PCAN PERIOPERATIVE CLINICAL ACTION NETWORK

INAUGURAL PCAN SUMMIT

NOVEMBER 20TH, 2023

SSC SPECIALIST SERVICES COMMITTEE

sscbc.ca

PCAN Summit Hosts

Geoff Schierbeck
Portfolio Liaison
Doctors of BC

Brooke Forbes
Director, Surgical Strategy & Innovation
Ministry of Health

Laicy Ball
Director, Surgical Services & Provincial Health Services Division
Ministry of Health

WIFI:

WALL CENTRE MEETING

PASSWORD: PCAN2023


IT'S ALL ABOUT
RELATIONSHIPS

Who is Here Today?

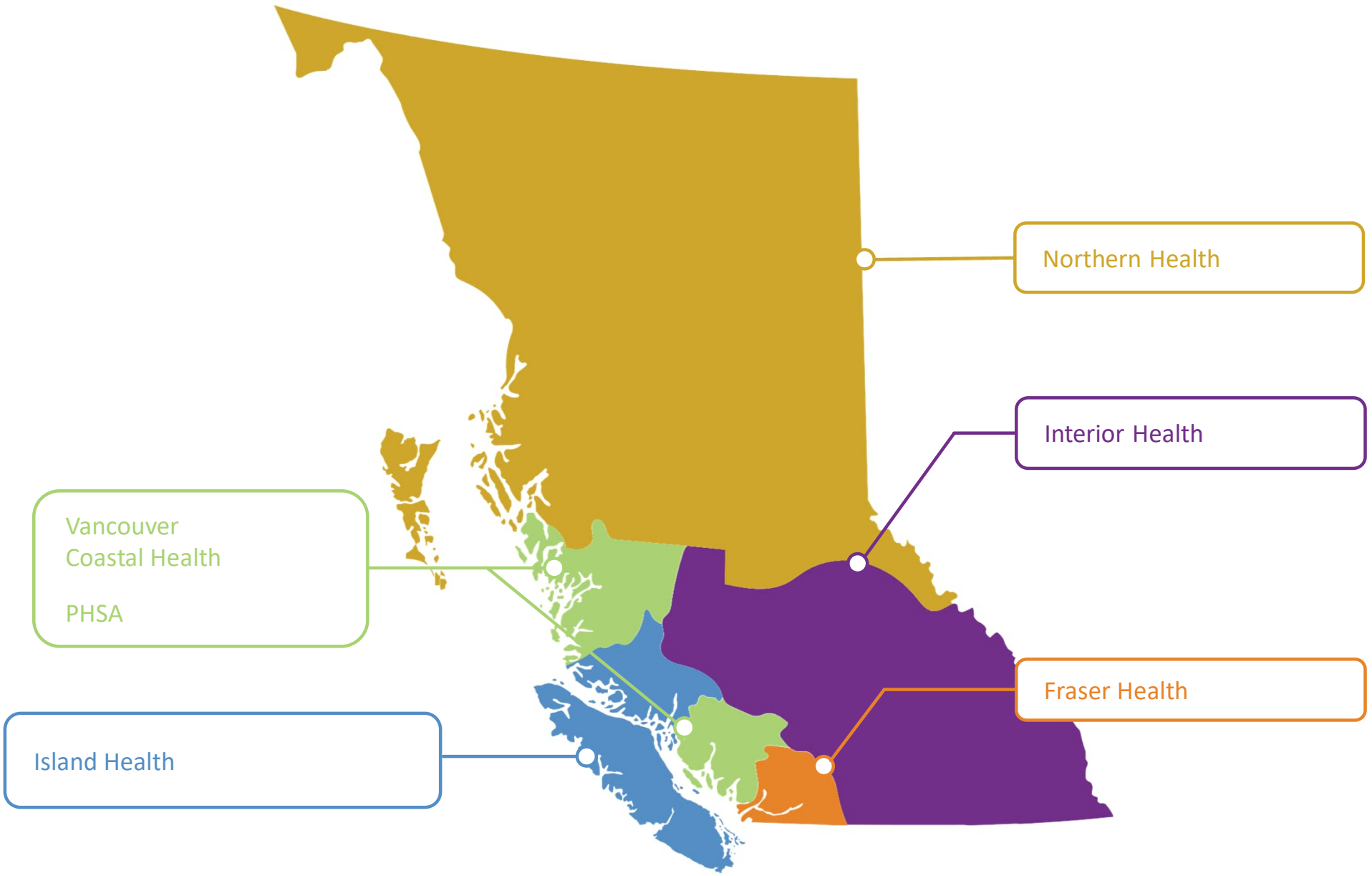
36% Physicians

42% Administrators

21% Nursing and Allied Health

7 Representatives from Ministry of Health

5 Patient partners


Northern Health
Interior Health
Vancouver
Coastal Health
PHSA
Fraser Health
Island Health

PCAN Passport… There will be a prize!

Who is on track to be the MVP of the NFL this year?

Taylor Swift

Who does this best describe?

An Arthroplasty Patient

What question have scholars tried to answer for centuries?

Why is Pickleball so popular?

What is the hardest thing on earth?

Cancelling a gym membership

Twitter changed its name, what is it called now?

Twitter

#PCANSUMMIT

X

Formally Known As:

PCAN:

MORE THAN A NUT

Introductions

Dr. Ahmer Karimuddin

Shana Ooms

Disclosures


KEYNOTE

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University of Southampton | NHS University Hospital Southampton NHS Foundation Trust

Perioperative Care in the UK: where are we now?

mike.grocott@soton.ac.uk

Professor of Anaesthesia and Critical Care Medicine, University of Southampton, UK

Director, Southampton NIHR Biomedical Research Centre (2022-27), UK

Senior Investigator, UK National Institute of Health Research

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Faculty/Presenter Disclosure

- Faculty: Professor Mike GROCOTT

- Relationships with commercial interests:
  - Grants/Research Support: National Institute of Health Research (UK), Bill and Melinda Gates Foundation, National Lottery Fund (UK), NHS England (UK), Edwards Lifesciences, Macmillan Cancer Support
  - Speakers Bureau/Honoraria: NA.
  - Consulting Fees (Medical Advisory Board & Trial Monitoring): Edwards Life Sciences, Sphere Medical Ltd, South-West Sensors Ltd
  - Other = Employee of: University of Southampton, University Hospital Southampton, National Institute of Health Research (UK).

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Declarations

- Elected council member and trustee of Royal College of Anaesthetists
- Vice-chair, national Centre for Perioperative Care
- Chair, National Institute of Academic Anaesthesia
- Joint editor-in-chief, *Perioperative Medicine*
- Joint editor-in-chief, *TopMedTalk*
- Editorial Board, *British Journal of Anaesthesia*
- Vice-president, *Perioperative Quality Initiative*

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Managing Potential Bias

- Faculty: Professor Mike GROCOTT

- All content developed as part of this program was reviewed by members of the program planning committee
- Relationships do not alter my choices when developing content
- Financial relationships are unrelated to presentation
- Not speaking about any products/medications

- Views expressed my own - not representative of the organisations listed

Executive summary

- Pathway re-design* = preparation lists (not waiting lists)
- Early and on-going characterization and evaluation of risk
  - Shared decision making
  - Prehabilitation*
  - Management of long-term conditions and co-morbidities
  - Intra- and post-operative care
- Individualisation of care

BJA
British Journal of Anaesthesia

Volume 108, Number 5, May 2012

British Journal of Anaesthesia **108** (5): 723–6 (2012)
doi:10.1093/bja/aes124

EDITORIAL I

Perioperative medicine: the future of anaesthesia?

M. P. W. Grocott[1,2,3]* and R. M. Pearse[4]

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[2] Integrative Physiology and Critical Illness Group, Clinical and Experimental Sciences, University of Southampton, Southampton SO16 6YD, UK
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> For time and the world do not stand still. Change is the law of life. And those who look only to the past or the present are certain to miss the future.
> *US President John F. Kennedy, Frankfurt, June 25, 1963.*

Perioperative medicine is the future of anaesthesia, if our speciality is to thrive.

opportunities presented by the broader role of the perioperative physician encompassing many aspects of the 'non-operative' care of the patient undergoing major surgery. Along with the many other aspects of anaesthetic practice, this would allow us to consolidate our position as a mature and respected medical speciality alongside our peers. This proposition highlights the critical decisions we face as a spe

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US President John F Kennedy

Paulskirche, Frankfurt, Germany; 25 June 1963

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US President John F Kennedy
Paulskirche, Frankfurt, Germany; 25 June 1963

"It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change."

Charles Darwin
Westminster Abbey, London, UK; 1 April 1883

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US President John F Kennedy
Paulskirche, Frankfurt, Germany; 25 June 1963

"It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change."

Professor Leon C Megginson
Community College, San Antonio, Texas, 12 April 1963

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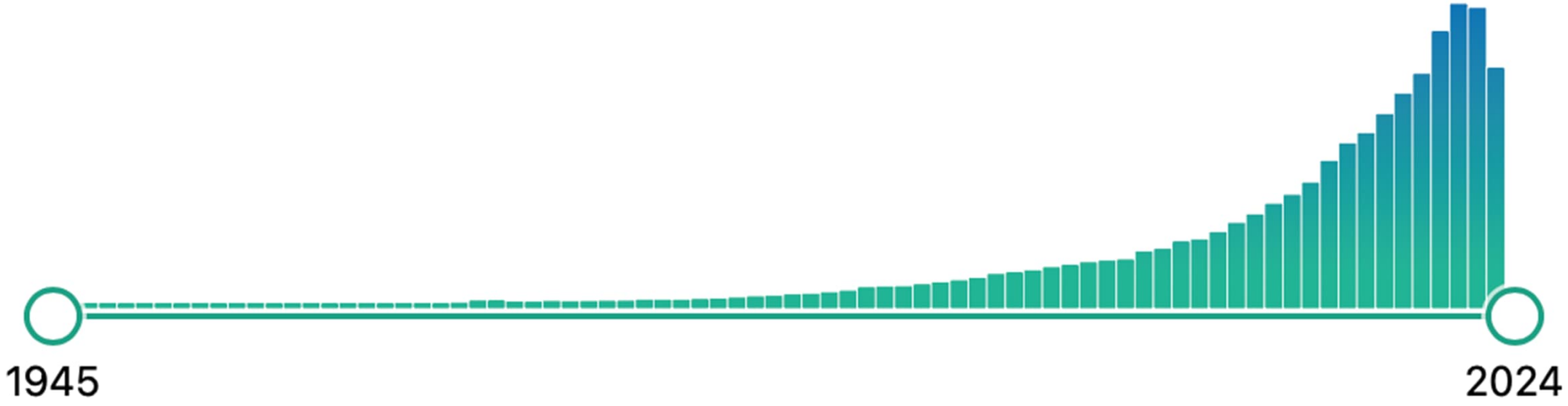
‘Perioperative’ Pubmed citations



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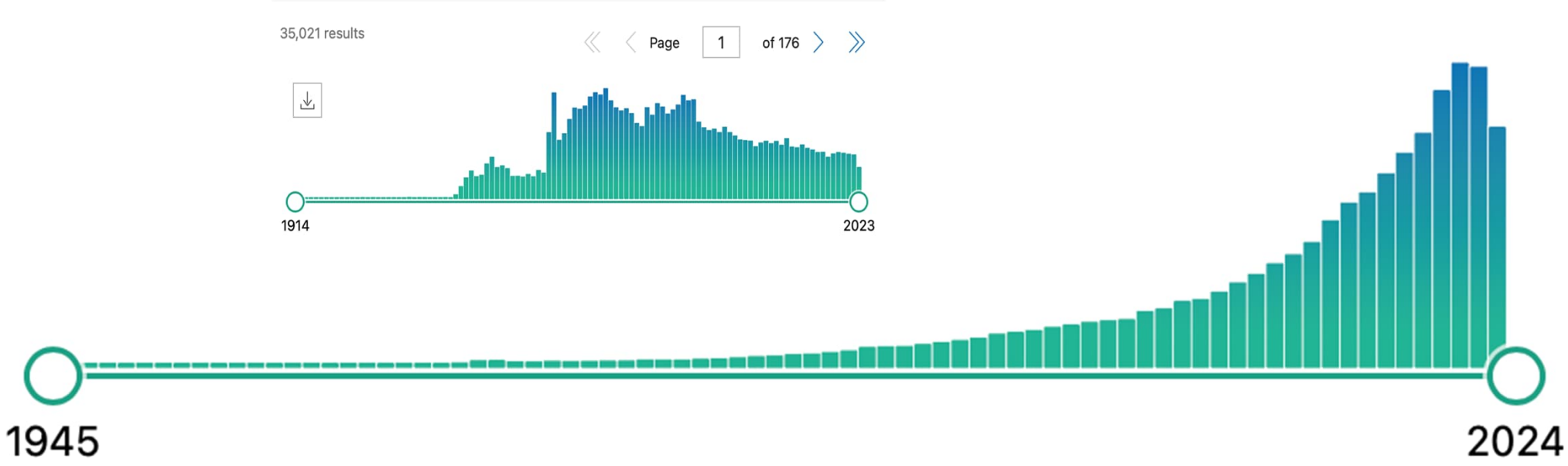
‘Perioperative’ Pubmed citations




Threat
Opportunity

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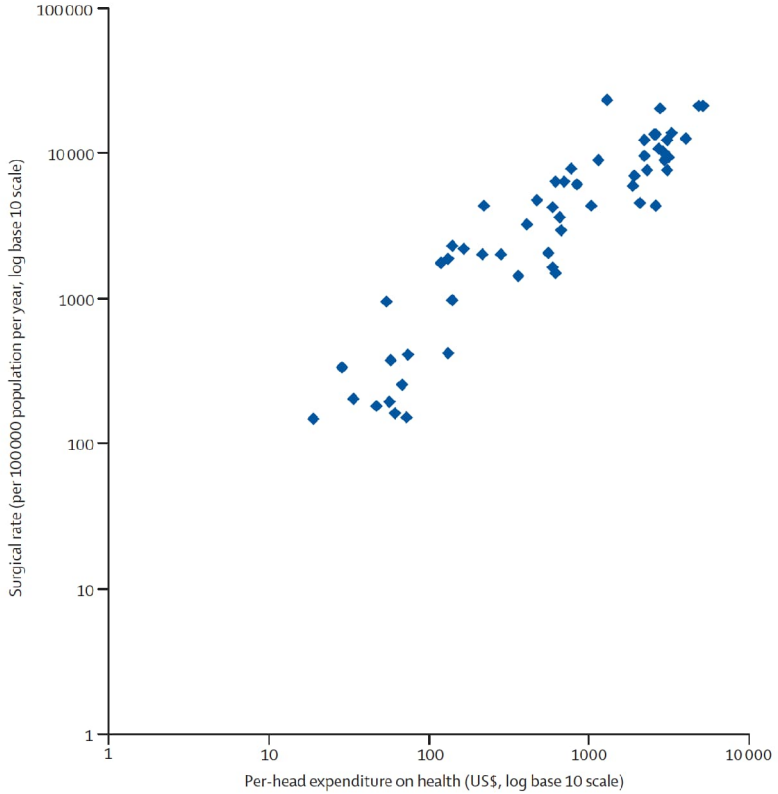
An estimation of the global volume of surgery: a modelling strategy based on available data

Thomas G Weiser, Scott E Regenbogen, Katherine D Thompson, Alex B Haynes, Stuart R Lipsitz, William R Berry, Atul A Gawande

THE LANCET



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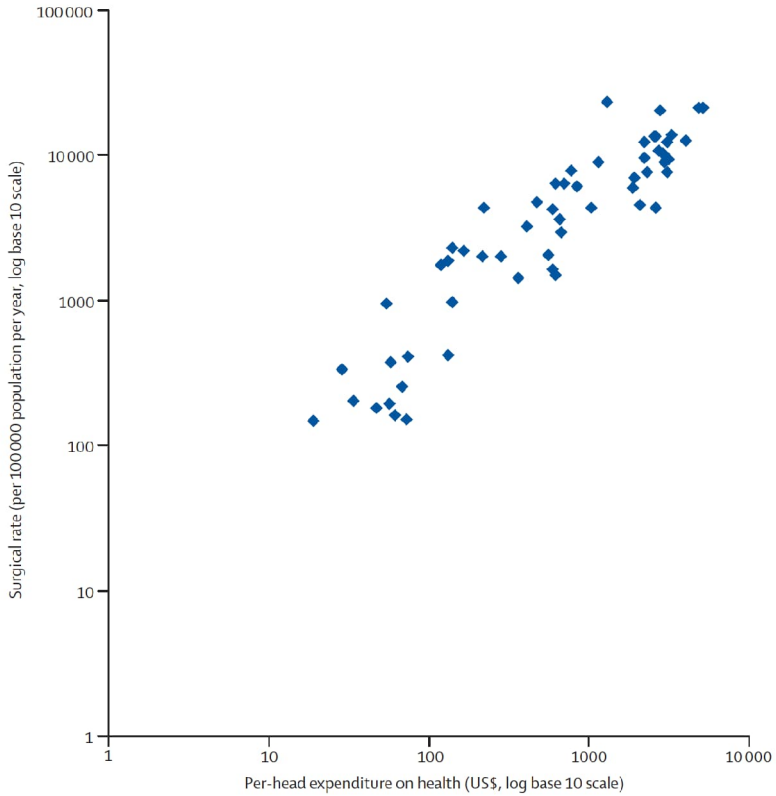

Estimate of the global volume of surgery in 2012: an assessment supporting improved health outcomes

Thomas G Weiser*, Alex B Haynes*, George Molina, Stuart R Lipsitz, Micaela M Esquivel, Tarsicio Uribe-Leitz, Rui Fu, Tej Azad, Tiffany E Chao, William R Berry, Atul A Gawande

THE LANCET

Abstract

Background It was previously estimated that 234·2 million operations were performed worldwide in 2004. The association between surgical rates and population health outcomes is not clear. We re-estimated global surgical volume to track changes over time and assess rates associated with healthy populations.

Methods We gathered demographic, health, and economic data for 194 WHO member states. Surgical volumes were obtained from published studies and other reports from 2005 onwards. We estimated rates of surgery for all countries without available data using a regression model. We assessed the proportion of surgery comprised by caesarean delivery. The rate of surgery was plotted against life expectancy to describe the association between surgical care and this health indicator.

Findings We identified 66 countries reporting surgical data between 2005 and 2013. We estimate that 312·9 million operations (95% CI 266·2–359·5) took place in 2012—a 33·6% increase over 8 years; the largest proportional increase [illegible] (5·8 million operations) of the total surgical volume in poor health expenditure countries compared with 10·8% (7·8 million operations) in low health expenditure countries and 2·7% (5·1 million operations) in high health expenditure countries. We noted a correlation bet[illegible] life expectancy and increased surgical rates up to 1533 operations per 100 000 people, with significant but less dramatic improvement above this rate.

Interpretation Surgical volume is large and continues to grow in all economic environments. A single procedure—caesarean delivery—comprised almost a third of surgical volume in the most resource-limited settings. Surgical care is an essential part of health care and is associated with increased life expectancy, yet many low-income countries fail to achieve basic levels of service. Improvements in capacity and delivery of surgical services must be a major component of health system strengthening.

"We estimated that 312.9 million operation (95%CI 266.2-359.20) took place in 2012 – a 33.6% increase over 8 years

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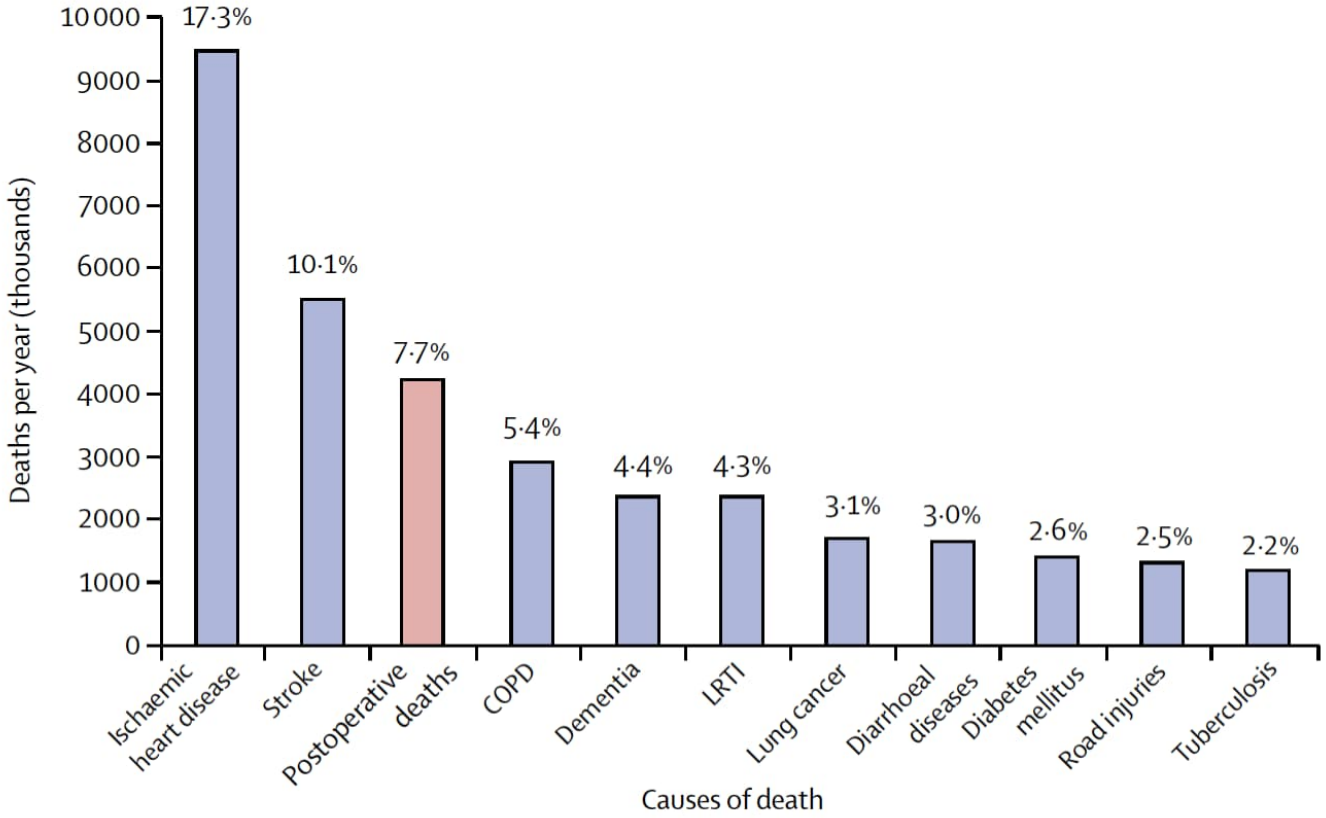
Surgery is a public health issue



Burden of harm following surgery

- Mortality (loss)
- Morbidity (suffering)
- Cost (waste)

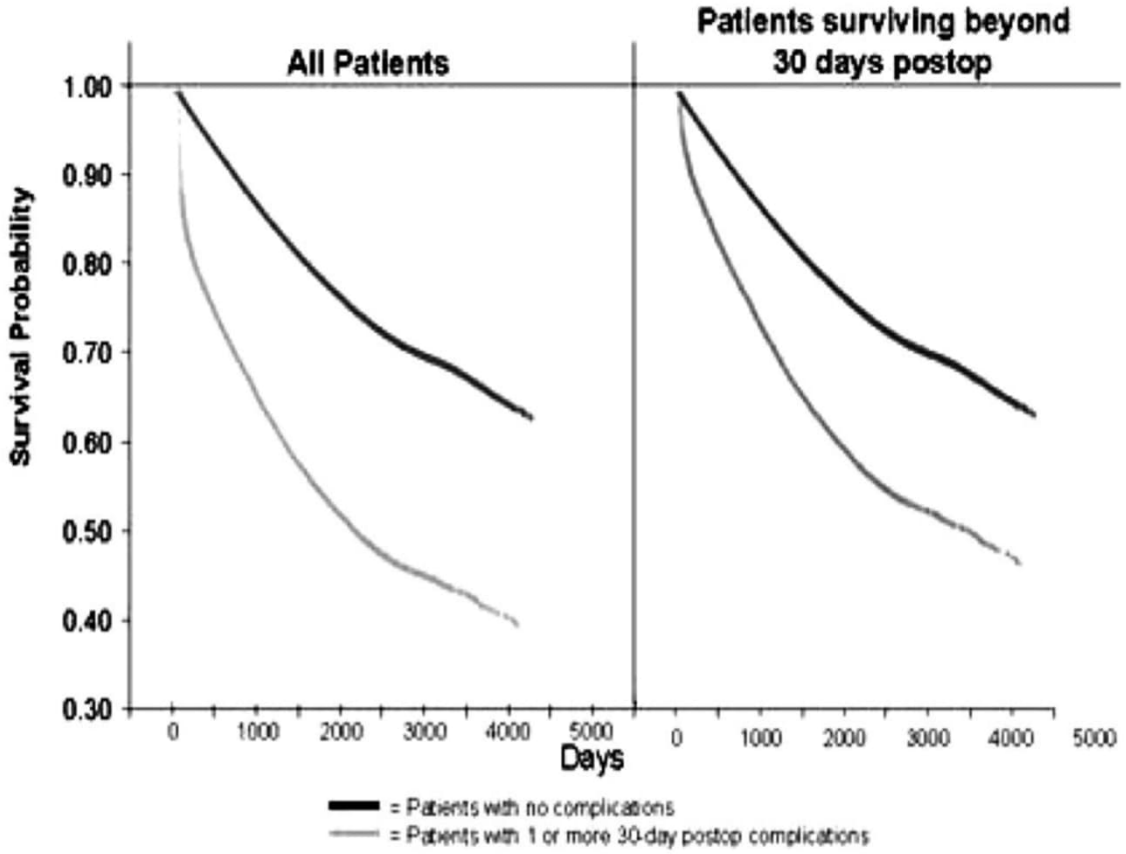
Morbidity:mortality relationship

Morbidity Criterion	Mortality (%)	Morbidity (%)	Ratio
POMS	1.6	26.9	**16.8**
Clavien-Dindo	1.2	16.4	**13.7**
NSQIP	3.1	18.1	**5.8**
NSQIP	4.8	25.4	**5.2**

Morbidity = “suffering” (+ increased LOS)

Bennett-Guerrero *Anaesth Analg* 1999 | Dindo *Ann Surg* 2004
Khuri *Ann Surg* 2005 | Ghaferi *NEJM* 2009

More complications = more death



Khuri *Ann Surg* 2005

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More complications = more death

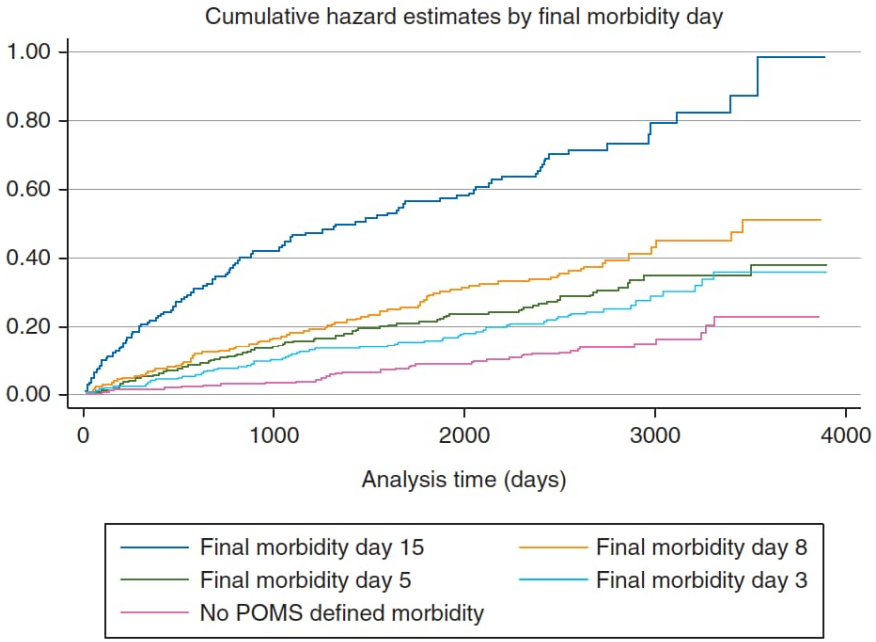

Fig 1 Cumulative hazard plot for mortality after postoperative morbidity according to FMD.

