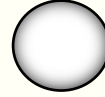
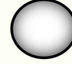


Safe Transfer onto hospital trolley





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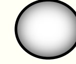

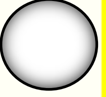

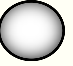

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Safe Transfer onto hospital trolley

Handover

Diagnosis an
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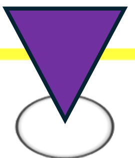

Safe Transfer o
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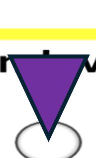

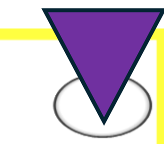

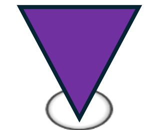

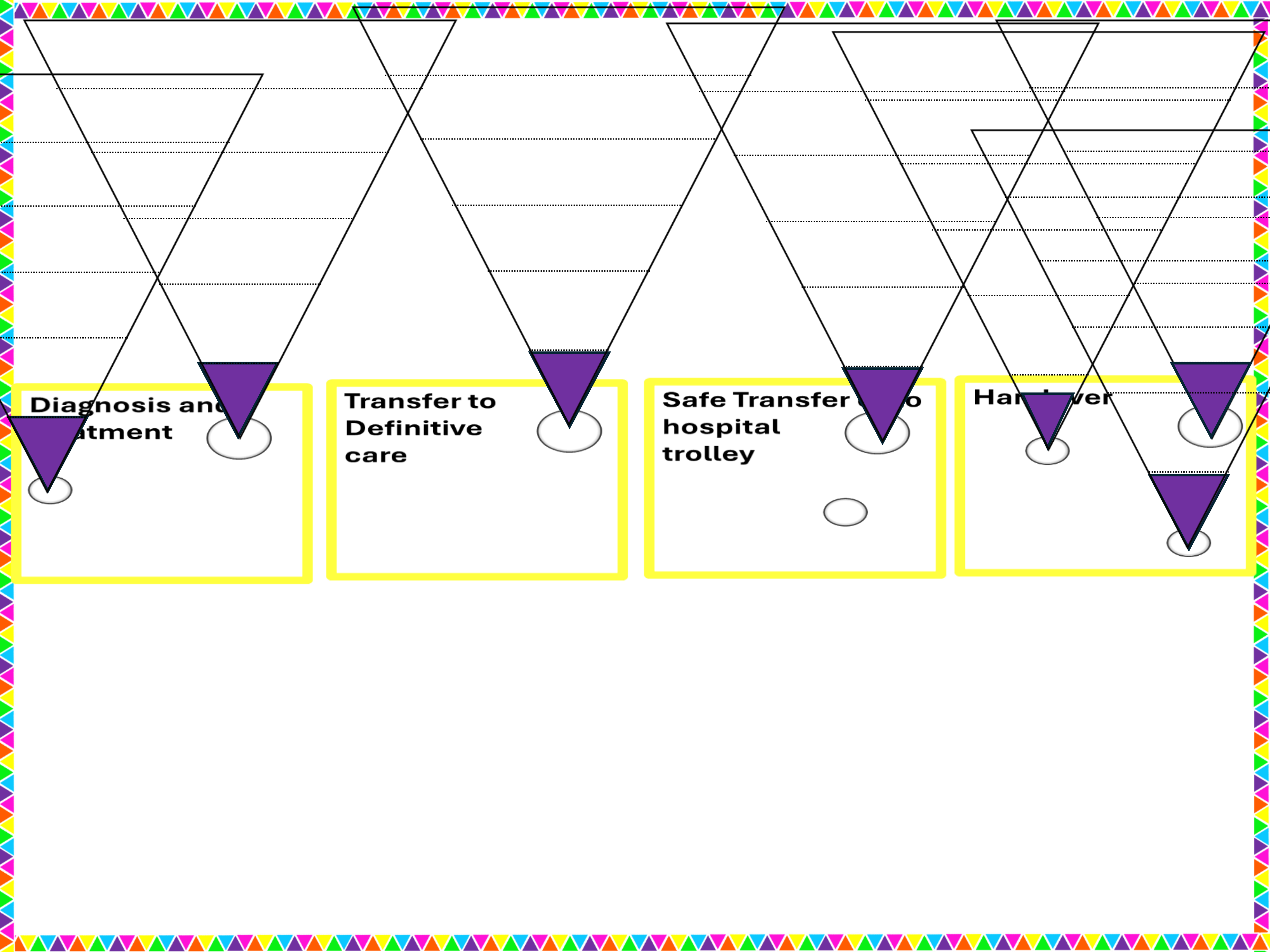

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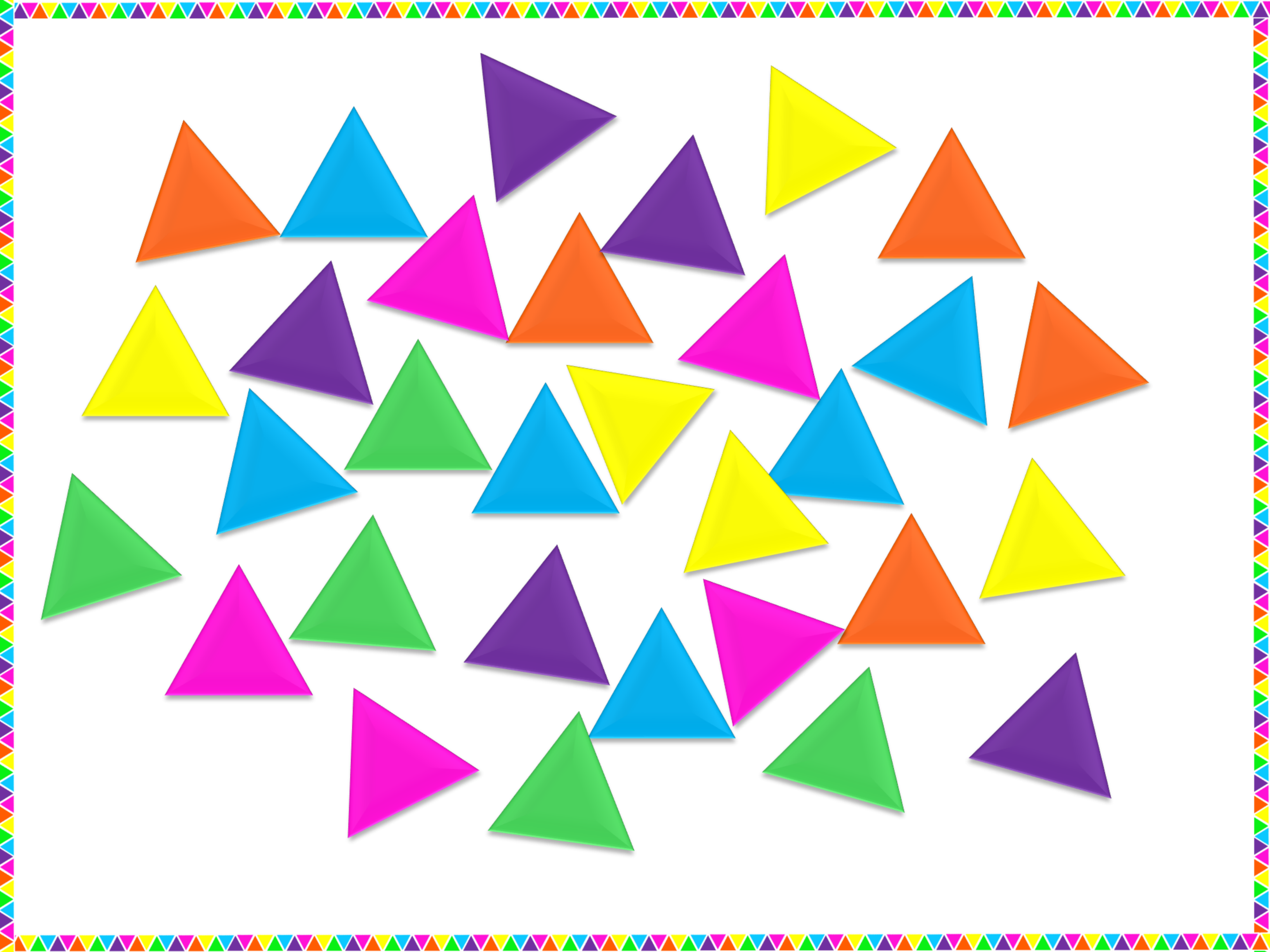
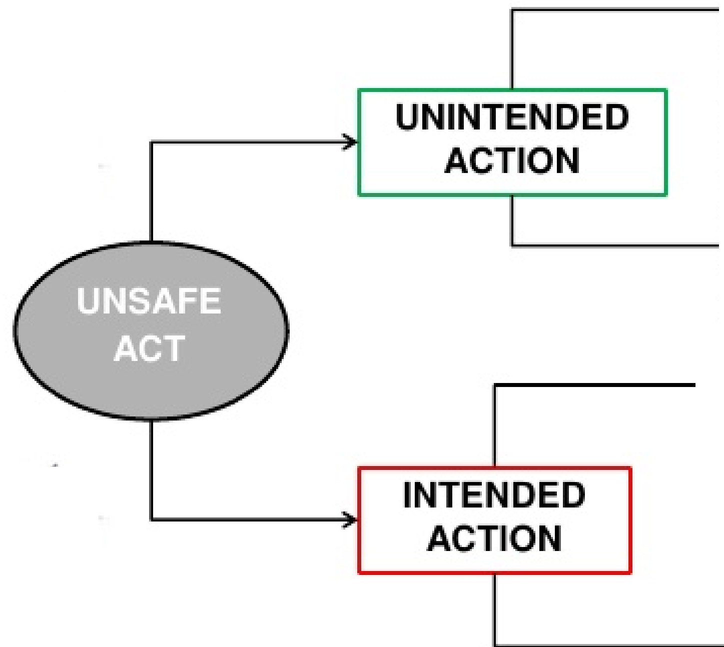
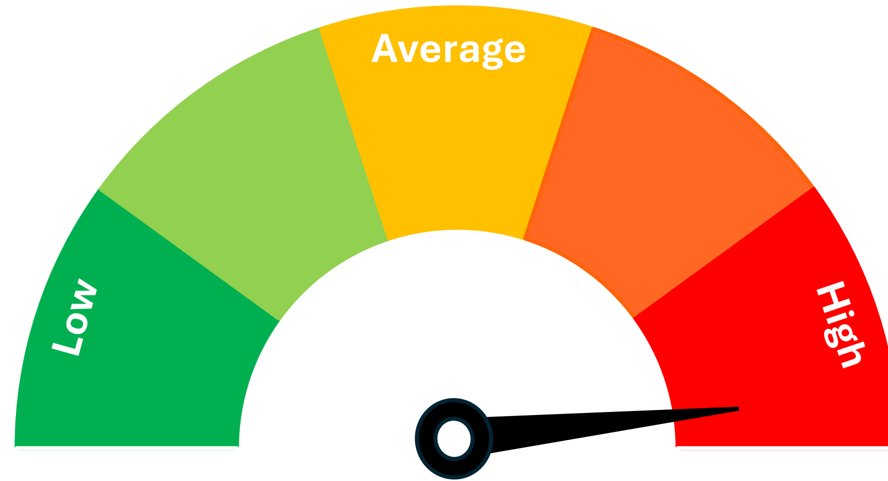


Dr. James Reason describes error as ***circumstances in which planned actions fail to achieve the desired outcome***

CLASSIFICATION OF ERRORS



Taken from 'Human Error', James Reason (1990, 2009), p207



25X higher incidence of error in high-stress situations compared to baseline.

