Imperial College London

Decision-making in surgery

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Learning outcomes for this lecture

1. Define terms used within surgical education
2. Select appropriate tools for training and assessment of surgical skills
3. Define the multidimensional nature of surgical performance
4. Justify the importance of simulation (as prerequisite to surgical practice)
5. Evaluate research studies (in simulation)

   and their limitations

What is a *decision* in clinical practice?

What is *good clinical judgement*?

Judgement & decision-making

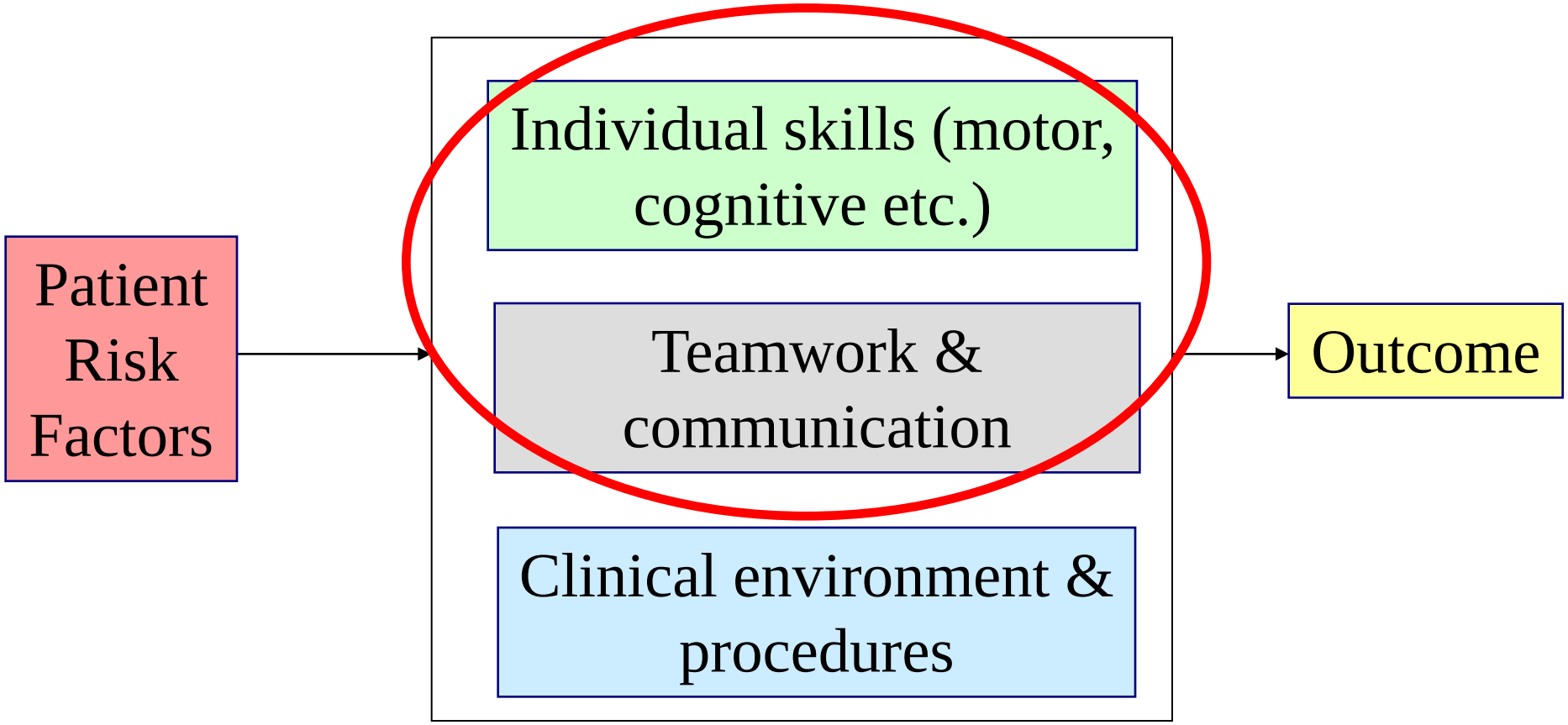
- Judgement
  - How bright is a light?
  - How likely is a diagnosis?
  - How tender is the abdomen?
  - How likely is a patient to quit smoking?

← ***perception***

- Decision-making
  - Deciding whether to treat
  - Choosing a treatment to follow