Moonesinghe *BJA* 2014

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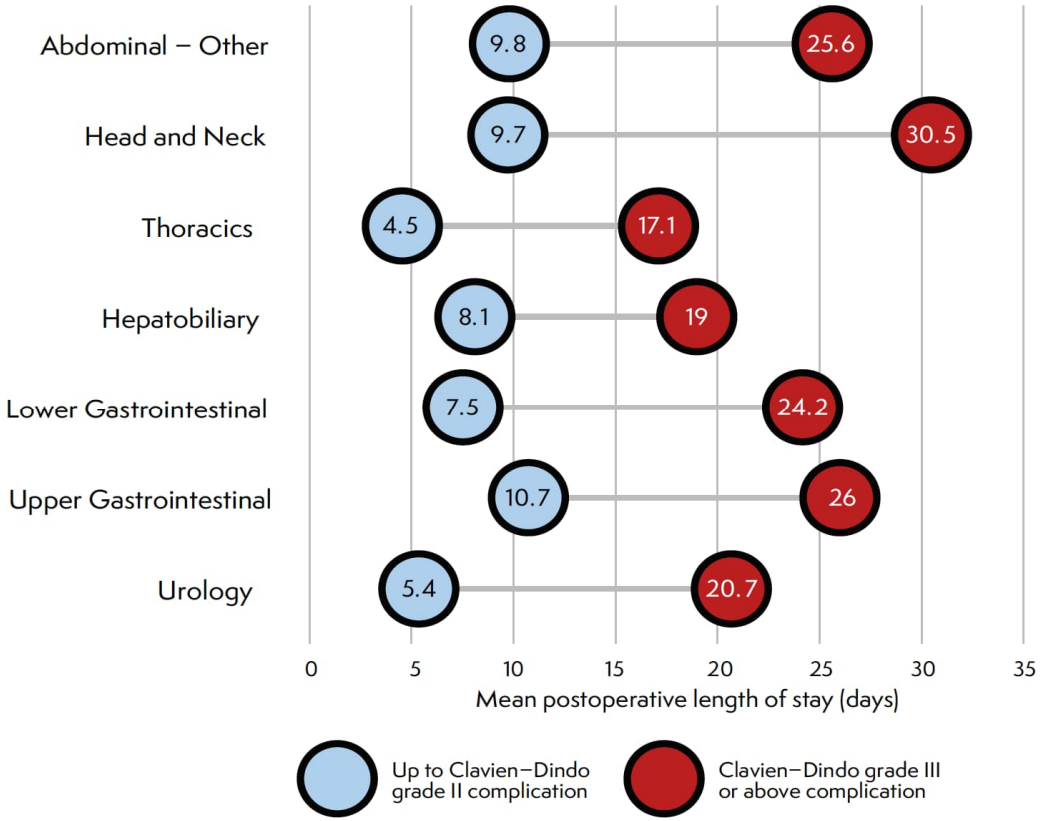
More complications = greater LOS



Day 7 morbidity domain	Year 1 % (n= 6,378)	Year 2 % (n= 12,152)
Major pulmonary*	6.2	5.3
Major infection*	12.8	11.5
Major renal*	1.5	1.1
Major cardiac*	2.7	2.2
Major neurological*	2.4	1.8
Major wound*	4.5	3.2
Major haematological	0.8	0.8
Major pain	0.9	0.8
All gastrointestinal *	14.9	11.8
Any morbidity*	**28.4**	**23.8**
Any major morbidity*	**18.7**	**16.4**

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More complications = more cost

Table 2. Patient Age, Average Length of Stay, Revenue, and Variable Costs, With and Without Complications

Variable	Unadjusted (95% CI)		
	Without Complications (n = 32 436)	With ≥1 Complication (n = 1820)	Difference[a]
Age, mean, y[b]	57.4 (55.7 to 58.3)	64.8 (63.8 to 67.0)	7.4 (5.8 to 10.7)
Length of stay, median, d	3.0 (2.9 to 4.0)	14.0 (11.5 to 15.0)	11.0 (9 to 12)
Mean, $, in thousands			
Net revenue per patient	18.9 (15.8 to 20.5)	49.4 (40.7 to 54.0)	30.5 (23.9 to 34.5)
Variable costs per patient	11.3 (9.4 to 12.1)	33.7 (27.7 to 36.8)	22.4 (18.1 to 25.7)
Contribution margin per patient	7.6 (6.1 to 8.9)	15.7 (11.0 to 18.4)	8.1 (4.9 to 9.7)
Fixed costs per patient	6.6 (5.7 to 7.9)	22.1 (18.7 to 24.7)	15.5 (12.8 to 18.2)
Total costs per patient	17.9 (15.1 to 19.1)	55.8 (46.7 to 61.1)	37.9 (31.1 to 43.8)
Total margin per patient	1.0 (0.01 to 2.2)	−6.4 (−10.3 to −4.4)	−7.4 (−10.5 to −5.1)

Eappen *JAMA* 2013

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‘Elevator pitch’ (UK)

- Average UK citizen - 5 surgeries during their lifetime
- Deaths within 30 days of surgery account for 1 in 10 deaths in the UK

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‘Elevator pitch’ (UK)

- Average UK citizen - 5 surgeries during their lifetime
- Deaths within 30 days of surgery account for 1 in 10 deaths in the UK
- >5 million surgical procedures in the UK each year
- Surgery = for 1/3 hospital admissions
- UK COVID-19 “backlog” exceeds 8 million operations
- Surgical demand is increasing (UK >5%/yr) driven by technical innovation, ageing and multimorbidity (>50% patients >65yrs)

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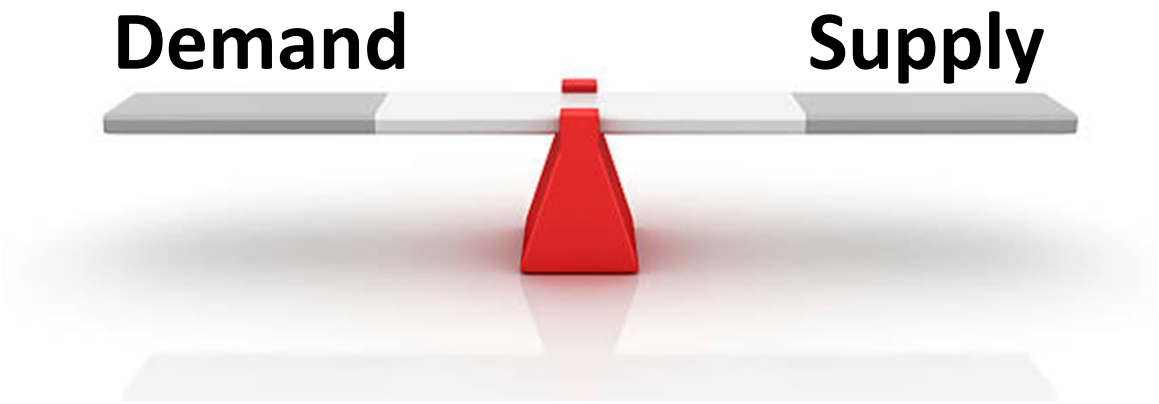
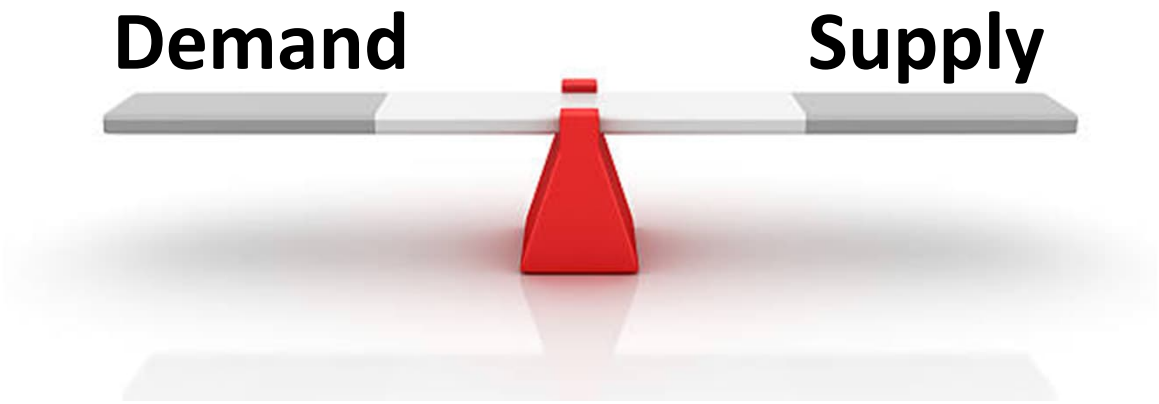
Health economic challenges



Health economic challenges

- Demography (ageing)
- Multimorbidity
- **Innovation**



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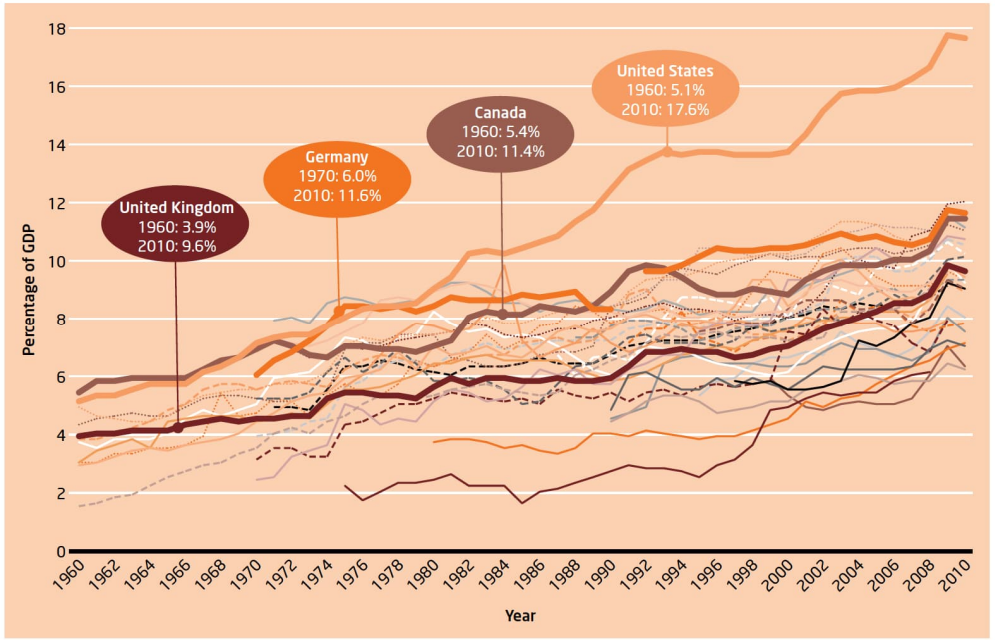
Health economic challenges

- Demography (ageing)
- Multimorbidity
- **Innovation**

Figure 4 Total (public + private) health spending as a percentage of GDP, 1960–2010, all OECD countries



Note: GDP, gross domestic product

Source: Organisation for Economic Co-operation and Development (2012)

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21:03 4G

News

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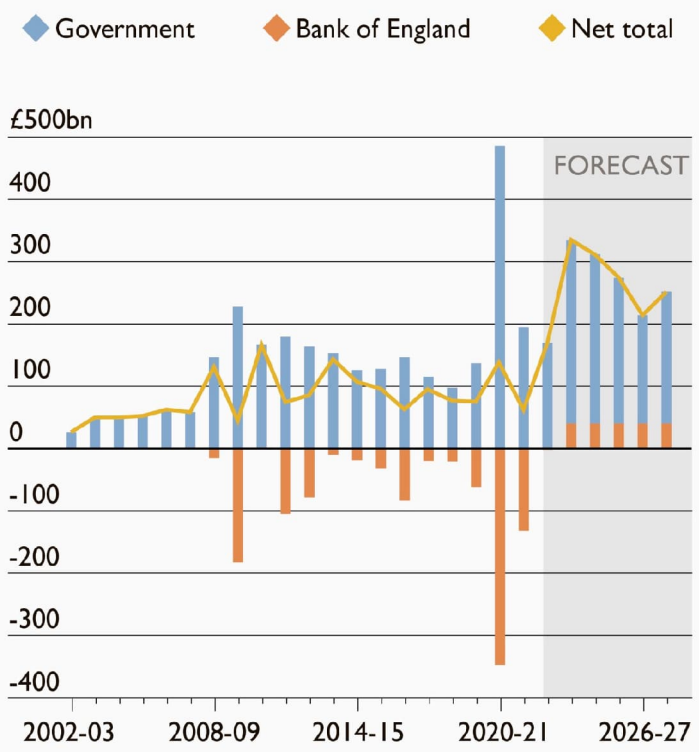
Britain's £335 billion debt disaster



Graphic: The Times and The Sunday Times • Source: Citi

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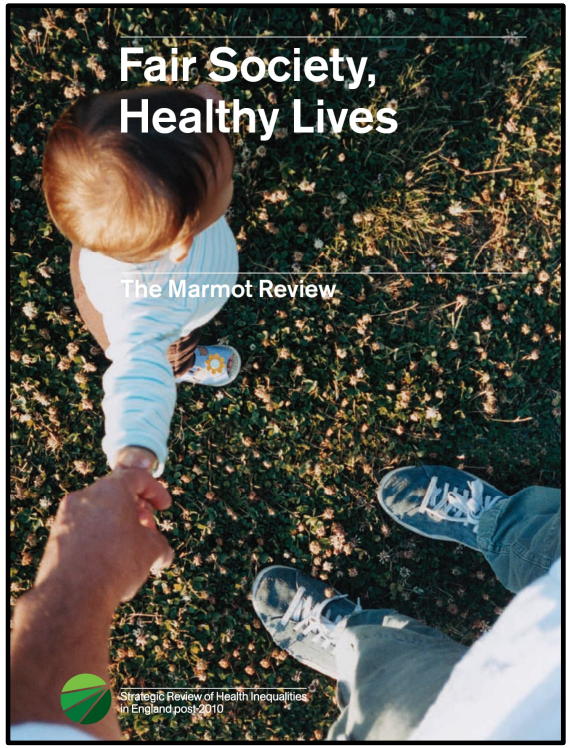
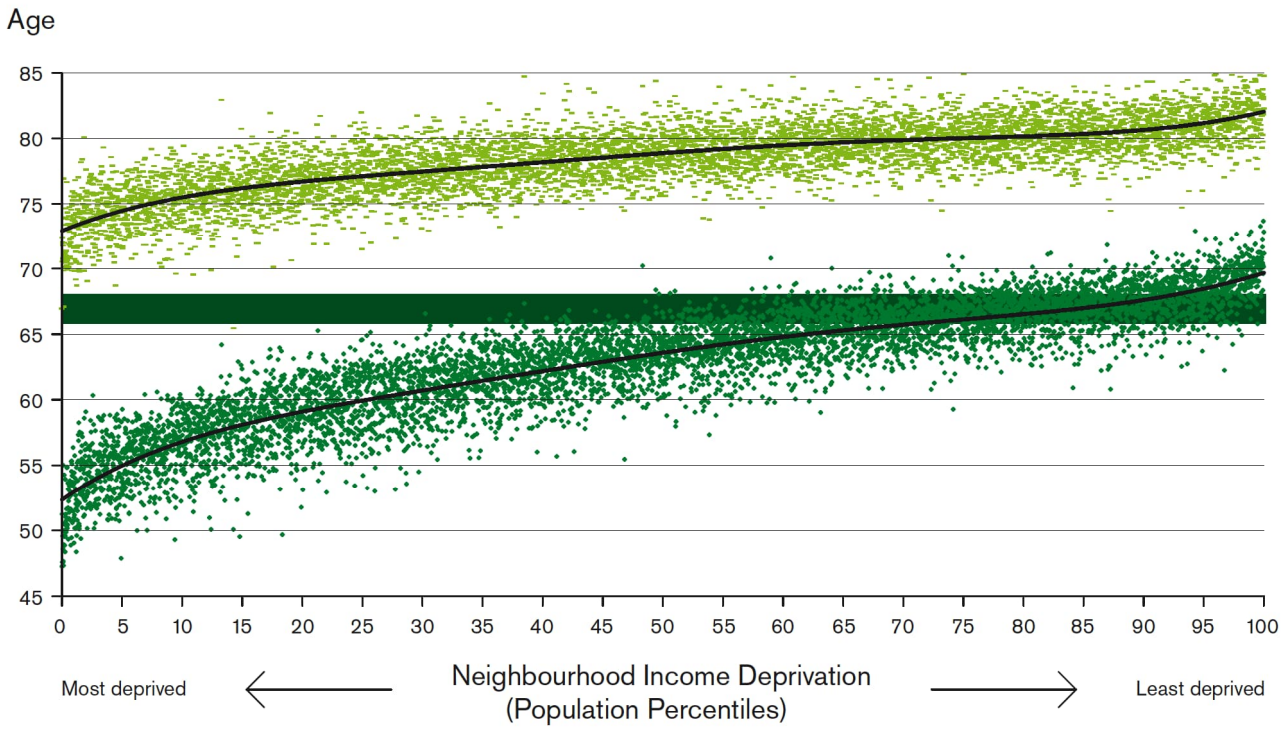
Social determinants of health





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Social determinants of health

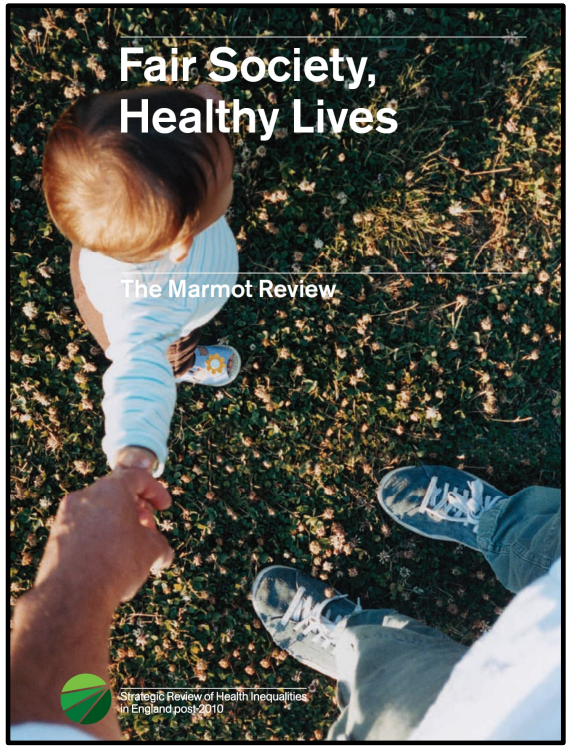

Table 1 Life expectancy and healthy life expectancy by deprivation decile: England

Period	Deprivation decile	Life expectancy	Healthy life expectancy	Proportion of life spent in 'good health' (%)
		Males		
2011-13	Most-deprived	73.9	52.0	70.4
	Least-deprived	82.9	70.0	84.4
	Difference	**9.0**	**18.0**	**14.0**
2018-20	Most-deprived	73.5	52.3	71.1
	Least-deprived	83.2	70.5	84.6
	Difference	**9.7**	**18.2**	**13.5**
		Females		
2011-13	Most-deprived	79.0	52.4	66.4
	Least-deprived	85.9	70.9	82.5
	Difference	**6.9**	**18.5**	**16.1**
2018-20	Most-deprived	78.3	51.9	66.3
	Least-deprived	86.3	70.7	82.0
	Difference	**8.0**	**18.8**	**15.7**

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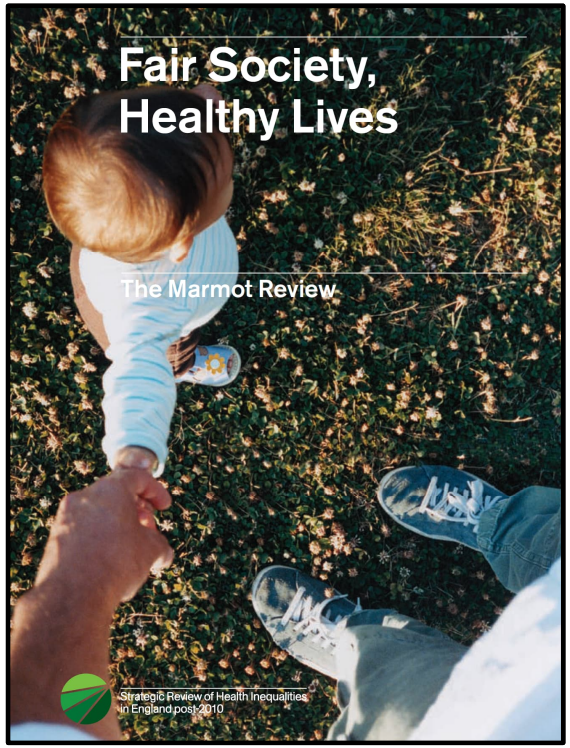
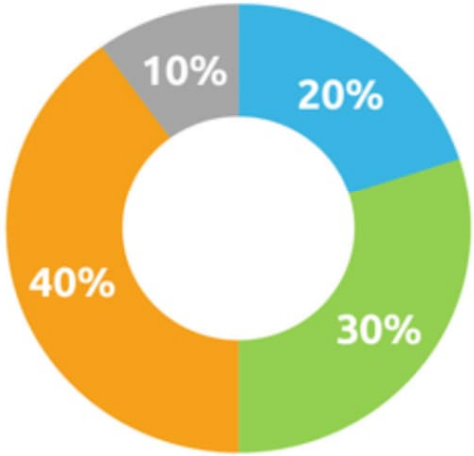
Social determinants of health



Physical Environment
Environmental quality
Built environment
…

Health Care
Access to Care
Quality of Care
…



Socio-Economic Factors
Education
Employment
Income
Family/Social Support
Community Safety
…

Health Behaviors
Tobacco use
Diet & Exercise
Alcohol use
Unsafe sex
…

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‘Burning platform’

- COVID-19 healthcare legacy
- Healthcare worker welfare and burnout
- Demographics and inequality
- Human behaviour, self-harm & multimorbidity
- Innovation-driven demand growth
- (Health) economic challenges

Solutions

- **Rethinking healthcare delivery:** who, what, where, how?
- **Re-designing pathways:** patient focused *(not provider)*
- **Removing barriers:** multi-professional, multidisciplinary,

Solutions

- Day case surgery
- Day of surgery admission
- Pre-assessment
- **Enhanced recovery**
- Shared Decision Making (SDM)
- Perioperative Medicine/Care

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Enhanced Recovery in the UK

Figure 2

Length of stay: Colectomy, Excision of Rectum, Cystectomy

(Quarterly HES Data)

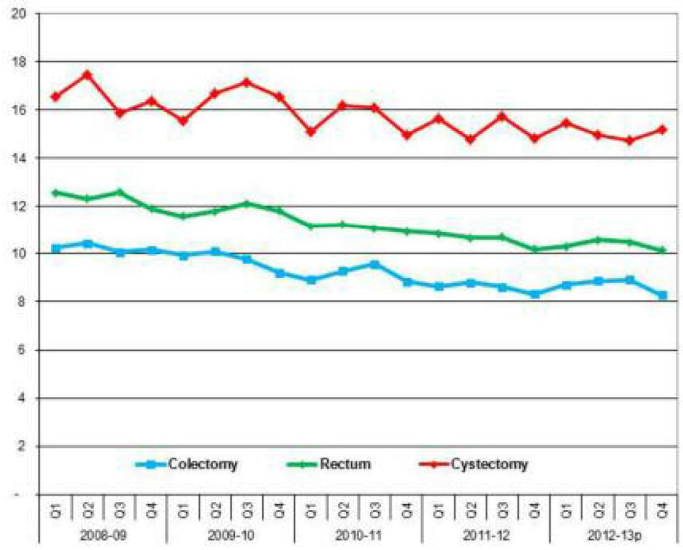
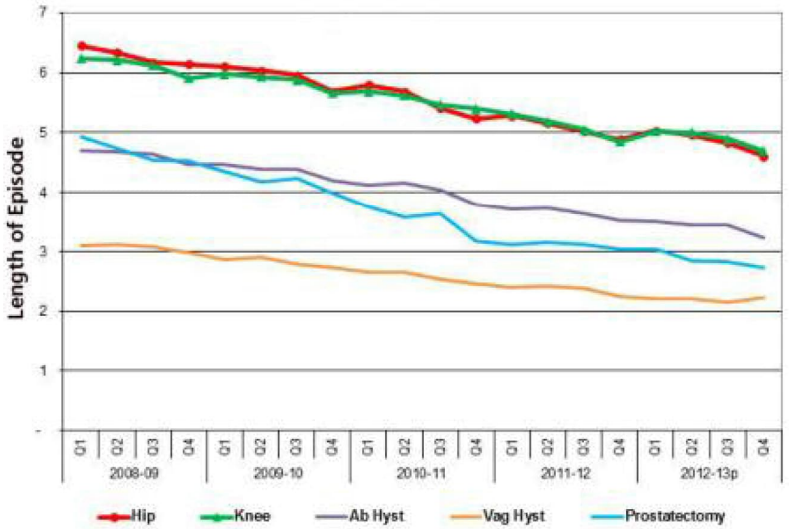
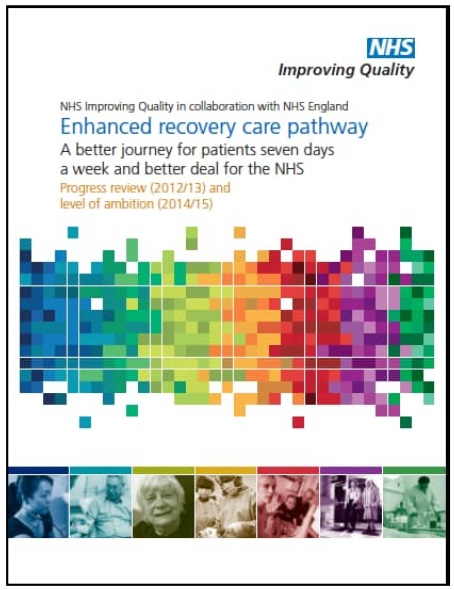


Figure 3

Length of stay: Hip, Knee, Hysterectomy (abdominal and vaginal)

(Quarterly HES Data)





Solutions

- **Rethinking healthcare delivery:** who, what, where, how?
- **Re-designing pathways:** patient focused *(not provider)*
- **Removing barriers:** multi-professional, multidisciplinary,

(payroll accounts for about 40-60% of healthcare costs)

Solutions

- **Technical Innovation:** automated/digital solutions to augment (or replace) the roles of healthcare providers

- **Task shifting:** "a process of delegation whereby tasks are moved, where appropriate, to less-specialized health workers" (WHO, 2007)

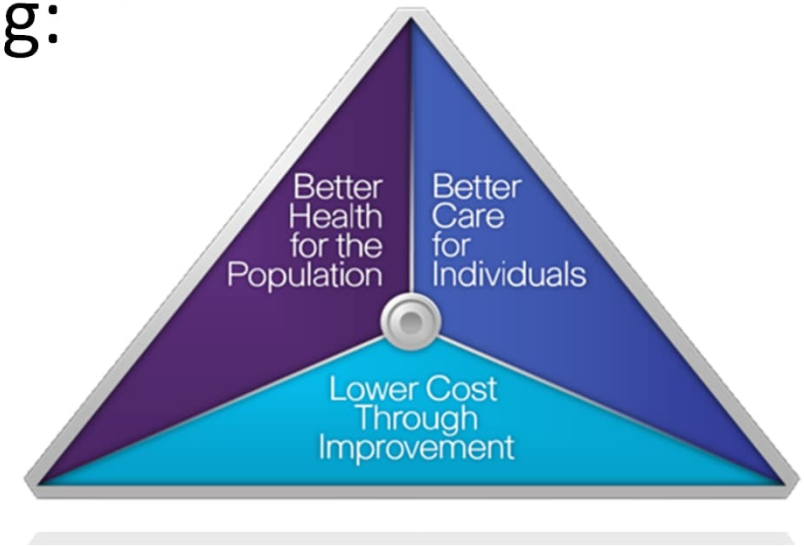
Solutions

- **Rethinking healthcare delivery:** who, what, where, how?
- **Re-designing pathways:** patient focused *(not provider)*
- **Removing barriers:** multi-professional, multidisciplinary

- **Individualised care:** screening for risk, needs based assessment & individualised intervention

Perioperative Care

- All the about the patient
- Multidisciplinary, multispecialty & collaborative
- Achieves the triple aim of improving:
  - Health of the patient
  - Heath of the population
  - Value



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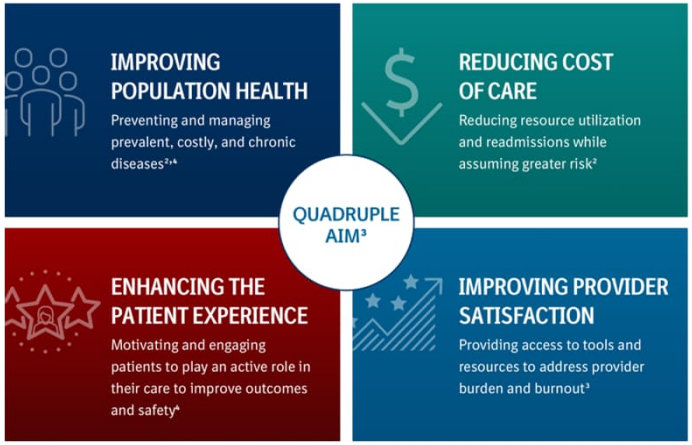
Perioperative Care

- All the about the patient
- Multidisciplinary, multispecialty & collaborative
- Achieves the **quadruple** aim of improving:
  - Health of the patient
  - Heath of the population
  - Value
  - **Workforce wellbeing**



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Evolution of identity….

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Evolution of identity….

- 2011 NHS National Institute for Health Research "APOMP" Specialty Group

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PERIOPERATIVE MEDICINE
THE PATHWAY TO BETTER SURGICAL CARE

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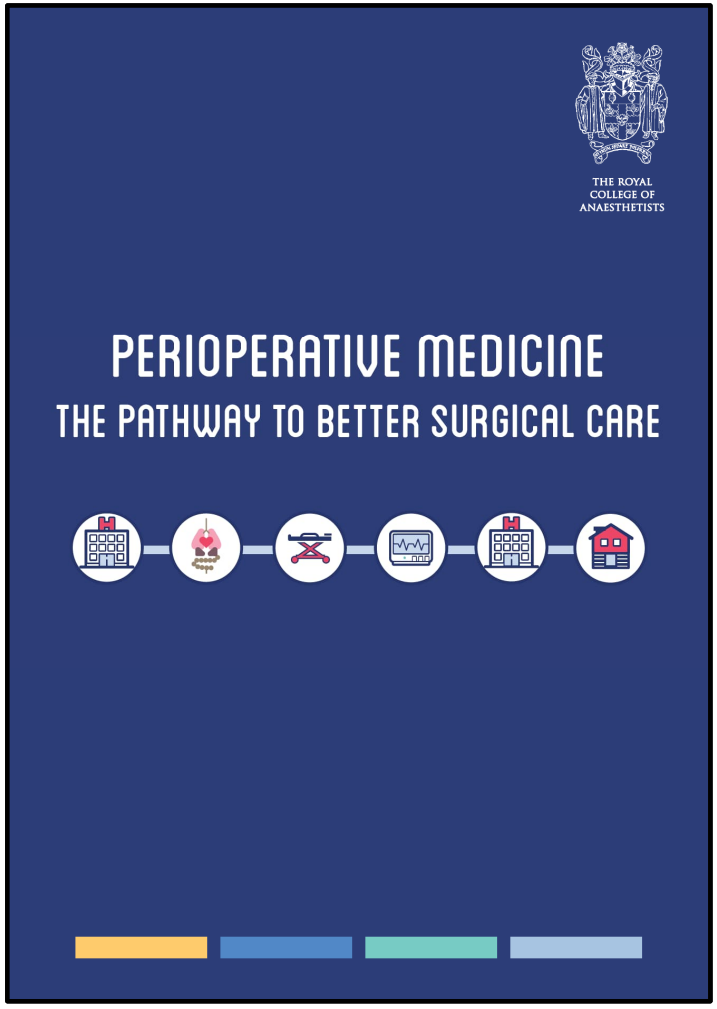

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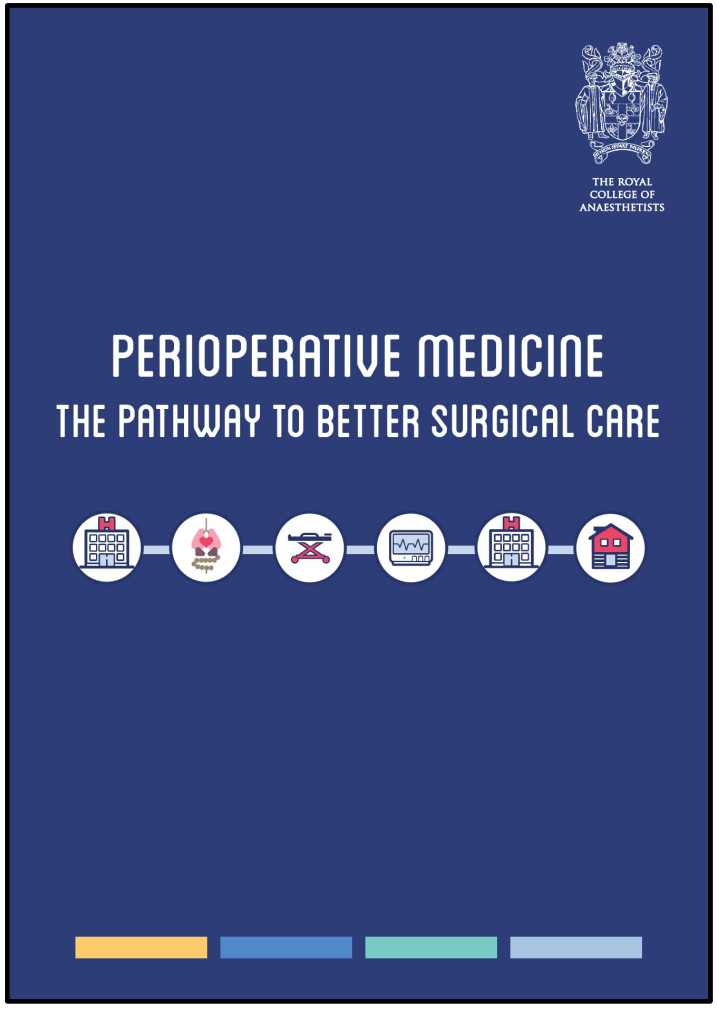

"…from the moment of contemplation of surgery until full recovery."

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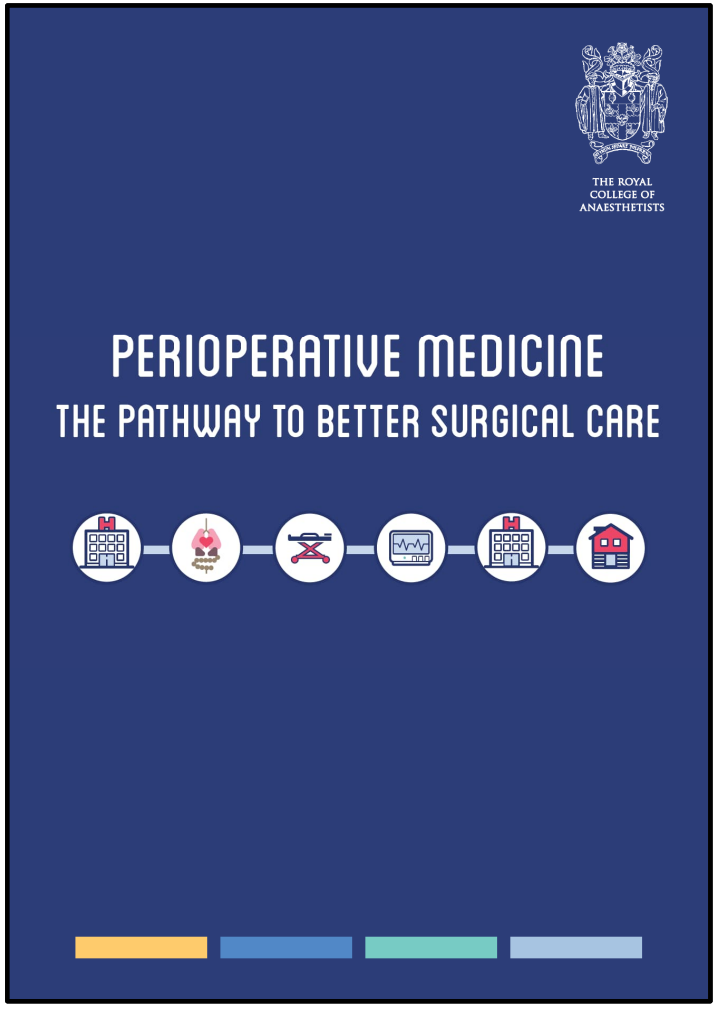

"…from the moment of contemplation of surgery until full recovery."