Different uses of the word Error

Error – one action (eg slip)

A classification of Harm eg Procedural error, Medication error, Human error*.

Normally the second type happens as a string of the first type…

Institutional Context

Organisation and Management

Teamwork Work Environment

Task Tools

Patient Factors Staff Factors

Unsafe Act

Resident Pathogens

Blunt End

Latent Factors

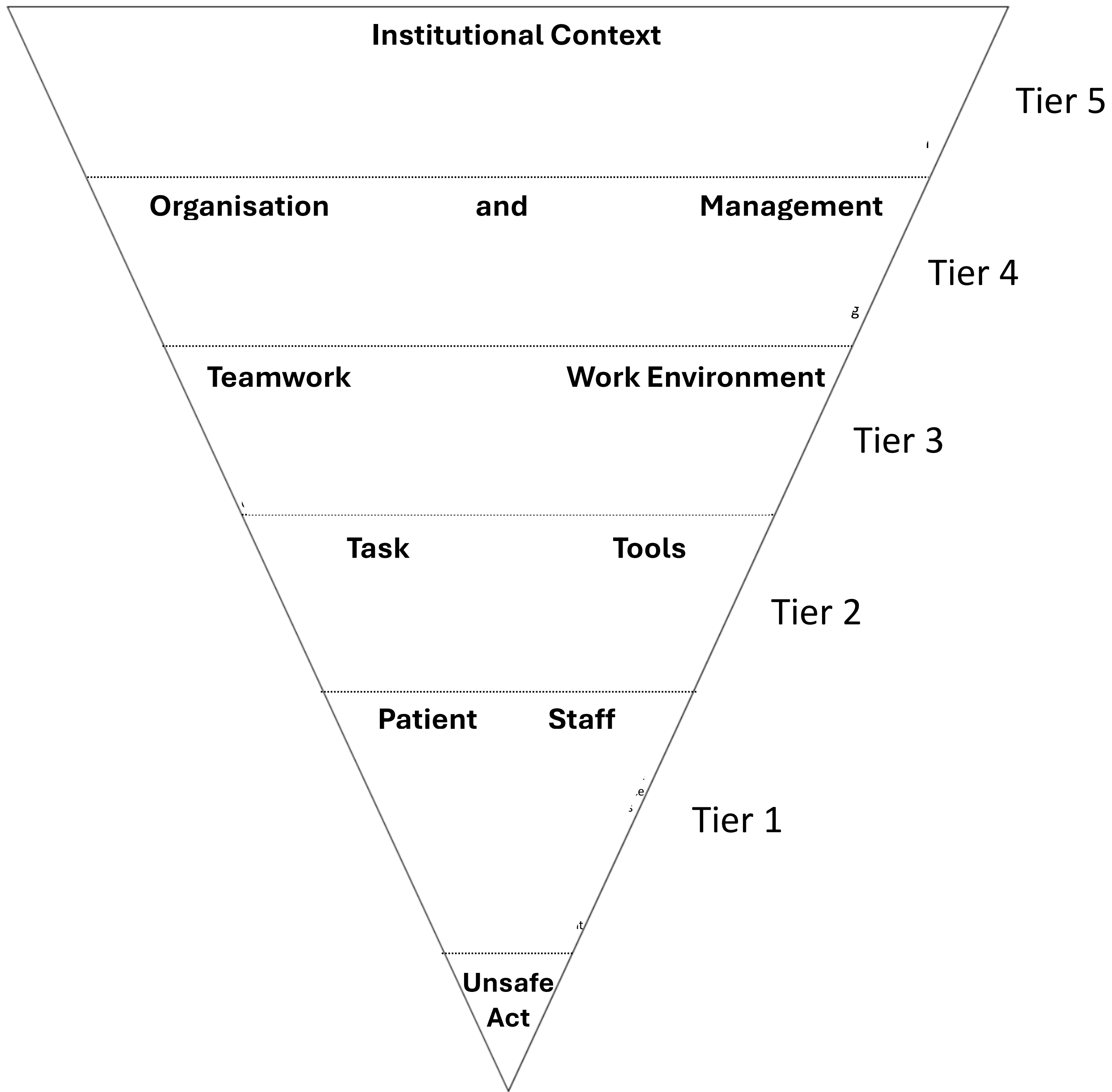
Contributing Factors

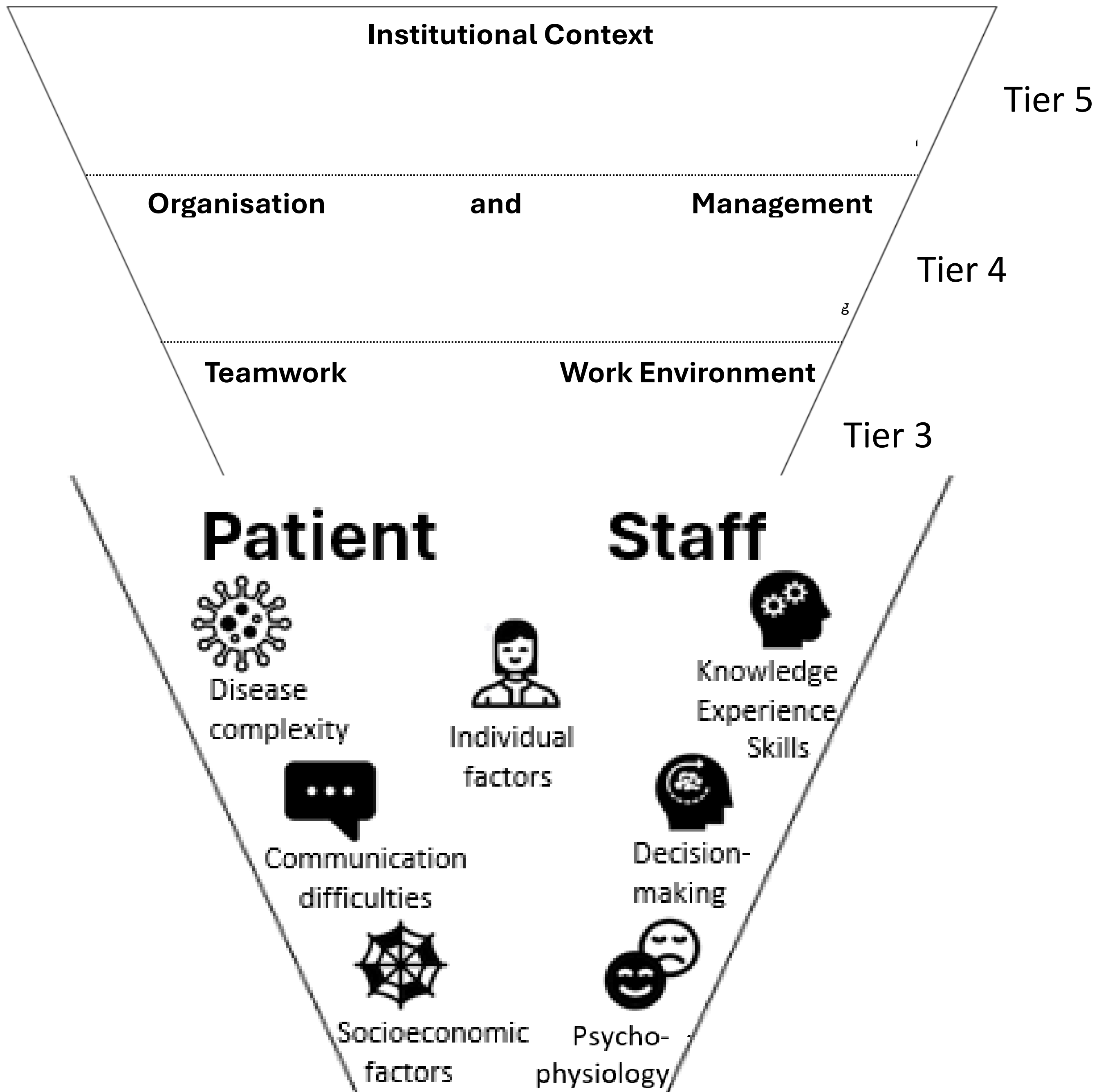
ROOT CAUSES

Sharp End

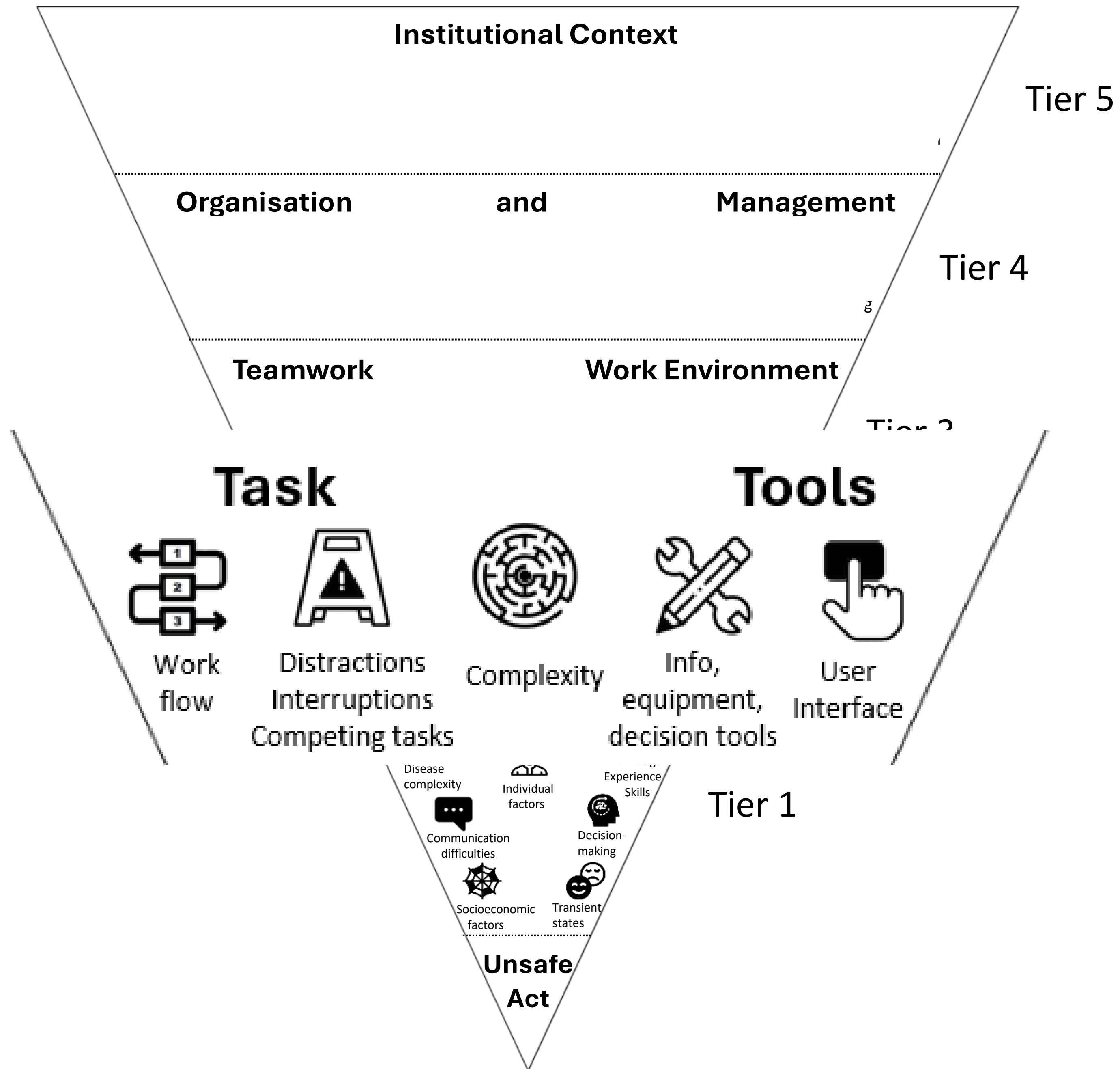
Care Delivery Problem

PROXIMATE CAUSE


Institutional Context
Tier 5
Organisation and Management
Tier 4
Teamwork
Work Environment
Tier 3
Task
Tools
Tier 2
Patient
Staff
Tier 1
Unsafe Act