← ***action***

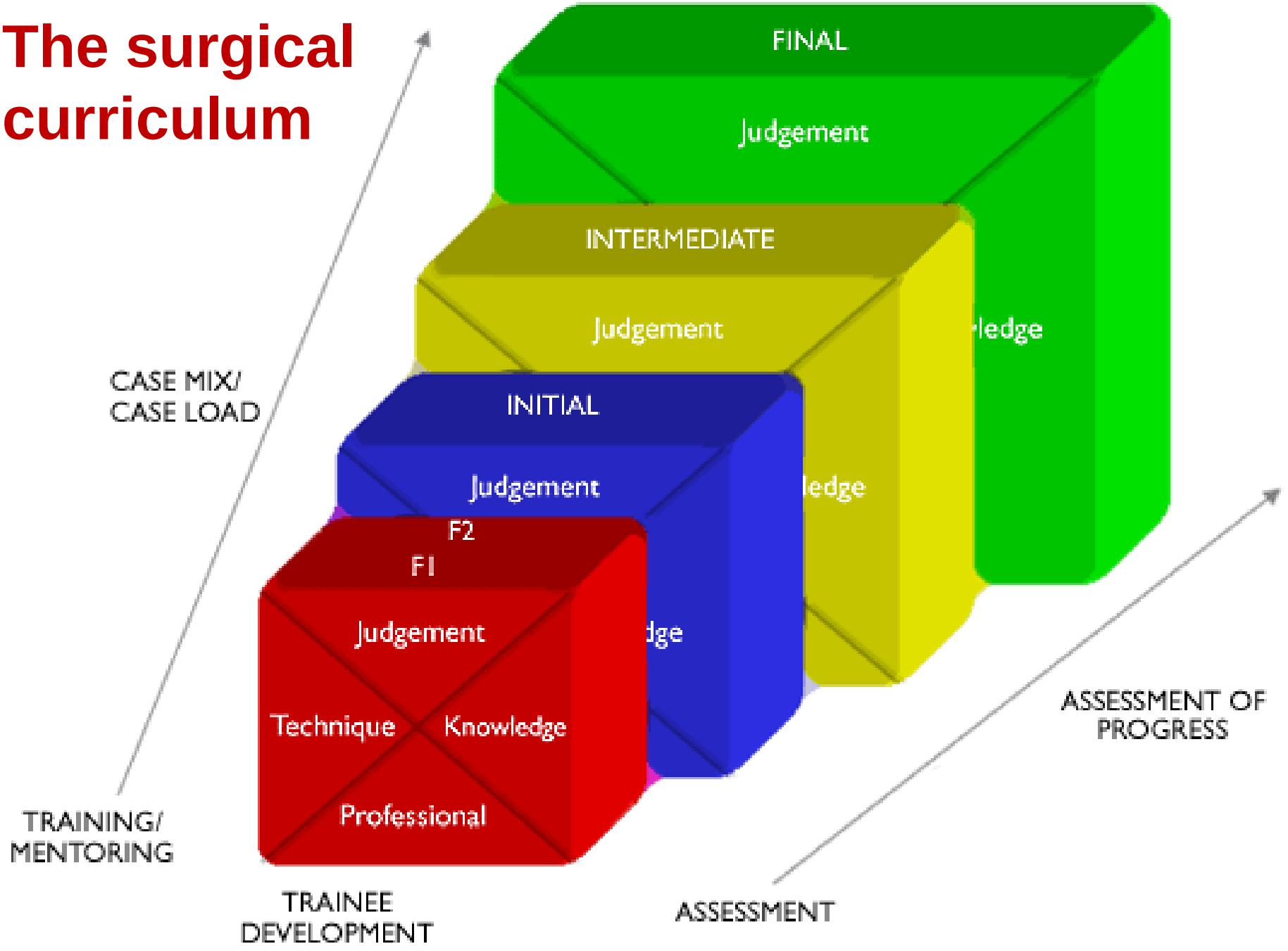
‘Systems approach’ to patient outcomes



Decision-making as a surgeon's skill

- **Individual decision-making**
  - Diagnosis
  - Whether to offer treatment; choice of treatment
  - On-going decision-making as the treatment progresses
  - ……

The surgical curriculum

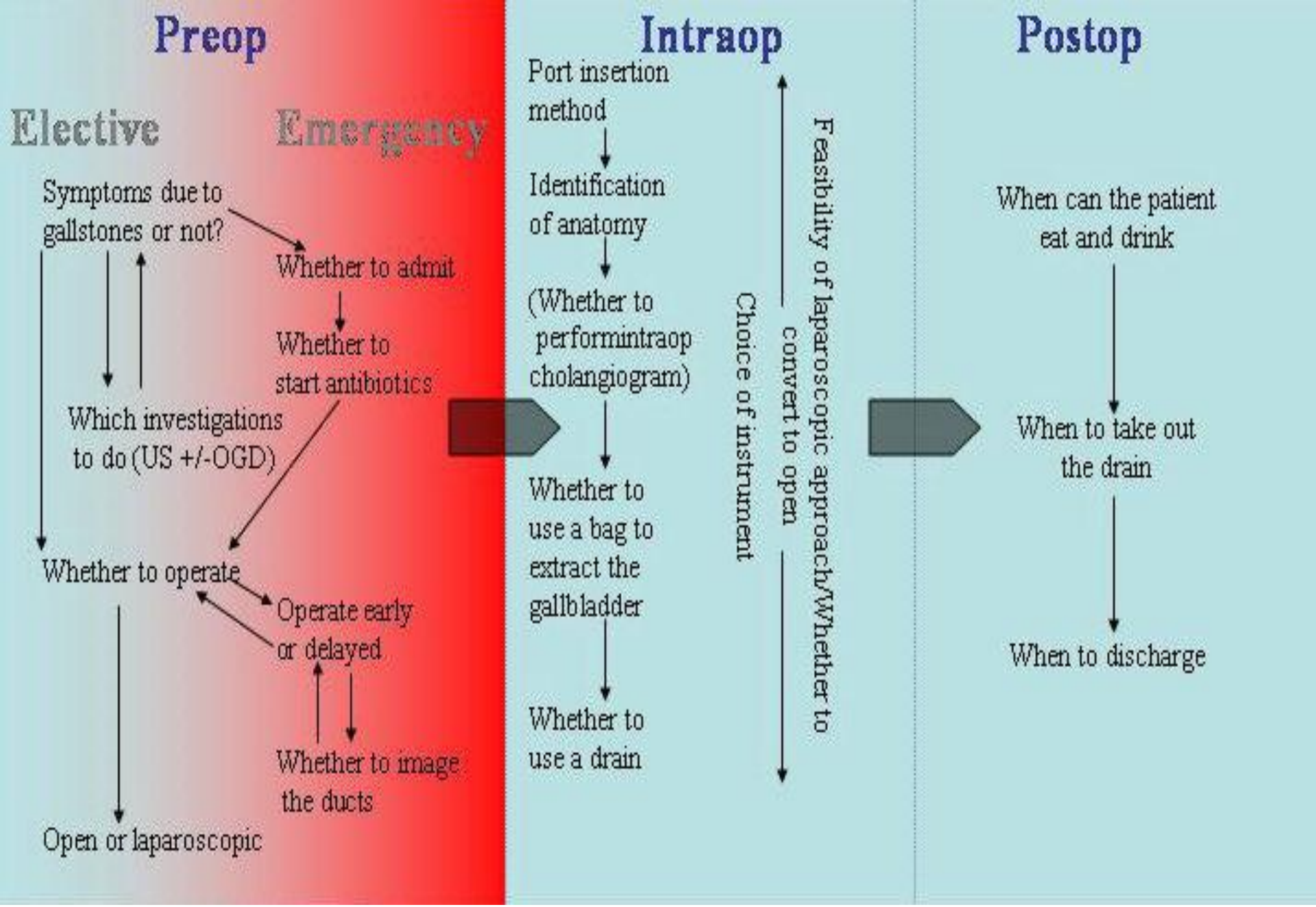


Decision-making as a team skill

- **Team decision-making**
  - Multidisciplinary cancer teams
- **Decision-making between doctors and patients**
  - Shared; how much is truly shared?

