

Patient Safety Research

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Conceptual Framework for Patient Safety Research

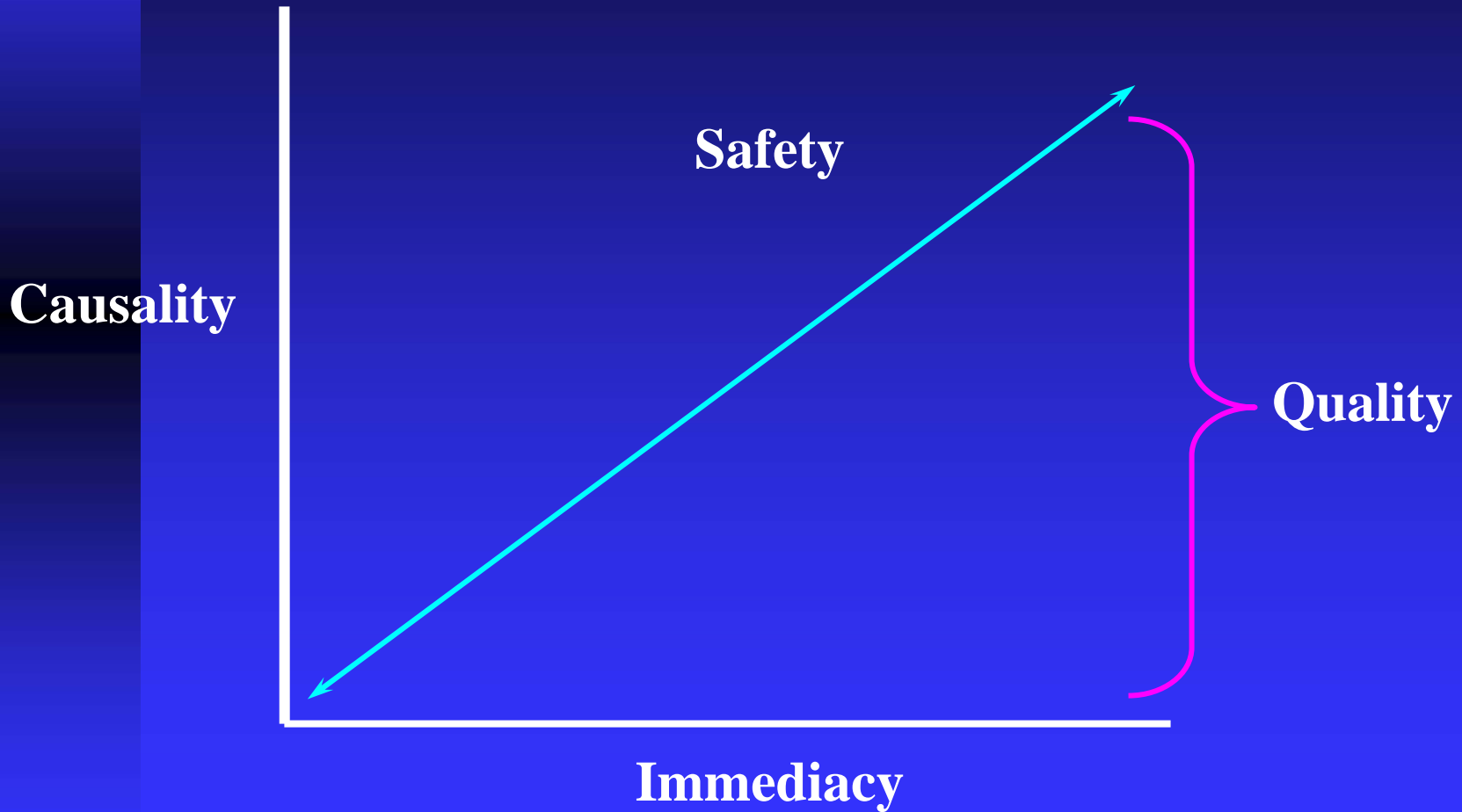
- What is safety?
- What distinguishes safety research?
- What forms does it take?