Institutional Context
Tier 5
Organisation and Management
Tier 4
Teamwork
Work Environment
Tier 3
Patient
Staff
Disease complexity
Individual factors
Knowledge
Experience
Skills
Communication difficulties
Decision-making
Socioeconomic factors
Psycho-physiology



Institutional Context
Tier 5
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Tools
Work flow
Distractions
Interruptions
Competing tasks
Complexity
Info, equipment, decision tools
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Socioeconomic factors
Transient states
Tier 1
Unsafe Act

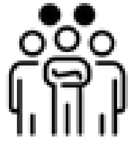
Institutional Context

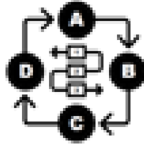
Tier 5

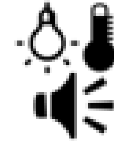
Organisation and Management

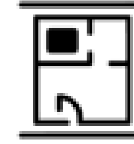
Teamwork

Work Environment









Communication

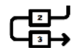
Make-up & dynamics

Co-ordination

Workload

Physical Environment

Workplace Layout



Work flow

Distractions Interruptions Competing tasks

Complexity

Info, equipment, decision tools

User Interface

Tier 2

Patient

Staff

Disease complexity

Individual factors

Knowledge Experience Skills

Communication difficulties

Decision-making

Socioeconomic factors

Transient states

Tier 1

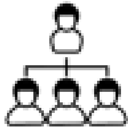
Unsafe Act

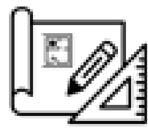
Institutional Context

Tier 5

Organisation and Management

Culture


Staff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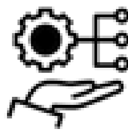
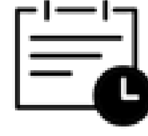
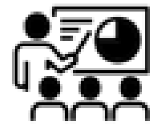