Patient Centered

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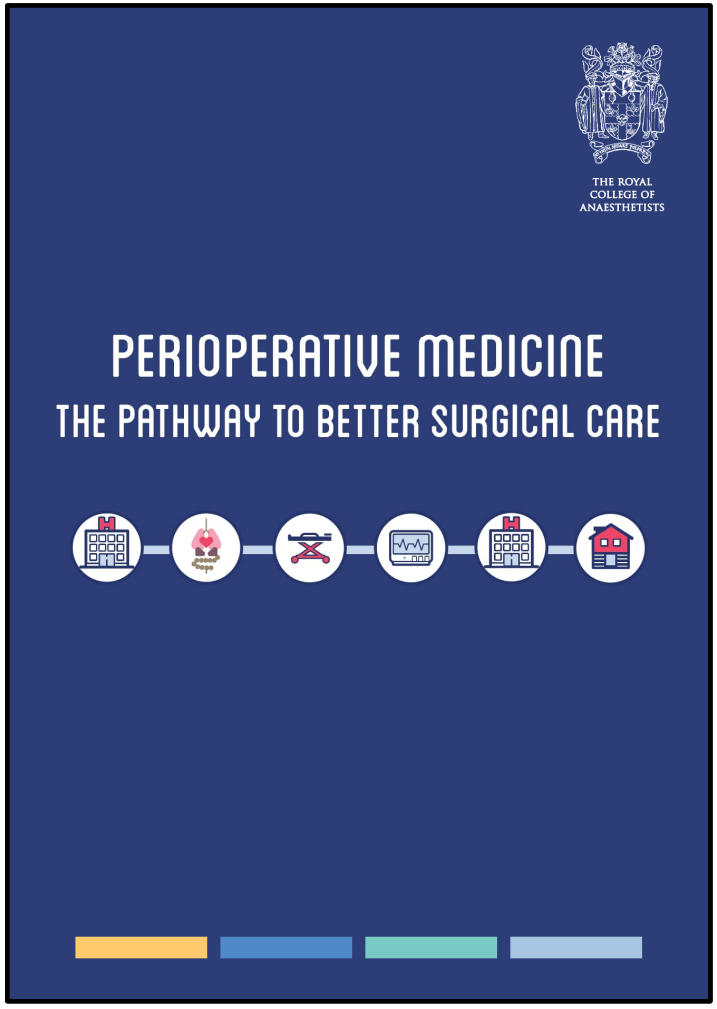

"…from the moment of contemplation of surgery until full recovery."

Patient Centered Multidisciplinary Integrated Care

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Journey Pathway Silo

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Journey Pathway

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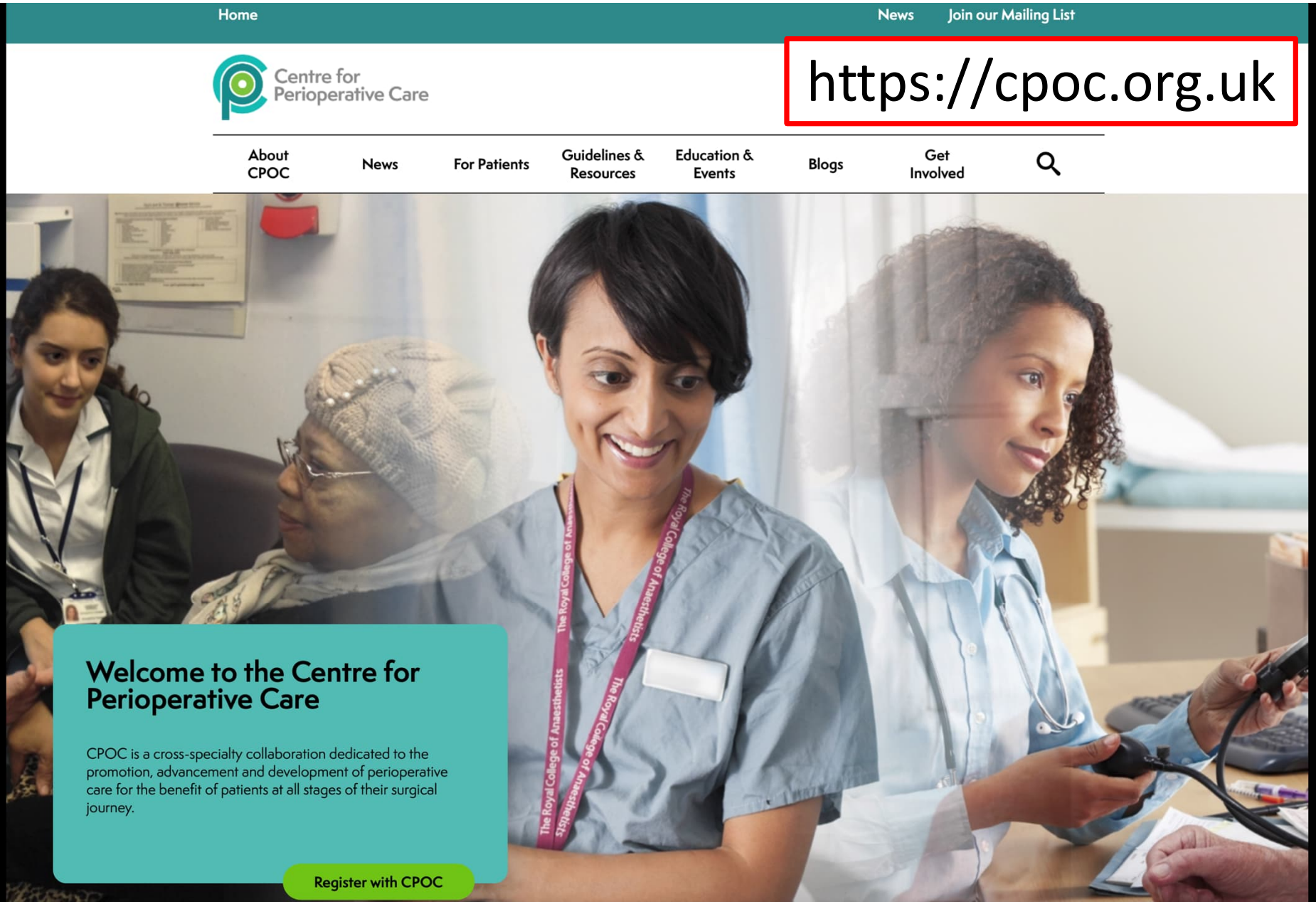
- 2019 RCoA Royal College of Anaesthetists Centre for Perioperative Care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CPOC is a cross-specialty collaboration dedicated to the promotion, advancement and development of perioperative care for the benefit of patients at all stages of their surgical journey.
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CPOC Themes

- 1. Improving quality of care
- 2. Empowering patients
- 3. Supporting the workforce
- 4. Influencing policy
- 5. Technology and digital
- 6. Research and innovation

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Improving quality of care

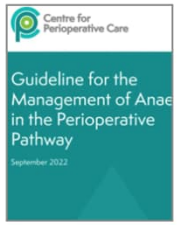
CPOC Guidelines

Perioperative Management of Adult Patients with Obstructive Sleep Apnoea

CPOC

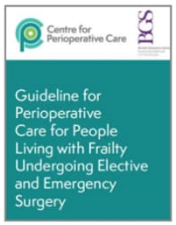
National Safety Standards for Invasive Procedures

CPOC



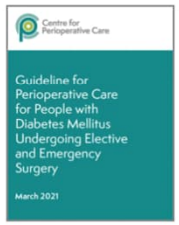
Management of Anaemia in the Perioperative Pathway

CPOC



Perioperative Care of People Living with Frailty

CPOC and The British Geriatrics Society



Perioperative Care of People with Diabetes Undergoing Surgery

CPOC and Diabetes UK

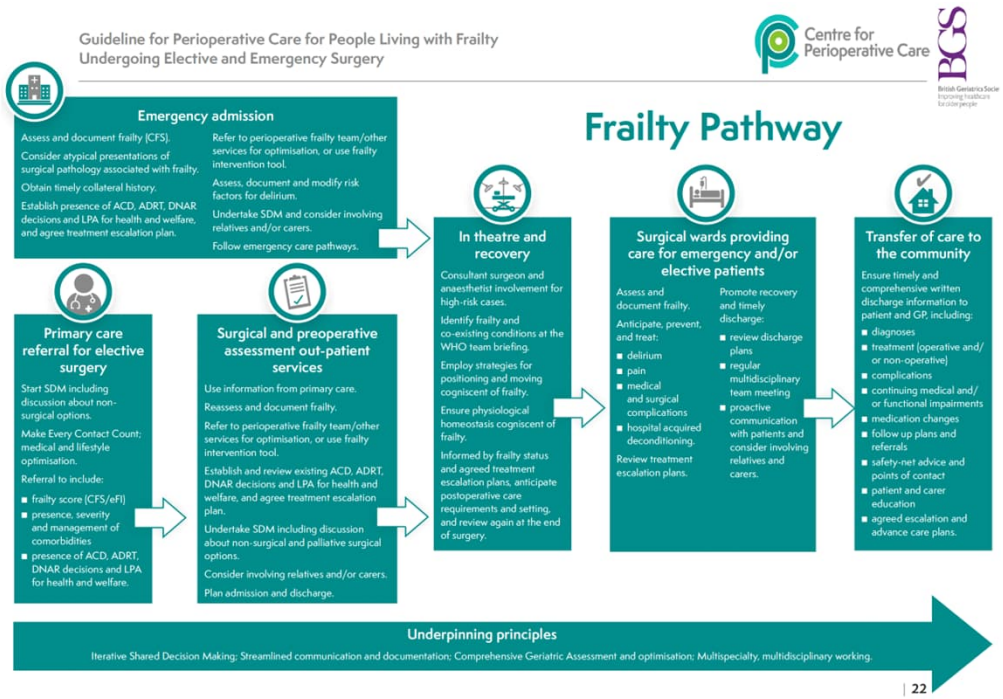
Day Surgery: National Day Surgery Delivery Pack

BADs, GIRFT and CPOC

Enhanced Perioperative Care

CPOC and FICM

COVID-19 and timing of adult elective surgery



https://cpoc.org.uk

Supporting the workforce

- Medical schools
- Foundation trainingg
- Specialist training (RCoA curriculum)
- Credentialling (ANZCA diploma)

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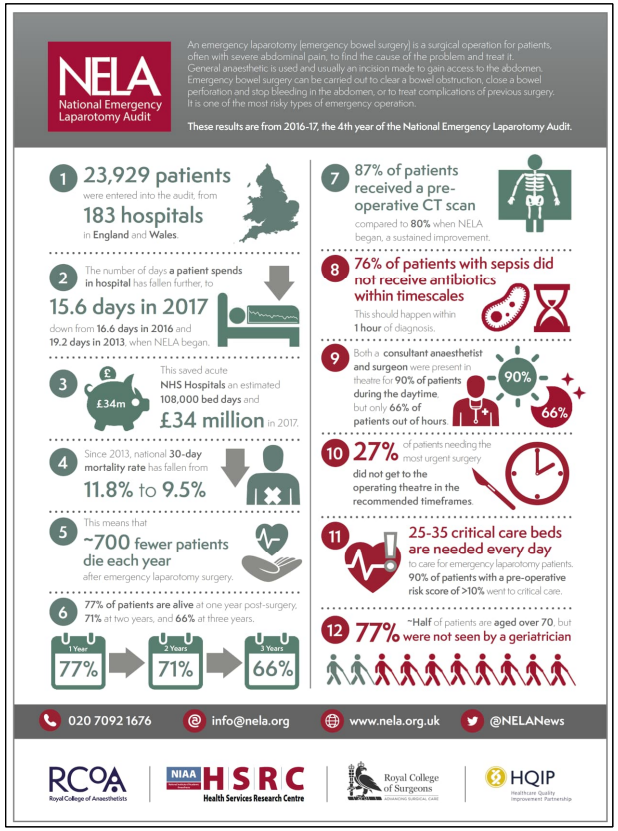
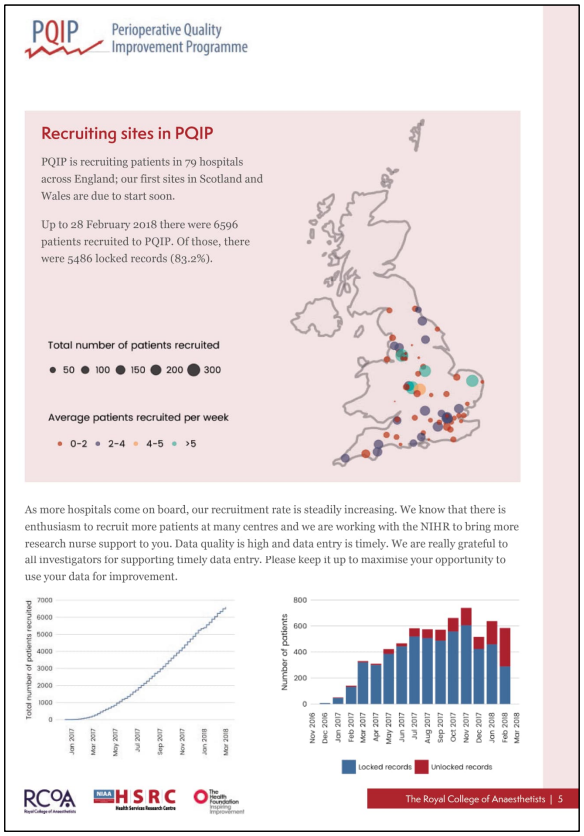
Research and innovation





Clinical Trials

- FLOELA (NELA)
- VITAL (PQIP)

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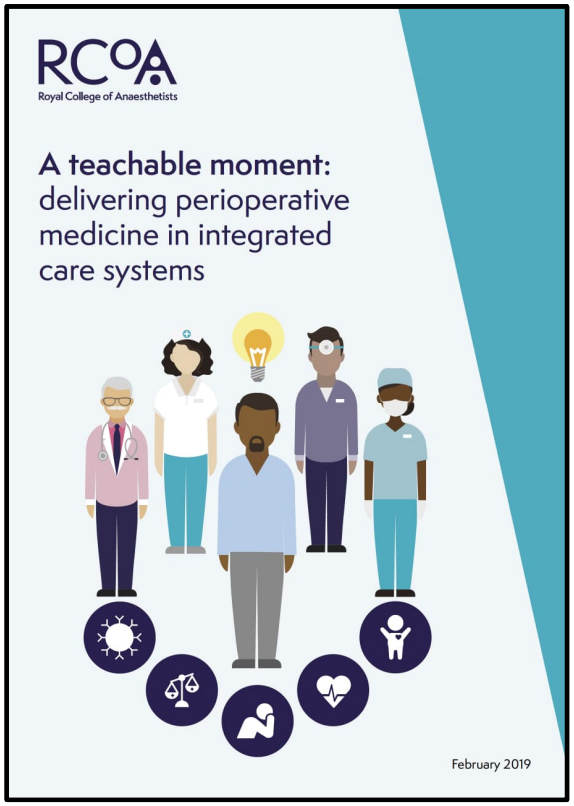
Influencing Policy



I hope that readers of this report will – as I do – identify perioperative medicine as 'pragmatic medicine'; underpinned by common sense insights which do not require re-inventing the wheel. This report demonstrates the compatibility between new models of integrated care and the delivery of perioperative medicine.

The Long Term Plan sets out our ambition for ICSs to be established across the whole country by April 2021. I would encourage all system leaders currently within an ICS, and all of those beginning to plan the development in their area, to read this report and consider how a perioperative approach could improve patient care in their area.

Professor Stephen H Powis
National Medical Director, NHS England

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NHS Long Term Plan

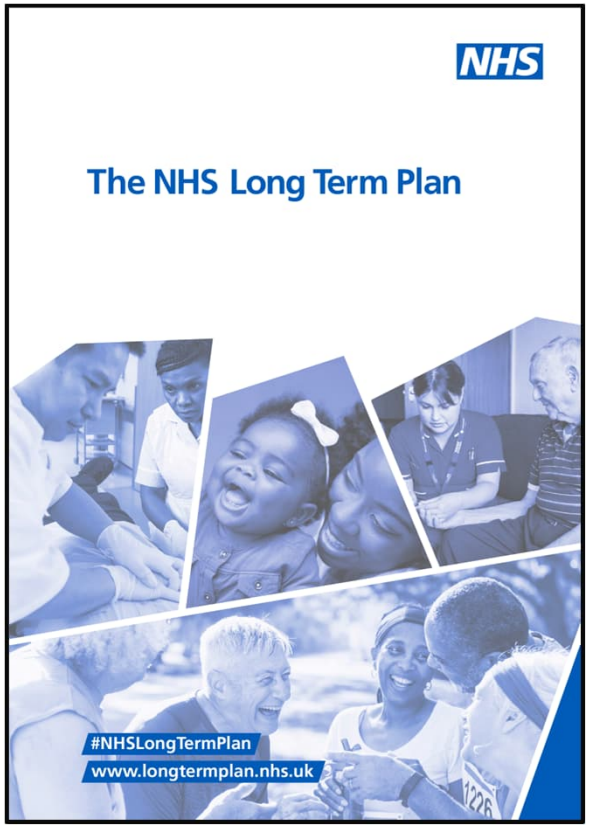
1. **Doing things differently:** we will give people more control over their own health and the care they receive, encourage more collaboration between GPs, their teams and community services, as 'primary care networks', to increase the services they can provide jointly, and increase the focus on NHS organisations working with their local partners, as 'Integrated Care Systems', to plan and deliver services which meet the needs of their communities.

2. **Preventing illness and tackling health inequalities:** the NHS will increase its contribution to tackling some of the most significant causes of ill health, including new action to help people stop smoking, overcome drinking problems and avoid Type 2 diabetes, with a particular focus on the communities and groups of people most affected by these problems.

3. **Backing our workforce:** we will continue to increase the NHS workforce, training and recruiting more professionals – including thousands more clinical placements for undergraduate nurses, hundreds more medical school places, and more routes into the NHS such as apprenticeships. We will also make the NHS a better place to work, so more staff stay in the NHS and feel able to make better use of their skills and experience for patients.

4. **Making better use of data and digital technology:** we will provide more convenient access to services and health information for patients, with the new NHS App as a digital 'front door', better access to digital tools and patient records for staff, and improvements to the planning and delivery of services based on the analysis of patient and population data.

5. **Getting the most out of taxpayers' investment in the NHS:** we will continue working with doctors and other health professionals to identify ways to reduce duplication in how clinical services are delivered, make better use of the NHS' combined buying power to get commonly-used products for cheaper, and reduce spend on administration.



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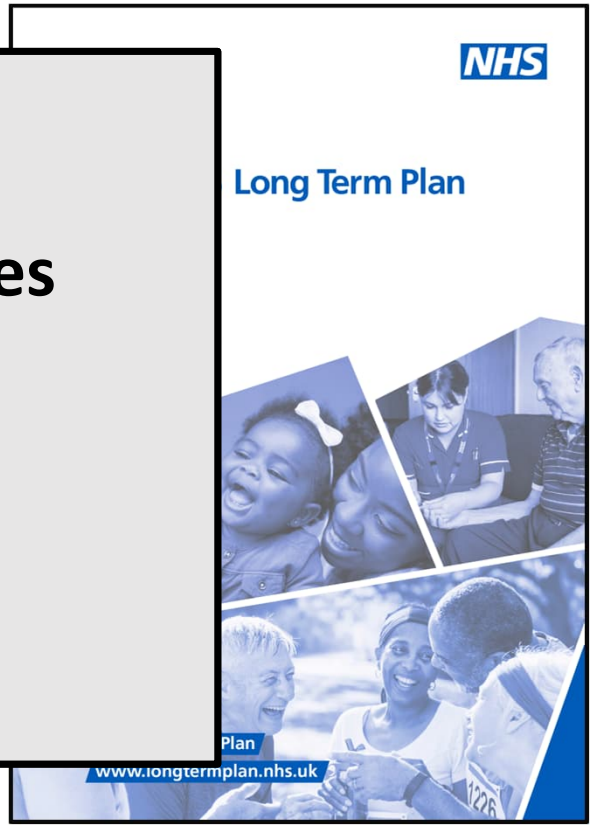
NHS Long Term Plan

1. Integrated Care
2. Prevention & tackling health inequalities
3. Workforce
4. Data & digital
5. Value



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Patient-centred…?

- What would I want for my nearest and dearest?
- What does the whole journey (pathway) look like?
- How can I improve patient outcome and experience through individualization of care?

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Five simple assumptions...

- 1. “I am a partner in my own care”

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Five simple assumptions…

- 1. "**I am a partner in my own care**"

therefore….

- 2. **Right decision…**
- 3. **Well prepared** "best possible state"
- 4. **Properly cared for** "least possible harm"
- 5. **Fully recover** "back to how I was beforehand"

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Five simple assumptions...

- 1. "I am a partner in my own care"

therefore….

- 2. Right decision **SHARED DECISION MAKING**
- 3. Well prepared. **PREHAB & COMORBIDITIES**
- 4. Properly cared for **HAEMODYNAMICS & ANALGESIA**
- 5. Fully recover "back to how I was beforehand"

ENHANCED RECOVERY / CRITICAL CARE / REHAB / EOLC

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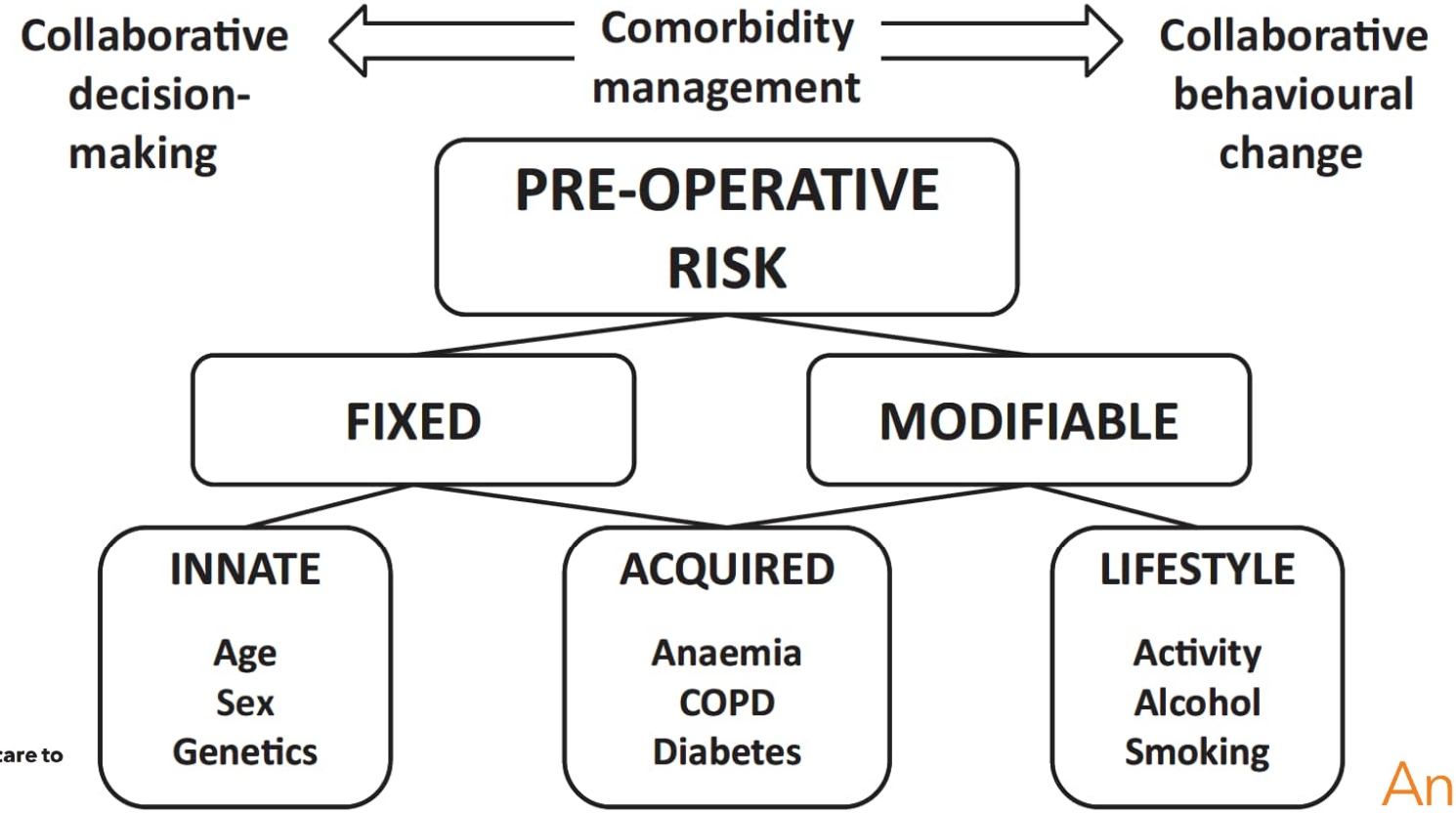
Risk evaluation is fundamental



Review Article

Peri-operative care pathways: re-engineering care to achieve the 'triple aim'

M. P. W. Grocott,[1,2] M. Edwards,[1,2] M. G. Mythen[2,3] and S. Aronson[2,4]

Anaesthesia

Peri-operative medicine, critical care and pain

Risk-guided preparation lists

- Screening
- Assessment
- Shared decision making
- Intervention
  - Prehabilitation
  - Management of long-term conditions (co-mordidities)
  - Intra- and post-operative care

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Shared Decision Making

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Shared Decision Making

“no decision about me without me”

Shared Decision Making

"no decision about me without me"

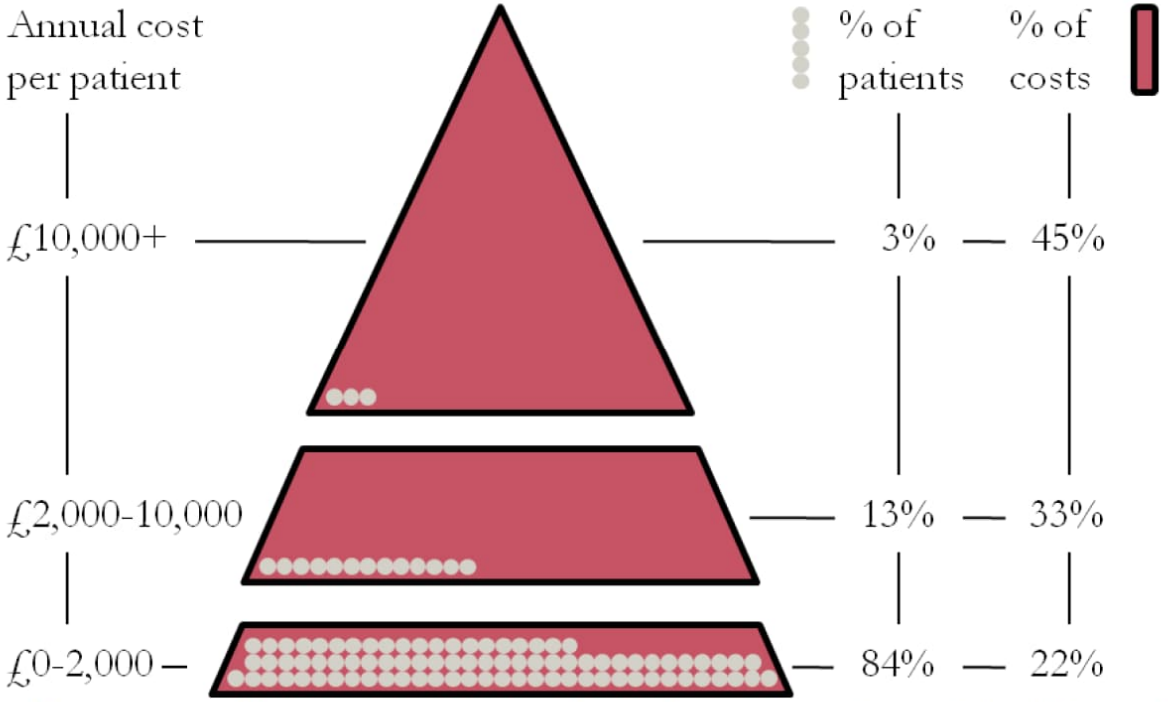
- "Unwarranted variation" in procedure rates
- Less "wrong patient surgery"
- Reduction in high-risk patients:
  - Fewer complications
  - Reduced cost

Shared Decision Making

"no me"

- "Unwar
- Less "w
- Reducti
  - Fewer
  - Reduc

Figure 5.1. Proportion of total costs spent on patients by annual costs



Note: Proportion of total costs spent on patients with annual costs of £0–£2,000, £2,000–£10,000 and £10,000+ (area of shape), with the proportion of all patients in annual cost band (dots).

NICE guidelines

NICE guidelines are evidence-based recommendations for health and care in England.

They set out the care and services suitable for most people with a specific condition or need, and people in particular circumstances or settings.

Our guidelines help health and social care professionals to:

- prevent ill health
- promote and protect good health
- improve the quality of care and services
- adapt and provide health and social care services.

All our guidance applies to Wales too. You can find out more on the Welsh Government website.

Find NICE guidelines

View important dates in the development process and links to all guidelines in development (Excel).

Guideline types

- clinical
- social care
- public health
- medicines practice
- cancer services
- antimicrobial prescribing.

How we develop our guidelines

We work with health and care professionals, people who use services and carers to draft our recommendations. Find out how we choose our topics, draft and publish our guidelines.

Making decisions using our guidelines

Our guidelines can help you make decisions around prescribing medicines, what treatments to recommend and the promotion of safeguarding.

How to get involved

You can help draft our guidelines by registering as a stakeholder or joining a guideline committee.

Shared decision making

Our guidelines support shared decision making between healthcare professionals and those receiving care and treatment.

Maintaining and updating our guideline portfolio

We're changing how we manage and maintain our guidelines by prioritising which topics we monitor and update.