So What is Safety?

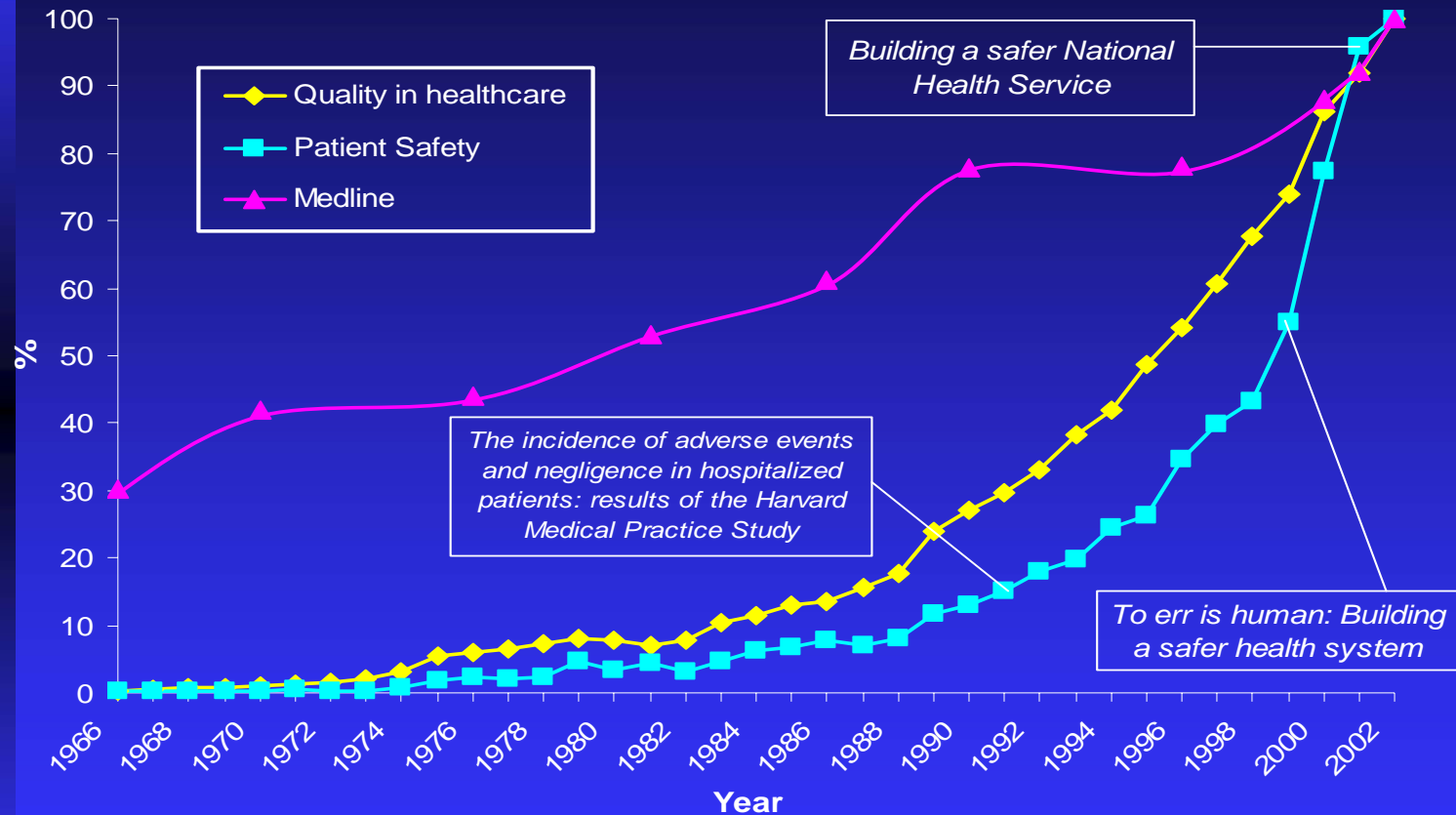
Quality Safety Continuum

Error	Causality	Immediacy
Intra-thecal vincristine	High	High
Fail to vaccinate; dies	High	Low
Failure to use thrombolysis	Low	High
Failure beta-blocker post MII	Low	Low