Mx System


Demand-Capacity planning

Design of things

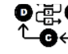
Policy, SOP, Value-stream design


Training

Tier 3

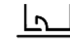
Make-up & dynamics

Communication


Co-ordination

Workload

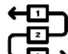
Physical Environment


Workplace Layout

Tier 2

Task

Tools


Work flow

Distractions Interruptions Competing tasks

Complexity

Info, equipment, decision tools

User Interface

Tier 1

Patient

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Communication difficulties

Socioeconomic factors

Individual factors

Knowledge Experience Skills

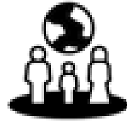
Decision-making

Transient states

Unsafe Act

Institutional Context

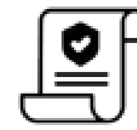
Knowledge



Demographics

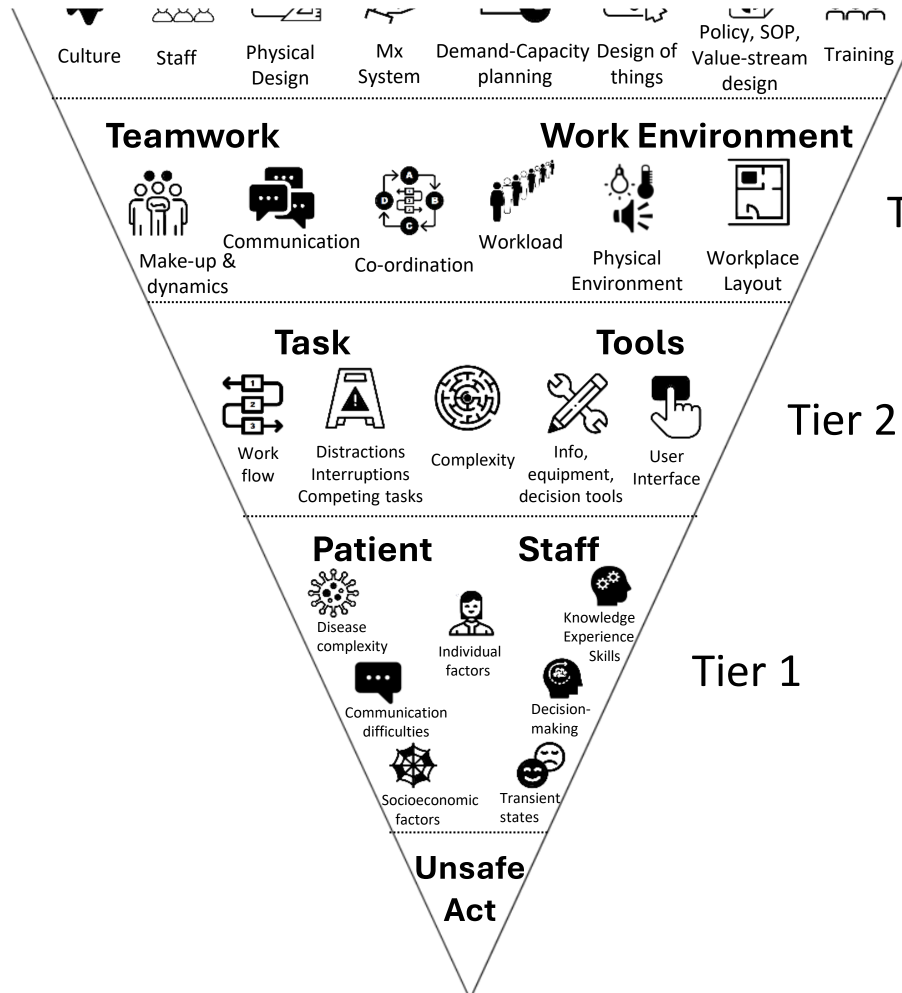
Economy

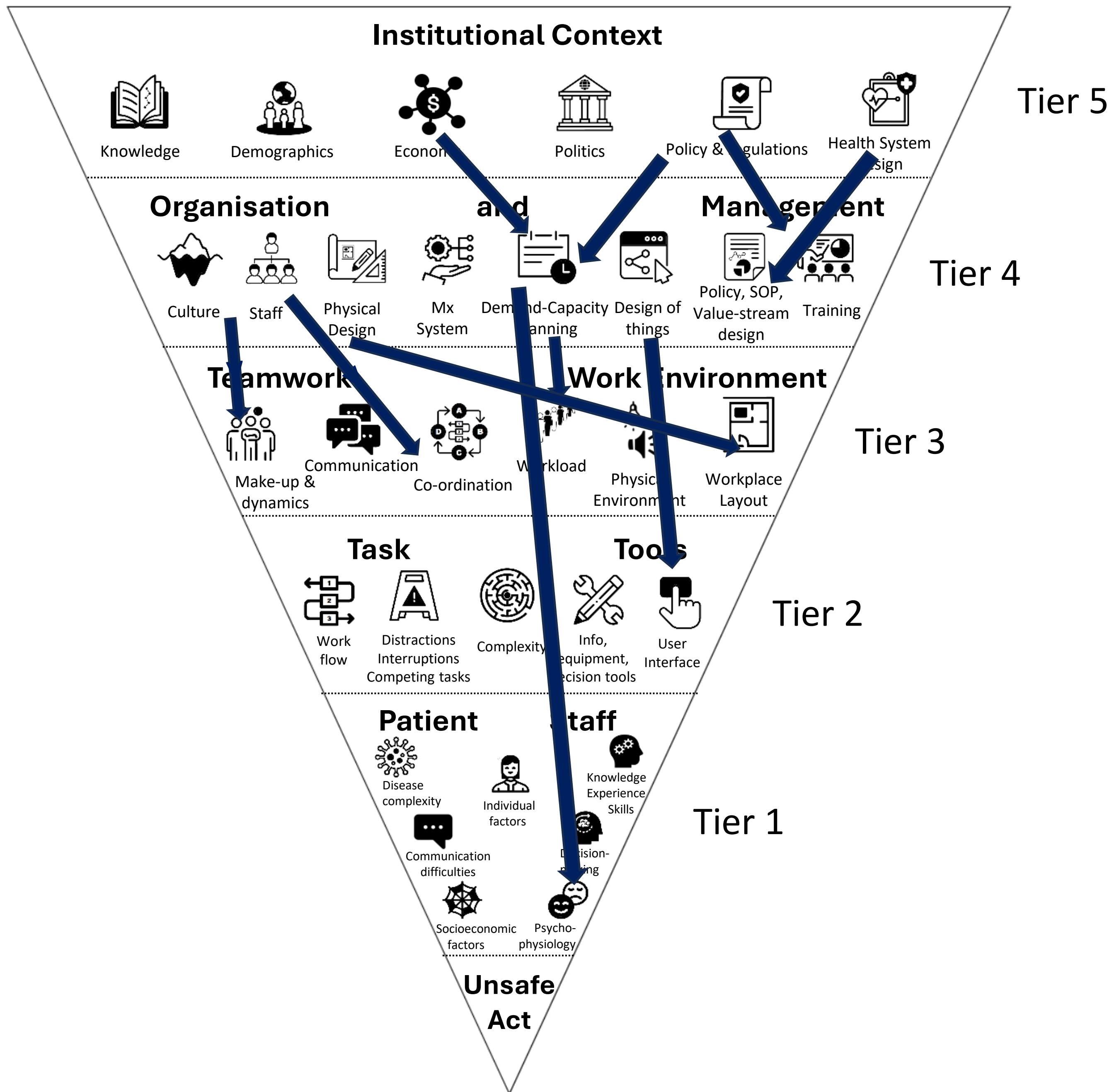
Politics



Policy & regulations

Health System design





Institutional Context
Knowledge
Demographics
Politics
Health System
Tier 5
Organisation
Culture
Staff
Physical Design
Mx System
Design of things
Policy, SOP, Value-stream design
Training
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Communication
Make-up & dynamics
Co-ordination
Workplace Layout
Tier 3
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Complexity
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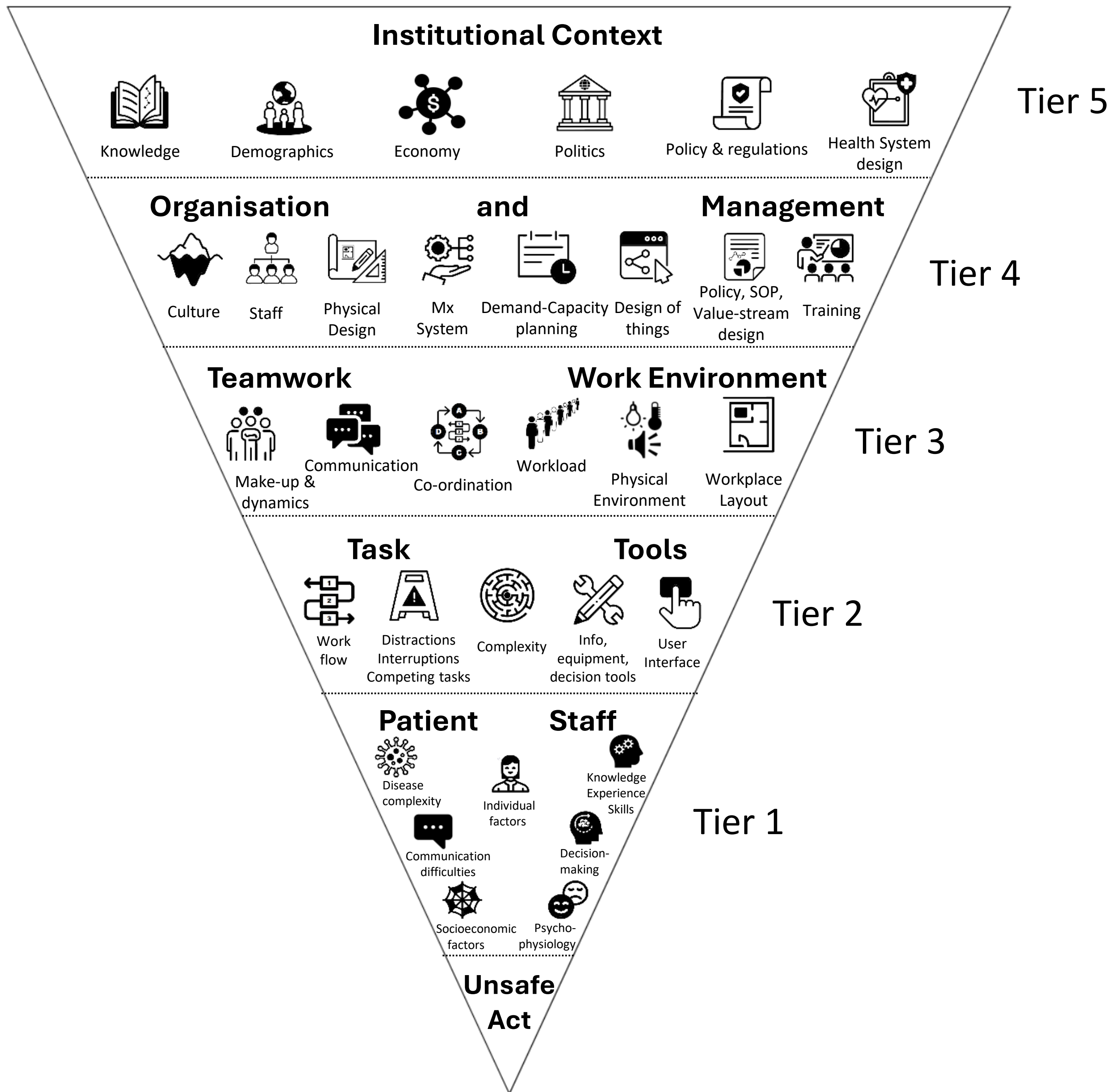
Institutional Context
Knowledge
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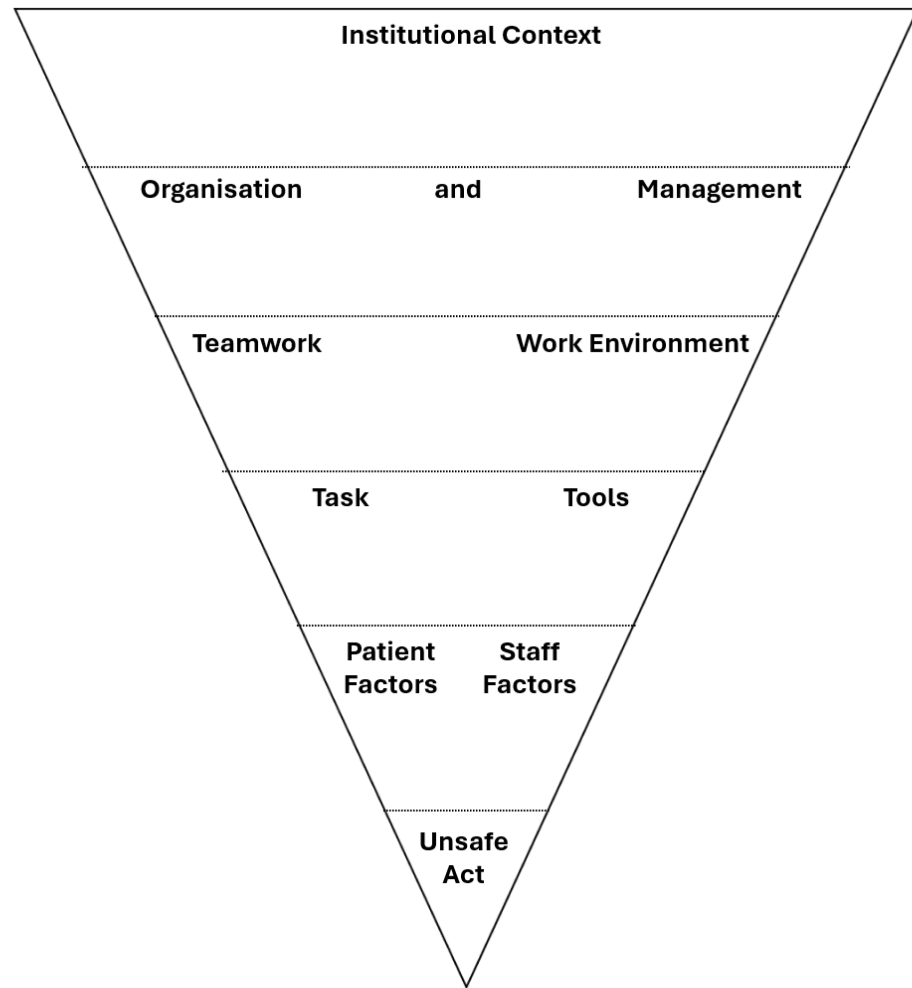
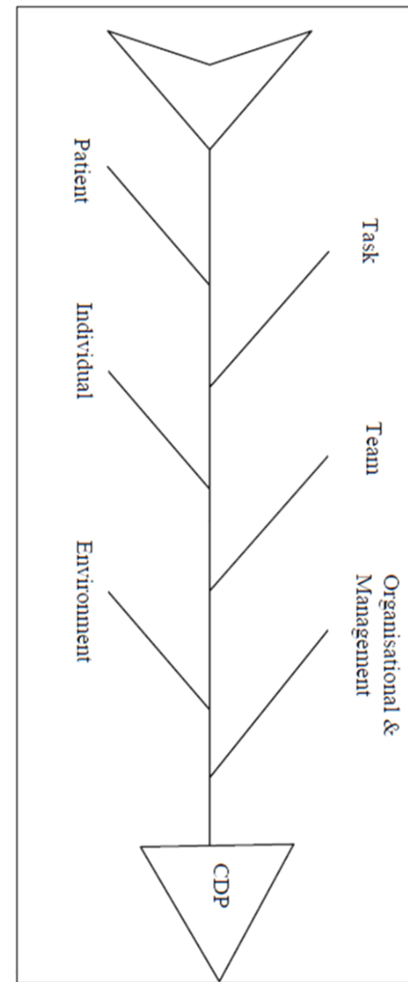

Institutional Context
Organisation and Management
Teamwork
Work Environment
Task
Tools
Patient Factors
Staff Factors
Unsafe Act