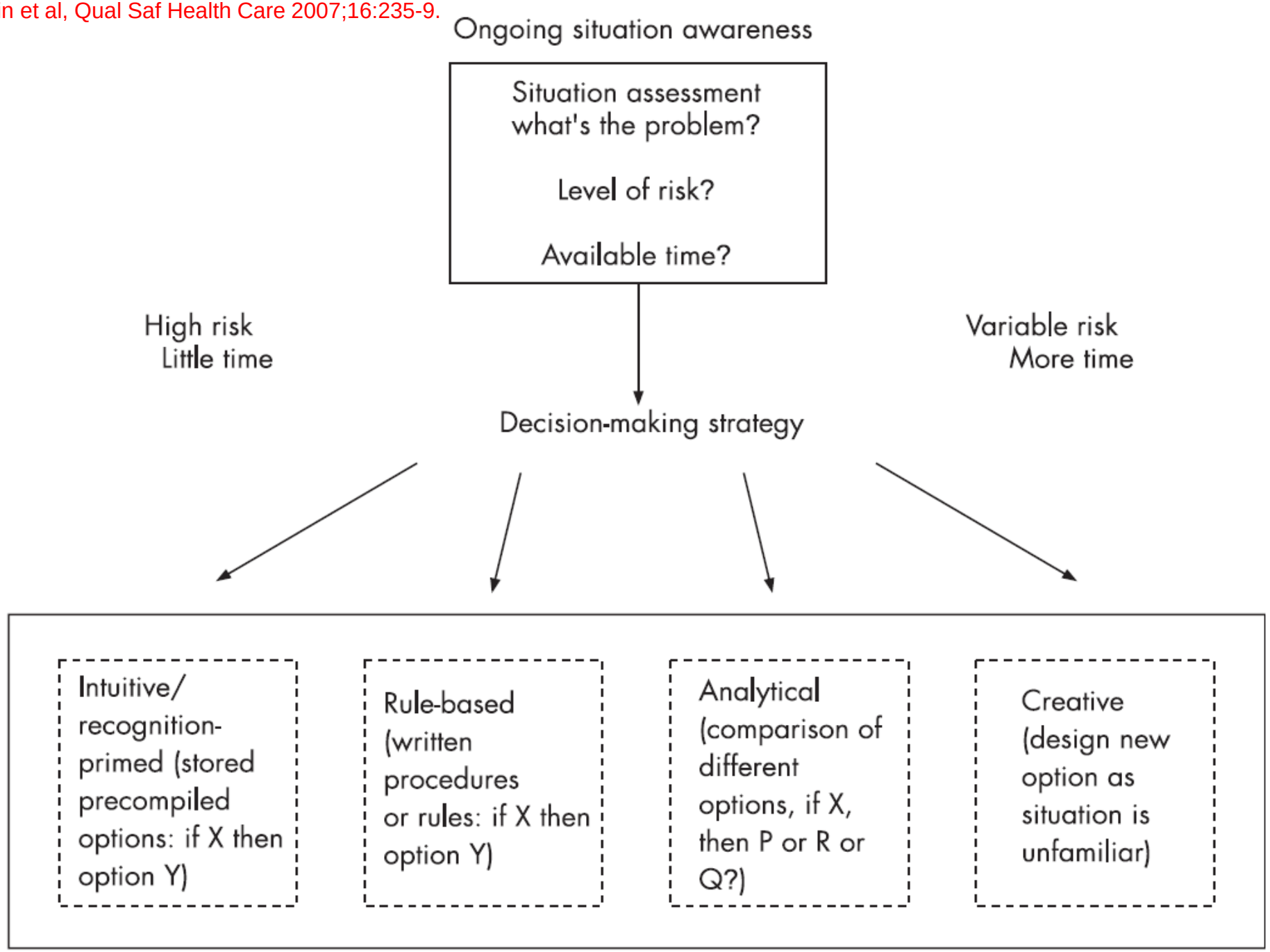
Think of a patient with symptomatic gallstone disease

What decisions would you have to make pre-, intra- and post-operatively?

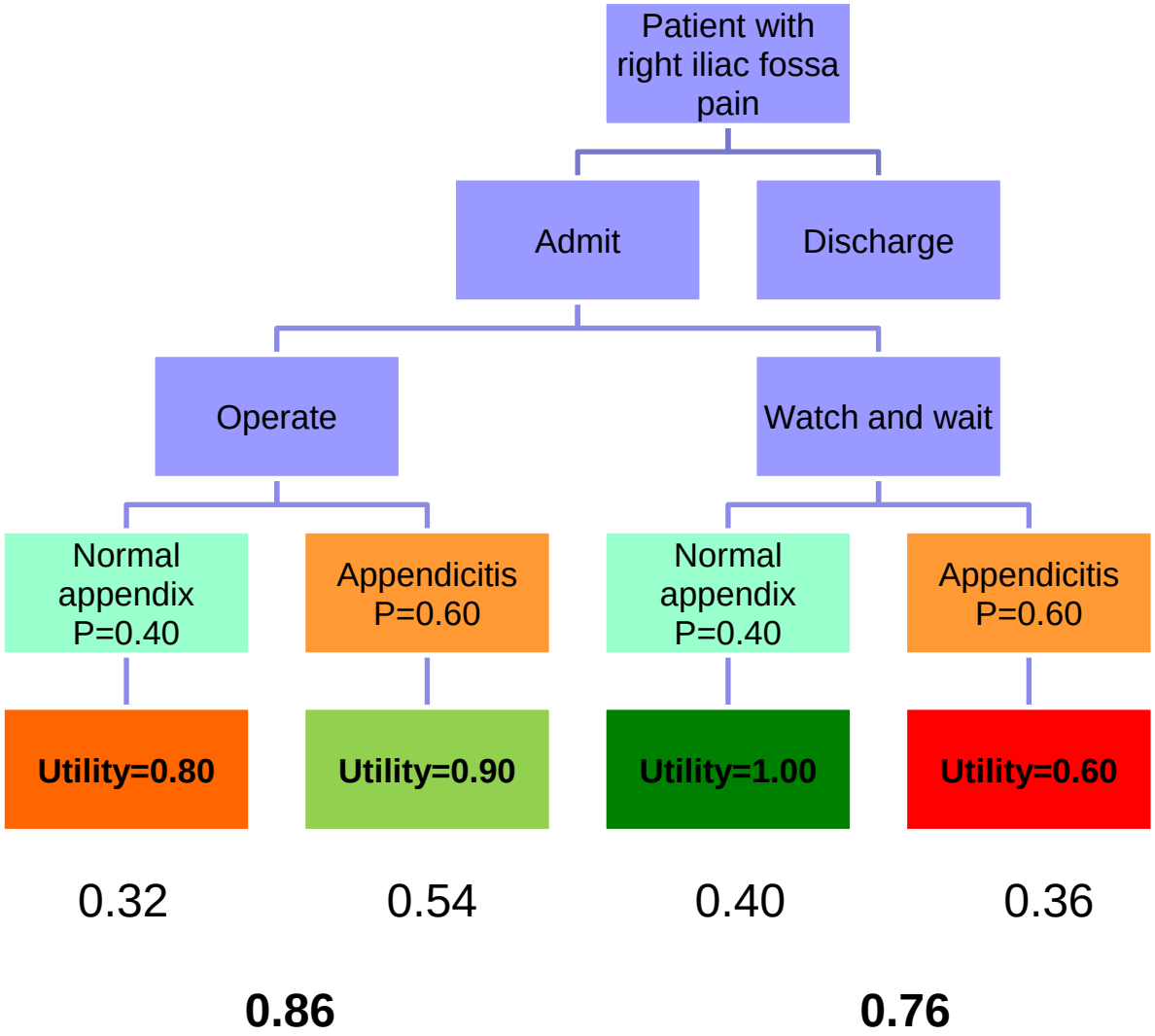


Jacklin et al, Am J Surg 2008;195:689-96.

Flin et al, Qual Saf Health Care 2007;16:235-9.