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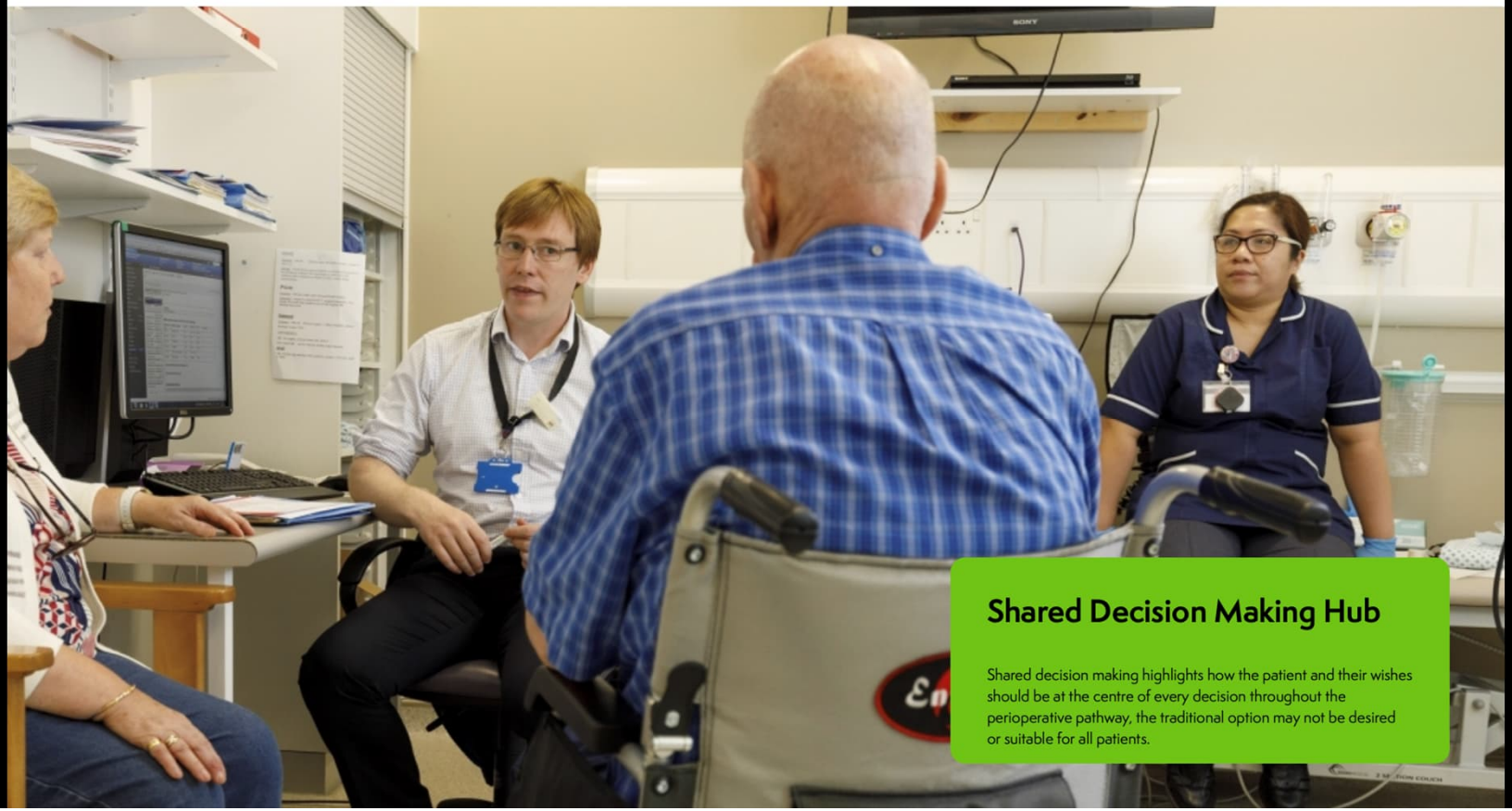
Home > Shared Decision Making for clinicians

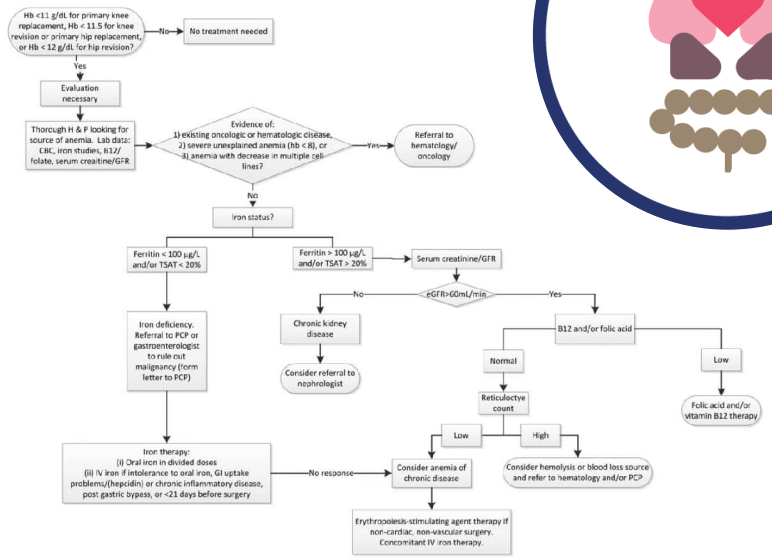
https://cpoc.org.uk

Shared Decision Making for clinicians



Comorbidity management

- Anaemia
- Diabetes
- Respiratory (COPD/Asthma)
- Cardiac failure/CAD
- Implanted devices



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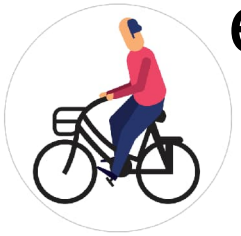
Prehabilitation

"enhancing the functional capacity of a person to enable her/him to withstand a stressful event"



RESILIENCE

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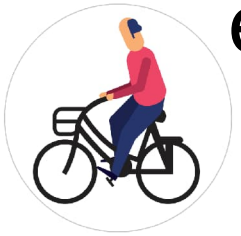
Prehabilitation

"enhancing the functional capacity of a person to enable her/him to withstand a stressful event"



RESILIENCE

UNIQUE OPPORTUNITY

The interval between diagnosis and treatment presents a unique opportunity to intervene that may impact long-term survival

Prehabilitation

"enhancing the functional capacity of a person to enable her/him to withstand a stressful event"

UNIQUE OPPORTUNITY

The interval between diagnosis and treatment presents a unique opportunity to intervene that may impact long-term survival

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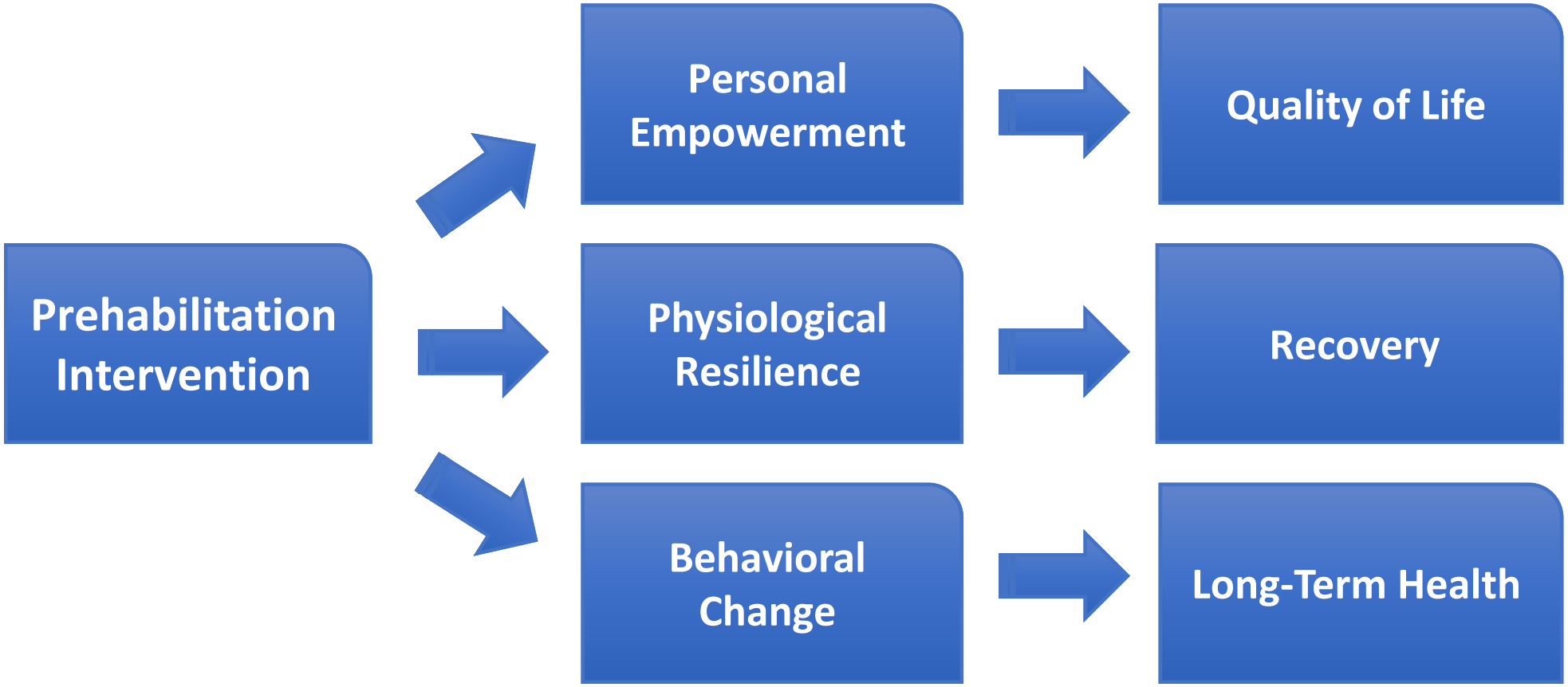
Prehabilitation benefits*



Prehabilitation: "the money"

- MACRO: Health economics = cost-effectiveness
- MESO: Integrated care system/board = capitation
- MICRO: Hospital = business case

INCENTIVISATION

Fee for service
ACTIVITY

Capitation
VALUE

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Prehabilitation: ”the money”

COSTS	BENEFITS Short-term	Medium-term	Long-term
Screening (100%)	Survival	Survival	Survival
Assessment (50%)	QoL	QoL	QoL
Targeted interventions (30-40%)	Complications	Readmissions	“Trajectory”
Specialized interventions (5-10%)	ICU/Hosp LOS	Return-to-work	Burden
”High-risk clinic” = SDM (10%)	Satisfaction	Carer burden	
Comorbidity referrals (20%)	Rehab/care	Behaviour	
	Demand Mx	Disability	
	Flow/cancelations		

Prehabilitation: *societal/ICS*

COSTS	BENEFITS Short-term	Medium-term	Long-term
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	Flow/cancelations		

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Prehabilitation: *hospital*

COSTS	BENEFITS Short-term	Medium-term	Long-term
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Assessment (50%)	QoL	QoL	QoL
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	Demand Mx	Disability	
	Flow/cancelations		

Prehabilitation: *NICE*

COSTS	BENEFITS Short-term	Medium-term	Long-term
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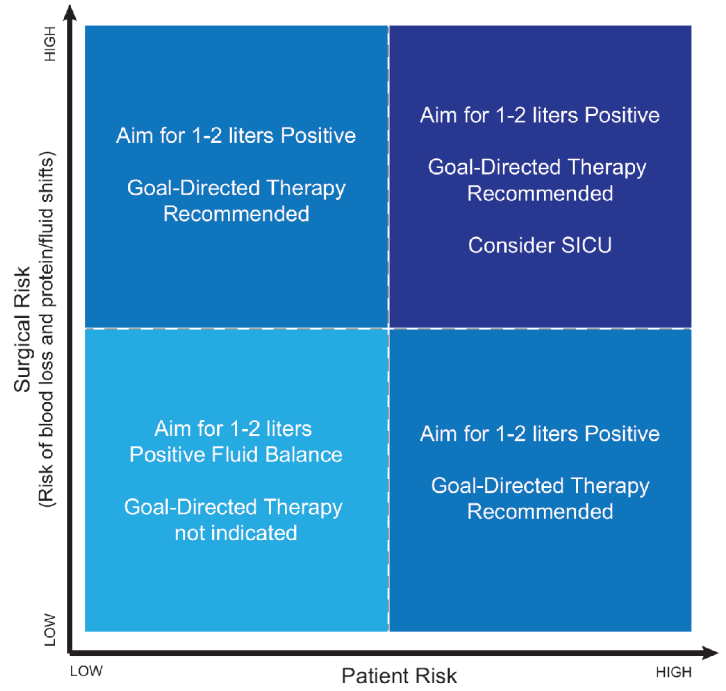
	Demand Mx	Disability	
	Flow/cancelations		

Risk-adapted intraoperative care

- Haemodynamic management
  - Fluids
  - Pressors (inotropes)
- Gas exchange management
  - Oxygen therapy
  - Ventilation
- Analgesia



Miller *Anesthesiology* 2019

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Risk-adapted postoperative care

- Care environment by risk (not procedure)
- “Level 1.5”
- Perioperative Medicine Team
- DrEaMing…..

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Risk-adapted postoperative care

- Care environment by risk (not procedure)
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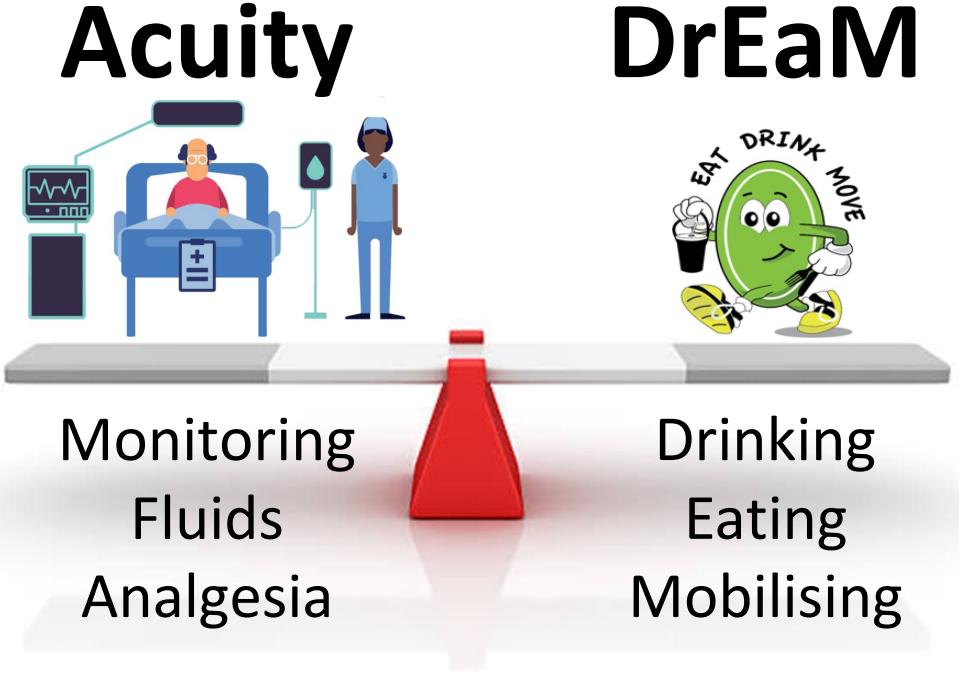

What else needs fixing?

- Transitions of care
- Medication
- Palliative and end-of-life care
- Post-discharge follow-up and communication
- ?????

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Pathway re-engineering

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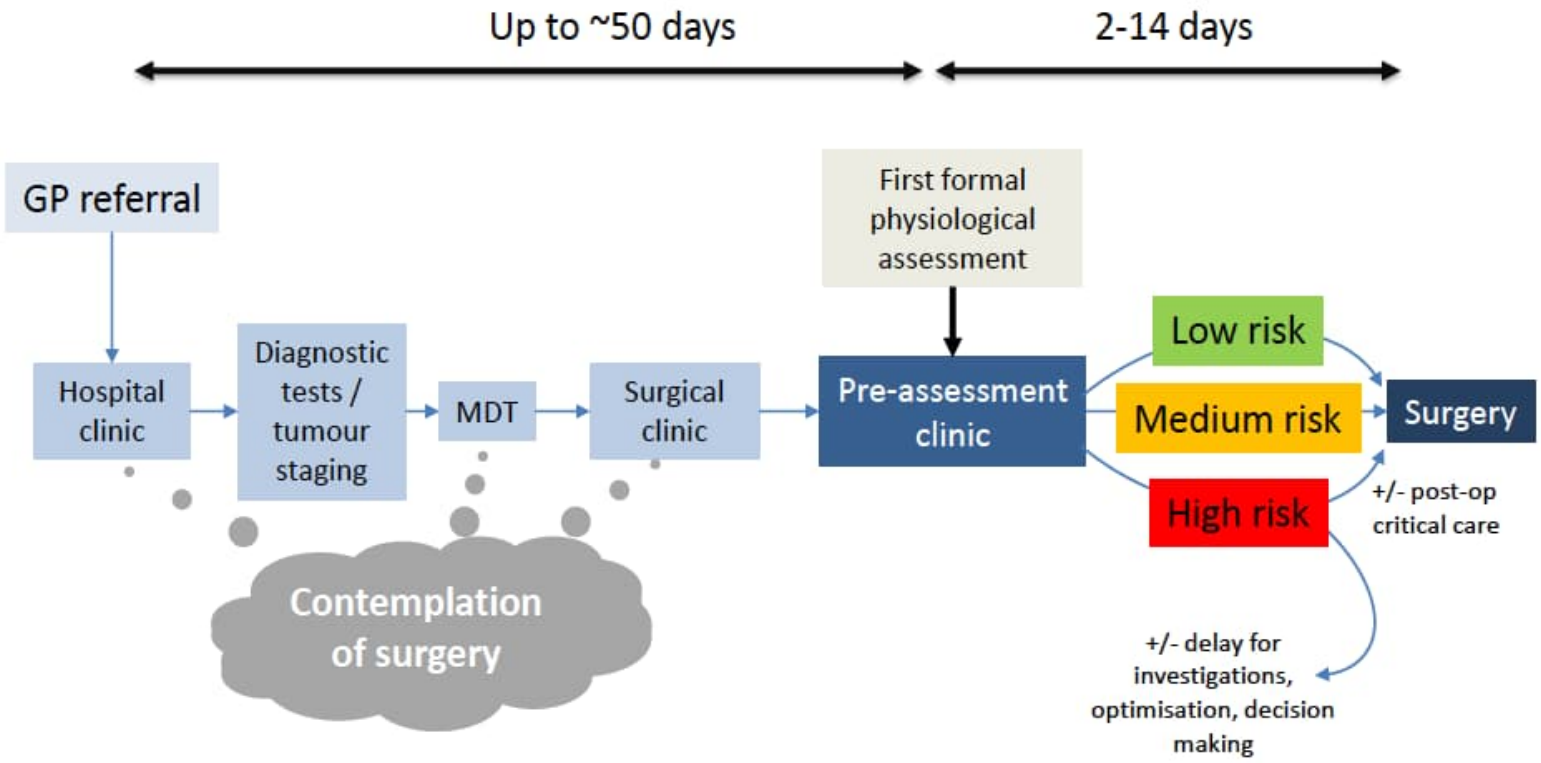
Pathway re-engineering*



Perioperative Medicine BMC

Grocott *Perioperative Medicine* 2017

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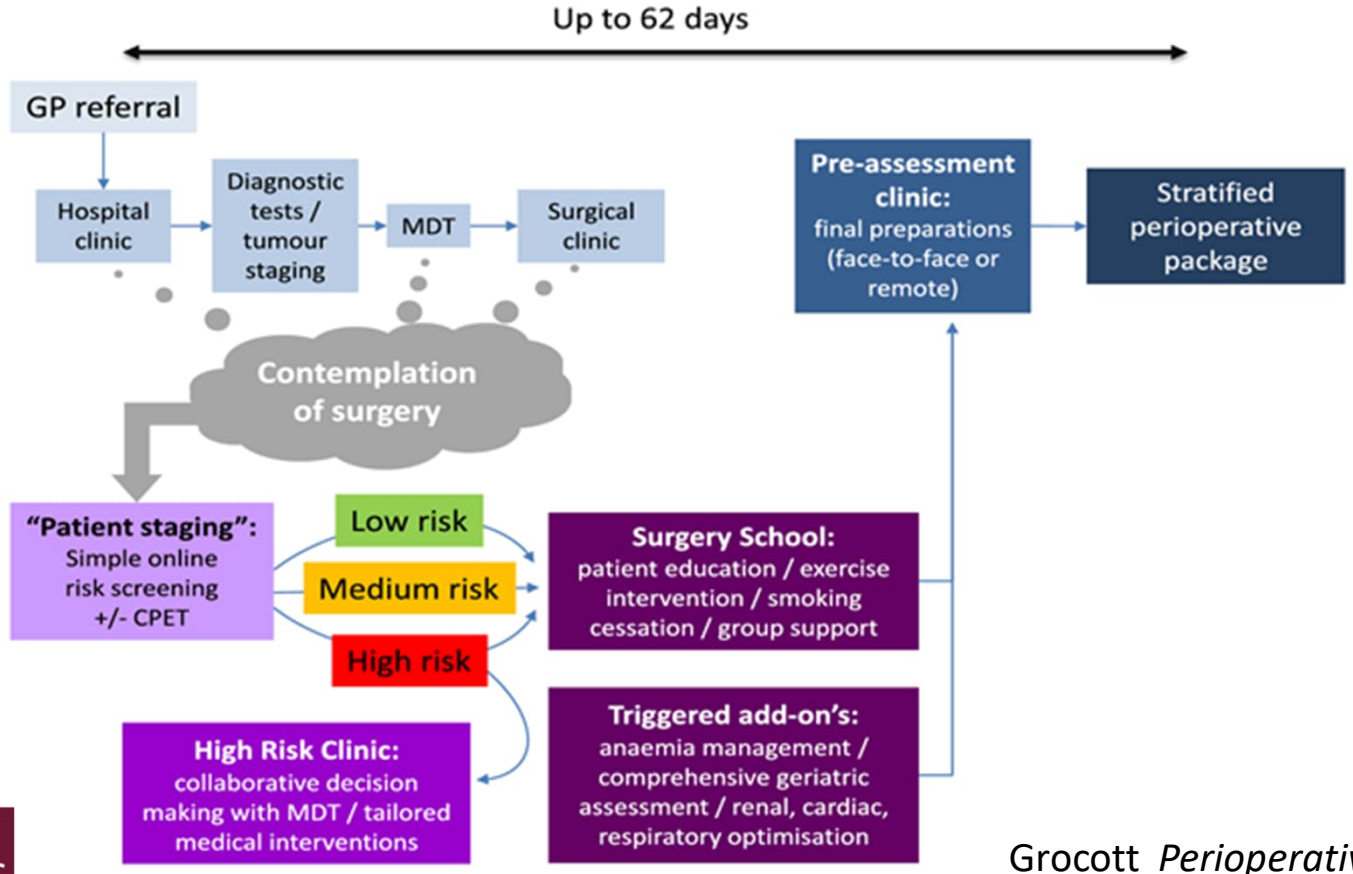
Pathway re-engineering*



Perioperative Medicine BMC

Grocott *Perioperative Medicine* 2017

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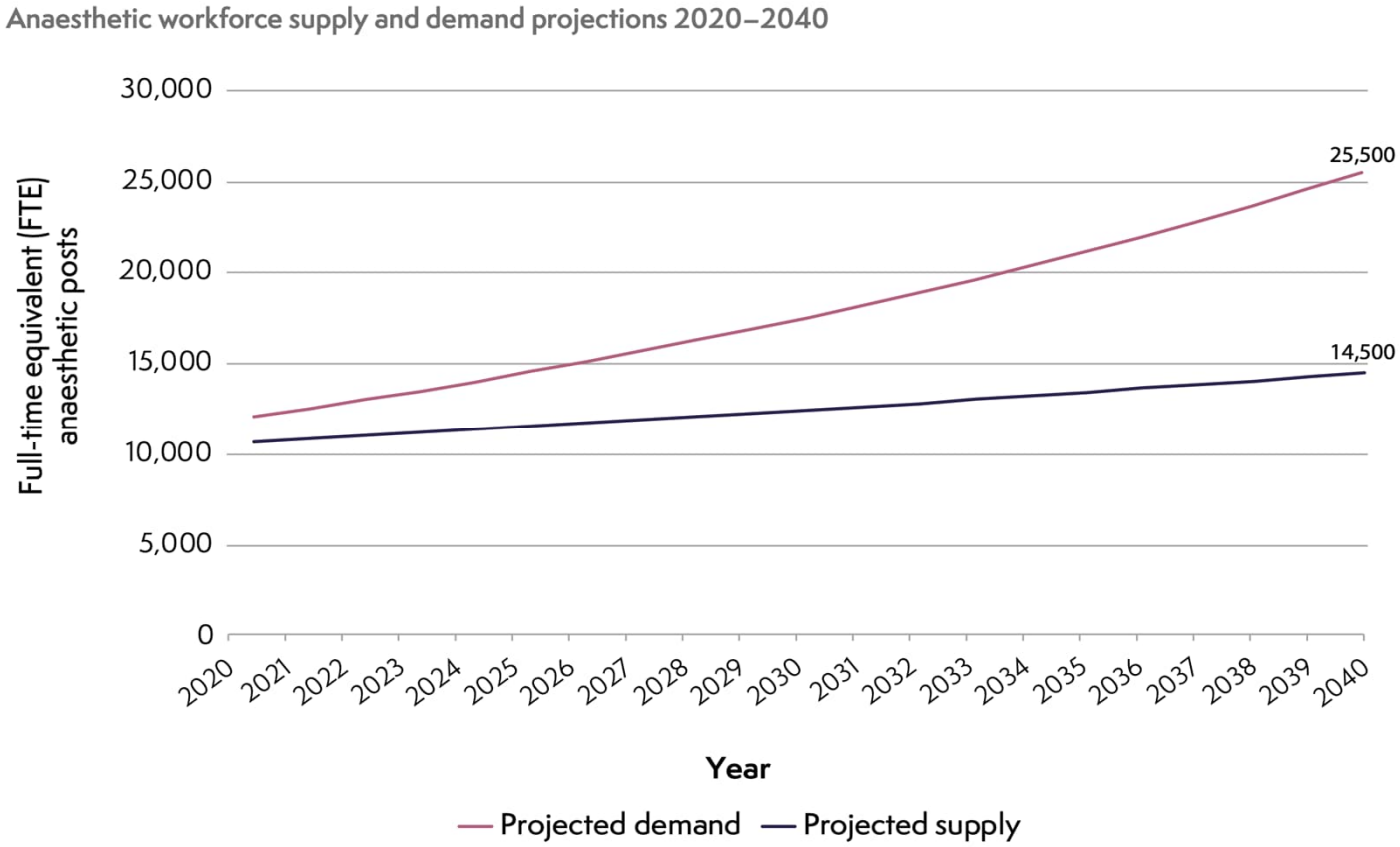
Workforce ‘timebomb’



Solutions

- **Technical innovation**

  automated/digital solutions to augment (or replace) the roles of healthcare providers

- **Task shifting**

  “a process of delegation whereby tasks are moved, where appropriate, to less-specialized health workers” (WHO, 2007)

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Technical innovation

Technical innovation

- Early digital screening*
- Apps & dashboards*
- *Predictive analytics*
- **Generative AI**
- **Robotics**

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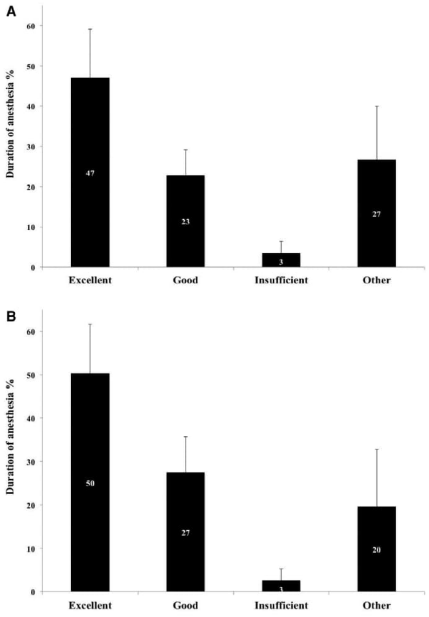
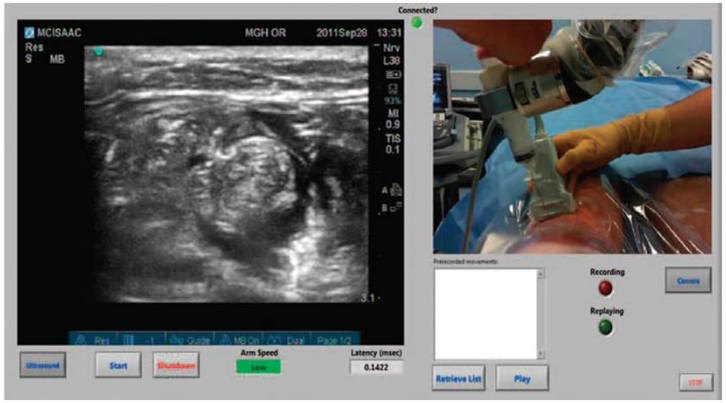
Society for Technology in Anesthesia

Section Editor: **Maxime Cannesson**

The Feasibility of a Completely Automated Total IV Anesthesia Drug Delivery System for Cardiac Surgery

Cedrick Zaouter, MD, MSc,* Thomas M. Hemmerling, MD,† Romain Lanchon, MD,* Emanuela Valoti, MD,‡ Alain Remy, MD,* Sébastien Leuillet, MSc,§ and Alexandre Ouattara, MD, PhD*





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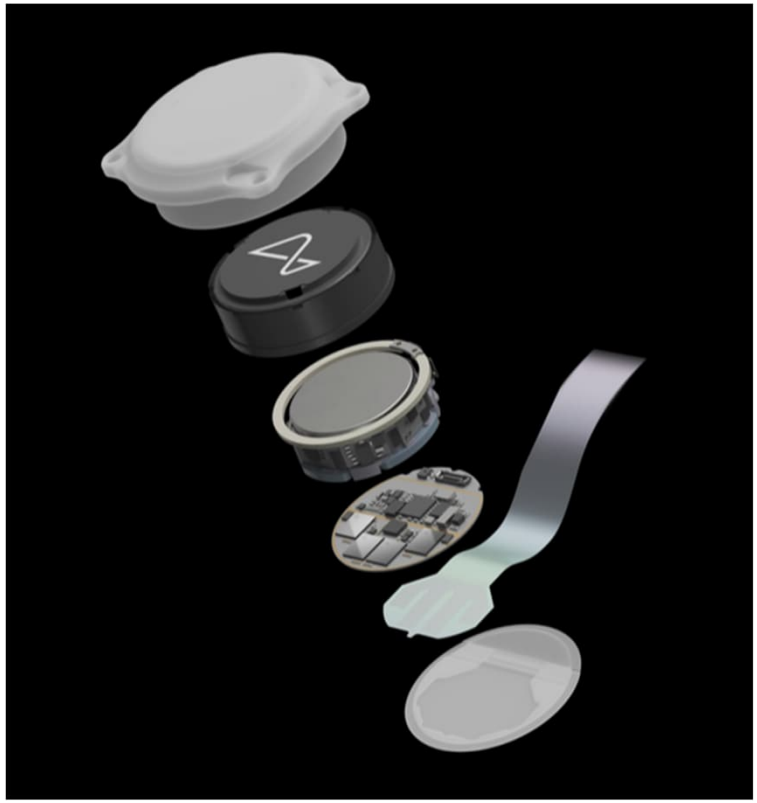

Task shifting

- Physicians
- Nurses
- Physiotherapists
- Dieticians
- Etc.
- E.g. phlebotomy…

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Task shifting

- Physicians
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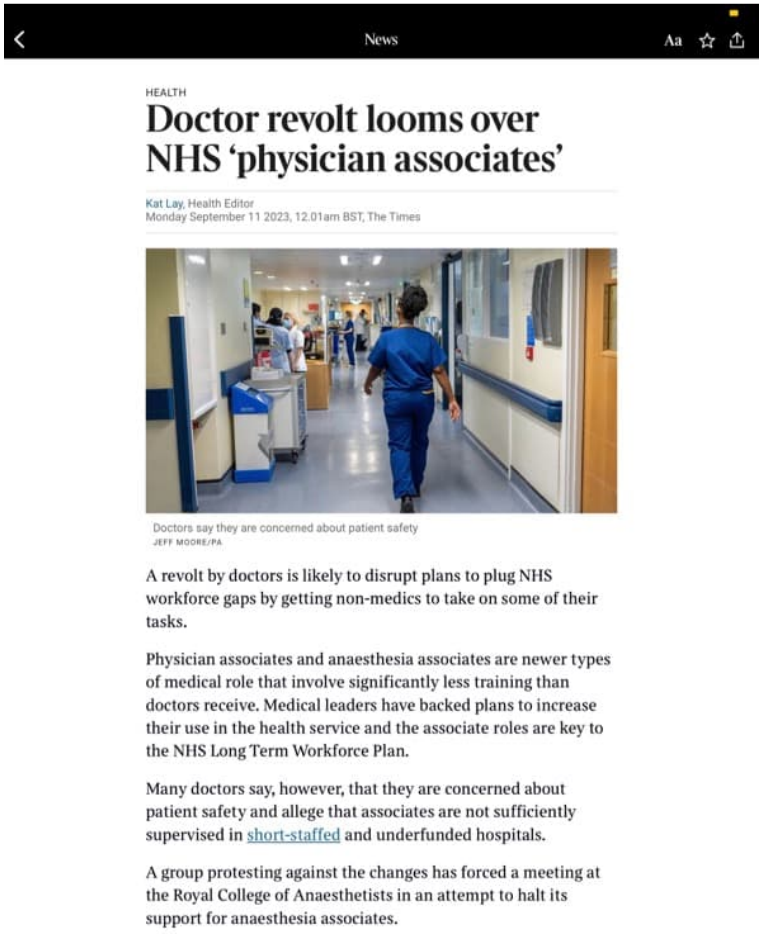
- E.g. phlebotomy…



News Aa

HEALTH

Doctor revolt looms over NHS 'physician associates'

Kat Lay, Health Editor
Monday September 11 2023, 12.01am BST, The Times

Doctors say they are concerned about patient safety
JEFF MOORE/PA

A revolt by doctors is likely to disrupt plans to plug NHS workforce gaps by getting non-medics to take on some of their tasks.

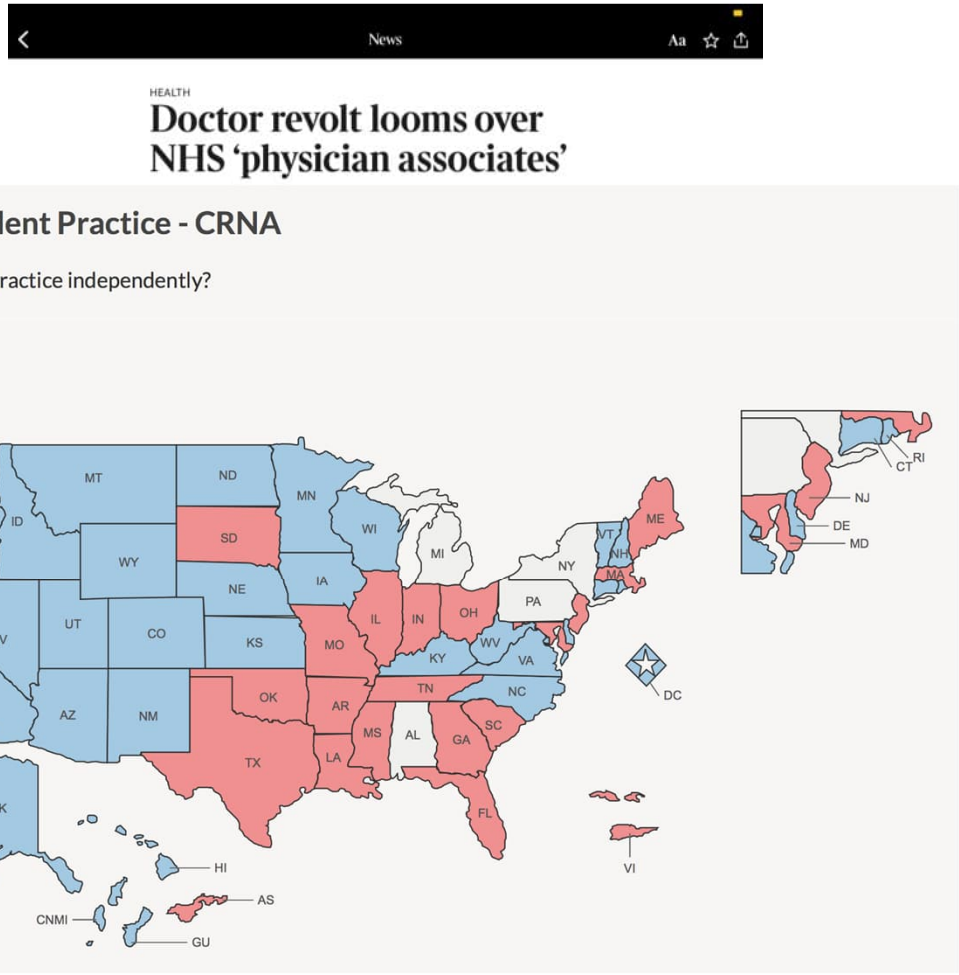
Physician associates and anaesthesia associates are newer types of medical role that involve significantly less training than doctors receive. Medical leaders have backed plans to increase their use in the health service and the associate roles are key to the NHS Long Term Workforce Plan.

Many doctors say, however, that they are concerned about patient safety and allege that associates are not sufficiently supervised in short-staffed and underfunded hospitals.