Quality/Safety Continuum



Dramatic Growth in Patient Safety Research



The growth of Medline, quality in healthcare and patient safety citations from 1966 to 2002. Each graph was normalized by taking the data for the year 2002 as 100% (Medline=502,000, quality in healthcare= 12,644, patient safety=2123). The total number of citations in the searches 'quality in healthcare' and 'patient safety' represents 4% of citations added to the Medline database.

Johal and Lilford 2003

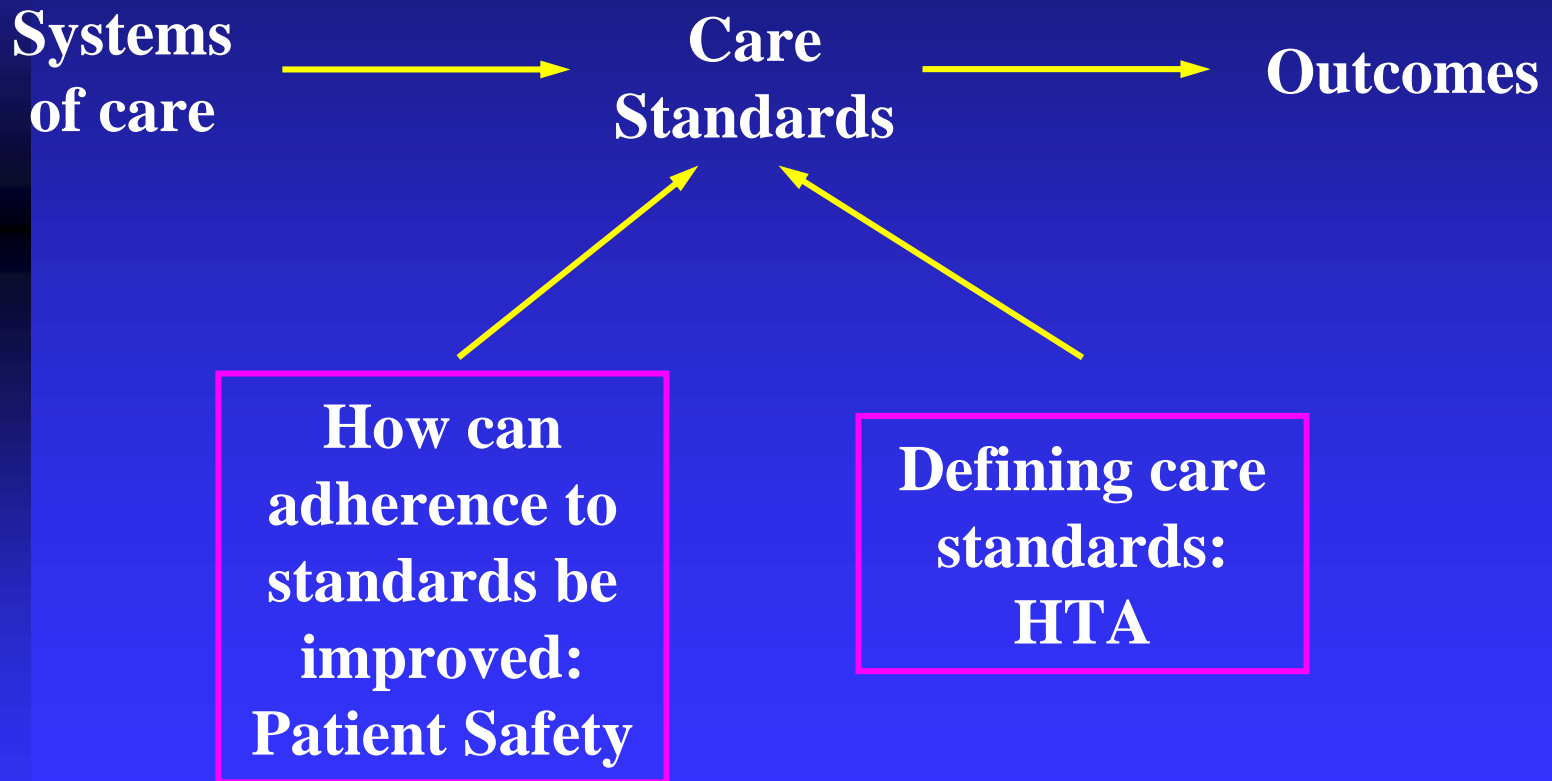
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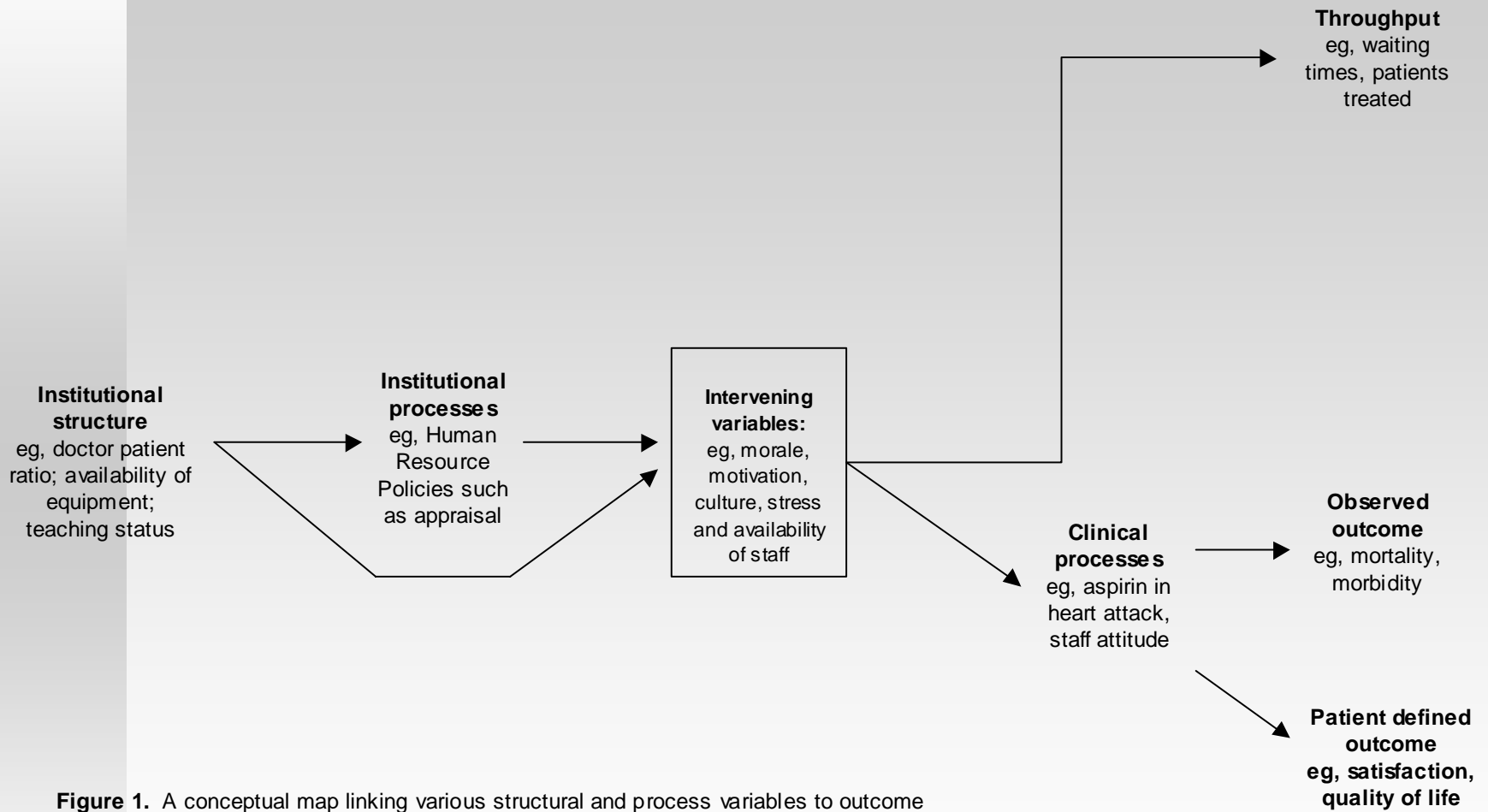