Patient
Individual
Environment
Task
Team
Organisational & Management
CDP

Healthcare Acquired Infections

Procedural Error

Medication Error

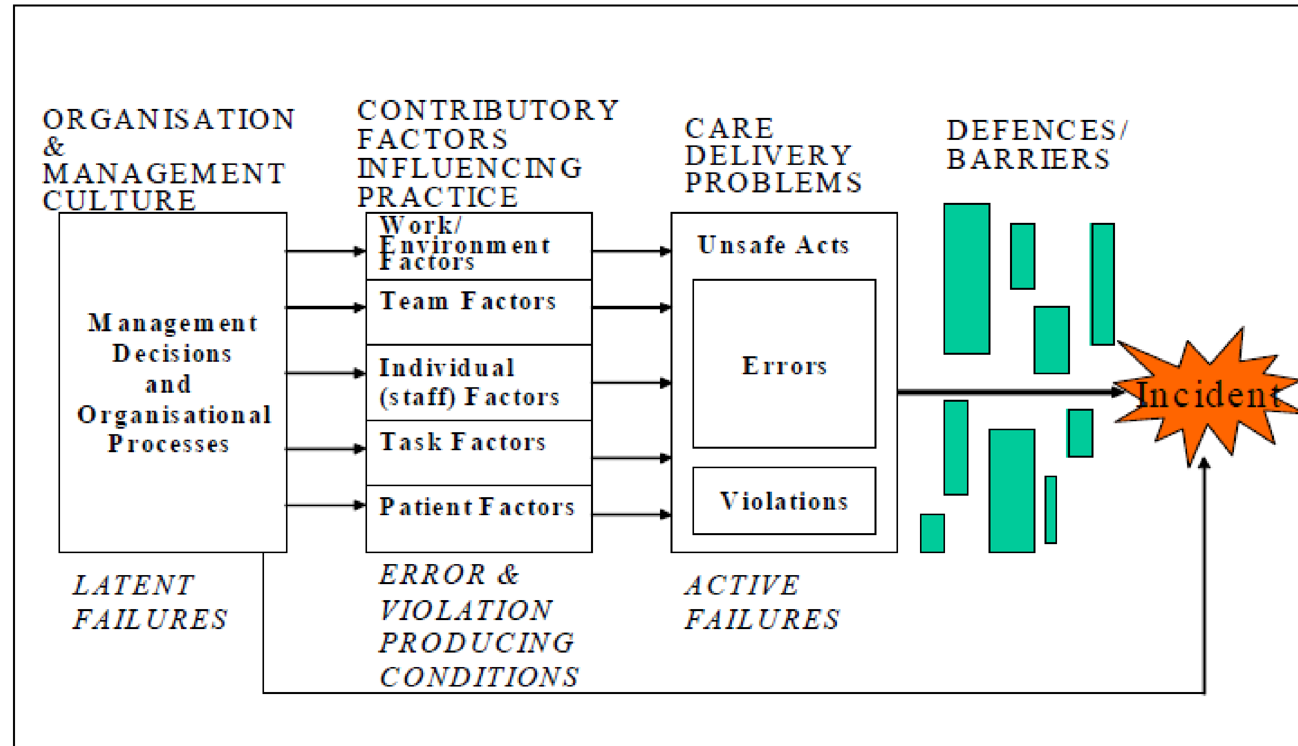
Healthcare Acquired Conditions

Diagnostic Error

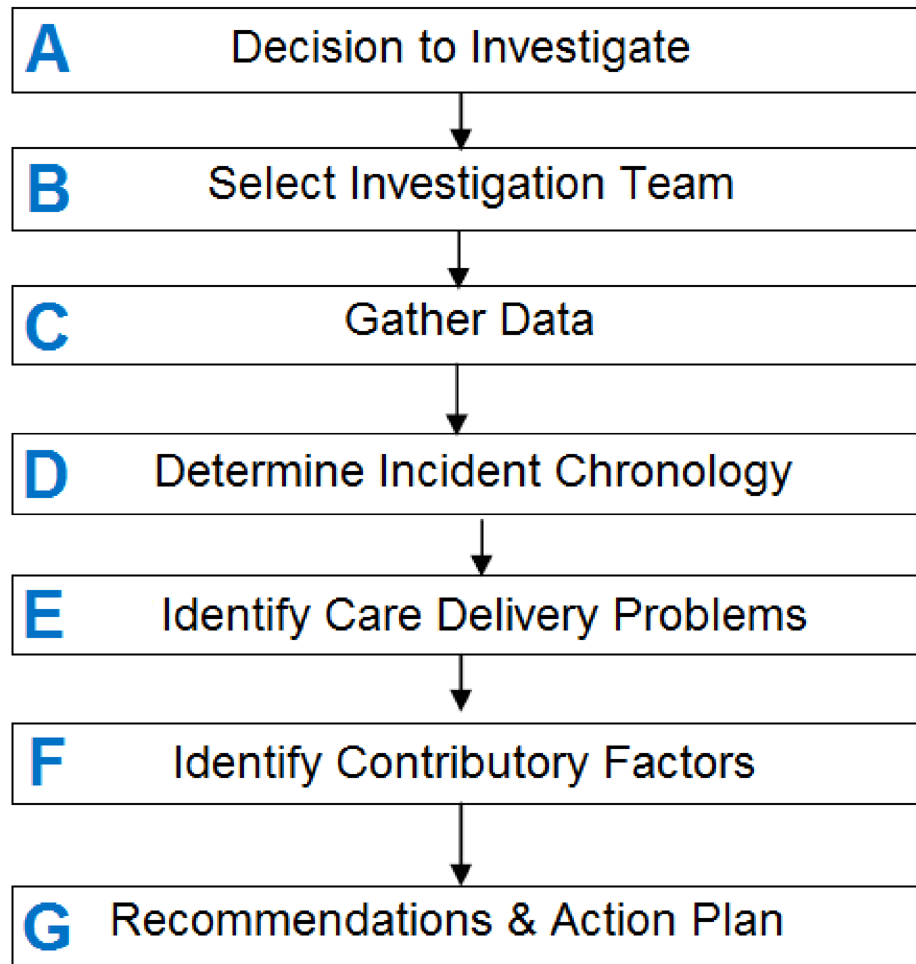
Failure to Rescue

Psychological Trauma

Organisational Accident Causation Model



Systems Analysis



Adapted from "Systems Analysis of Clinical Incidents - The London Protocol" by S. Taylor-Adams & C. Vincent

Institutional Context

Knowledge

Economy

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Tier 5

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Staff

Demand-Capacity planning

Tier 4

Teamwork

Work Environment

Make-up & dynamics

Co-ordination

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Task

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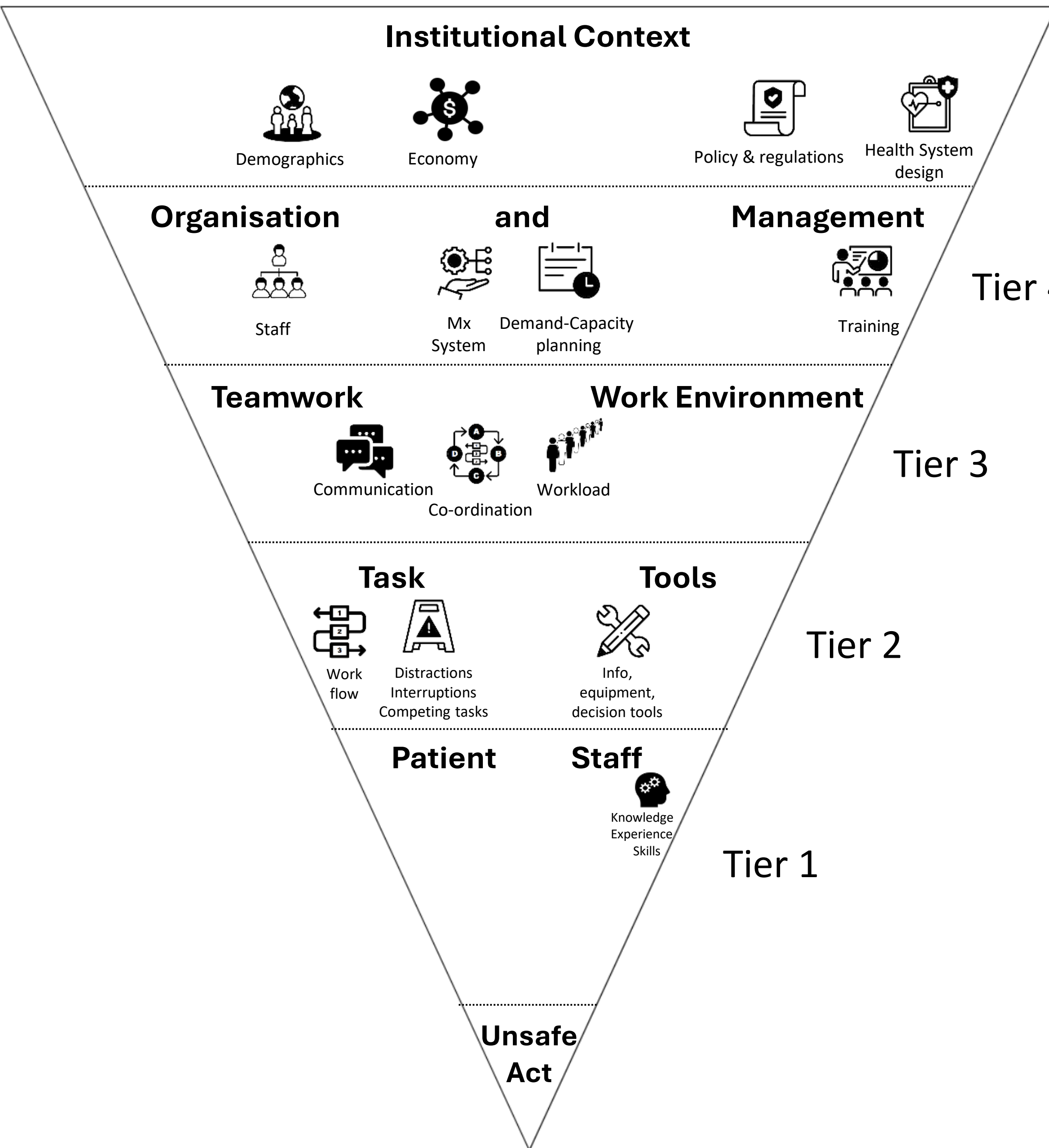

Transfer to Definitive care

Institutional Context

Pandemic!

Health System design

Tier 5

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Mx System

Policy, SOP, Value-stream design

Tier 4

Teamwork

Work Environment

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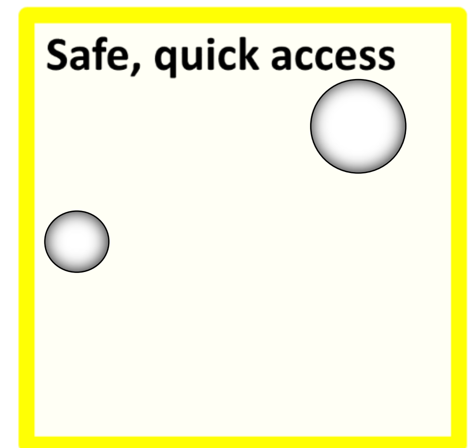
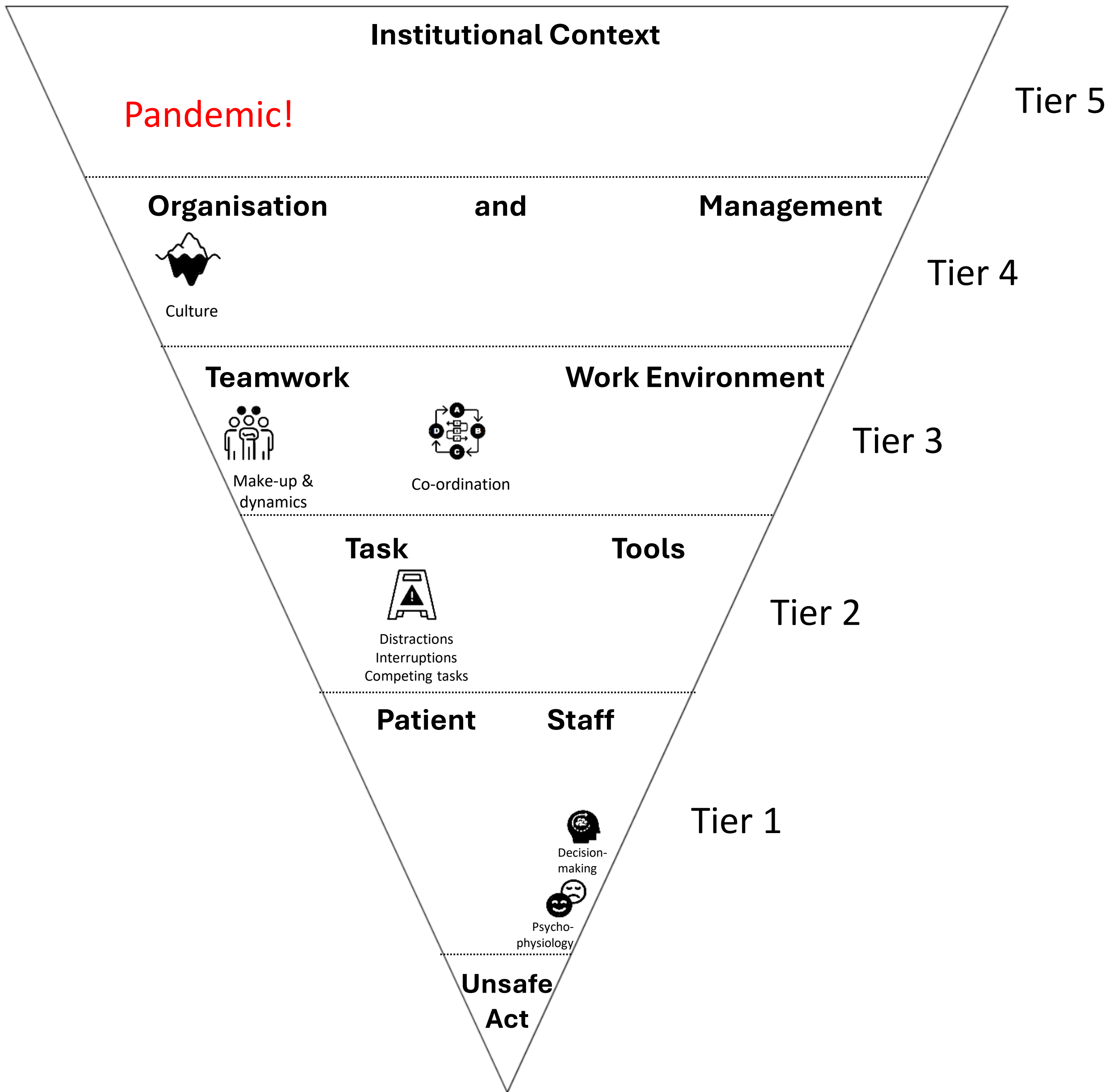
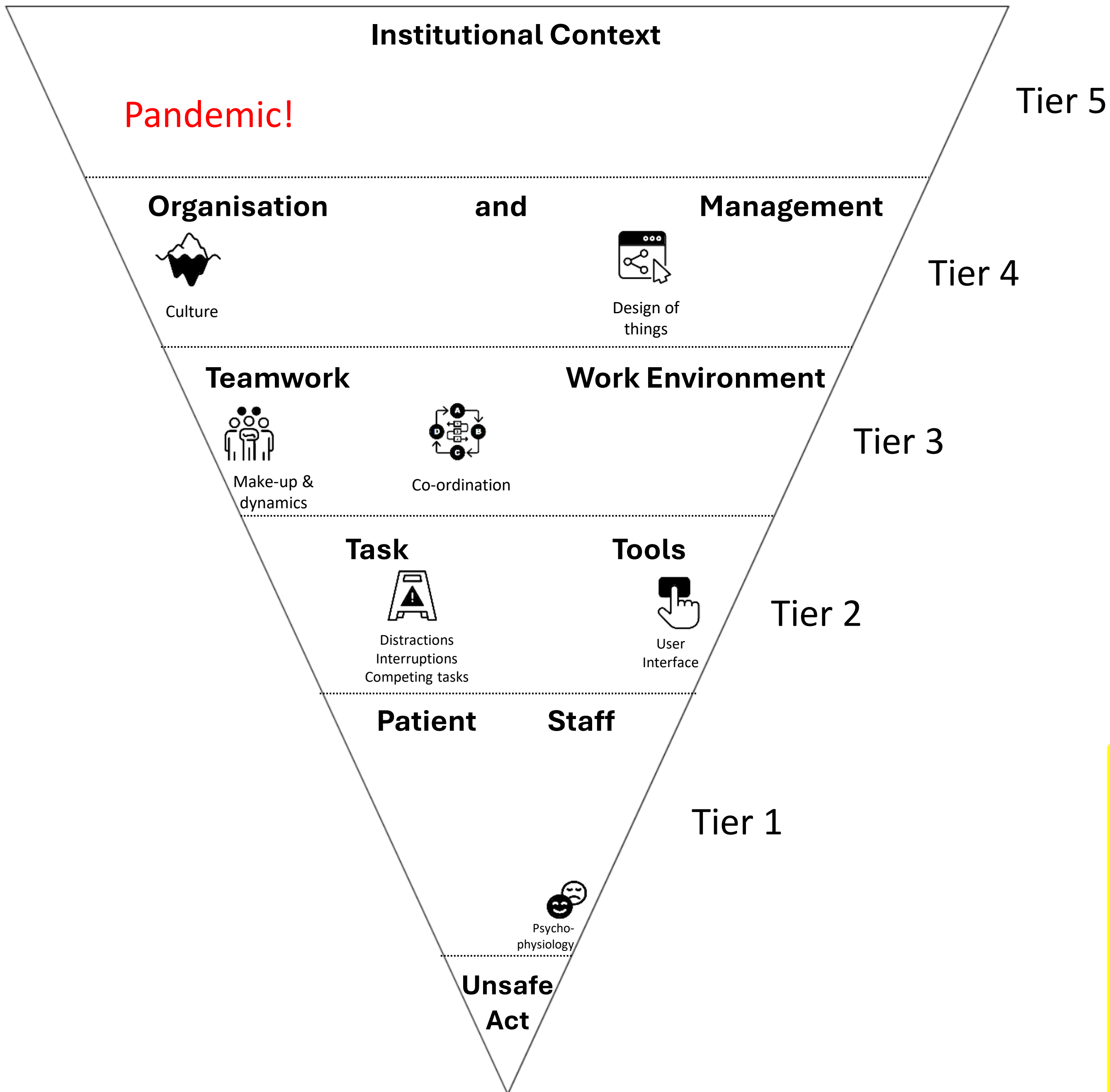
Unsafe Act