Analytical: Decision tree for appendicitis



Creative: situation not previously seen

Assessing and training decision making skills


MD-11

Originally developed for commercial aviation

‘**Crew Resource Management**’ training modules

Nationaal Lucht- en Ruimtevaartlaboratorium

National Aerospace Laboratory NLR

NLR-TP-98518

NOTECHS:

Non-technical skill evaluation in JAR-FCL

J.A.G. van Avermaete

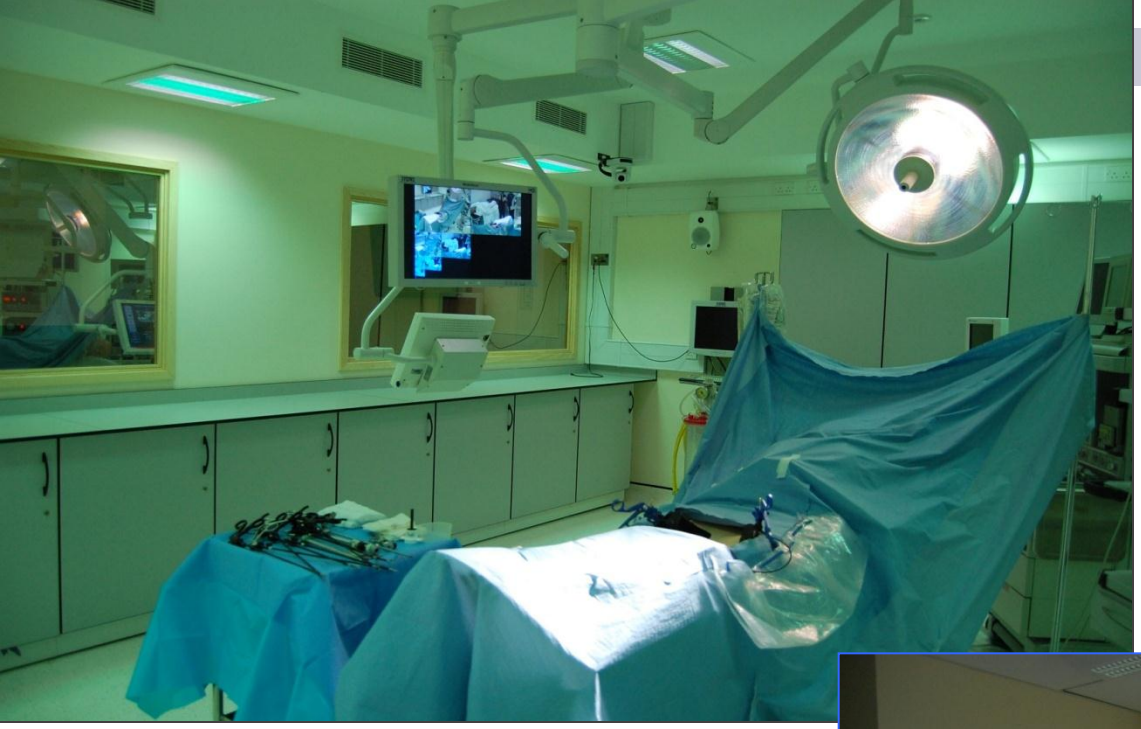
Concrete, observable "Behavioural Markers"

Typically derived via observation and expert consensus procedures

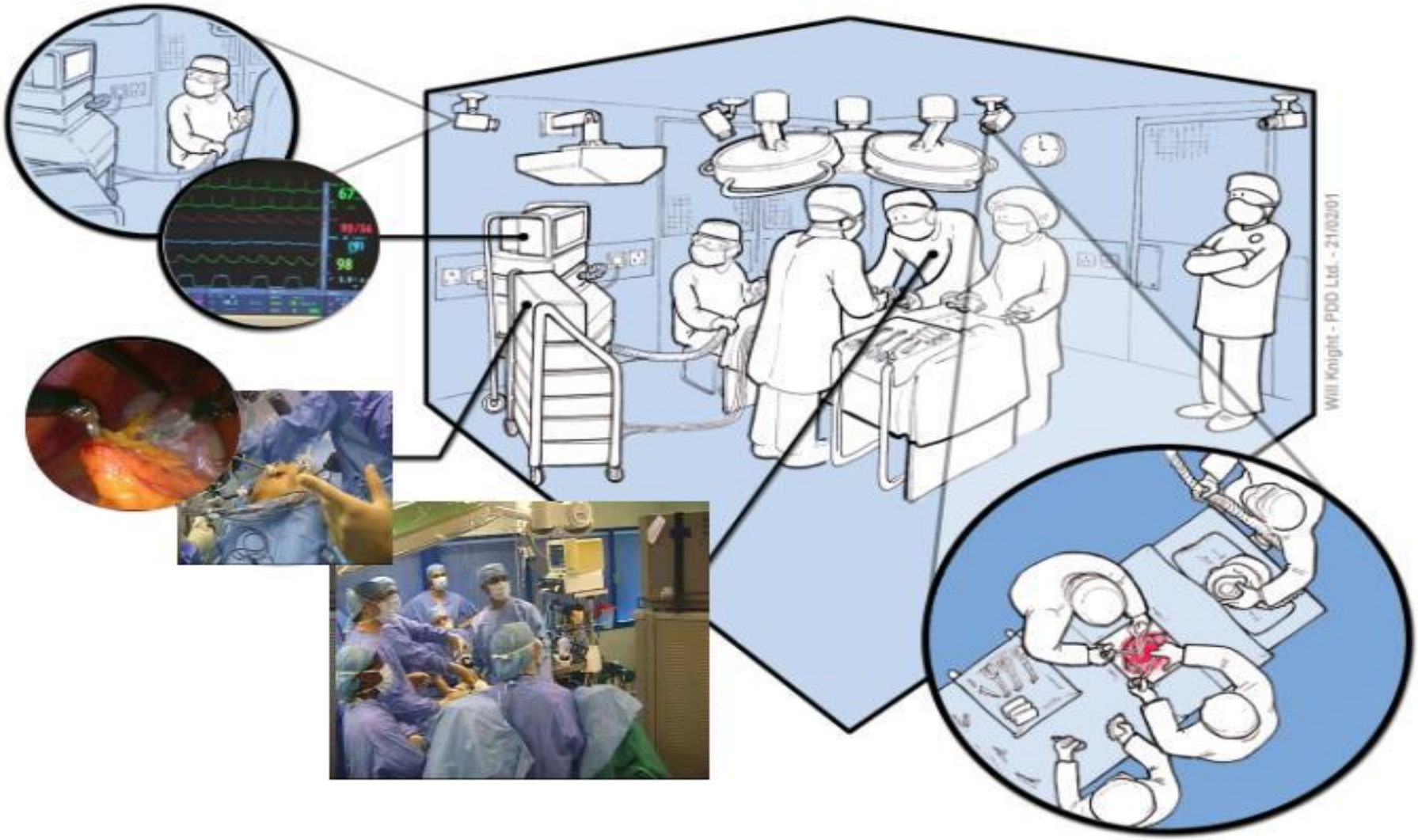
Categories	Elements	Example Behaviours
COOPERATION	Team building and maintaining	- Establishes atmosphere for open communication and participation
	Considering others	- Takes condition of other crew members into account
	Supporting others	- Helps other crew members in demanding situation
	Conflict solving	- Concentrates on what is right rather than who is right
LEADERSHIP & MANAGERIAL SKILLS	Use of authority and assertiveness	- Takes initiative to ensure involvement and task completion
	Maintaining standards	- Intervenes if task completion deviates from standards
	Planning and co-ordinating	- Clearly states intentions and goals
	Workload management	- Allocates enough time to complete tasks
SITUATION AWARENESS	System awareness	- Monitors and reports changes in system's states
	Environmental awareness	- Collects information about the environment
	Anticipation	- Identifies possible future problems
DECISION MAKING	Problem definition / diagnosis	- Reviews causal factors with other crew members
	Option generation	- States alternative courses of action - Asks other crew member for options
	Risk assessment / Option choice	- Considers and shares risks of alternative courses of action
	Outcome review	- Checks outcome against plan