Patient Safety Research



So It Is Quite Easy to Distinguish Patient Safety Research From HTA

But What About Patient Safety
Research V Service Delivery
Research?



Archetypal Topics for Patient Safety Research and Practice

- Medication error
- Falls
- The deteriorating patient
- Hospital acquired infection
- Failure to retrieve or act on unusual results

- Diagnostic error

Conceptual Framework for Patient Safety Research

- What is safety?
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Forms of Safety Research

- Epidemiology of error
 - ◆ How often, what kind, where
- Why
 - ◆ Cognitive form and root cause
- What can be done
 - ◆ Development of interventions
 - ◆ Evaluations of interventions

Epidemiology of Medication Error in Primary Care

- Important cause of hospital admission
 - ◆ About 4% : Howard et al, 2002; Winterstein et al, 2000
- 19% medico-legal claims
- 52% of all primary care incident reports in Australia: Miller et al, 1997
- 3% prescriptions have an error, about third non trivial: Neville et al, 1989

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Error Science

- Root cause/prospective hazard analysis
- Human factors engineering
- Organisational theory/culture
- Educational theory
- Fatigue
- Psychology/error proneness
- Cognitive basis of error

Cognitive Basis of Active Failure

Knowledge based

Bounded rationality

Inadequate knowledge

Rule based

Skills based

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Specific Sources of Medication Error