A group protesting against the changes has forced a meeting at the Royal College of Anaesthetists in an attempt to halt its support for anaesthesia associates.

Task shifting

- Physicians
- Nurses
- Physiotherapists
- Dieticians
- Etc.
- Etc.



Professional judgement = value

- Application of **knowledge** and **experience** to make decisions (judgements) *under conditions of uncertainty*

Perioperative 'Provider'?

- Physician? Internal medicine? Care-of-the-elderly?
- Non-physician?
  - Nurse?
  - Anaesthesia associate?
- Surgeon?
- Anaesthetist?
- Other…….?

Perioperative 'Provider'?

- Cost
- Role displacement
- Depleting other workforces
- Professional roles/status
- Governance & safety *vs.* barriers to entry / pricing power
- Politics….

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Team working

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Fit4Surgery

University of Southampton

NHS University Hospital Southampton NHS Foundation Trust

Summary

- Change is inevitable – how will we rise to the challenge?
- Perioperative care: global problem and solutions
- Early and on-going characterization and evaluation of risk
- Pathway re-design = preparation lists (not waiting lists)
- Breaking down barriers – working as teams
- Individualisation of care

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Thank you for listening

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BREAK

PROVINCIAL SURGICAL PRIORITIES

Introductions

Dr. Sam Bugis

Dr. Ahmer Karimuddin

Kristy Anderson

Dr. Dave Konkin

Mark Spelliscy

Provincial Surgical Priorities

PCAN Summit

November 20, 2023

BRITISH COLUMBIA | Ministry of Health

Presenter Disclosure

- Kristy Anderson, Assistant Deputy Minister, Hospital and Provincial Services Division, Ministry of Health
- I have nothing to disclose.

Emma's Story

- 68-year-old self-employed woman with hip pain


PATIENT
SPACE
OPERATING ROOM TIME
DATA
BEDS
FUNDING
INFORMATION
SUPPORT SERVICES
TECHNOLOGY
PRIMARY CARE
PROVIDERS

Background – past initiatives

BRITISH COLUMBIA | Ministry of Health

Hip/Knee/Dental (2017/18-2020)

Surgical Renewal (May 2020)

A Commitment to Surgical Renewal in B.C.

Spring – Fall

May 7, 2020

Surgical Renewal Highlights

BRITISH COLUMBIA | Ministry of Health

- Directly contacted 111,584 patients who were on the waitlist prior to May 7, 2020
- Completed or booked ALL surgeries postponed due to COVID waves
- Completed more surgeries in 22/23 than ever before (350,886)
- 219 surgeons, 137 anesthesiologists, 385 perioperative nurses, 7 general physician/family physician anesthetists, and 120 medical device reprocessing technicians added
- Increased operating room time by 31,219 hours in 2022/23 (equal to adding over 15 new ORs)
- Annual new funding of $250M
- Reports, reports, reports – active monitoring

Context – Our Environment

BRITISH COLUMBIA | Ministry of Health

Though we have:

- Completed COVID postponements
- Performed more surgeries
- Increased operating room hours (capacity)
- Increased urgent and non-urgent access across some surgeries
- Trained and recruited more surgical teams

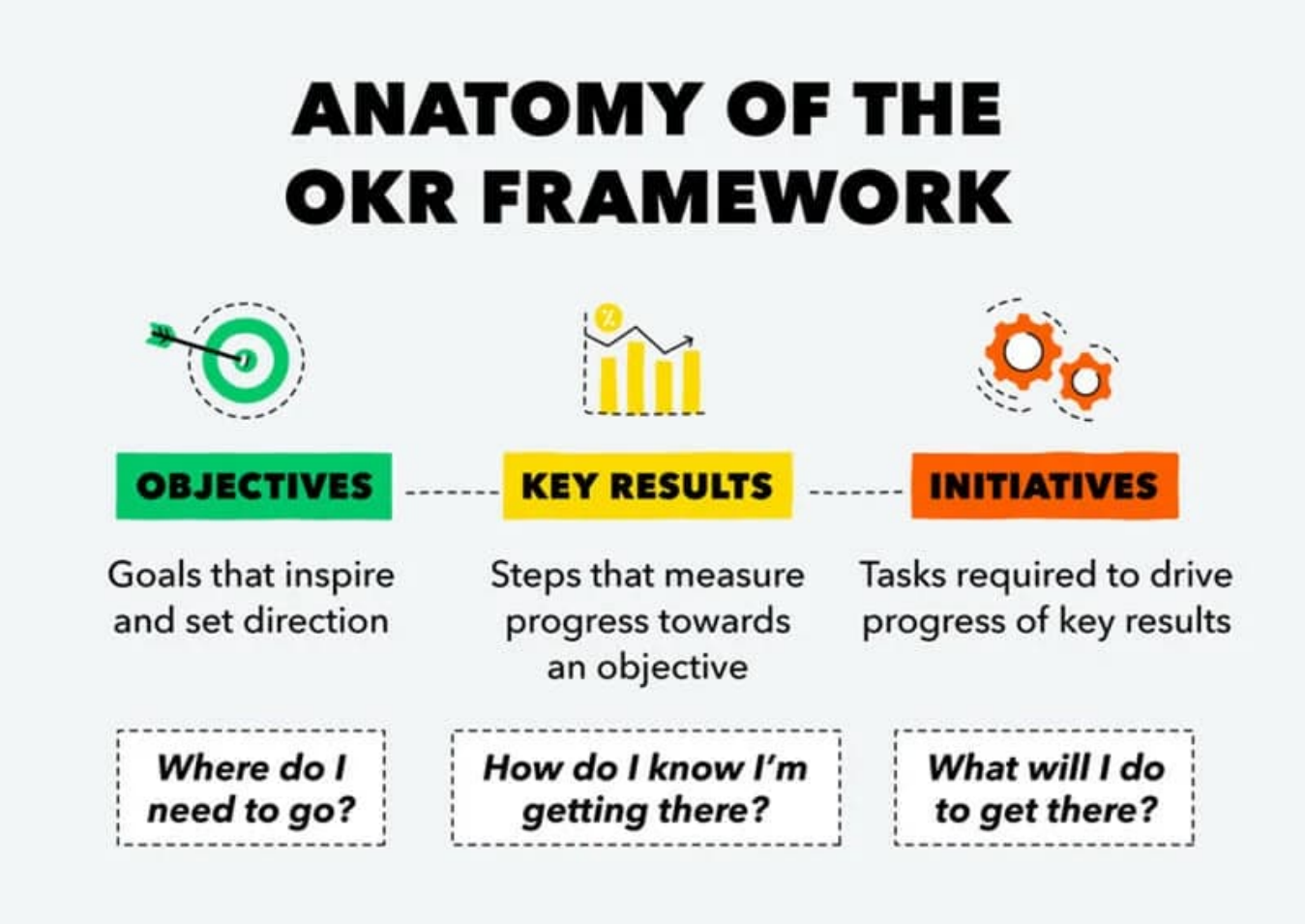
We see and experience:

- Continuous HHR gaps
- Hospital capacity bed impacts
- The number of urgent cases completed within 4 weeks is unchanged or decreasing in some areas
- Scheduled urgent and non- urgent waitlists are growing across some surgical specialities
- Some people are waiting even longer for surgery than before
- Competing priorities – emergency, urgent/long waiters; cancer, transplant, gynecological surgeries

Where to from here? OKRs

Objectives and Key Results (OKRs) provide a framework for organizations to execute and achieve their desired strategies through simple, collaborative goal setting.

Originally developed in the 1970s by Intel CEO Andrew Grove. Now used by organizations across the globe including Google, Disney, Samsung and Amazon.



OKRs for Surgery in BC (2022/23)

BRITISH COLUMBIA | Ministry of Health

- **Objective A - Provide timely surgical access by having the right volume of operating room time, in the right place, at the right time**
  - KR: Increase provincial OR hours
  - KR: Achieve wait time site targets for urgent and non-urgent scheduled surgeries as set out in the Surgical Services 5 Year Plan
- **Objective B - Improve surgical capacity**
  - KR: Develop a provincial Anesthesia Locum Initiative by December 30, 2023
  - KR: Recruit additional surgeons and anesthesiologists, and train additional perioperative nurses by March 31, 2024
  - KR: Develop and implement provincial surgical optimization standards, to ensure surgical services are efficient and effective
  - KR: Implement standard digital Pre-Surgical Screening for surgeries

OKRs for Surgery in BC (2022/23)

BRITISH COLUMBIA | Ministry of Health

- ***KR – Operating Room Hours***
  - ***Site level*** operating room hour targets
    - Initiatives determined by HAs/sites
- ***KR – Wait Times***
  - ***Site level*** wait time targets for urgent and non-urgent surgeries
    - Initiatives determined by HAs/sites

Goals	Year 1 22/23	Year 2 23/24	Year 3 24/25	Year 4 25/26	Year 5 26/27
80% of Urgent Scheduled Surgeries completed within 4 weeks	50-70%	60-80% (80%)	60-80% (80%)	80%	80%
No more than 5% of Non-Urgent Scheduled Surgeries Waiting over CB	52, 78, & 104 weeks	36, 52 & 78 weeks	26 & 36 weeks	26 weeks & CB	CB

OKRs for Surgery in BC (2022/23)

BRITISH COLUMBIA | Ministry of Health

- ***KR – Anesthesia Locum Initiative***
  - **Target:** implementation date
  - **Action/initiative needed?** Determined by a variety of groups
- ***KR – Recruit additional surgeons and anesthesiologists, and train additional perioperative nurses***
  - **Target:** number of
  - **Action/initiative needed?** Determined by a variety of groups
- ***KR - Develop and implement provincial surgical optimization standards, to ensure surgical services are efficient and effective***
  - **Target:** implementation date and locations
  - **Action/initiative needed?** Determined by a variety of groups
- ***KR - Implement standard digital Pre-Surgical Screening for surgeries***
  - **Target:**
  - **Action/initiative needed?** Determined by a variety of groups including primary care

Conclusion – Call To Action (the How)

BRITISH COLUMBIA | Ministry of Health

Opportunities to Rethink and Redesign:

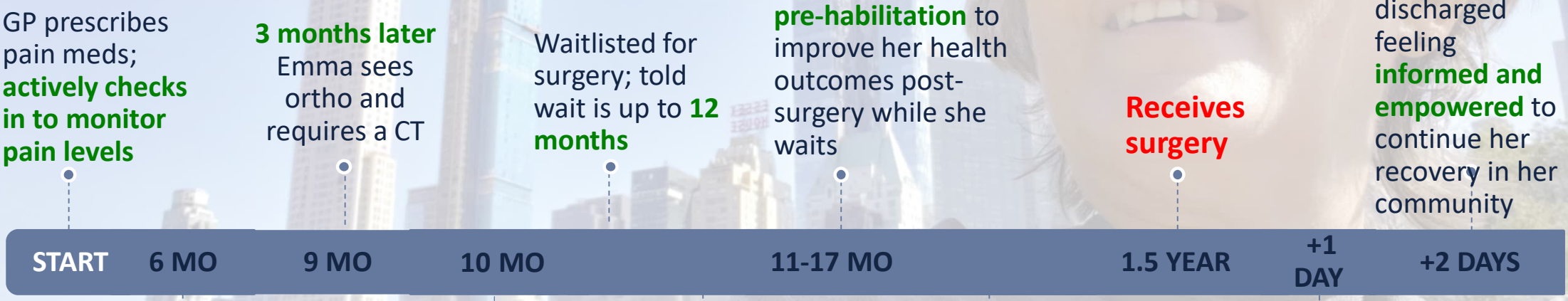
- OR site allocations
- First In First Out (FIFO)
- OR Time Utilization
- Funding - Incentives
- Waitlist Management
- Surgical Teams (recruitment, redesign, training etc.)
- Optimization Standards Prehabilitation, Post Surgery
- Virtual Strategies, Digital Enablement…

What is in your control?

- ❑ Surgical Teams
- ❑ Surgical Divisions
- ❑ Health Authorities
- ❑ Patients

Emma's Story – Future State

- 68-year-old self-employed woman with hip pain



GP prescribes pain meds; **actively checks in to monitor pain levels**

3 months later Emma sees ortho and requires a CT

Waitlisted for surgery; told wait is up to **12 months**

Emma does **pre-habilitation** to improve her health outcomes post-surgery while she waits

Receives surgery

Emma is discharged feeling **informed and empowered** to continue her recovery in her community

After 6 months, GP refers to ortho due to continued pain; **tells Emma it's a 3 month wait**

Emma gets CT and sees ortho **within the next month**

Emma **does Pre-Surgical Screening** to identify any opportunities for pre-habilitation

Hospital sends Emma an **email and text** informing her of her surgery date

Discharge planner visits Emma to set up follow up care in her community; receives a **text and email** with the information

Time to Hear From You

Questions & Discussion

BRITISH COLUMBIA | Ministry of Health

PANEL DISSCUSSION QUESTION & ANSWER PERIOD

JOIN AT:

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#PCANQA


BREAK OUT

Breakouts… Rules of Engagement

What are we looking for?

- Solution-Focused
- Active Participation
- Open-Mindedness
- Respectful Communication
- Encourage Creativity
- Build on Others' Ideas
- Actionable Strategies With Current Resources

Breakout Topics

Workshop 1: Steveston Room	Workshop 2: Airport Ballroom
Spreading Surgical Prehabilitation	Increasing Surgical Capacity

WORKSHOP #1:

SURGICAL PREHABILITATION

PCAN PERIOPERATIVE CLINICAL ACTION NETWORK

INAUGURAL PCAN SUMMIT

WORKSHOP 1: SURGICAL PREHABILITATION
WORKSHOP 3: PRE-SURGICAL SCREENING

NOVEMBER 20TH, 2023

SSC SPECIALIST SERVICES COMMITTEE

SPECIALIST SERVICES COMMITTEE

Prehabilitation

in British Columbia, Canada

(SPOC)

AN SSC LED INITIATIVE IN PARTNERSHIP WITH SHARED CARE AND FPSC | #SPOC

sscbc.ca

S - Surgical

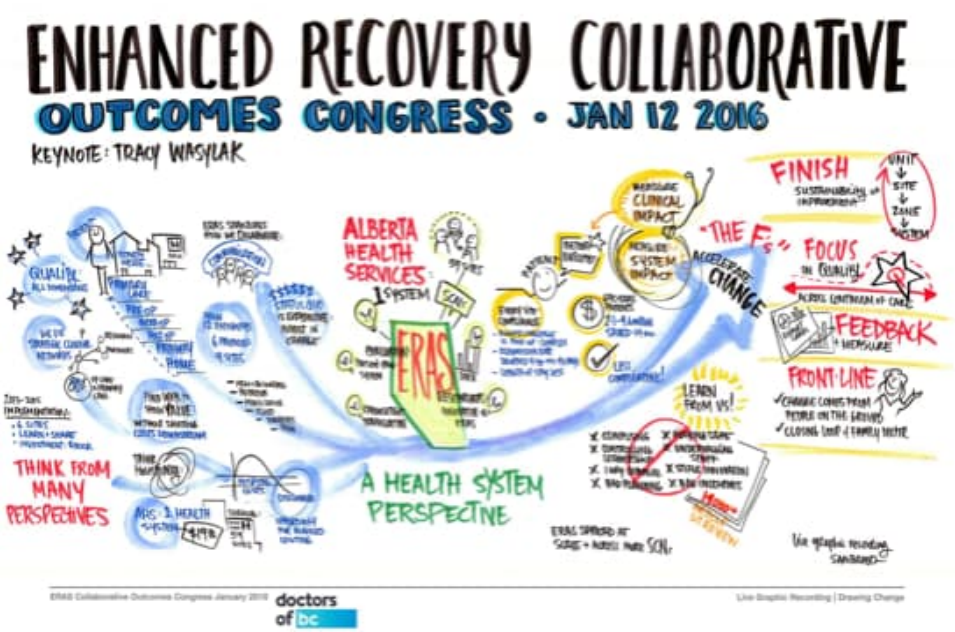
P - Patient

O - Optimization

C - Collaborative

HOW WE GOT HERE

2018 BC Surgical Summit



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SSC SPECIALIST SERVICES COMMITTEE

FPSC Family Practice Services Committee

SharedCare Partners for Patients

IHI Breakthrough Series (BTS)

An improvement method that relies on SPREAD and adaption of existing knowledge to multiple settings to accomplish a common aim

Factors that contribute to success

- Action orientated--Model of improvement. Sense of urgency
- Measurement system that connects testing to progress
- Great learning session and robust action periods
- Culture established—"all teach, all learn",.
  Sense of family and support

COLLABORATIVE MODEL

SPOC is Born

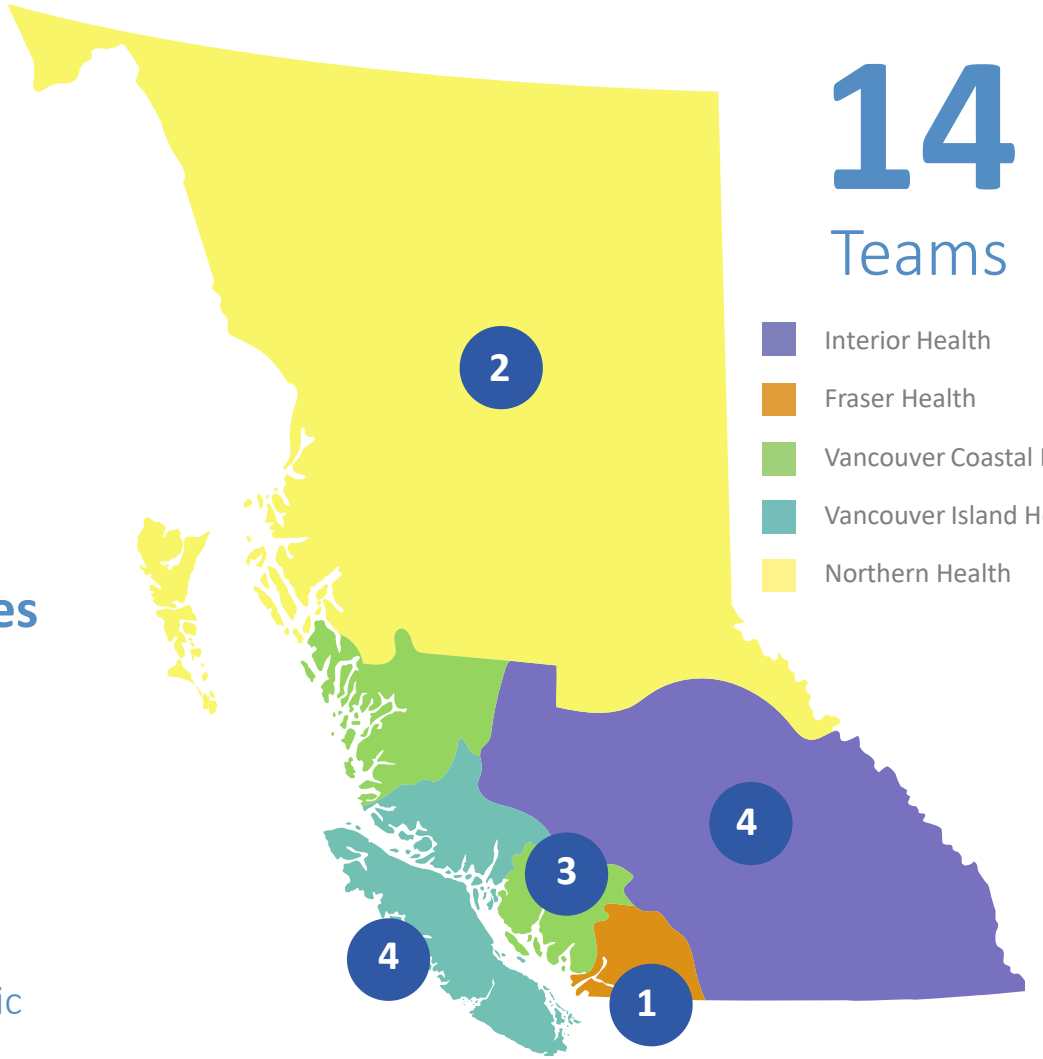
SPOC 1.0 Sept 2019 to May 2021

Pilot Sites

- VGH
- St. Paul's
- Royal Jubilee
- UHNBC
- RIH
- Campbell River Hospital

Additional Sites

- Prince Rupert
- Trail
- Nanamio
- Penticton
- Kelowna
- Duncan
- Change Pain Clinic



14

Teams

- Interior Health
- Fraser Health
- Vancouver Coastal Health
- Vancouver Island Health
- Northern Health

SPOC 1.0
Specialties

- Hip & Knee replacements
- Gynecology—benign & oncology
- Urology– benign & oncology
- General Surgery (colorectal)
- Spine
- Plastics

SPOC 2.0

April 2022-May 2023
13 more hospital sites

Northern Health

- GR Baker Memorial Hospital – Quesnel
- Kitimat General Hospital

Island Health

- Comox Valley Hospital
- West Coast General Hospital – Port Alberni

Interior Health

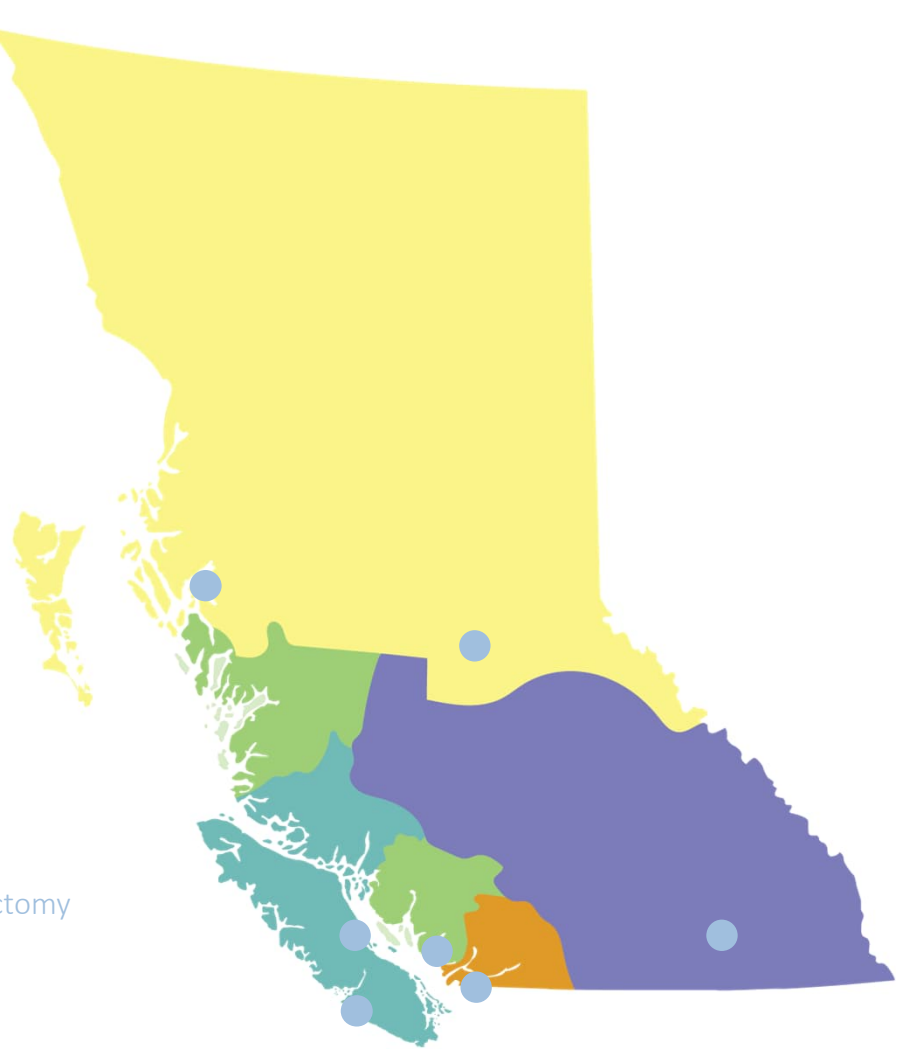
- Vernon Jubilee Hospital

Vancouver Coastal

- Vancouver General Hospital
  - Complex spine

Fraser Health

- Abbotsford Regional Hospital
- Chilliwack General Hospital
- Eagle Ridge Hospital
- Peace Arch Hospital
- Royal Columbian Hospital
- Surrey Memorial Hospital
  - Esophagectomy & Gastrectomy
- Ridge Meadows Hospital
- Langley Memorial Hospital

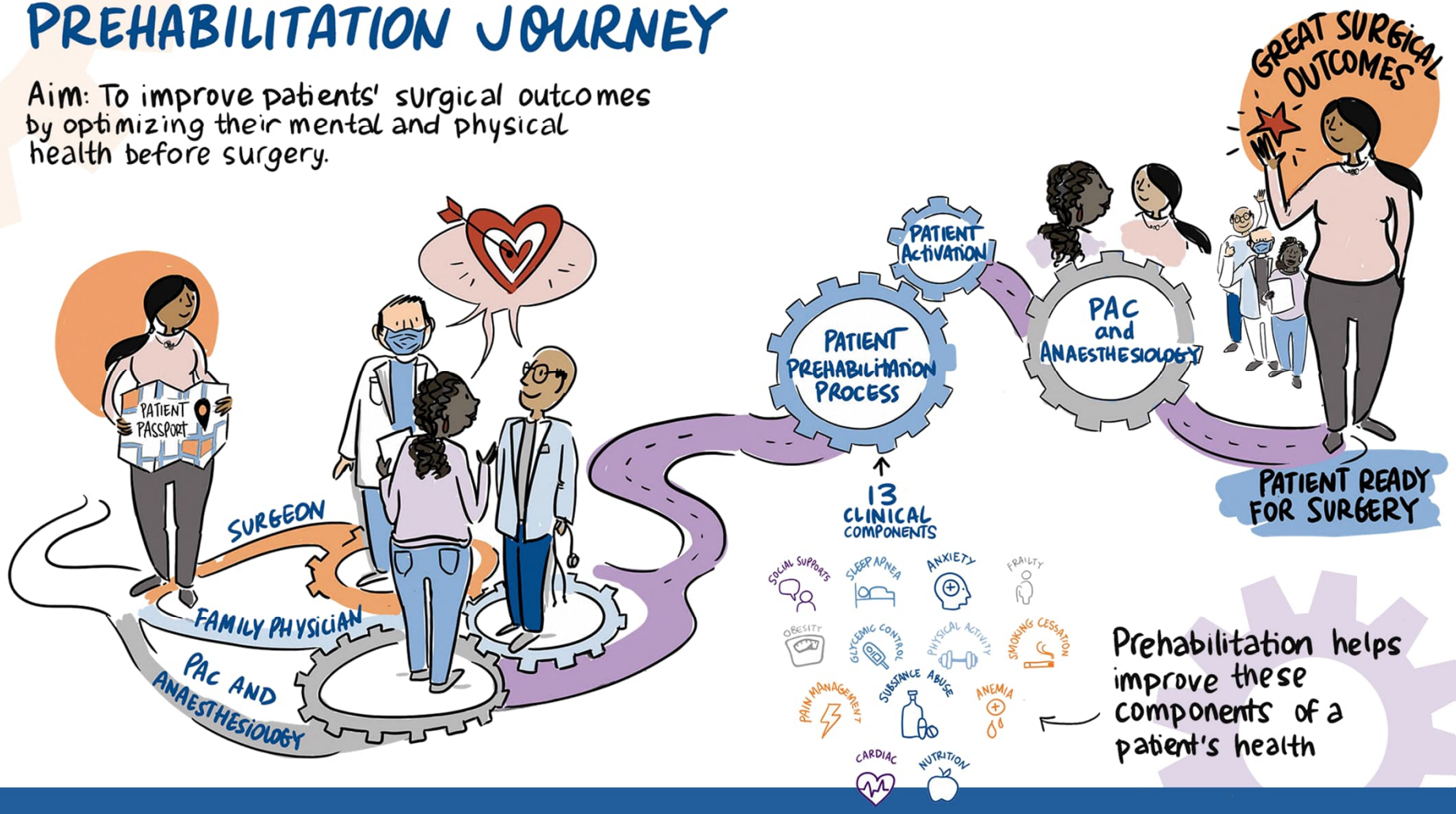


SPOC 2.0
Specialties

- Hip & Knee replacements
- Gynecology—benign & oncology
- Urology– benign & oncology
- General Surgery (colorectal, inguinal hernias, gastrectomy)
- Spine—1-3 levels, Complex instrumentation
- ENT
- Plastics
- Thoracics--esophagectomy

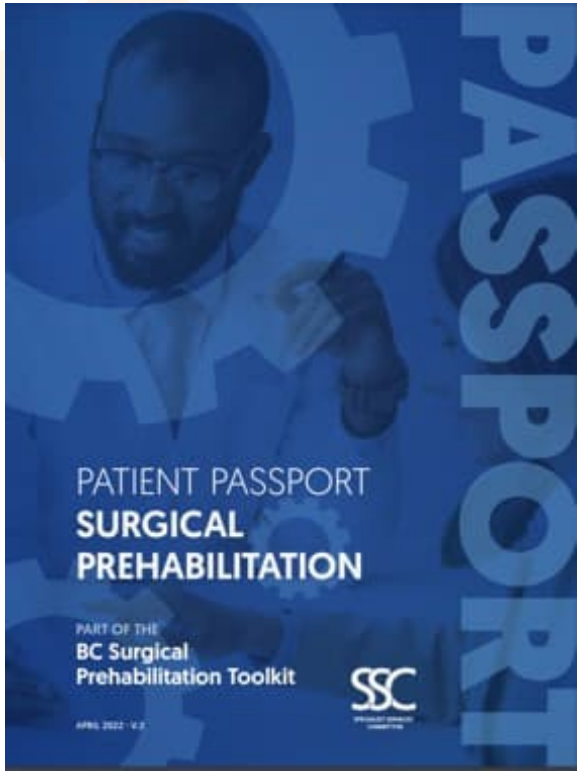
PATIENT SURGICAL PREHABILITATION JOURNEY

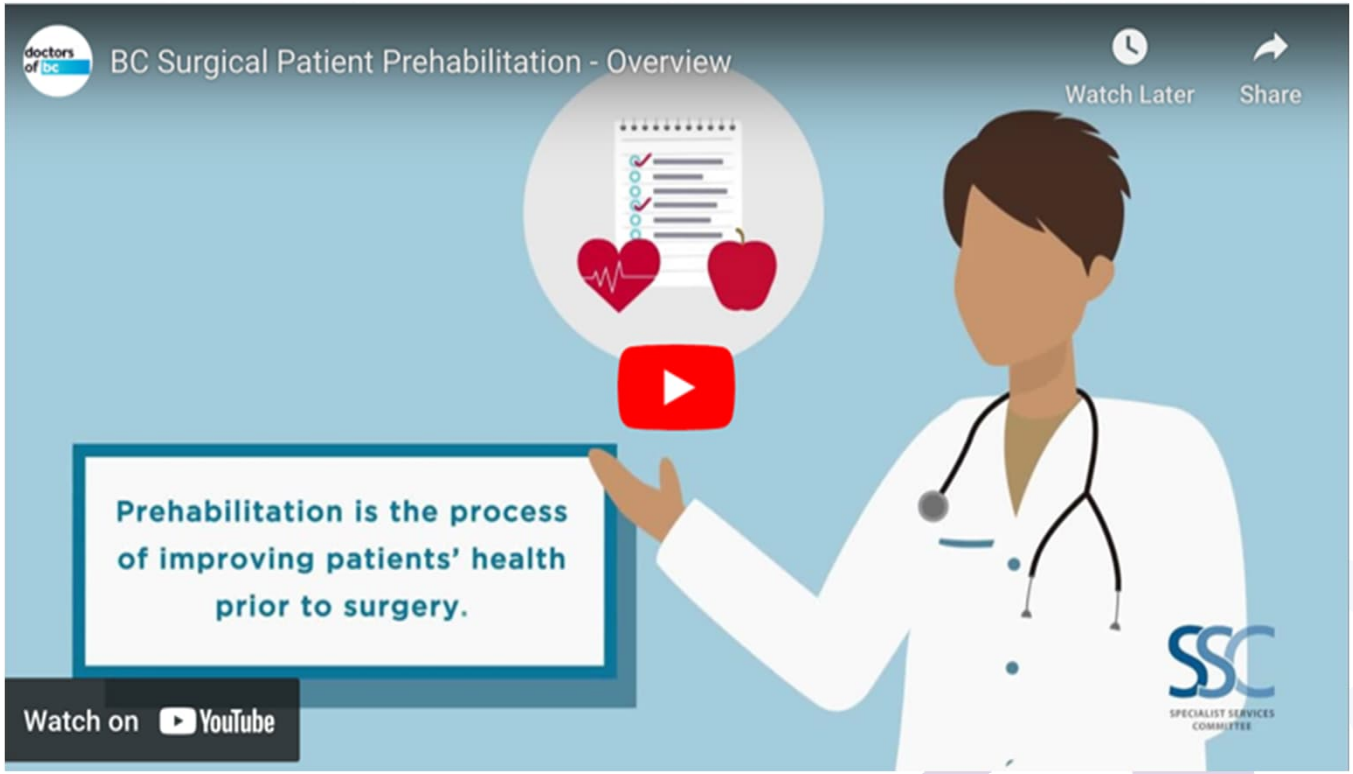
Aim: To improve patients' surgical outcomes by optimizing their mental and physical health before surgery.