CPAP shut-off procedure



Safe Transfer onto hospital trolley

Institutional Context

Knowledge
Pandemic!
Economy
Policy & regulations
Health System design

Tier 5

Organisation and Management

Culture
Staff
Training

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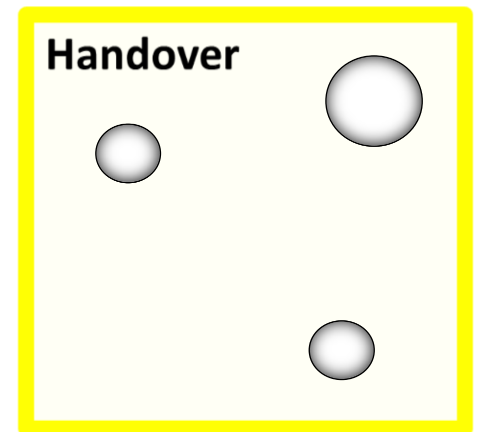
Unsafe Act



Tier 5

Health System design

Tier 4

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Policy, SOP, Value-stream design

Tier 3

Co-ordination

Tier 2

Info, equipment, decision tools

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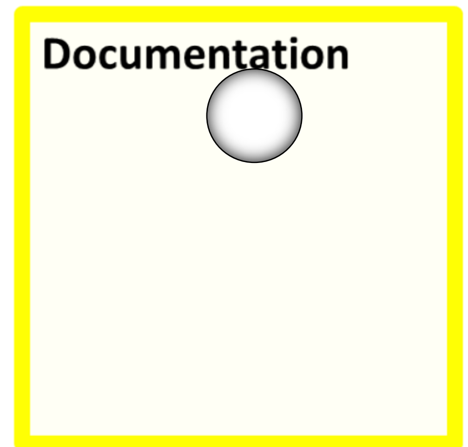
Knowledge Experience Skills

Unsafe Act



Everyone commits errors

Human error is generally the result of circumstances beyond one's control

Systems or processes that depend on perfect human performance are inherently flawed

Reason's 12 Principles

- Human error is universal & inevitable
- Errors are not intrinsically bad
- The best people can make the worst mistakes
- People cannot easily avoid actions they did not intend to commit
- Significant errors occur at all levels of the system
- *Errors are consequences not causes*

Reason's 12 Principles

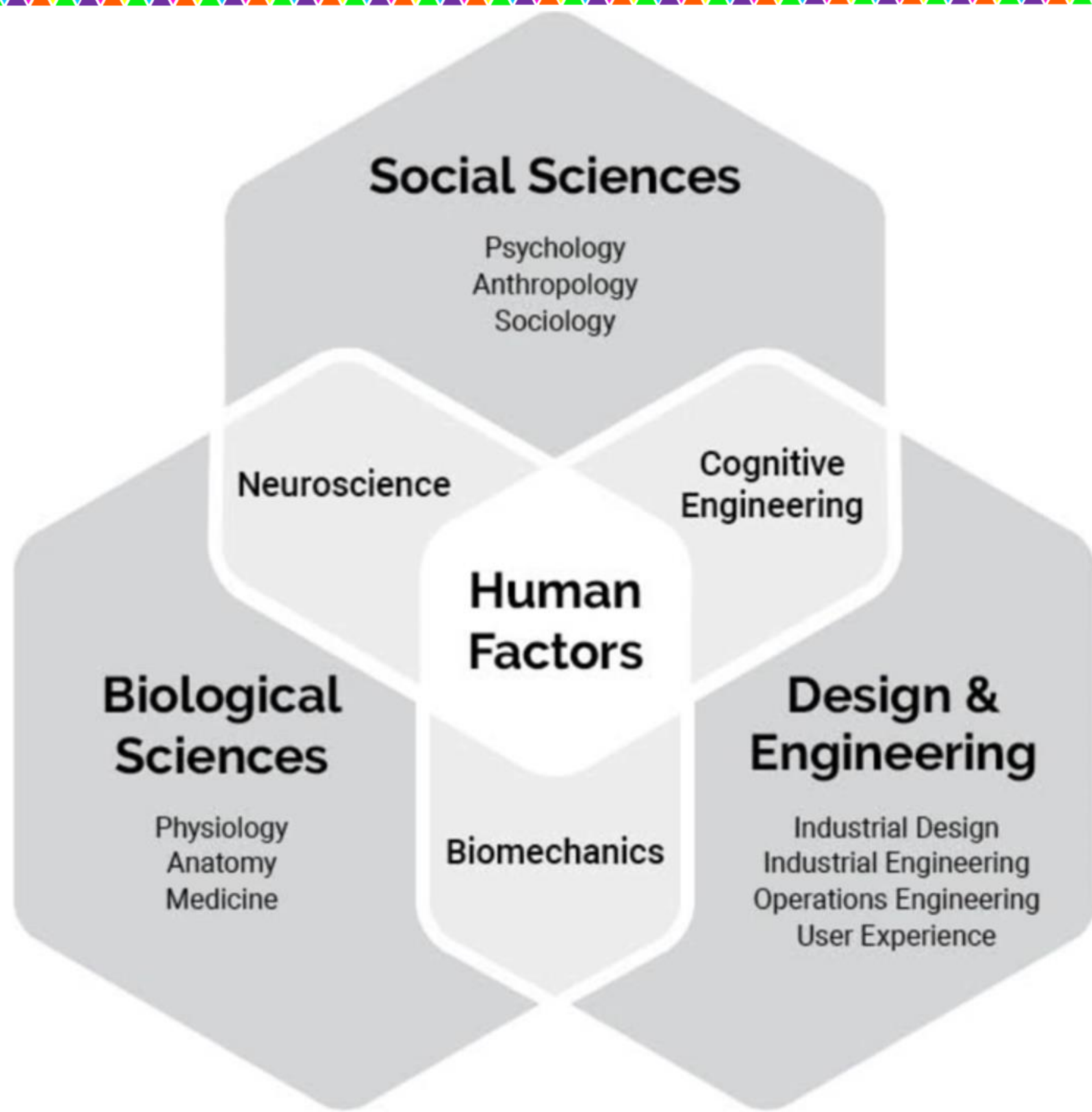
- You cannot change the human condition, but you can change the conditions in which humans work
- Many errors fall into recurrent patterns *("error traps")*
- Error management = managing the manageable
- Error management = making good people excellent
- There is no one best way
- Effective error management aims as continuous reform not local fixes

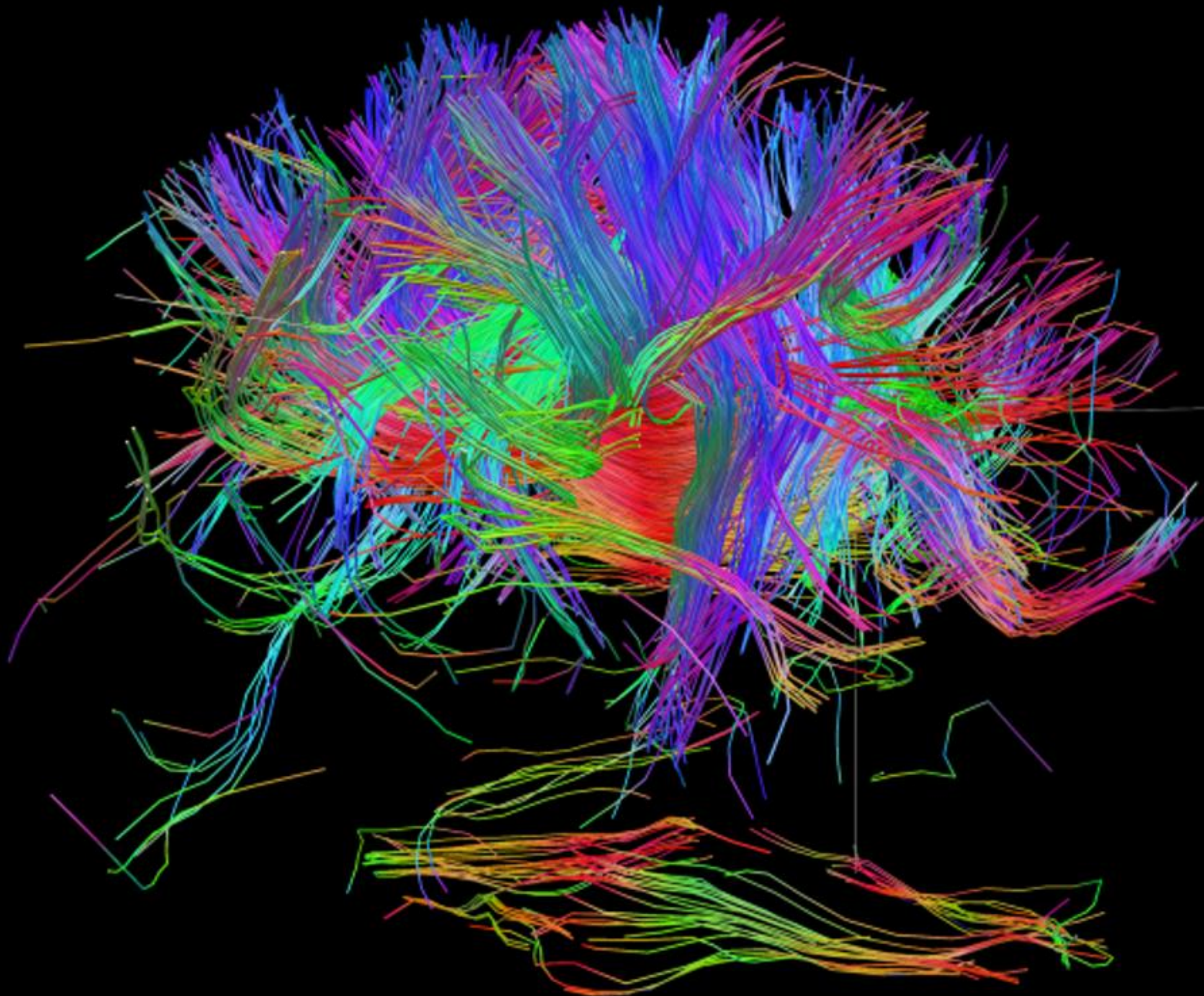
Reason J. BMJ 2000; 320:768-770.