Very Poor	Poor	Acceptable	Good	Very Good
Observed behaviour directly endangers flight safety	Observed behaviour in other conditions could endanger flight safety	Observed behaviour does not endanger flight safety but needs improvement	Observed behaviour enhances flight safety	Observed behaviour optimally enhances flight safety and could serve as an example for other pilots


Q700



- **Clinical data recorder**
- **Trainers observe and assess via one-way mirror**

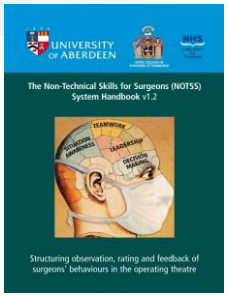


Revised NOTECHS for surgery

Table 1 Revised NOTECHS scale for the surgical group

Subscales	Items
Communication and Interaction	A1. Instructions to assistant clear and polite
	A2. Waited for acknowledgement from assistant
	A3. Instructions to scrub nurse clear and polite
	A4. Waited for acknowledgement from scrub nurse
Situation Awareness and Vigilance	B1. Monitored patient parameters throughout procedure
	B2. Awareness of anesthetist
	B3. Actively initiates communication with anesthetist during crisis
Cooperation and Team Skills	C1. Maintains positive rapport with whole team
	C2. Open to opinions from other team members
	C3. Acknowledges contribution from other team members
	C4. Supportive of other team members
	C5. Conflict handling (concentrating on what is right rather than who is right)
Leadership and Managerial Skills	D1. Adherence to best-practice during procedure (eg, does not permit corner cutting)
	D2. Time management (eg, not being too slow or rushing other team members)
	D3. Resource utilization (eg, appropriate task load distribution and delegation of responsibilities)
	D4. Debriefing the team (eg, provides details and feedback to the team about procedure)
	D5. Authority and assertiveness
Decision Making	E1. Prompt identification of the problem
	E2. Informed team members promptly and clearly
	E3. Outlines strategy and institutes a plan (eg, asks scrub nurse for suction, instruments, suture material)
	E4. Anticipates potential problems and prepares contingency plan (eg, ask anesthetist to order blood, call for help)
	E5. Option generation (eg, takes help from others, seeks team's opinion)

Decision-making in NOTSS



Category	Category rating*	Element	Element rating*	Feedback on performance and debriefing notes
Decision Making	3	Considering options	2	Consider discussing the decision to convert with the anaesthetist next time
		Selecting and communicating option	3	
		Implementing and reviewing decisions	3	

Questions?

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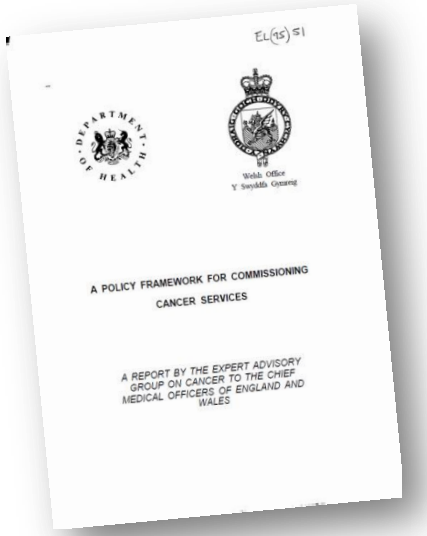
Team decision-making: Cancer MDTs

- Implemented in UK since 1995 (Calman-Hine Report)
- Intended to standardise and improve care
- Ensure expert input of specialists and improve timeliness of treatment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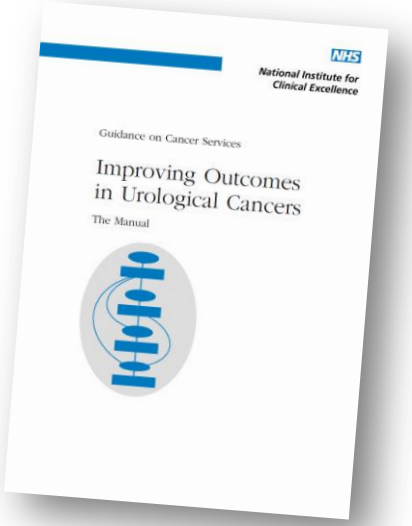
DEPARTMENT OF HEALTH

Welsh Office
Y Swyddfa Gymreig

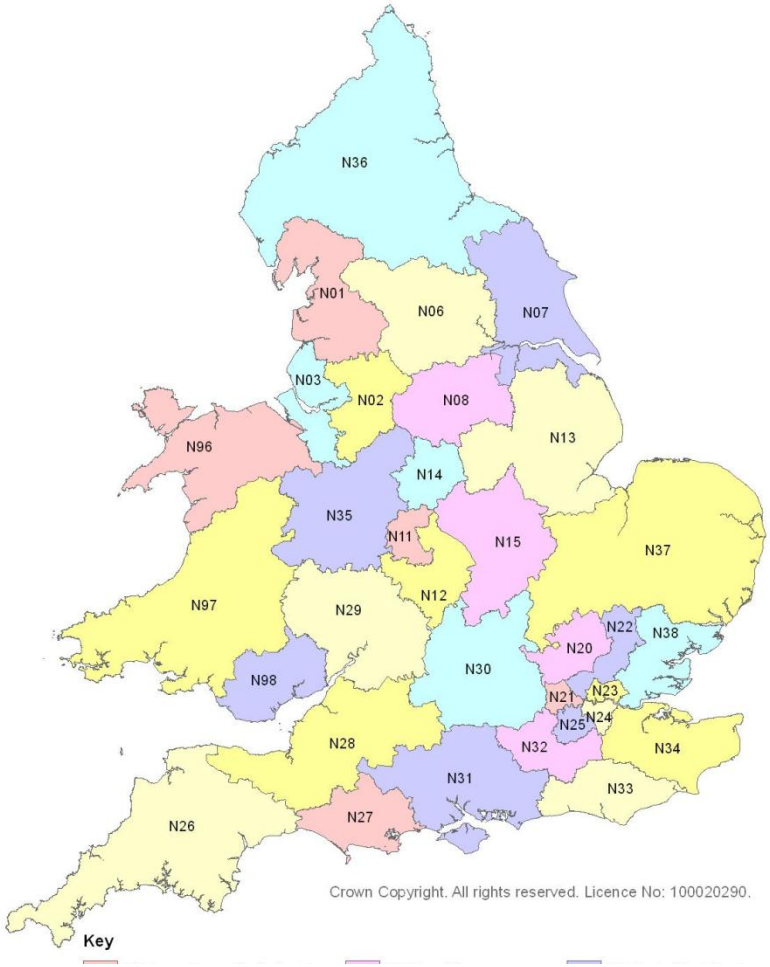
A POLICY FRAMEWORK FOR COMMISSIONING CANCER SERVICES

A REPORT BY THE EXPERT ADVISORY GROUP ON CANCER TO THE CHIEF MEDICAL OFFICERS OF ENGLAND AND WALES



Current MDT practice

- ≈1500 MDTs in England
- Cancer Units and Centres for each tumour type
- Delivery of care by MDTs:
  - 1996: 20%
  - 2006: >80%