Prehabilitation helps improve these components of a patient's health

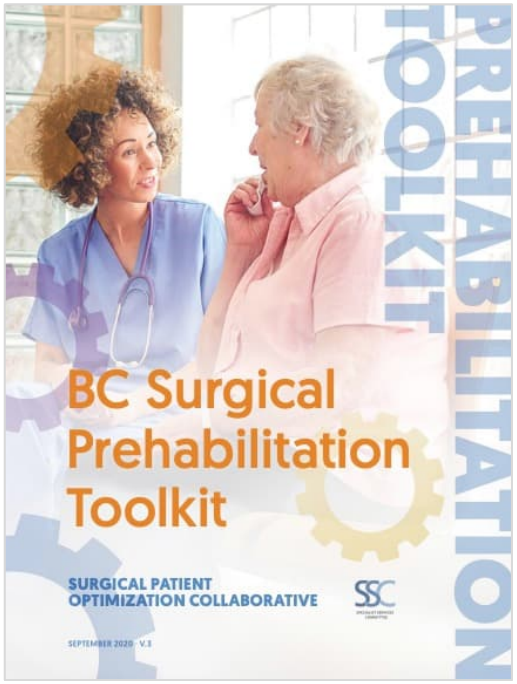
PATIENT ACTIVATION AND ENGAGEMENT





Four languages: English, Mandarin, Cantonese, Punjabi

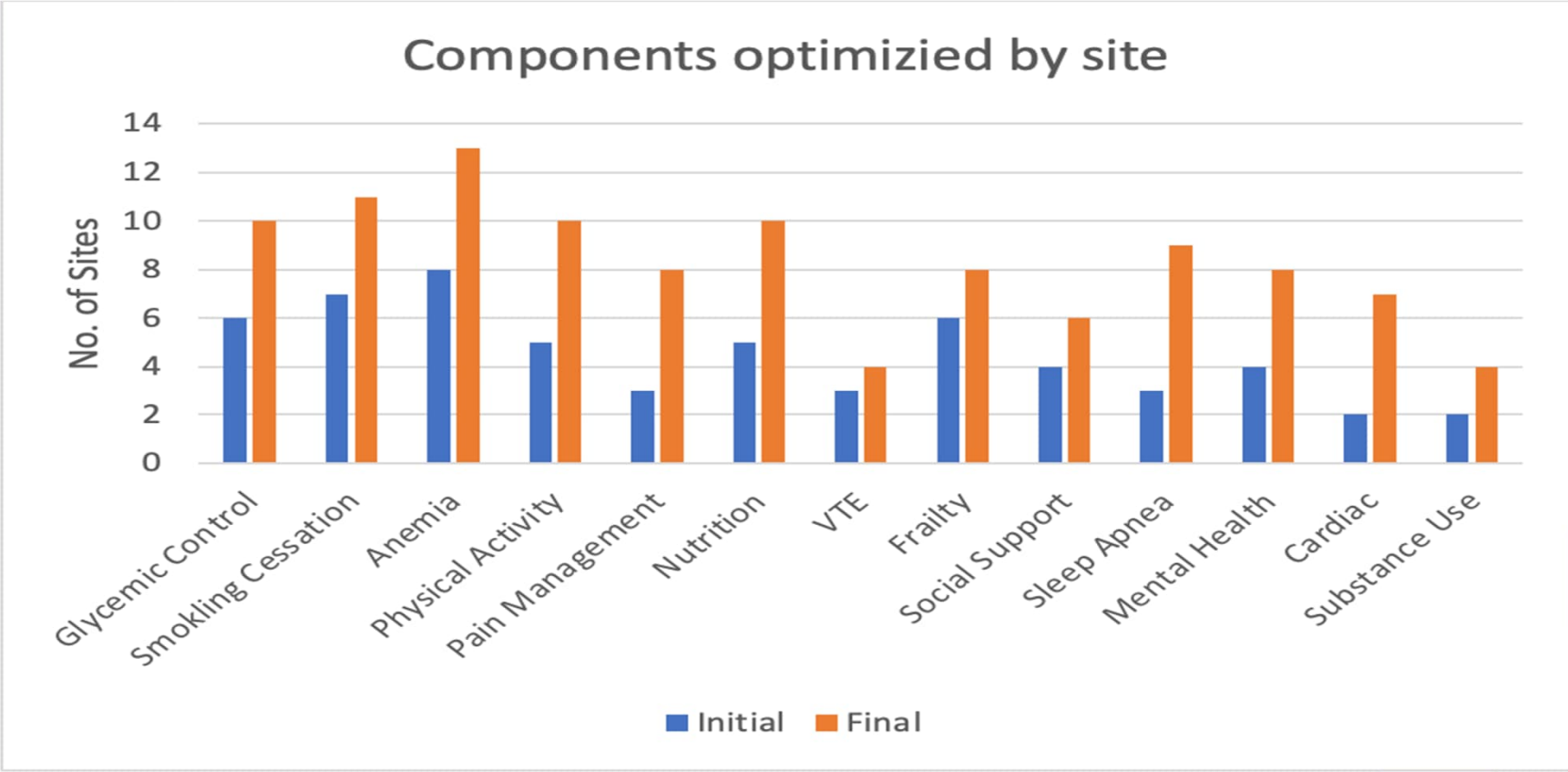
SPOC Toolkit

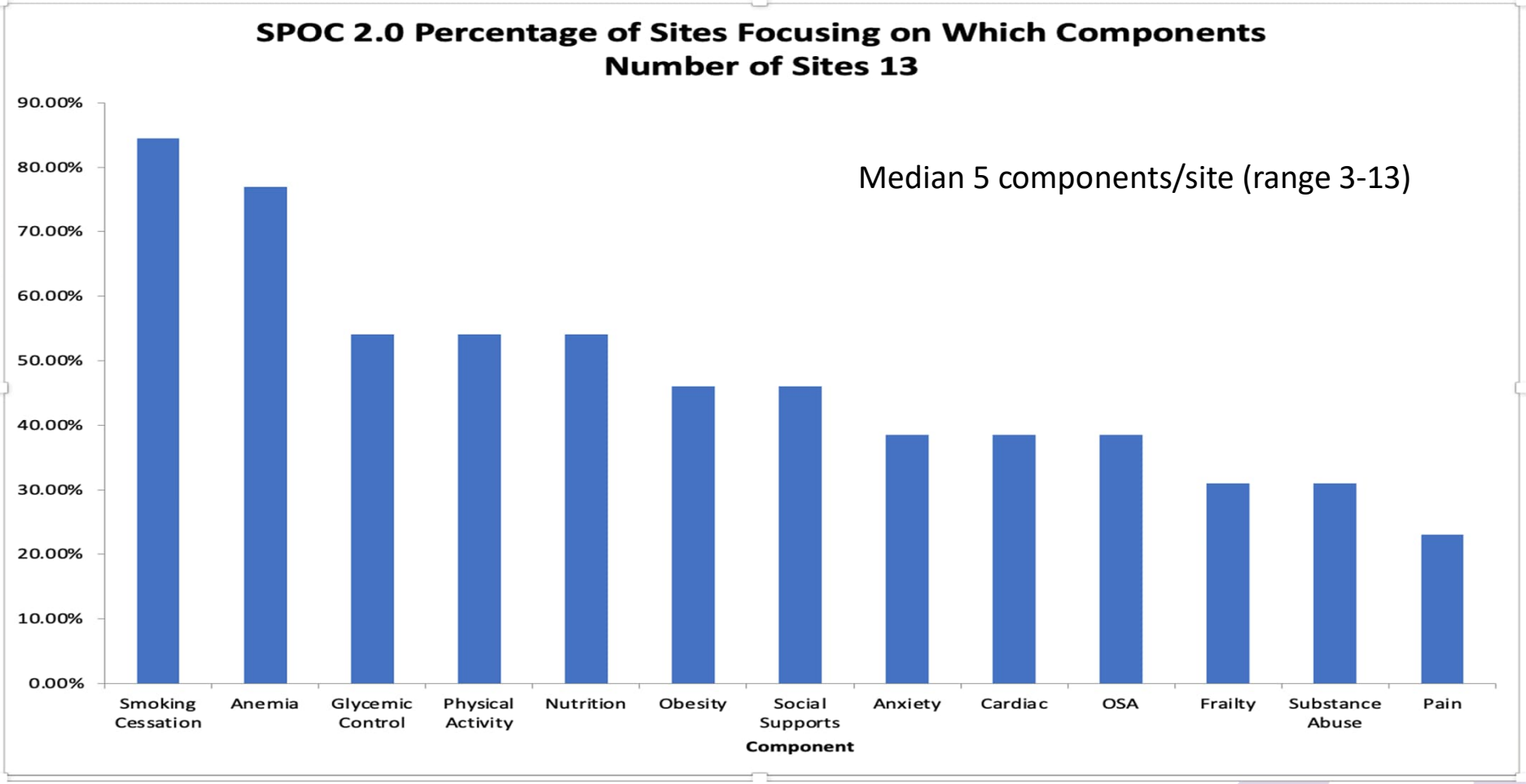


sscbc.ca/programs-and-initiatives/transform-care-delivery/perioperative-clinical-action-network-pcan/surgical

CLINICAL COMPONENTS

Clinical components for SPOC 1.0 sites





Median 5 components/site (range 3-13)

WHERE ARE WE NOW IN BC

# OF PATIENTS SCREENED	# OF REQUIRING PREHAB	# OF PATIENTS PREHABILITATED
25,026	18,698	16,901
	74.7%	90.3%

SPOC AIM STATEMENT

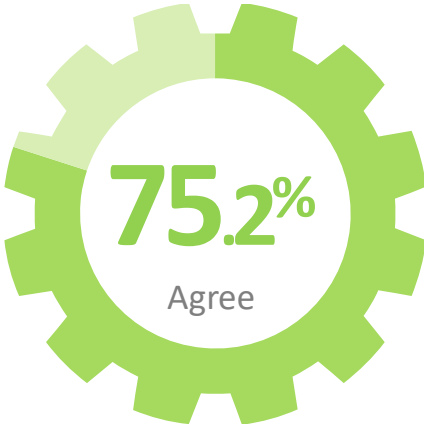
75% of screened elective surgery patients who require optimization of one or more of the components, will receive appropriate optimization by May 2023.

OUR RESULTS

90.3%

OUR PATIENTS
LIKE IT!

Pre-Surgery



PROM

Has your overall health improved as a result of the information and care provided by your surgical preoperative team?

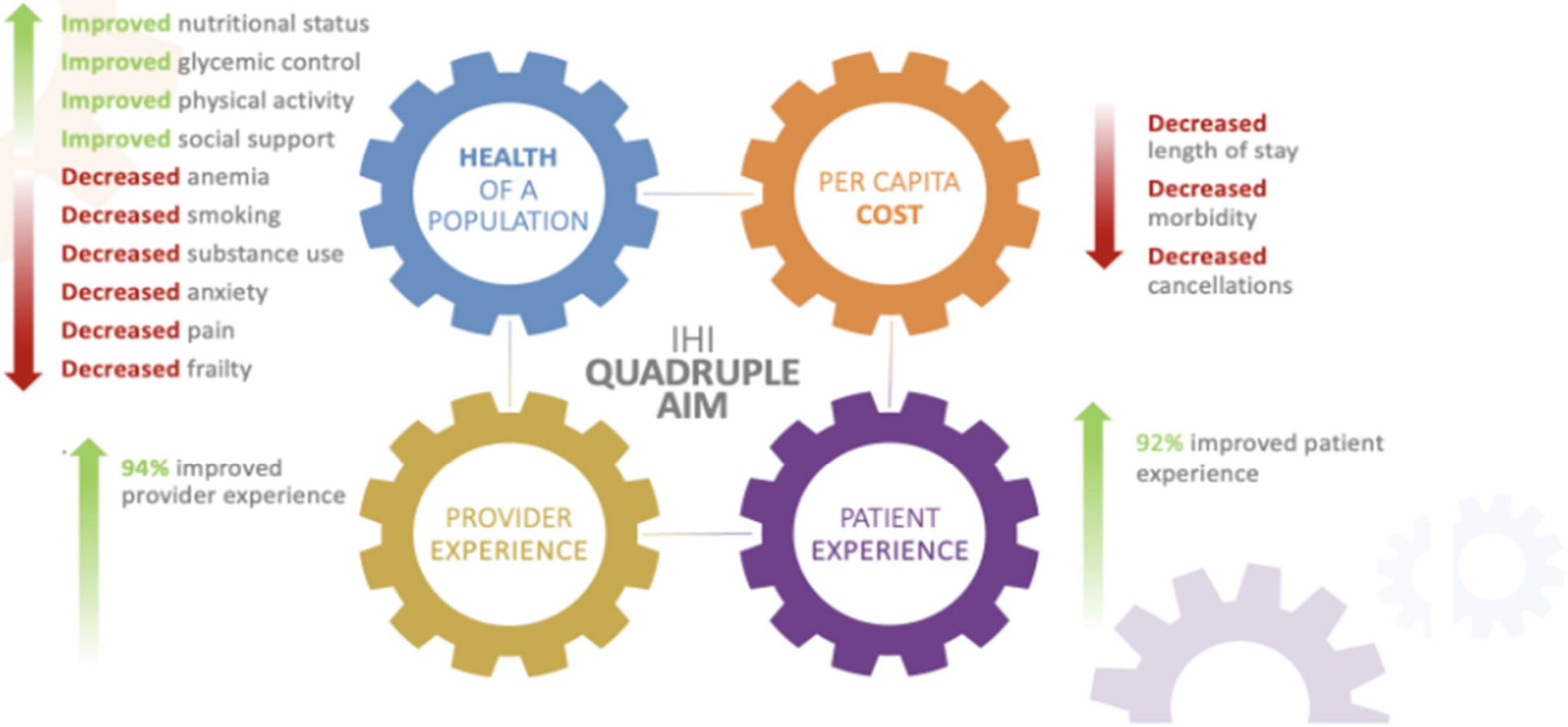
N=2162

PREM

Was your surgical experience improved as a result of the information/care provided by your surgical preoperative optimization team?

N=2158

SURGICAL PATIENT OPTIMIZATION COLLABORATIVE (SPOC)



LESSONS LEARNT

- Need to review your current perioperative pathway and surgical booking “package”
- Need an update preoperative surgical screening questionnaire incorporating components
- create Standard operating procedure for your nurses/MOA/ NUA based on “positive” responses on the questionnaire
- ERAS and prehabilItation have a “dose-response relationship the more you adhere to an evidence based perioperative care pathway the better the outcome
- You can only improve if you measure, continue to be curious, and hence the need for data
- Prehab Likely has the biggest benefit
  - Older > younger
  - Cancer/thoracabdominal > Orthopedics
  - Moderately reduced reserve at baseline

SPECIALIST SERVICES COMMITTEE

Specialist Services Committee
115 - 1665 West Broadway, Vancouver BC V6J 5A4
t. 604 638 4852 | e. sscbc@doctorsofbc.ca

www.sscbc.ca

DOWNLOAD THE SPOC TOOLKIT

WORKSHOP 1 QUESTION:

What innovative ideas do you have for extending SPOC at existing sites or introducing it to a new site?

JOIN AT:

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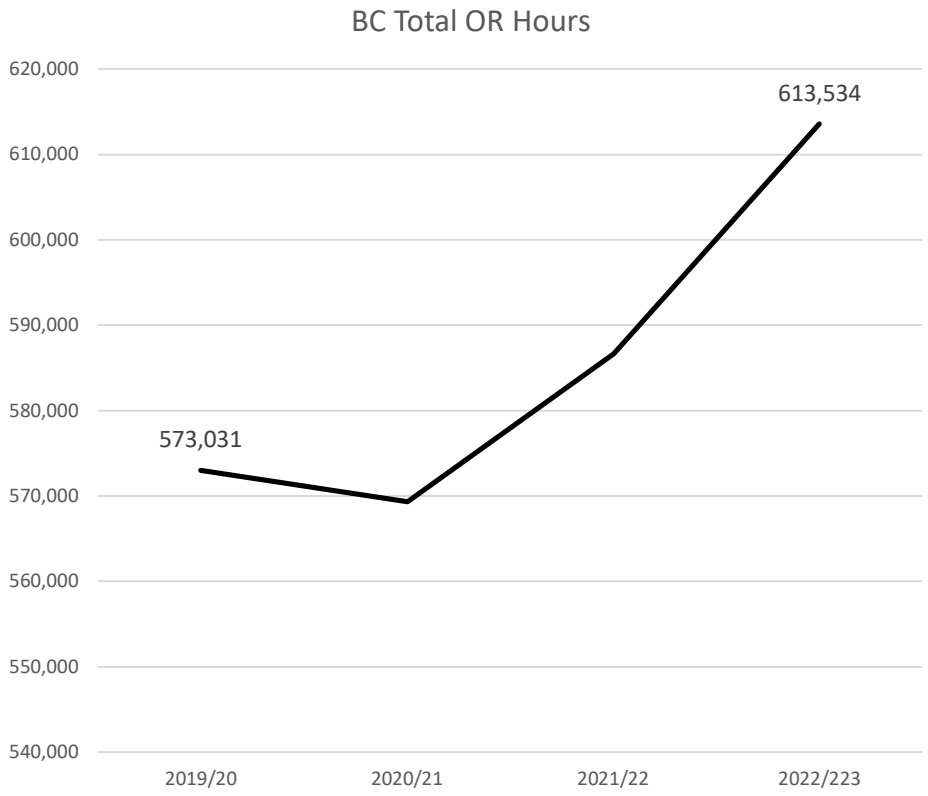
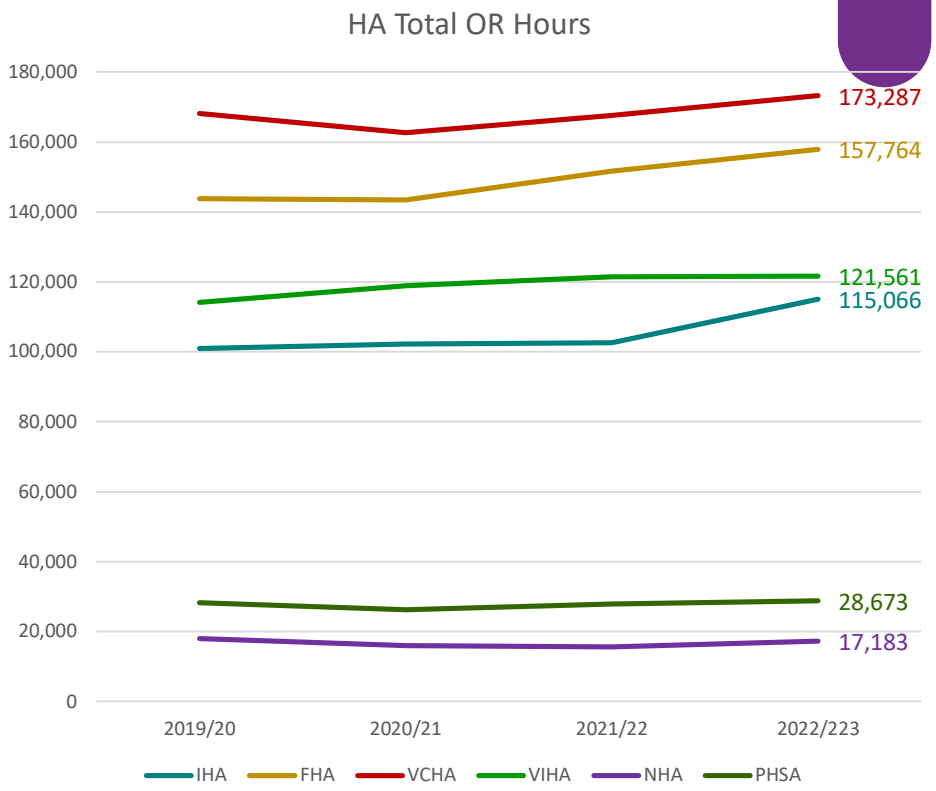
#PCANWORKSHOP1

WORKSHOP #2:

INCREASING SURGICAL CAPACITY

OR Hours


BC Total OR Hours
620,000
610,000
600,000
590,000
580,000
570,000
560,000
550,000
540,000
573,031
613,534
2019/20
2020/21
2021/22
2022/223


HA Total OR Hours
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
173,287
157,764
121,561
115,066
28,673
17,183
2019/20
2020/21
2021/22
2022/223
IHA
FHA
VCHA
VIHA
NHA
PHSA

OR Utilization

OR Utilization (% of Capacity) — Actual

HEALTH AUTHORITY	Baseline	Target	Actual	vs. Baseline	vs. Target
1	91%	92%	88%	-3%	-5%
2	92%	93%	89%	-3%	-4%
3	92%	94%	92%	-0%	-2%
4	94%	96%	93%	-1%	-3%
5	94%	92%	88%	-6%	-5%
6	85%	91%	85%	+0%	-6%
Overall	**92%**	**93%**	**90%**	**-2%**	**-4%**

How can we maximize OR utilization?

- Decrease turnover times
- Improve efficiencies
- Fill slates
- Decrease cancellations
- Emergent cases

Surgical Teams: Current State

- Surgical Teams:
  - Surgeon
  - Surgical Assists
  - Anesthesia Assistants
  - Anesthesiologist
  - General Practitioner Anesthetist
  - Nursing (RN / LPN)
  - Health Care Aide
  - Medical Device Reprocessing Technician
  - Housekeeping

Surgical Renewal Net New Employees:

- Perioperative Nurses: 334
- Surgeons: 235
- Anesthesiologists: 151
- GPA: 7
- MDRT: 120

Surgical Teams: Future State

Strategies:

- **Recruitment**
- **Retention**
- **Care Model Redesign**

WORKSHOP 2 QUESTION:

What innovative solutions / ideas do you have for increasing surgical capacity?

JOIN AT:

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#PCANWORKSHOP2


LUNCH


KEYNOTE

Digital Transformation of the Perioperative Pathway

Denny Levett

Professor of Perioperative Medicine and Critical Care, University of Southampton

President International Prehabilitation Society

NHSE Regional Perioperative Medicine Lead

Disclosures

- **Relationships with commercial interests:**
  - Grants: National Institute of Health Research (UK), NHS England, NHS Digital Partnerships Award, National Lottery Fund (UK), MacMillan
  - No consultancy fees/commercial relationships with industry
- **Non Commercial Leadership Roles**
  - President International Prehabilitation Society
  - NHS England Regional Perioperative Medicine Lead
  - Fit-4-Surgery Research Group, Southampton - investigator prehabilitation trials
  - President of the Perioperative Exercise Testing and training society (POETTS)
  - Perioperative Medicine Lead University Hospital Southampton
  - Perioperative Medicine Committee World Congress of Anaesthesia 2024

Managing Bias

- All content developed as part of this program was reviewed by members of the program planning committee
- Relationships do not alter my choices when developing content
- I have no financial conflicts relating to the content of the presentation

Patient Centered, Multidisciplinary, Integrated Care

...from the moment of contemplation of surgery until full recovery.

PERIOPERATIVE MEDICINE

THE PATHWAY TO BETTER SURGICAL CARE

Patient Centred Care

The patient is a partner in their own care….

1. ***'Right decision'***
   - Individualised risk assessment
   - Shared decision making
   - Informed consent
2. ***'Well prepared'***
   - Co-morbidities optimised
   - Best physiological state
   - Best metabolic state
   - Best Psychological state
3. ***'Well cared for'***
4. ***Optimal recovery***
   - Back to baseline or improved

Perioperative pathways do not promote patient centered care

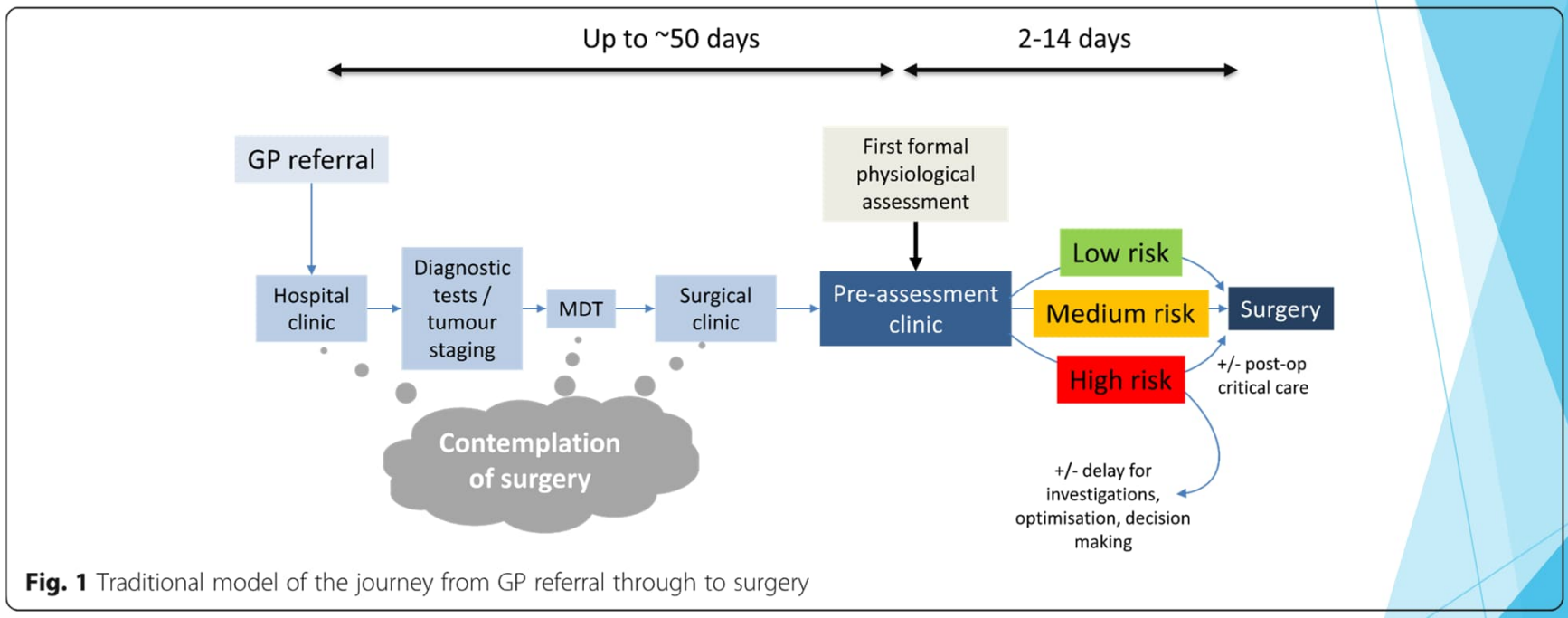
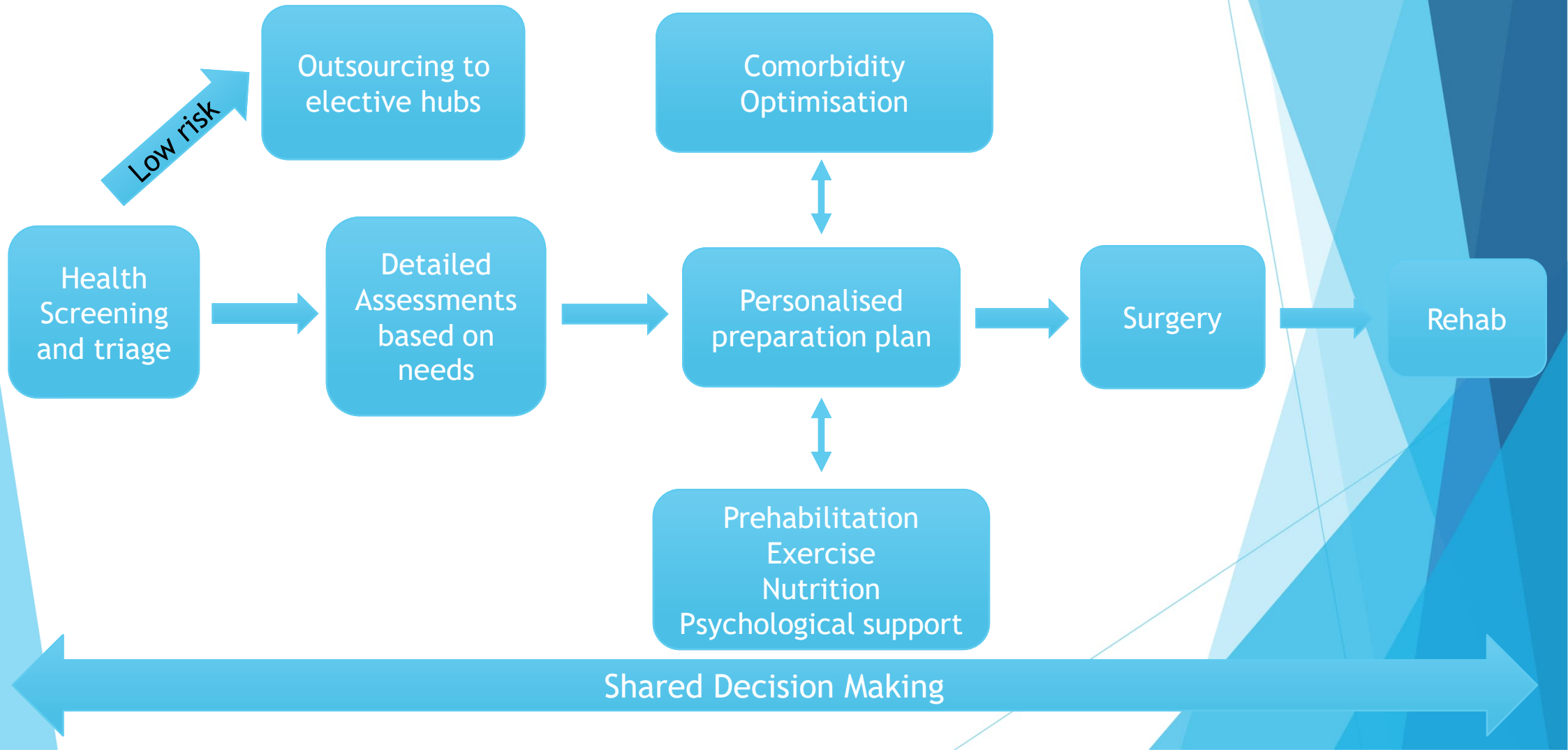


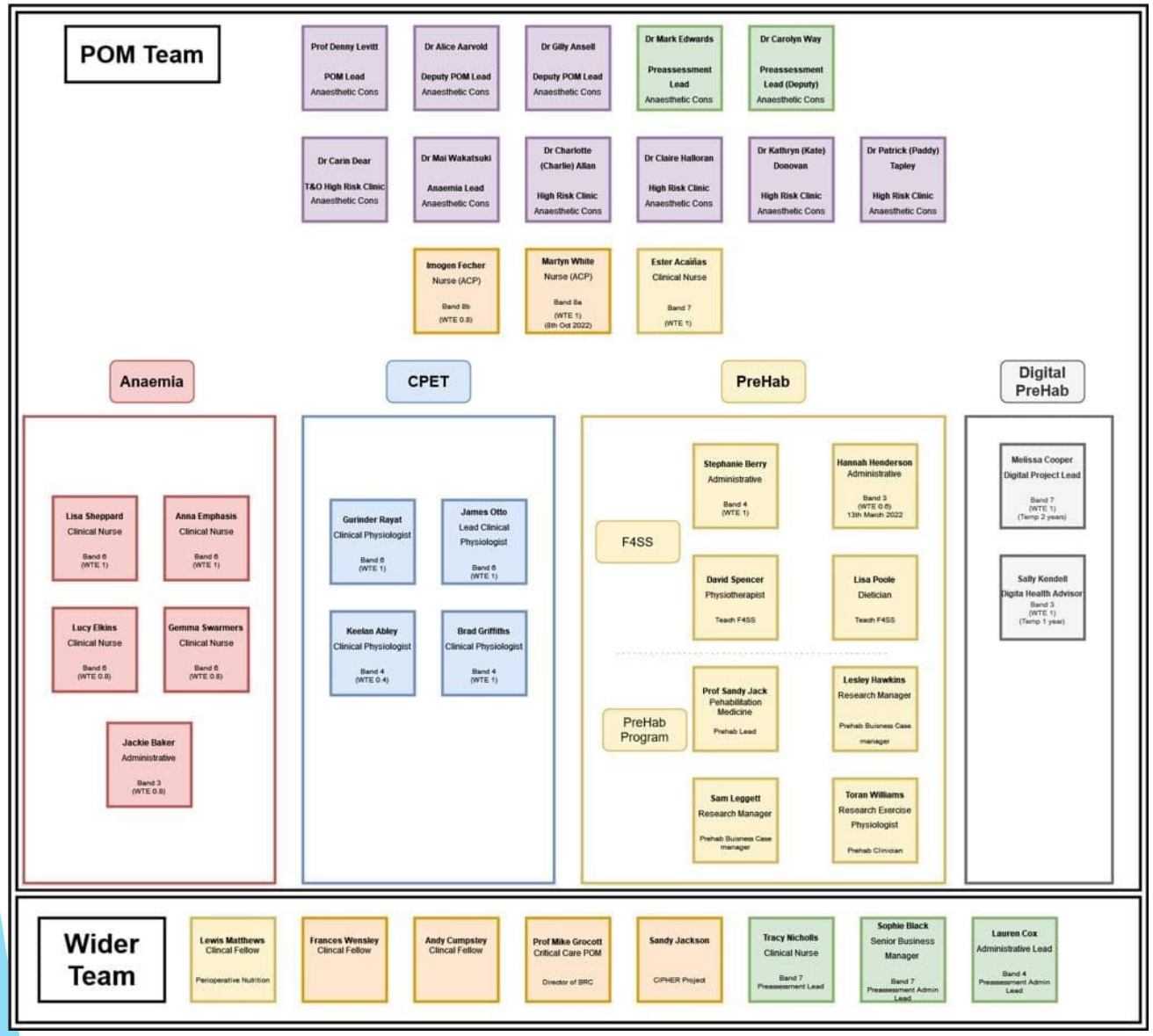
Fig. 1 Traditional model of the journey from GP referral through to surgery