DIAGNOSIS

Decision support

Robots etc

Enablement

Prescription

Dispensing

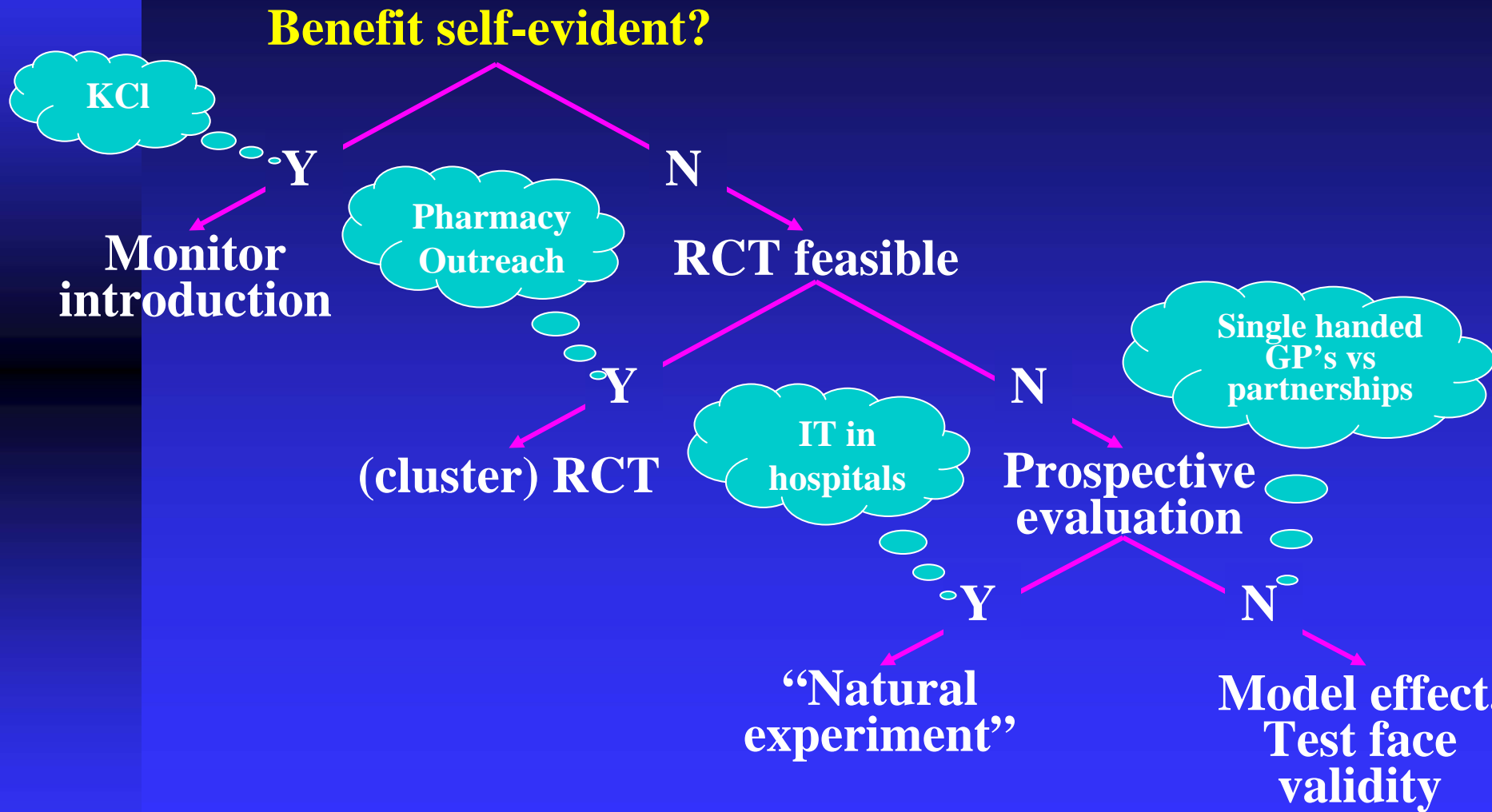
Use



Forms of Safety Research

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Epistemology of Evaluation

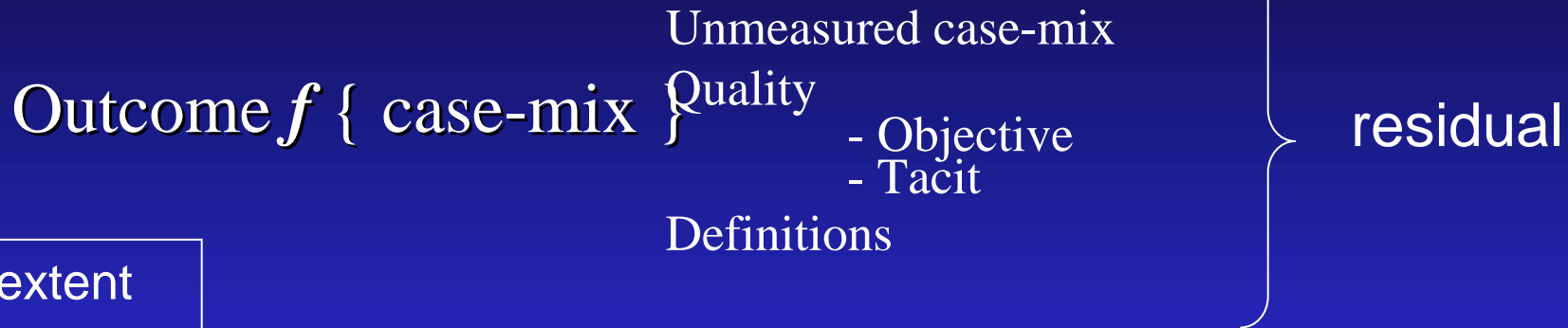


When do we need to measure
rates?