Effectiveness of MDTs

- Some positive studies
- Generally variable evidence base across tumour types

Ann Surg Oncol (2011) 18:2116–2125
DOI 10.1245/s10434-011-1675-6

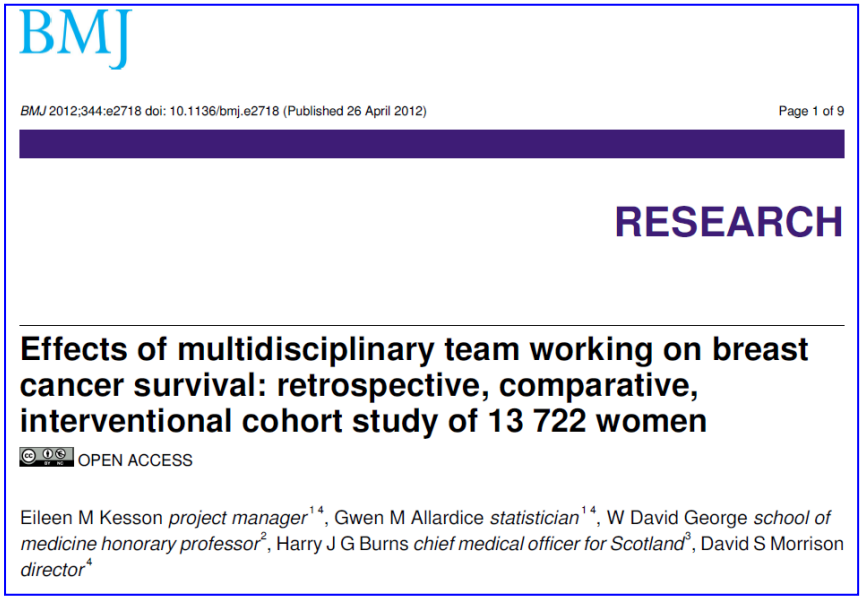
Annals of SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – HEALTHCARE POLICY AND OUTCOMES

Quality of Care Management Decisions by Multidisciplinary Cancer Teams: A Systematic Review

Benjamin W. Lamb, MRCS[1,2], Katrina F. Brown, PhD[1], Kamal Nagpal, MRCS[1], Charles Vincent, PhD[1], James S. A. Green, FRCS (Urol)[2], and Nick Sevdalis, PhD[1]

[1]Department of Surgery and Cancer, Imperial College London, London, UK; [2]Department of Urology, Whipps Cross University Hospital, London, UK



BMJ

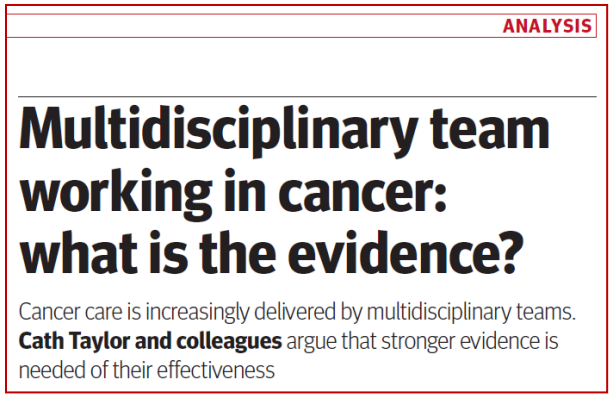
BMJ 2012;344:e2718 doi: 10.1136/bmj.e2718 (Published 26 April 2012)

RESEARCH

Effects of multidisciplinary team working on breast cancer survival: retrospective, comparative, interventional cohort study of 13 722 women

OPEN ACCESS

Eileen M Kesson *project manager*[1 4], Gwen M Allardice *statistician*[1 4], W David George *school of medicine honorary professor*[2], Harry J G Burns *chief medical officer for Scotland*[3], David S Morrison *director*[4]



ANALYSIS

Multidisciplinary team working in cancer: what is the evidence?

Cancer care is increasingly delivered by multidisciplinary teams. **Cath Taylor and colleagues** argue that stronger evidence is needed of their effectiveness

The MDT process

TEAM INPUTS → TEAM PROCESSES → TEAM OUTPUTS

Lamb, Green, Vincent, Sevdalis, Surg Oncol 2011;20:163-8.

The MDT process

TEAM INPUTS → **TEAM PROCESSES** → **TEAM OUTPUTS**

- Attendance
- Expertise
- Information
- Equipment

- Expert review
- Teamwork
- Open discussion
- Leadership

- Decision
- Implementation
- Documentation
- Communication
- Research

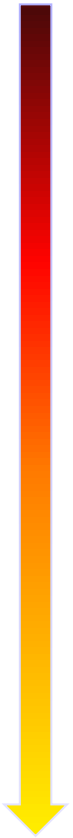
MDT MEETING

Lamb, Green, Vincent, Sevdalis, Surg Oncol 2011;20:163-8.

Why do MDTs fail to reach a decision?

Why do MDTs fail to reach a decision?

1. Lack of clinical or staging information
2. Lack of personal knowledge of patient
3. Lack of information on co-morbidities
4. Poor attendance
5. Disagreement
6. Case complexity



Order of importance

Lamb et al, World J Surg 2011;35:1970-6.

How do we assess MDT functioning scientifically?

MDT-MODe Metric for the Observation of Decision-making

Assessing quality of information

			Information					
#	Site	point	Hx	X-ray	Path	Psy/soc/	comorbid	Patient view
1								
2								
3								

Discussion							
Chair	Surg	Phys	Oncolo	Nurse	Radiolo	Histopath	MDTC

Assessing quality of contributions

Lamb et al, BMJ Qual Saf 2011;20:849-56.

How do we assess MDT functioning scientifically?