Proceed to surgery without time to fully optimise fitness and comorbidities – worse post-op outcomes
More full discussion of peri-operative risks – last minute cancellations and changes of plan
Delay surgery to investigate and treat co-morbidities further – delay to definitive surgery

Grocott & Levett 2017
Perioperative Medicine

The ideal perioperative care pathway





Perioperative Medicine at UHS

- Digital Health Screening and Pre-Assessment
- High risk shared decision making clinic
- Perioperative Anaemia Service
- Perioperative Care
- Cardio Pulmonary Exercise Testing
- Fit For Surgery School
- Prehabilitation

NHS Elective Recovery Plan

The 2023/24 NHS Standard Contract states:

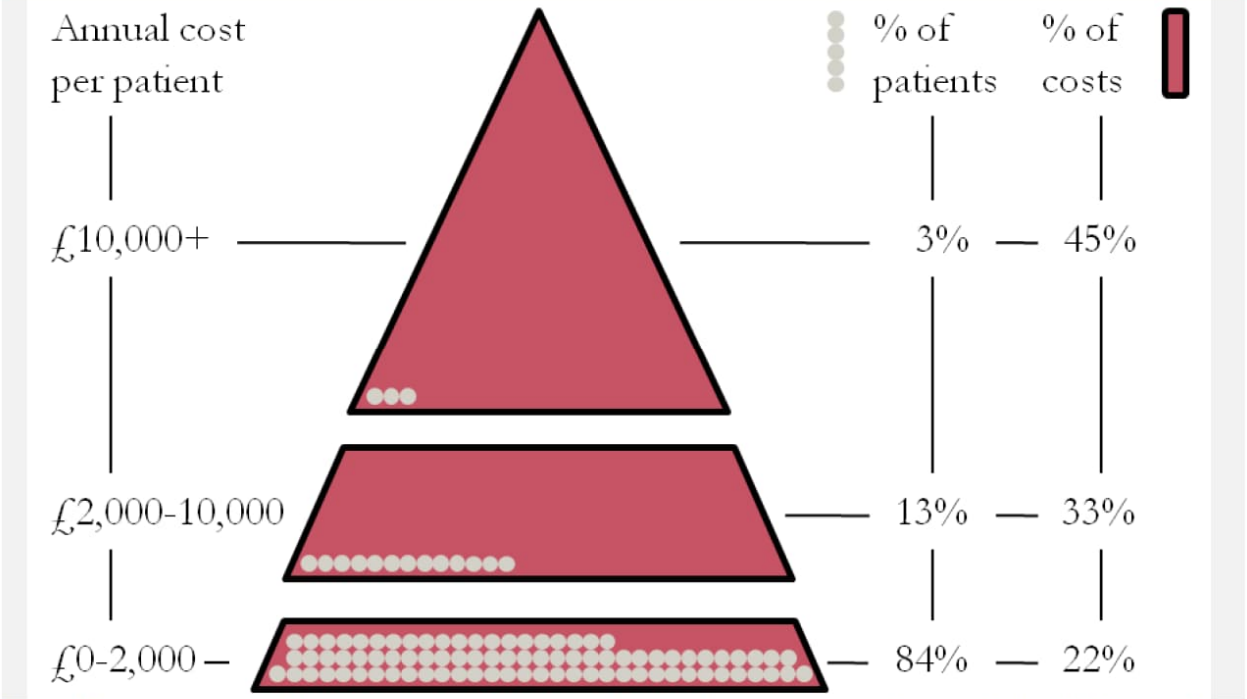
*"NHS trusts MUST by no later than 31 March 2024, **implement a system of early screening, risk assessment and health optimisation for all adult service users waiting for inpatient surgery,** in accordance with the requirements on perioperative care co-ordination set out in the NHS Elective Recovery Plan"*

NHSE Elective Recovery Plan: 5 principles

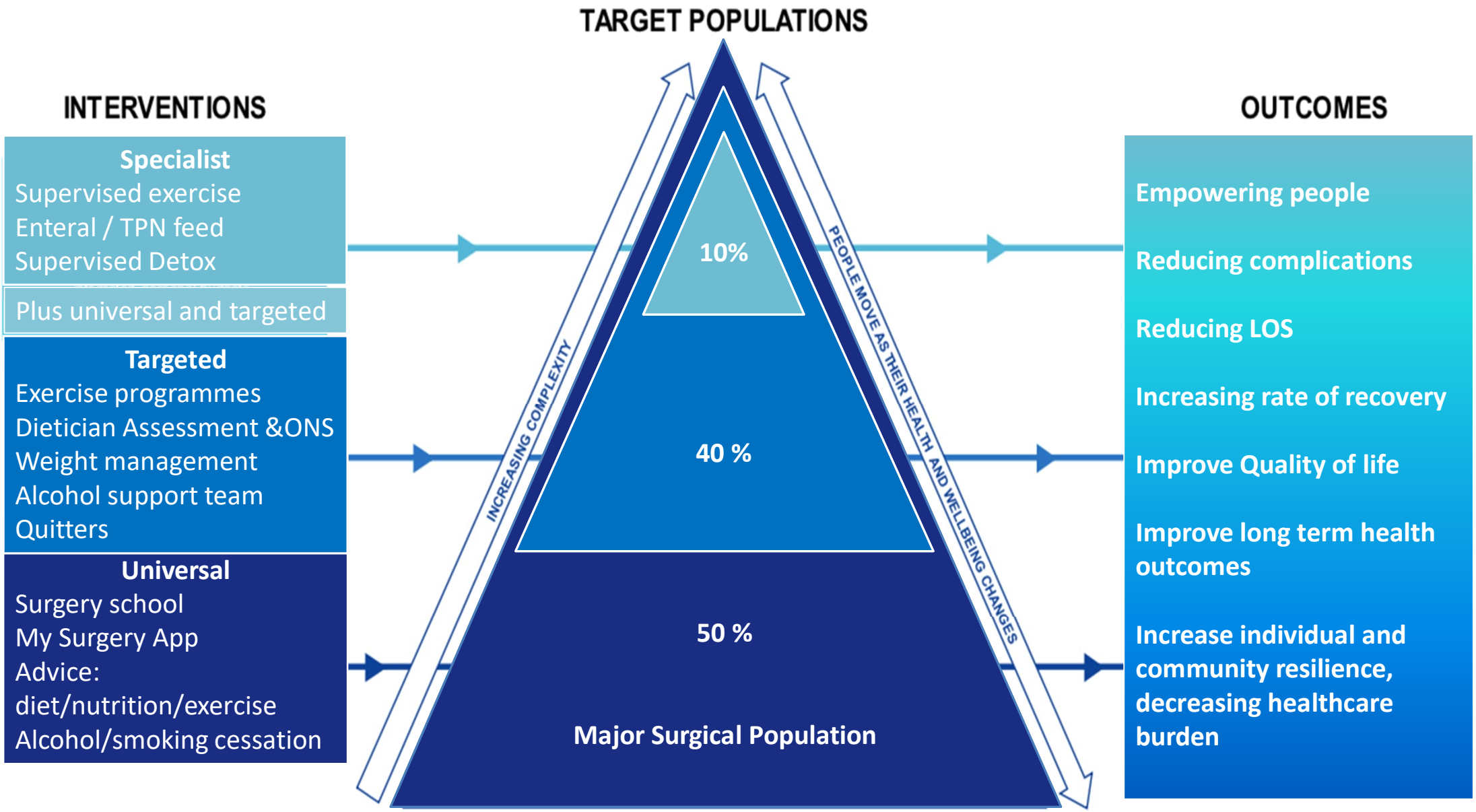
1. **Early Digital Screening** to Identify Modfiable Risk Factors and High risk patients who may require Shared Decision Making
2. Modifiable Risk should be optimised before surgery with a **personalised optimisation plan (prehabilitation and co-morbidities)**
3. Patients should be contacted every 3 months whilst on waiting lists to ensure they remain appropriate for surgery
4. Patients should only be given a **date for surgery AFTER a pre-op risk assessment and health optimisation** and being confirmed fit for surgery
5. Patients should participate in a **shared decision making** discussion to discuss the risks benefits and alternative treatment options to support them in their decision to proceed to surgery

A minority of patients account for the majority of costs: the 80:20 pareto principle

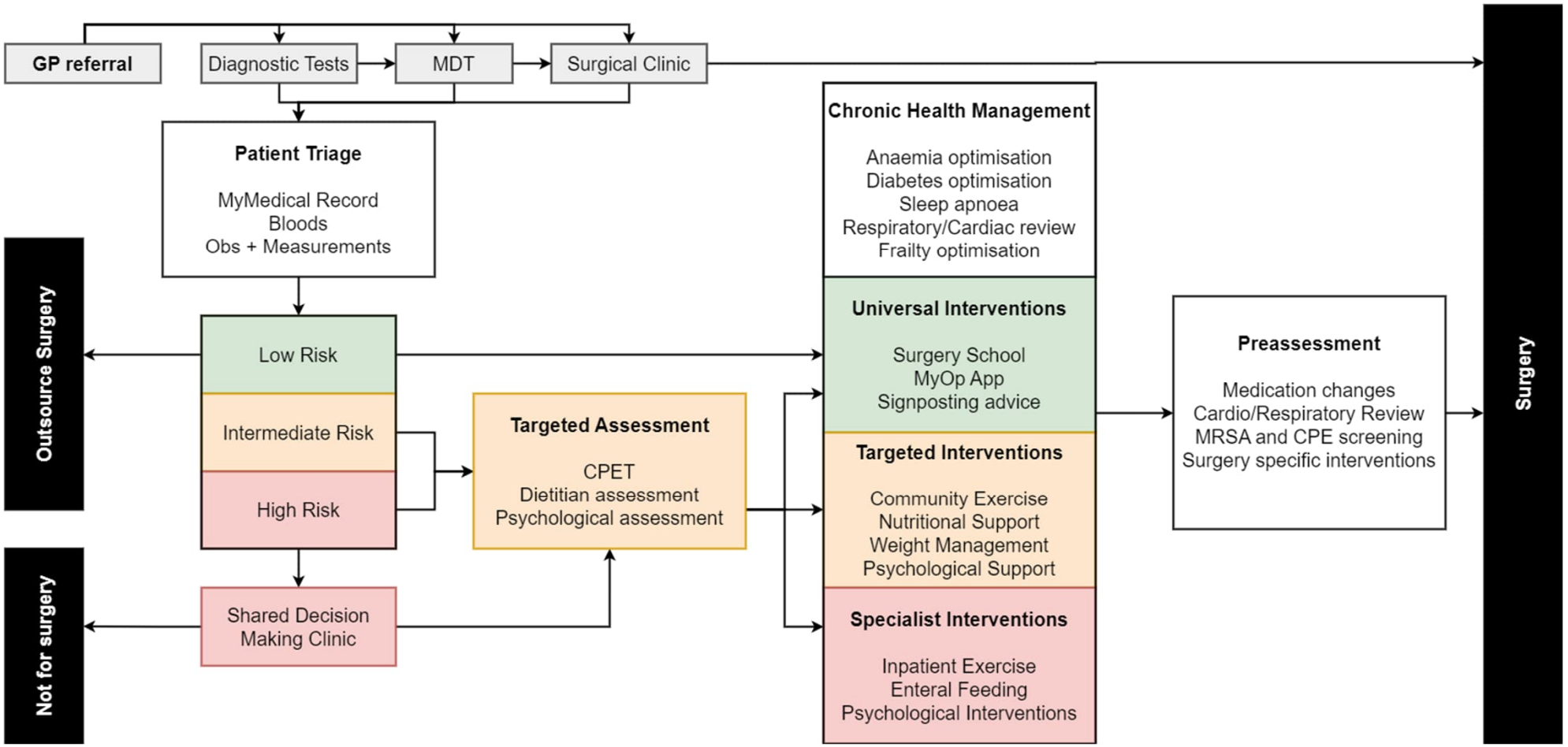
Figure 5.1. Proportion of total costs spent on patients by annual costs



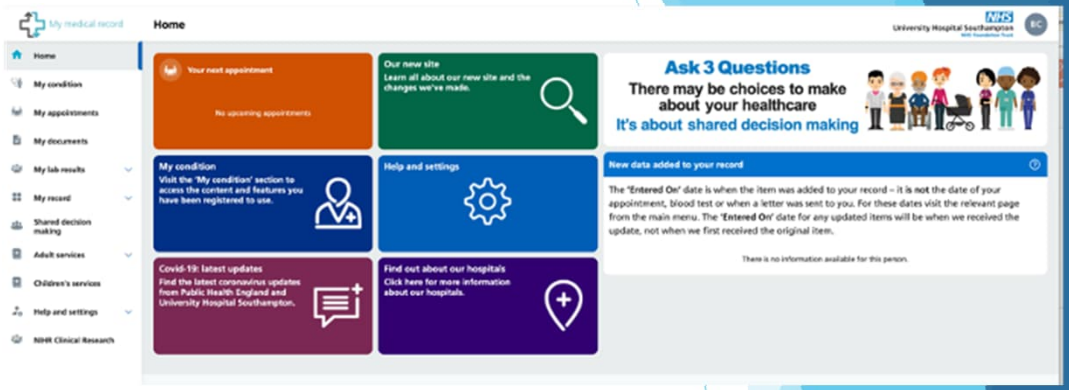
Note: Proportion of total costs spent on patients with annual costs of £0–£2,000, £2,000–£10,000 and £10,000+ (area of shape), with the proportion of all patients in annual cost band (dots).


TARGET POPULATIONS
INTERVENTIONS
OUTCOMES
Specialist
Supervised exercise
Enteral / TPN feed
Supervised Detox
Plus universal and targeted
Targeted
Exercise programmes
Dietician Assessment &ONS
Weight management
Alcohol support team
Quitters
Universal
Surgery school
My Surgery App
Advice:
diet/nutrition/exercise
Alcohol/smoking cessation
10%
40 %
50 %
Major Surgical Population
INCREASING COMPLEXITY
PEOPLE MOVE AS THEIR HEALTH AND WELLBEING CHANGES
Empowering people
Reducing complications
Reducing LOS
Increasing rate of recovery
Improve Quality of life
Improve long term health outcomes
Increase individual and community resilience, decreasing healthcare burden

Re-structuring Perioperative Care Pathways



Digital Screening Early in the Pathway



Screening

- DASI: Functional capacity
- Nutrition Risk Score: Malnutrition/Obesity
- HADS: Psychological well being
- Frailty: Modified Edmonton Frailty Scale
- Targeted comorbidities: Cardiac devices/anticoag
- Audit C: Alcohol
- Chronic pain: Opiate use
- Stop Bang: Sleep Apnoea
- Smoking
- Living alone/carers

Triage for

- Risk: Red-Amber-Green
- High Risk Clinic
- Outsourcing to elective hubs
- Pre-Assessment: telephone vs face-to-face
- Prehabilitation
- List management/Critical Care

NHS England

NHS Digital

Digital Screening Summary and Risk Rating

evaluating their health status at any point in the future.

Anaesthetic concerns	Surgical concerns	Fitness (DASI)	Frailty (REFS)	Emotional wellbeing (HADS)	Alcohol (AUDIT-C)	Smoking	Nutrition concern
Yes	**Yes**	**11.52 (derived VO2peak in ml/kg/min)**	**6.00 (Apparently vulnerable)**	**Yes (Borderline abnormal)**	**21 (Extended advice, 20+ indicates possible dependence)**	**Yes**	**Yes**

BMI	Sleep Apnoea (STOP-BANG Score)	Cardiac concerns	Neuro/Cognitive problem	Bleeding / clotting problem	Diabetes	Impaired Immunity	Chronic Pain
25.7	**4 (OSA unlikely/ low risk)**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Clinician Dashboard for Optimisation Tracking

Patient Details	Team	Surgical details	Function	Wellbeing	Nutrition	Chronic health	Clinical results	Preassessment pathway	Status
Patient No: 3461054 **NHS No:** 1212121212 **Name:** ALEXANDER TESTINGGGG **DOB:** 09/03/1976 (47 years) **Submitted date:** 07/06/2023 13:34:00	☐ Prehab ☐ Preassessment ☑ High risk ☐ T&O ☐ Triage screening	Set **Specialty:** Not set **Prioritisation:** P2 **Severity:** Major / int **Target date:** 08/07/2022 **Surgeon:** Dr O' Neil	Red No outstanding task	Amber No outstanding task	Red No outstanding task	Red No outstanding task	View No outstanding task	Set **Outsourcable?** Not outsource **Recommended preassessment:** Face to Face **Nurse name:** Sarah **Anaesthetic assessment:** Face to Face	Outsourced Complete View record history

r page

Displaying records

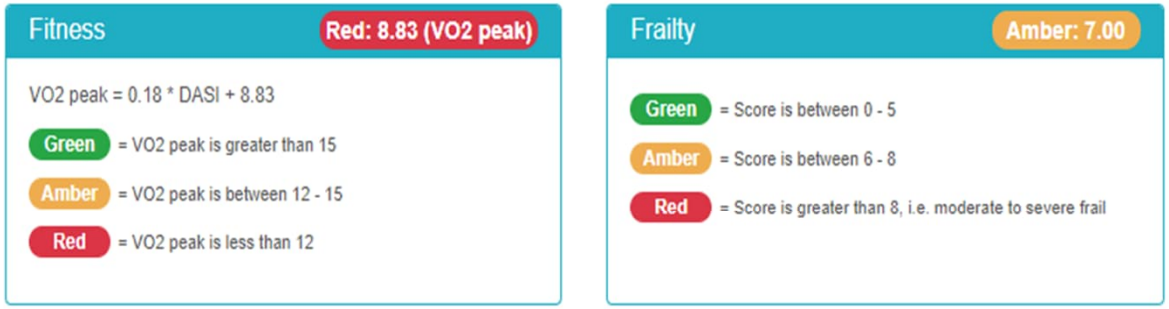
Clinician Dashboard: Surgical Details and Urgency

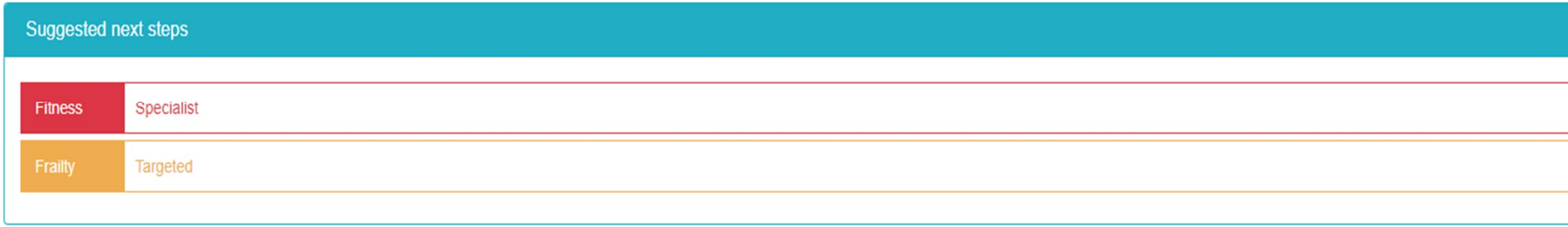
Patient Details	Team	Surgical details
Patient No: 3461054 **NHS No:** 1212121212 **Name:** ALEXANDER TESTINGGGG **DOB:** 09/03/1976 (47 years) **Submitted date:** 07/06/2023 13:34:00	☐ Prehab ☐ Preassessment ☑ High risk ☐ T&O ☐ Triage screening	Set **Specialty:** Not set **Prioritisation:** P2 **Severity:** Major / int **Target date:** 08/07/2022 **Surgeon:** Dr O' Neil

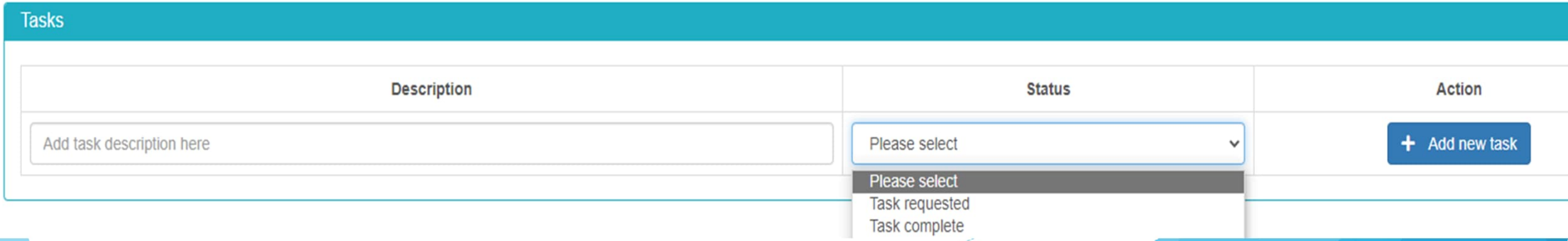
Clinician Dashboard: Optimisation/Prehab

Function	Wellbeing	Nutrition	Chronic health	Clinical results
Red	Amber	Red	Red	View
No outstanding task	No outstanding task	No outstanding task	No outstanding task	No outstanding task

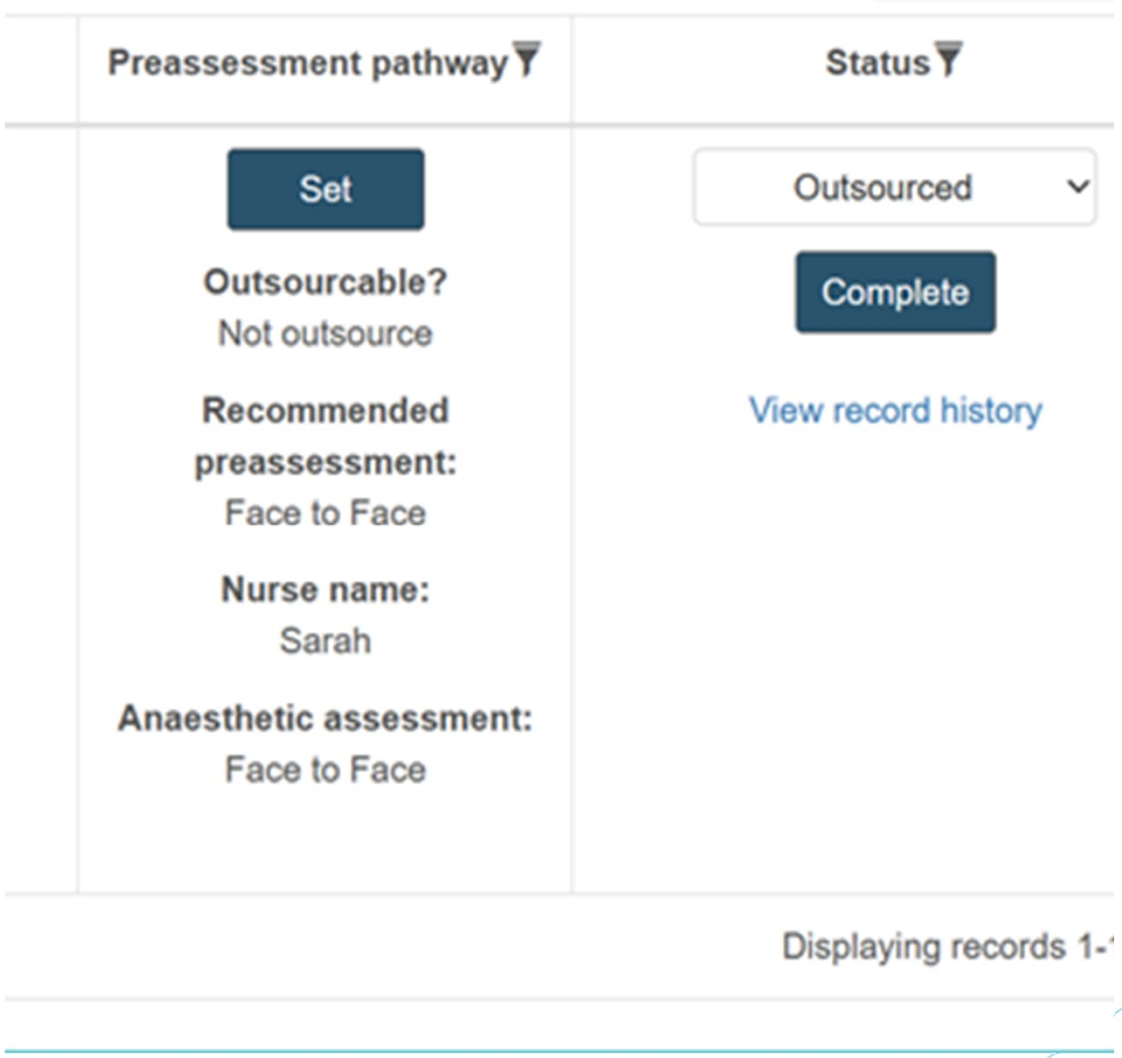
Clinician dashboard for Pathway Management