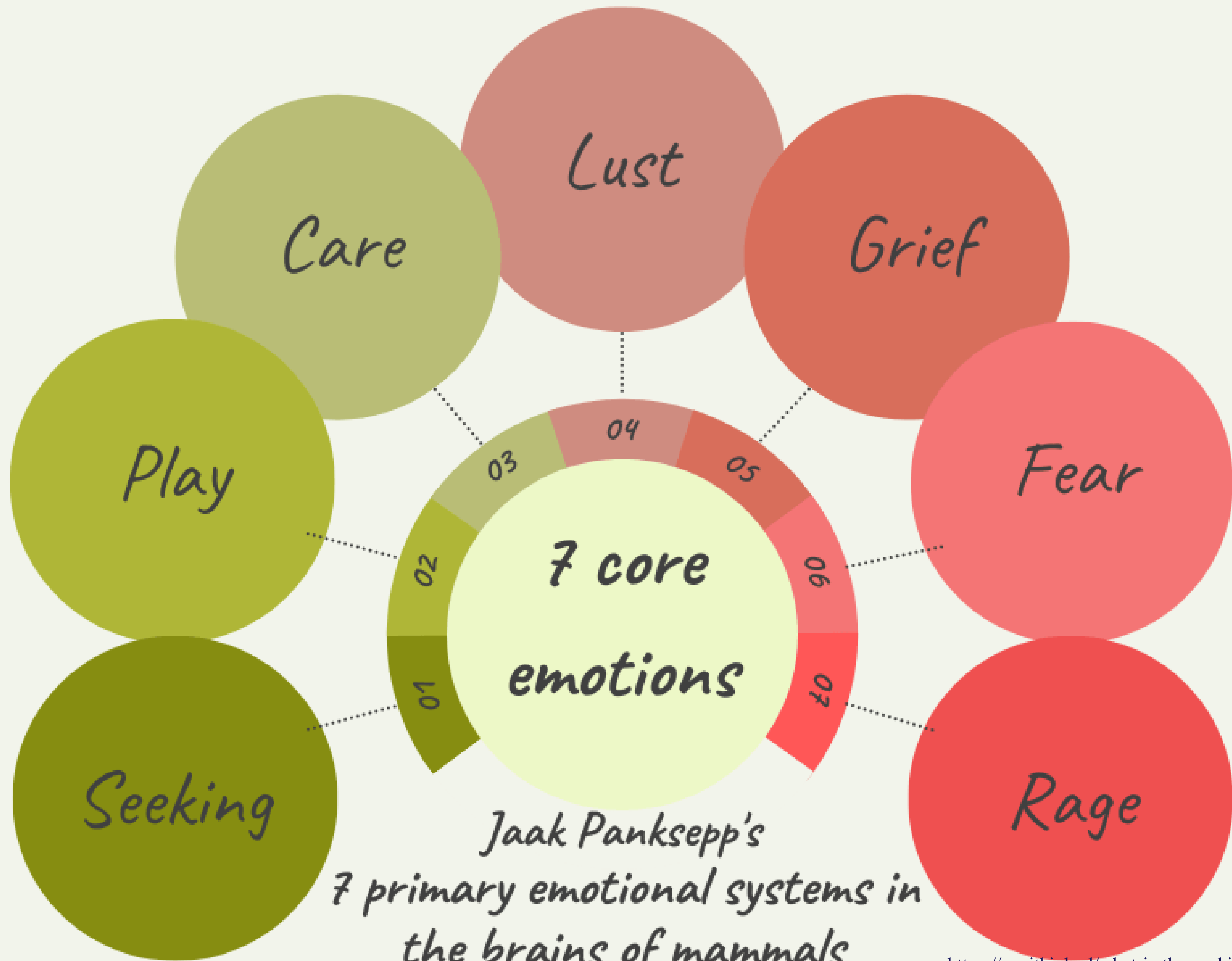
Human Factors

Human factors research applies knowledge about human strengths and limitations to the design of interactive systems of people, equipment, and their environment to ensure their effectiveness, safety, and ease of use.

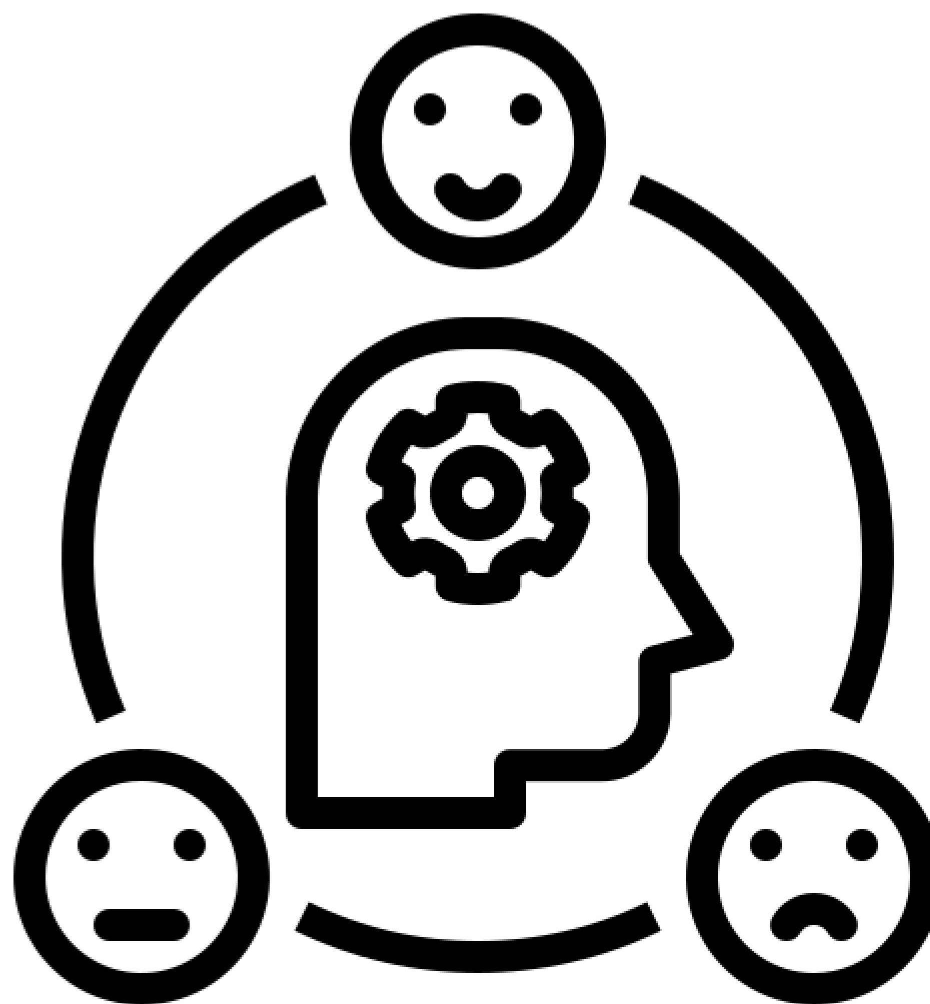
(from Understanding Adverse Events chapter)


Social Sciences
Psychology
Anthropology
Sociology
Neuroscience
Cognitive
Engineering
Human
Factors
Biological
Sciences
Physiology
Anatomy
Medicine
Biomechanics
Design &
Engineering
Industrial Design
Industrial Engineering
Operations Engineering
User Experience