MDT-MODe Metric for the Observation of Decision-making

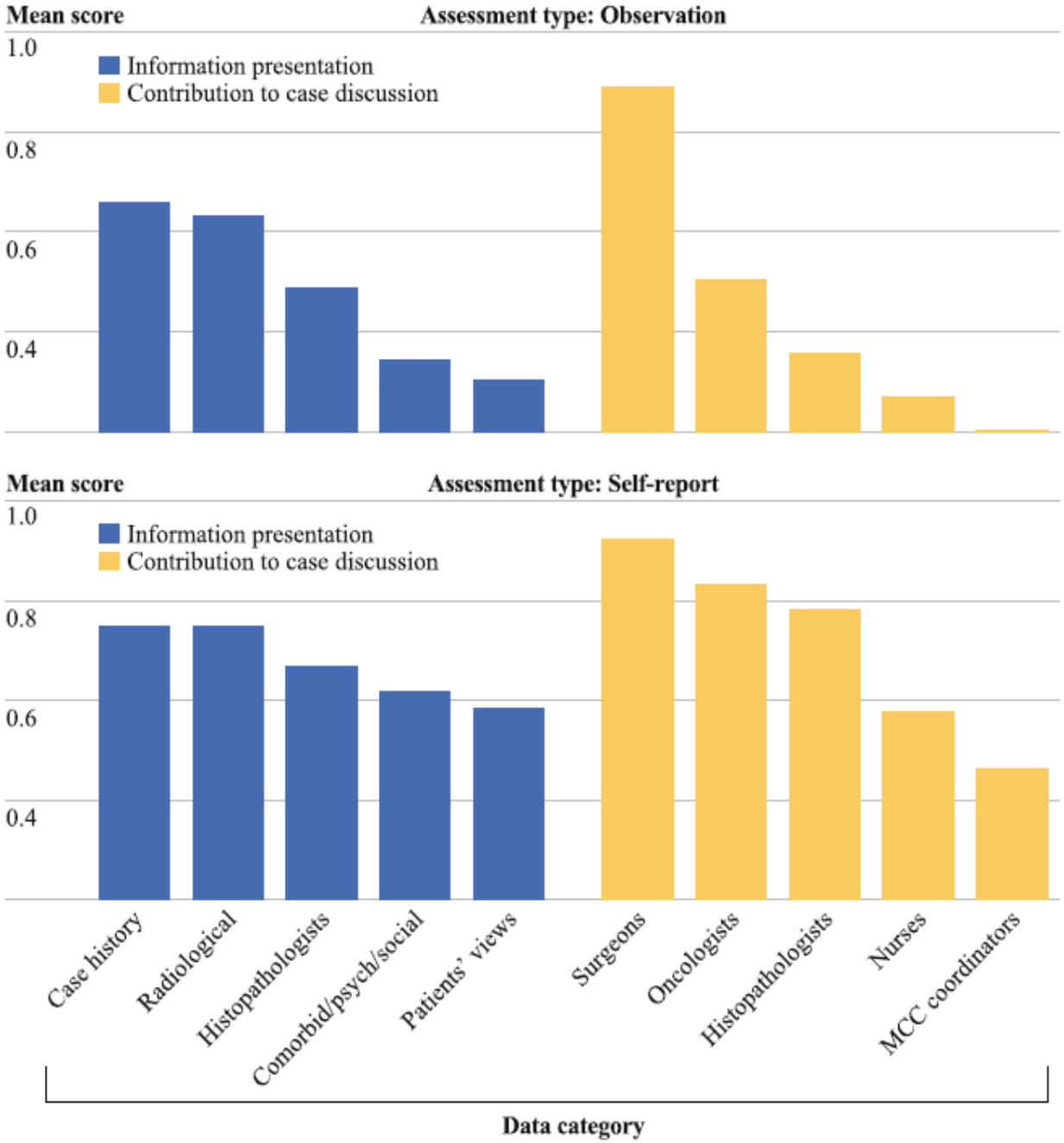
History	5	Fluent, comprehensive case history	**Psycho-social**	5	Comprehensive first-hand knowledge of patients' personal circumstances, social and psychological issues.
	3	Partial case history		3	Vague first-hand knowledge or good second-hand knowledge of personal circumstances, social and psychological issues.
	1	No patient case history		1	No knowledge of personal circumstances, social and psychological issues.
x-ray	5	Radiological images	**Co-morbidity**	5	Comprehensive first-hand knowledge of past medical history and performance status
	3	Radiological information from a report/ account		3	Vague first-hand knowledge, or good second-hand knowledge of past medical history or performance status
	1	No provision of radiological information		1	No knowledge of past medical history or performance status
Pathology	5	Histopathological information from pathologist	**Patient's views**	5	Comprehensive first-hand knowledge of patient's wishes or opinions regarding treatment
	3	Histopathological information from a report/account		3	Vague first-hand knowledge, or good second-hand knowledge of patient's wishes or opinions regarding treatment
	1	No provision of Histopathological information		1	No knowledge of patient's wishes or opinions regarding treatment
Chair	5	Good leadership enhanced team discussion and decision making	**Members**	5	Clear contribution of speciality.
	3	Leadership neither enhanced or impeded team discussion and decision making		3	Contribution inarticulate or vague
	1	Poor/inadequate leadership impeded team discussion and decision making		1	No contribution

Scales and scoring anchors for assessors

Lamb et al, BMJ Qual Saf 2011;20:849-56.