When we want to make
inferences

Error or Adverse
Event/Outcome/Harm?

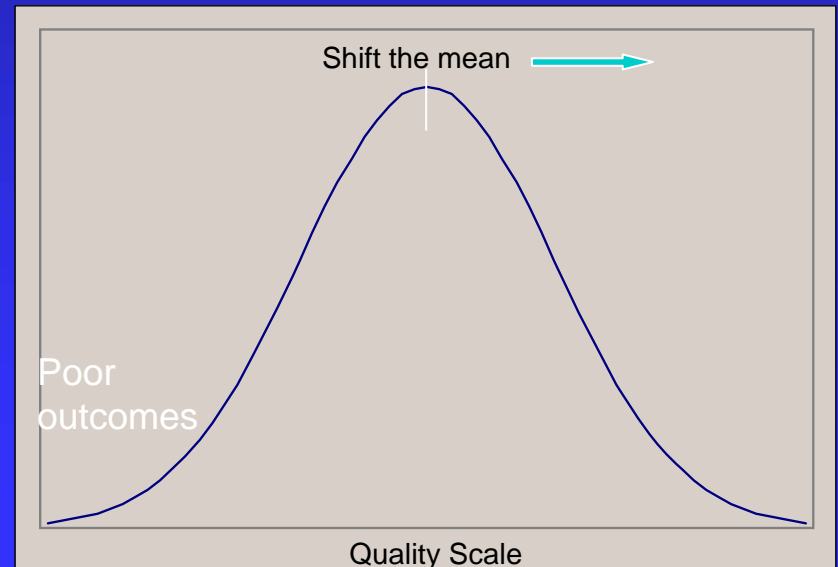
Case-mix Fallacy



To what extent does outcome correlate with objective quality?

Implications

Outcomes – research, choice
Process – performance management



Measurement of Error Rates

Document review

- ◆ Chart
- ◆ Data-base (plus chart)
- ◆ Prospective

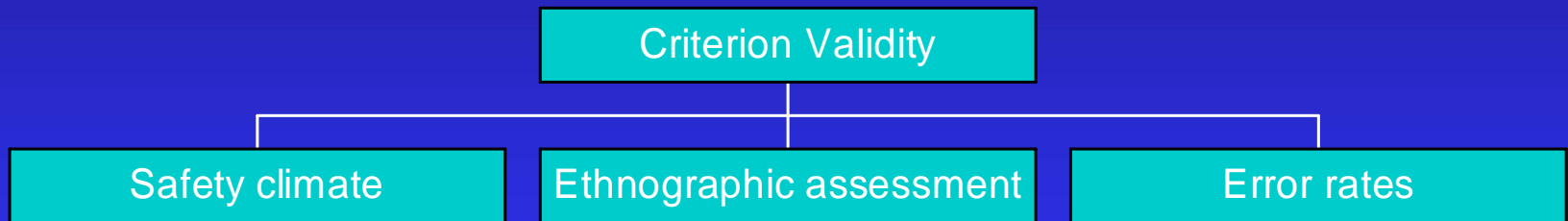
Direct observation

- ◆ Ethnographic
- ◆ ‘Participant’

Some Examples of Patient Safety Research

TOPIC	METHOD
Intra-thecal injection	Prospective hazard analysis
Labour and delivery	RCT of training methods
IT and medication errors	Natural experiment
Diagnostic errors	Training needs analysis
Community pharmacy	Cluster RCT

Does Culture Eat Everything For Lunch?



<http://www.publichealth.bham.ac.uk/psrp/>