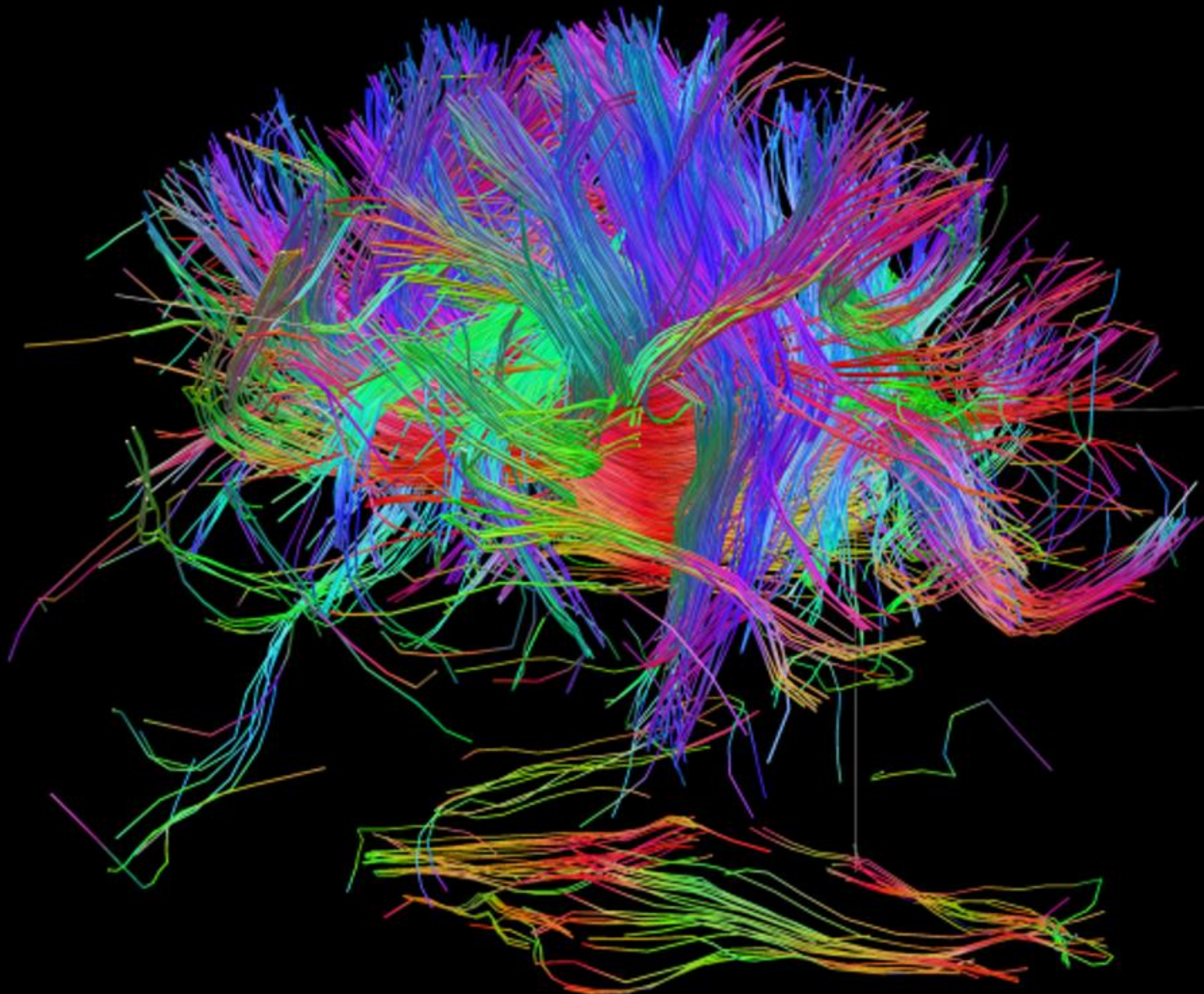


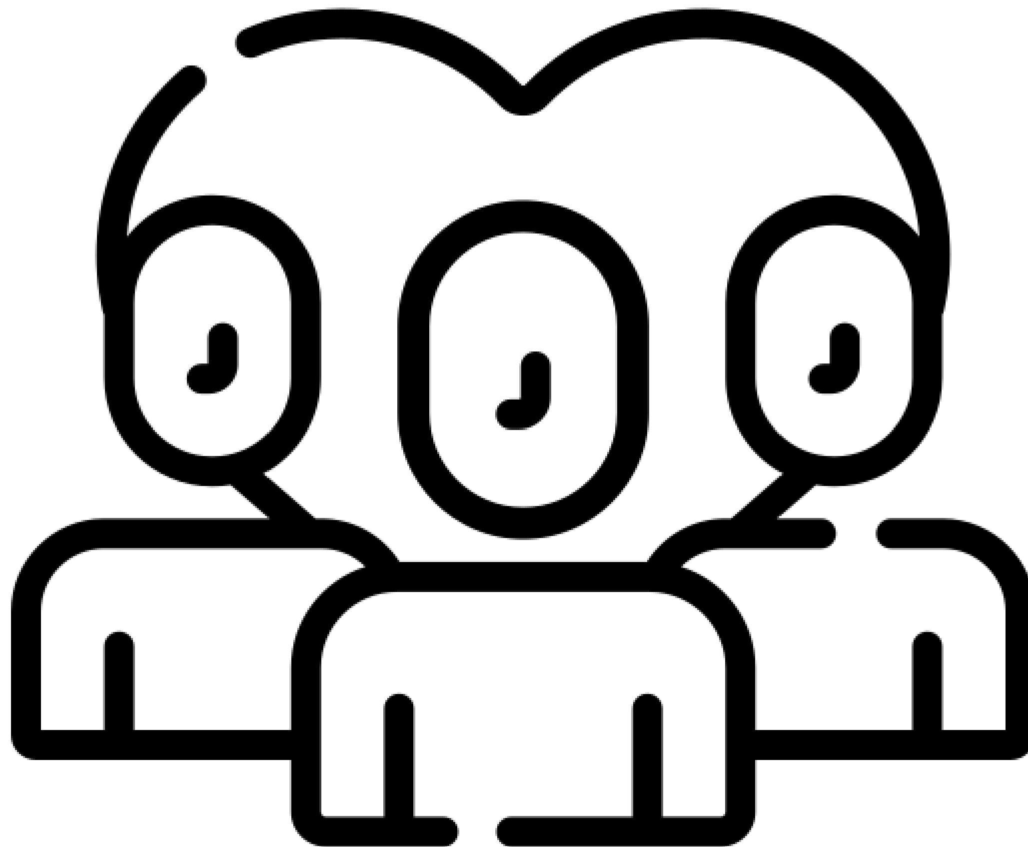
https://equithink.nl/what-is-the-seeking-system/



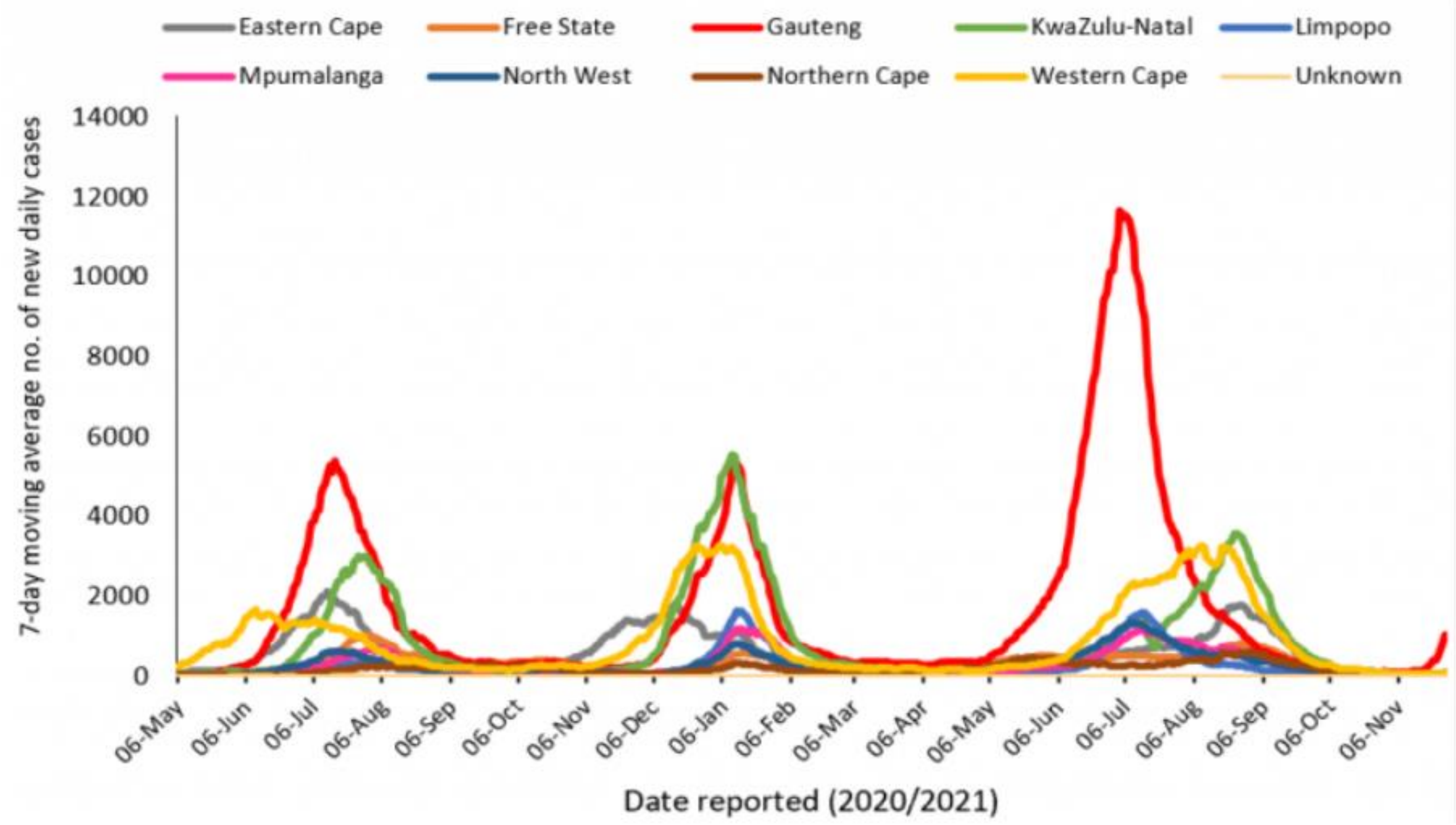
Icon by noomtah

Would you drink a glass of your own saliva?





Icon by Freepik



NICD

Cortex

Limbic system

Diencephalon

Brain

Stem

Adapted from the State-dependent response and neurosequential model – Dr Bruce Perry

INCIVILITY
THE FACTS

WHAT HAPPENS WHEN SOMEONE IS RUDE?

80% of recipients lose time worrying about the rudeness

38% reduce the quality of their work

48% reduce their time at work

25% take it out on service users

Less effective clinicians provide poorer care

WITNESSES

20% decrease in performance

50% decrease in willingness to help others

SERVICE USERS

75% less enthusiasm for the organisation

Incivility affects more than just the recipient
IT AFFECTS EVERYONE

CIVILITY SAVES LIVES

The price of incivility. Porath C, Pearson C. Harvard Business Review 2013 Jan-Feb ;91(1-2):114-21, 146

Emotional impact of errors on staff

3171 physicians:

Over 90% remembered a specific error or adverse event.

61% - Increased anxiety about future errors

44% Loss of confidence

42% Sleeping difficulties

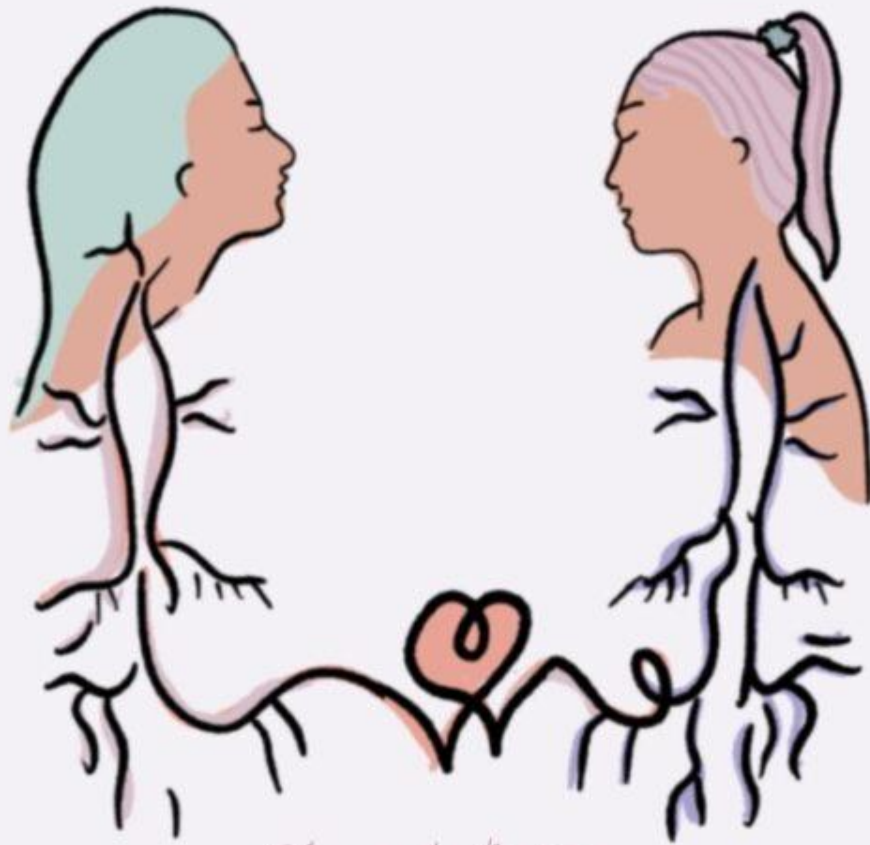
42% Reduced job satisfaction

13% harm to reputation

The vicious cycle

Feeling responsible for a serious medical error can affect mood and well-being – depression and exhaustion…months later.

Also report being involved in more errors secondary to burnout…


@innerglowtherapy

Questions or
Comments?

Thanks!

drheathertuffin@gmail.com

heathertuffin.com

LinkedIn