Team-members' contribution to team decision-making

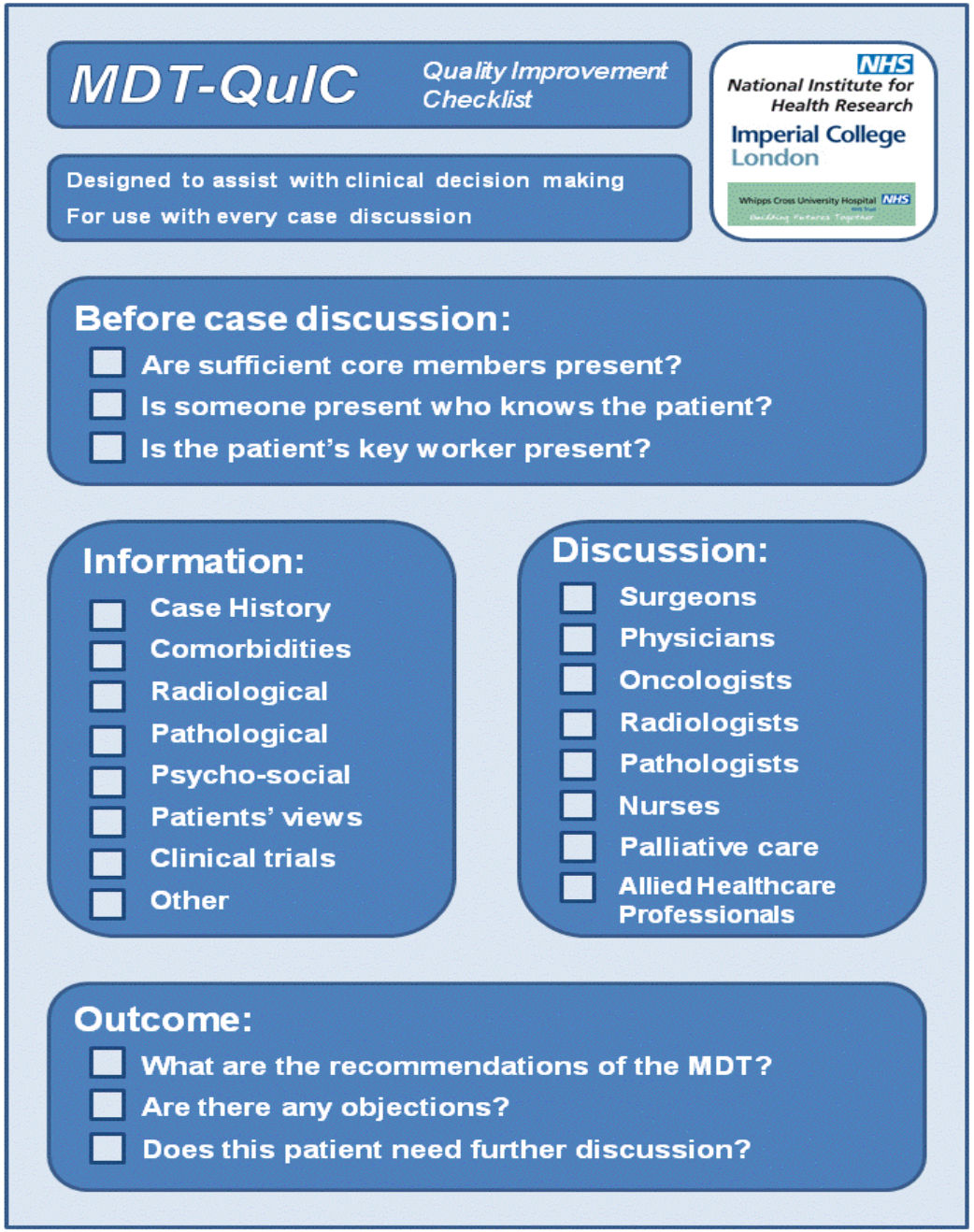
Self report & observation



Lamb, Sevdalis, Mostafid et al, Ann Surg Oncol 2011;18:3535-43.

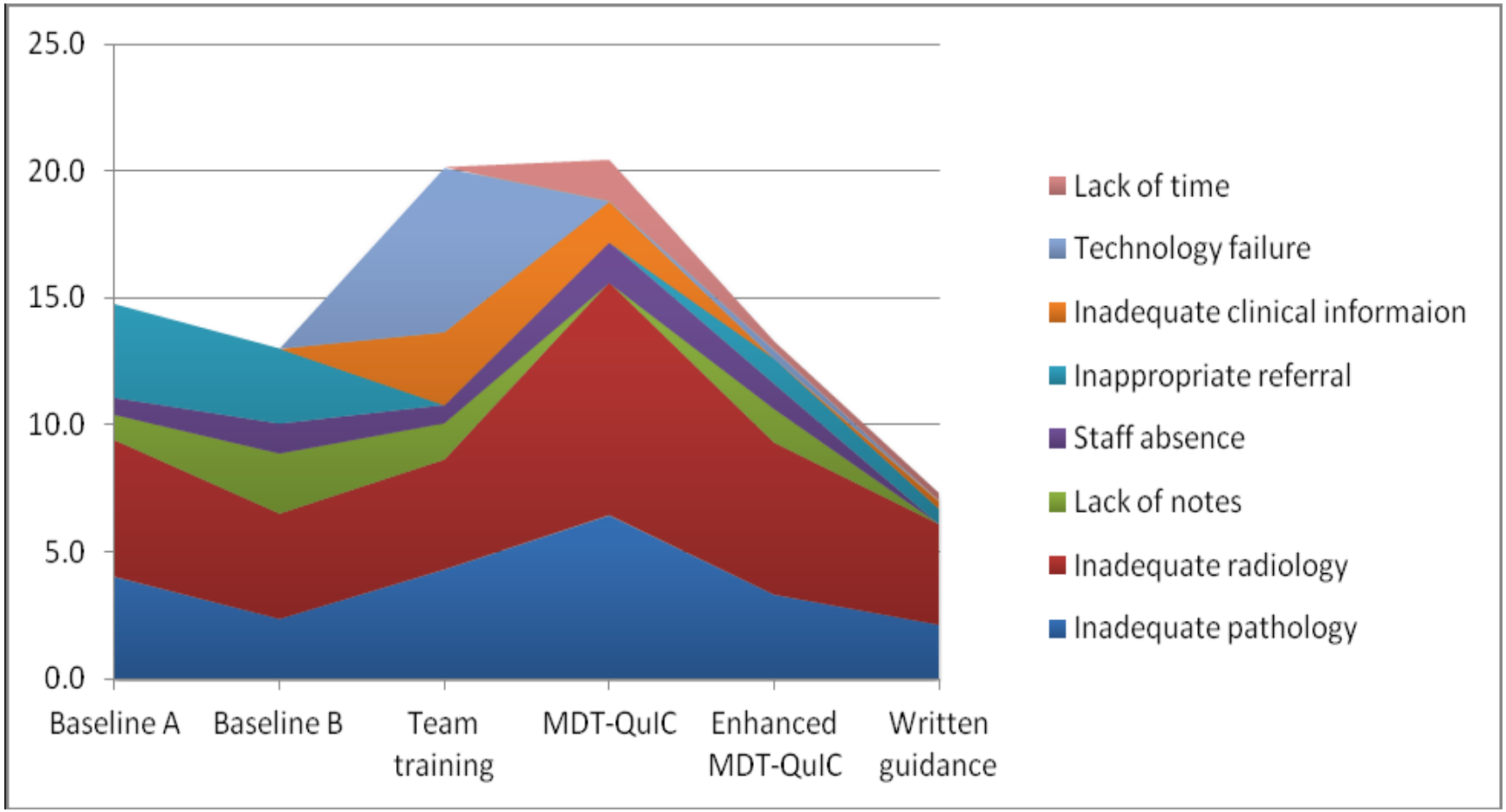
Improving MDT decision-making:

Development and application of a decision checklist



Lamb et al, Ann Surg Oncol 2012;19:1759-65

MDT-QuIC facilitates team decision-making



Lamb et al, Ann Surg Oncol 2013;under review.

How do patients contribute to decision making?

Decision-making with patients

- **Paternalistic**

Decisions made by doctor for the patient

- **Shared**

Interactive option generation and discussion; joint decision on treatment, implementation and review

- **Informed**

Options presented by doctor, burden of responsibility and choice to patient

Decision-making process

Box 3. Activities of decision-making

Recognition and clarification of a problem
Identification of potential solutions
Appraisal of potential solutions
Selection of a course of action
Implementation of the chosen course of action
Evaluation of the solution adopted

Entwistle & Watt (2006)

Patients' decision-making skills

- ✓ Question asking (most common)
- ✓ Clarification seeking
- ✓ Checking
- ✓ Understanding information/communication
- ✓ Raising concerns
- ✓ Taking active role
- ✓ Obtaining information
- ✓ Expressing opinions
- ✓ Verifying information

Review of interventions to enhance patient-physician communication. Harrington et al. (2004)

Very similar skills as those we discussed for surgeons

Questions?

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