Clinician Dashboard: Outcomes



Digital Implementation Pilot Cohorts

Orthopaedics Waiting List: Joint Replacements

- n = 400
- Mean Age 71 (range: 52-98); 45% male

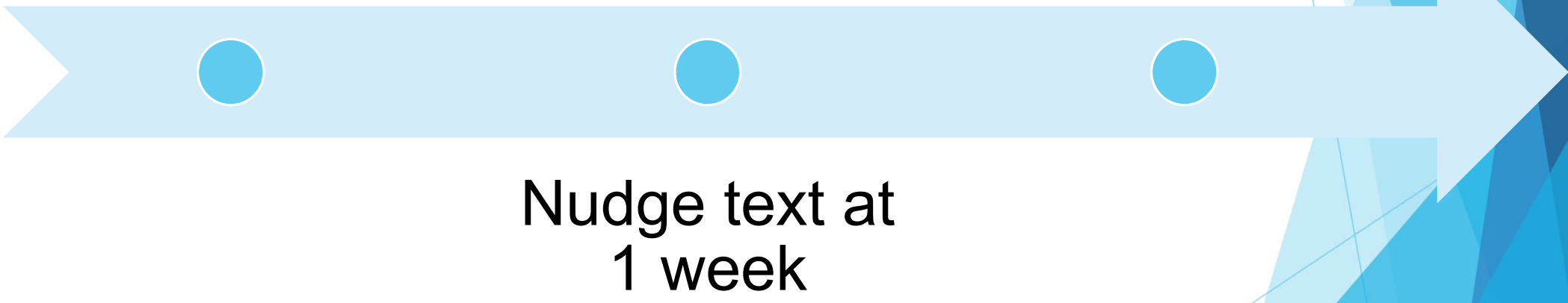
High Risk Clinic Referrals

- n = 700
- Mean Age 71 (range: 58-94); 57% male

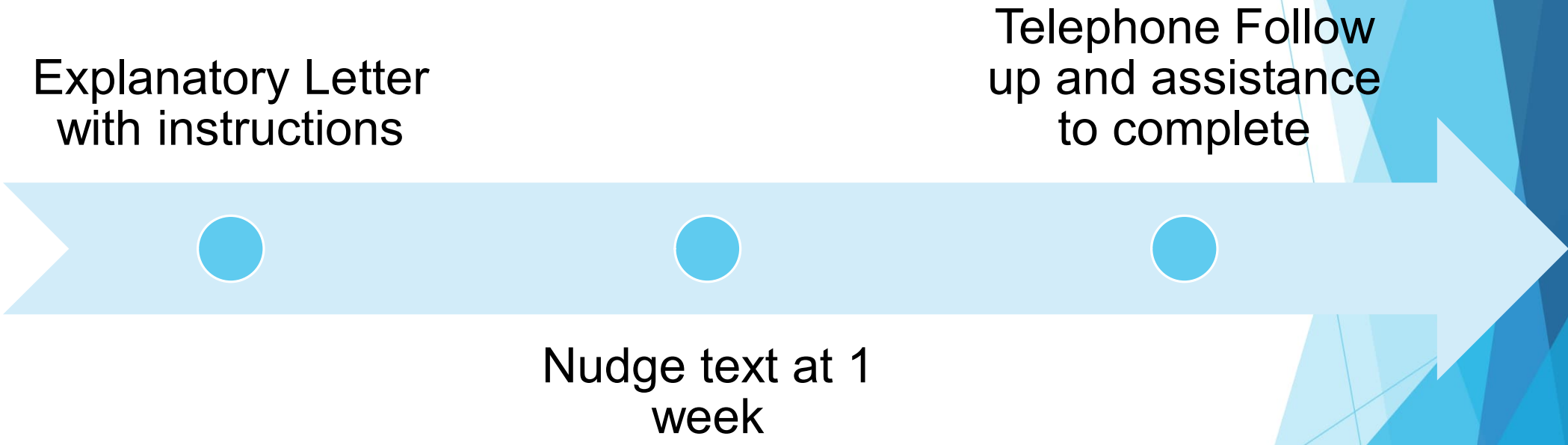
Cancer Prehabilitation Patients

- N = 400
- Mean Age 69 (range: 41-88); 70% male

Orthopaedics Pilot Stage 1: Methodology

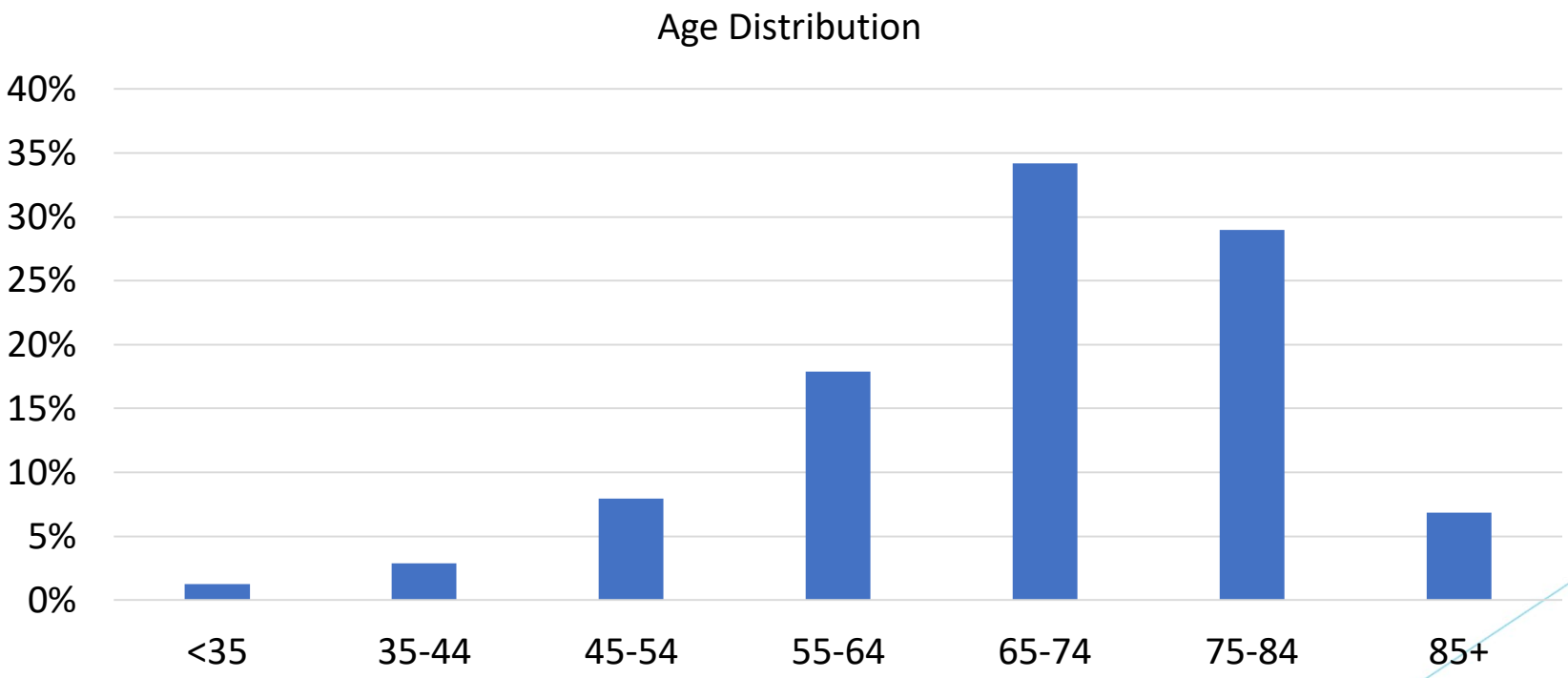


Orthopaedics Pilot Stage 2: Methodology



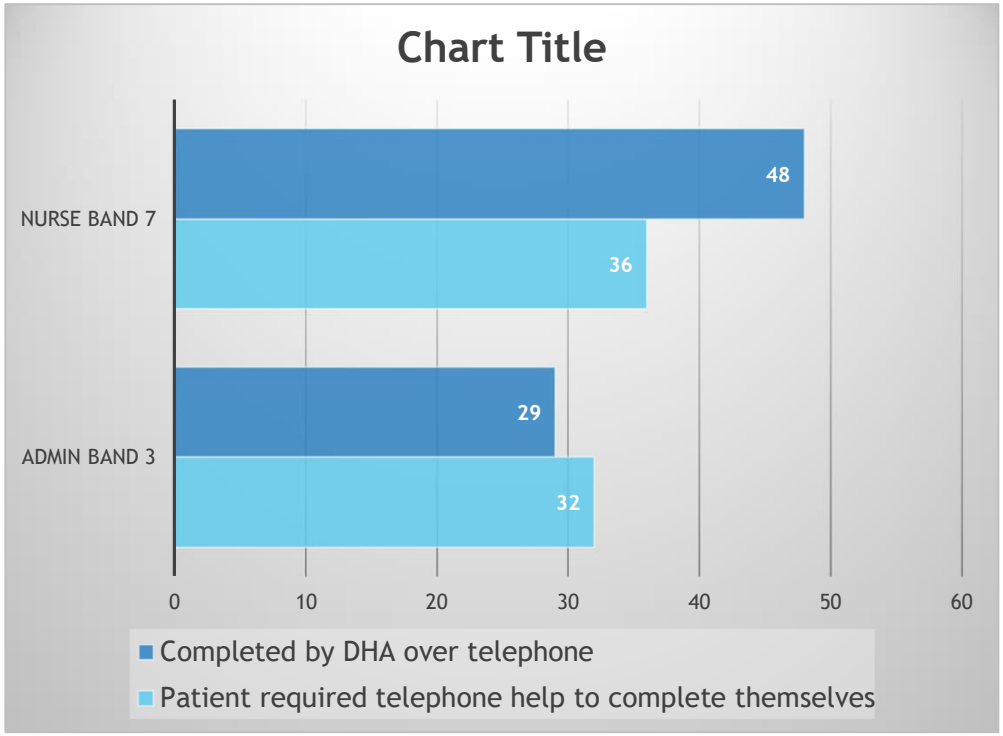
Screening: Implementation Evaluation

Age Distribution of patients completing Questionnaire

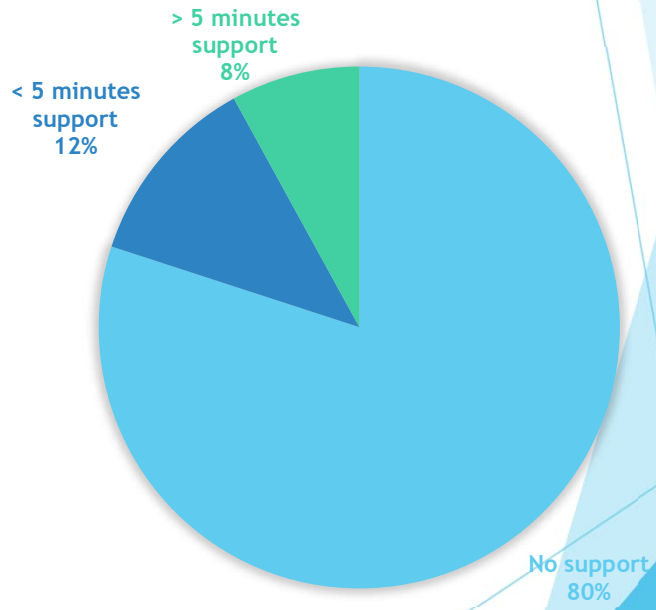


Preventing Digital Exclusion

Clinical vs Non-Clinical digital support



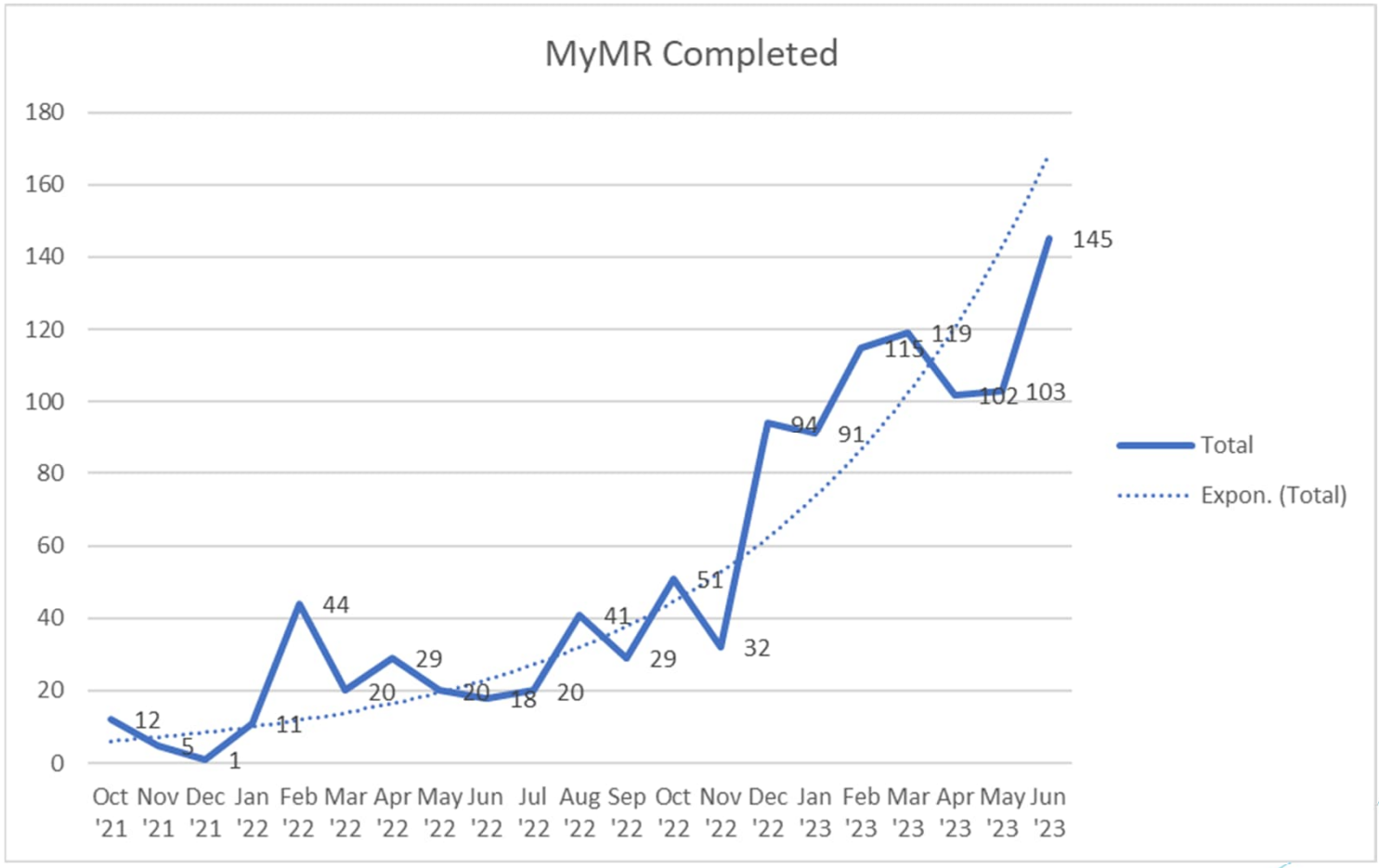
Digital Health Assistant Support



median time for completion = 18mins

NHS England

Uptake of Digital Screening at UHS



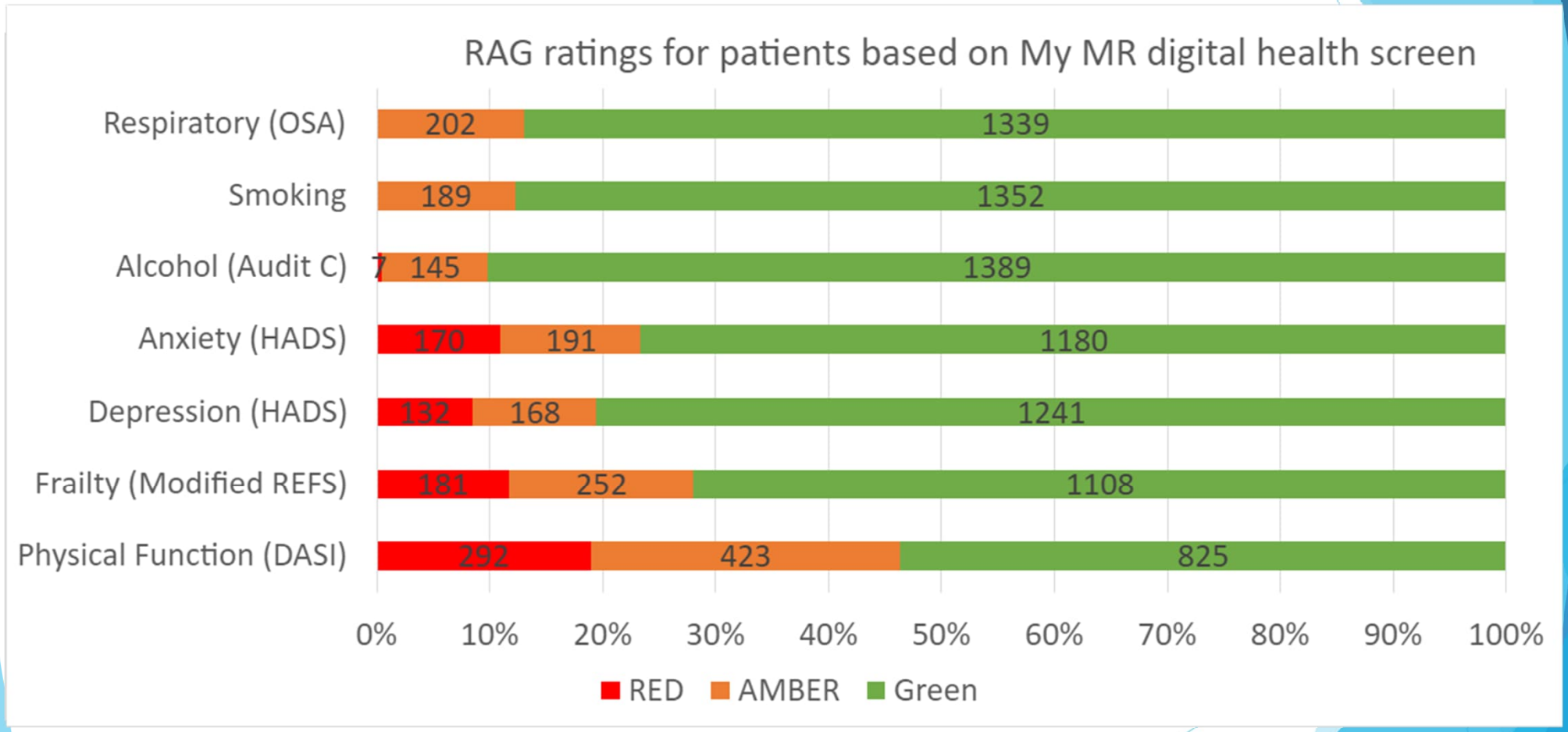
Characteristics of digital and non-digital patients

Table 3. Details of patients who completed My Medical Record digital health screening questionnaire

	All patients	"Non-digital"	"Digital"	
	mean (SD), median (IQR) or n (%)			P-value*
	N = 824	**N = 169**	**N = 655**	
Age	69.1 (12.0)	76.6 (9.0)	67.2 (11.9)	<0.001
15 - 54	100 (12)	5 (3)	95 (14)	
55-64	142 (17)	15 (9)	127 (19)	
65-74	279 (34)	39 (23)	240 (37)	
75-84	247 (30)	81 (48)	166 (25)	
>84	56 (7)	29 (17)	27 (4)	
Number of comorbidities	1 (0, 2)	1 (0, 1)	1 (0, 2)	<0.001
N (%) on > 5 medications	418 (51)	102 (60)	316 (48)	0.005
Time to complete (minutes)	17.5 (13.1, 35.0)	21.8 (15.3, 30.6)	17.5 (10.9, 37.1)	0.001

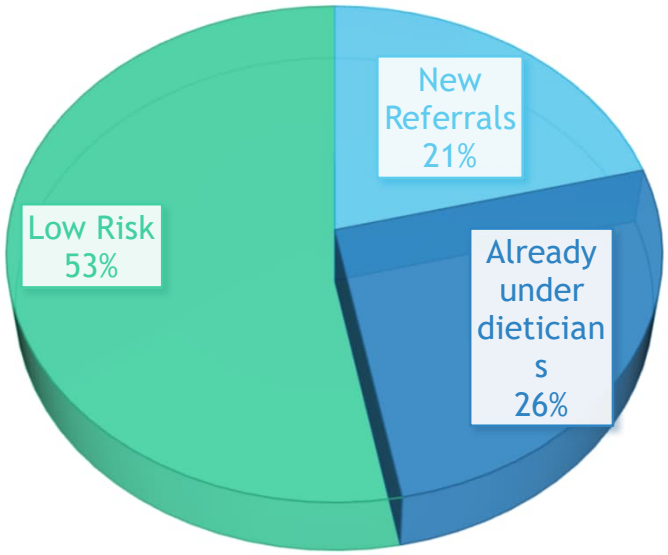
* P-value for chi2, t-test or 2-sample Wilcoxen rank-sum test

Distribution of Rag Ratings per domain

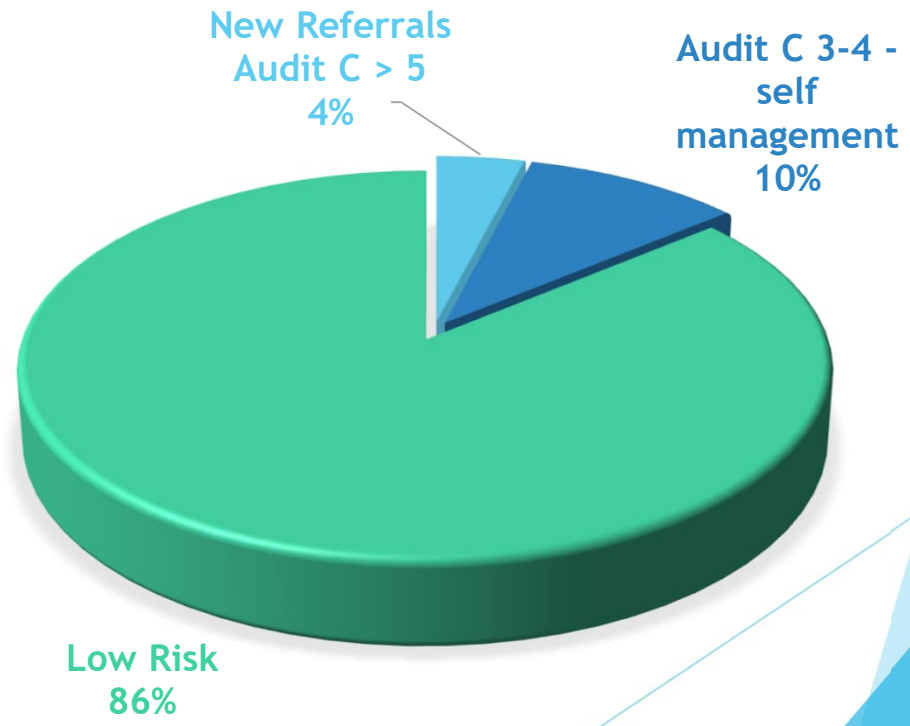


Identifying unmet clinical need

Nutritional risk

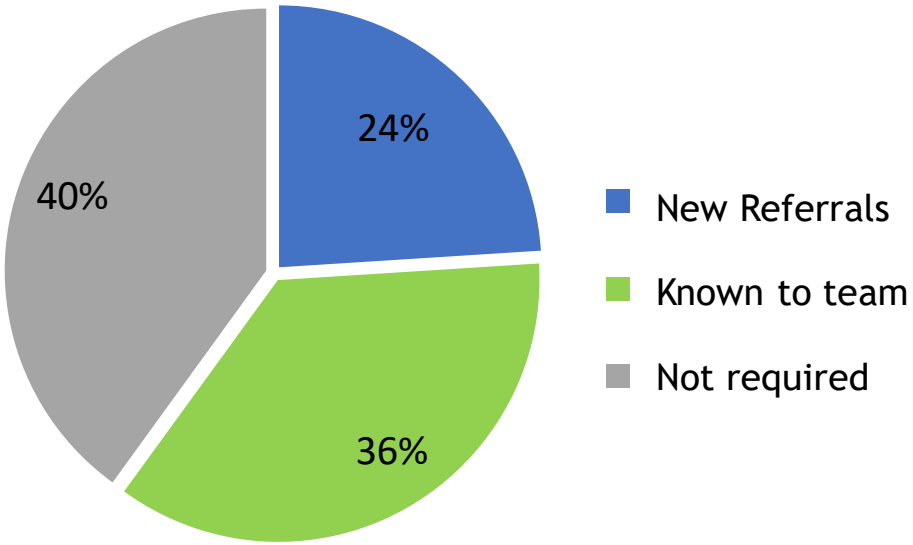


Alcohol Dependency Referrals

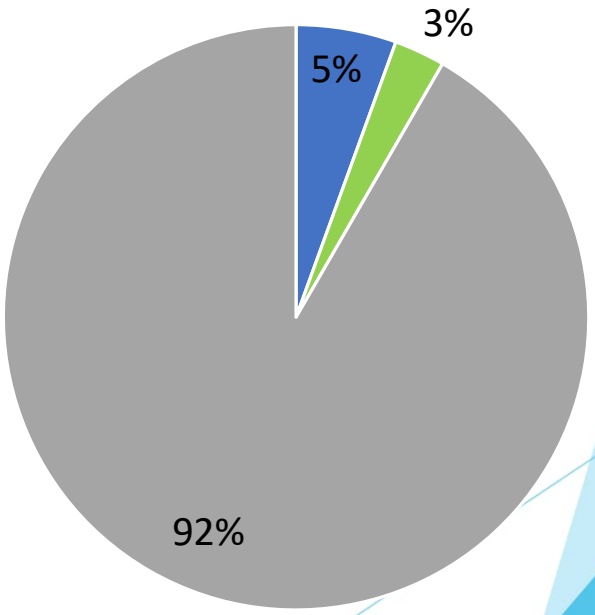


Early optimization of comorbidities

Peri-Operative Anaemia Referrals



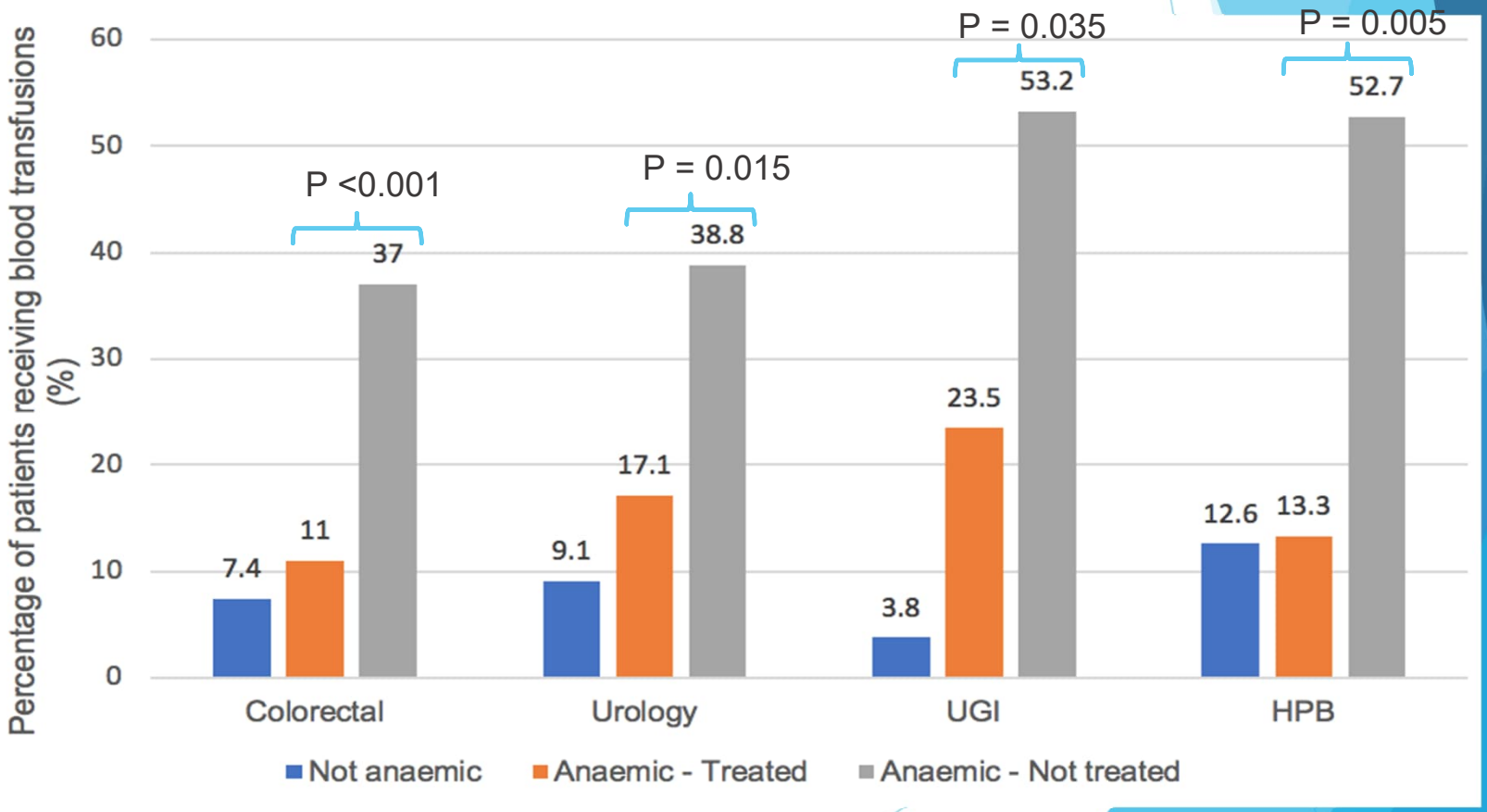
Diabetes Optimisation Referrals



Perioperative Anaemia Service (POAS)

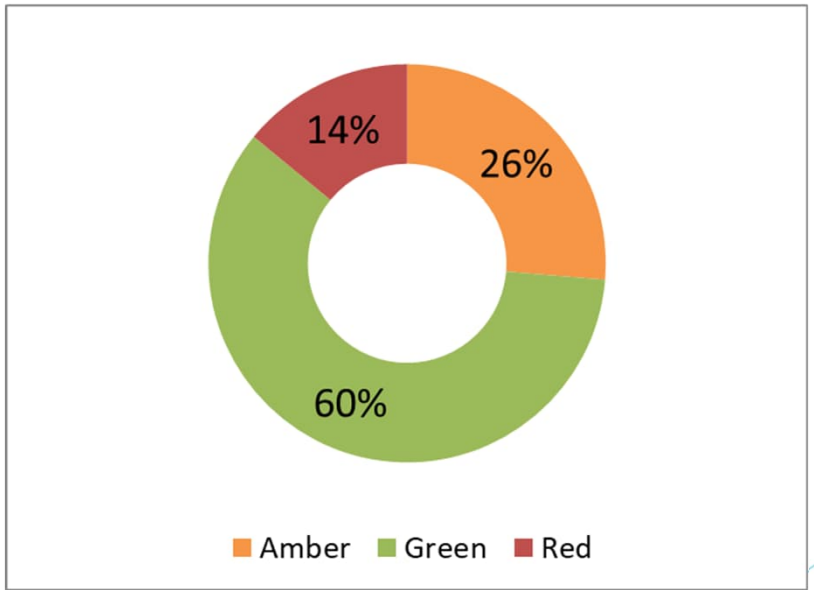
Transfusion Reduced from 43% to 13%

N= 1144, 301 treated



Screening Tool Validation:

Length of Hospital Stay	
Low Risk at UHS	4 days
Low Risk at elective hub	3 days
Intermediate risk	5 days
High risk	10 days



Funding Digital Health Assistants – the need

For 1000 patients, estimated DHA requirements:

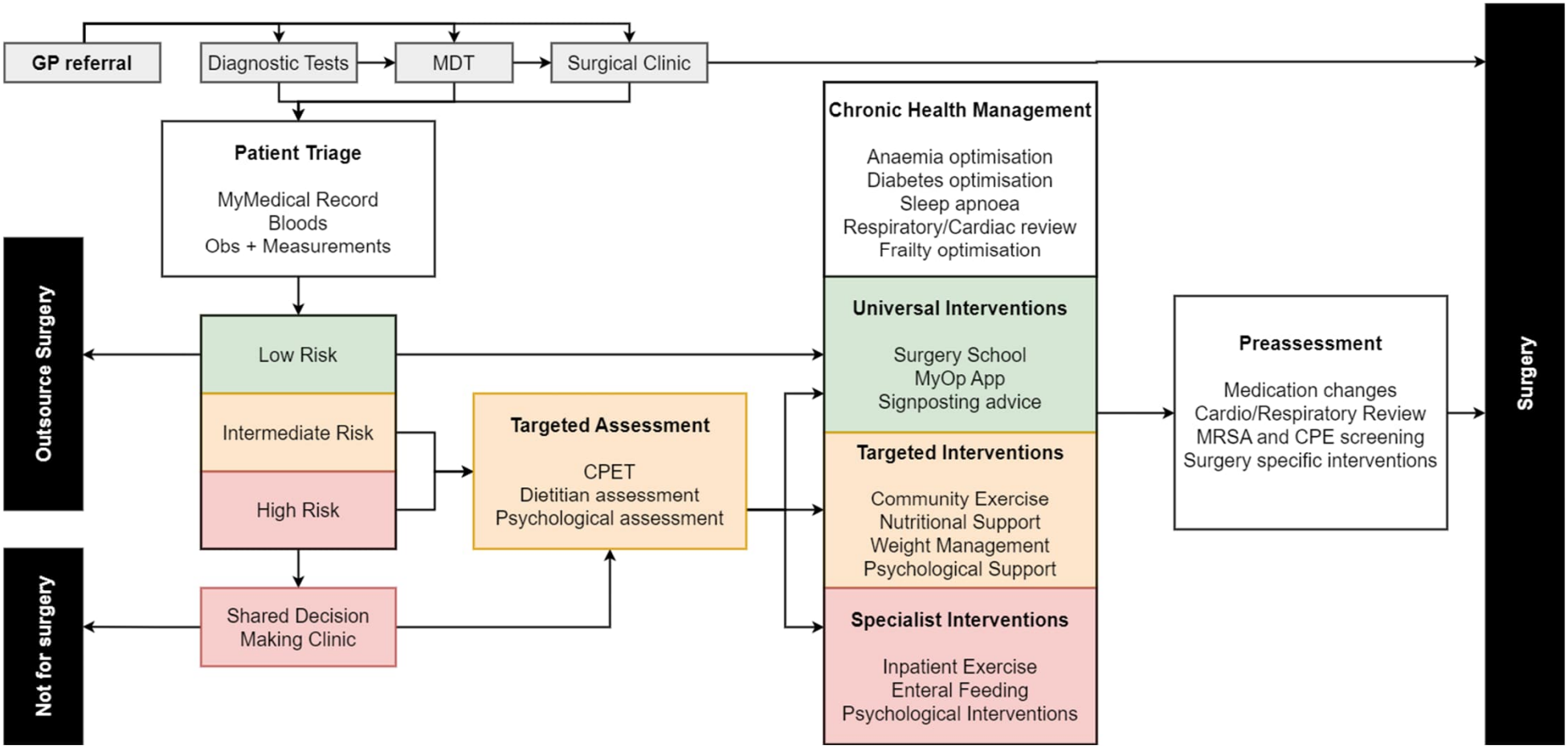
- Assuming approximately 30 minutes per patient
- 1 DHA at UHS per 750 patients

Proportion of patients requiring Help	Number of patients requiring assistance	Total DHA time for 1000 patients
25%	250	125 hours
30%	300	150 hours
35%	350	175 hours
40%	400	200 hours
45%	450	225 hours
50%	500	250 hours

Workforce Implications

- Digital Support
- Clinical Interpretation and optimization planning
- Comorbidity optimization capacity
  - Diabetic nurse specialist
  - Increased anaemia service capacity
- Psychological Support Services in the community
  - Non cancer
- Dietetic Support
  - Weight management

Re-structuring Perioperative Care Pathways

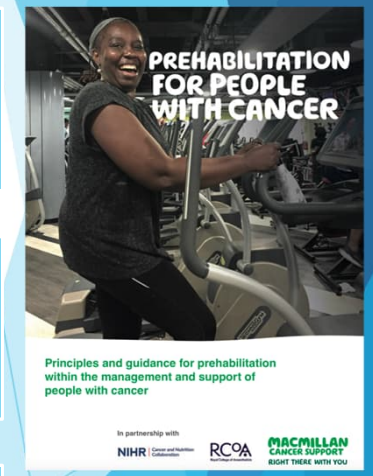


Prehabilitation

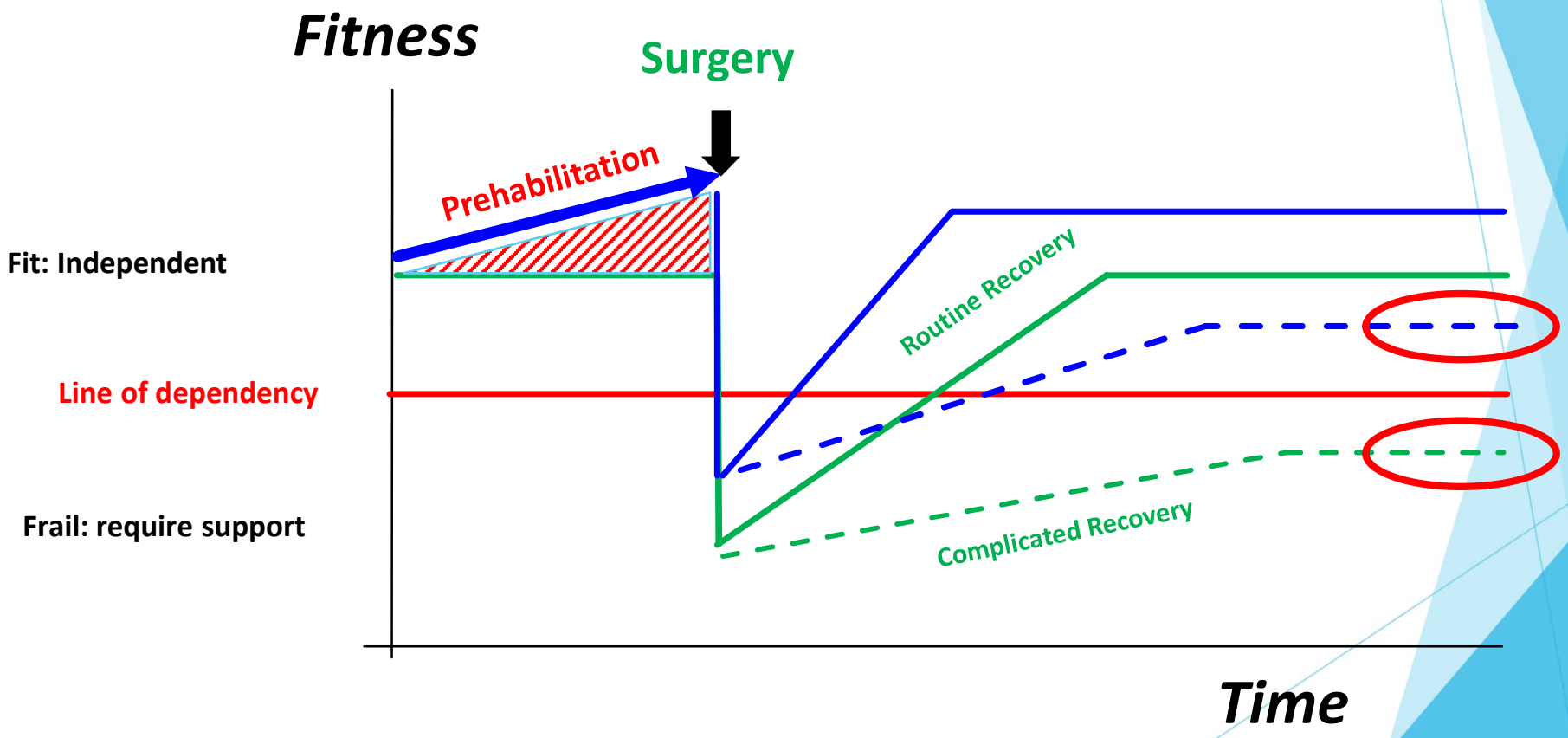
- *Prehabilitaiton is an intervention that improves a patient's physical, nutritional and psychological fitness to withstand surgery*
- *Prehabilitation is a **personalised treatment based on the patient's needs***
- *Prehabilitation reduces complications and length of stay and enhances recovery*

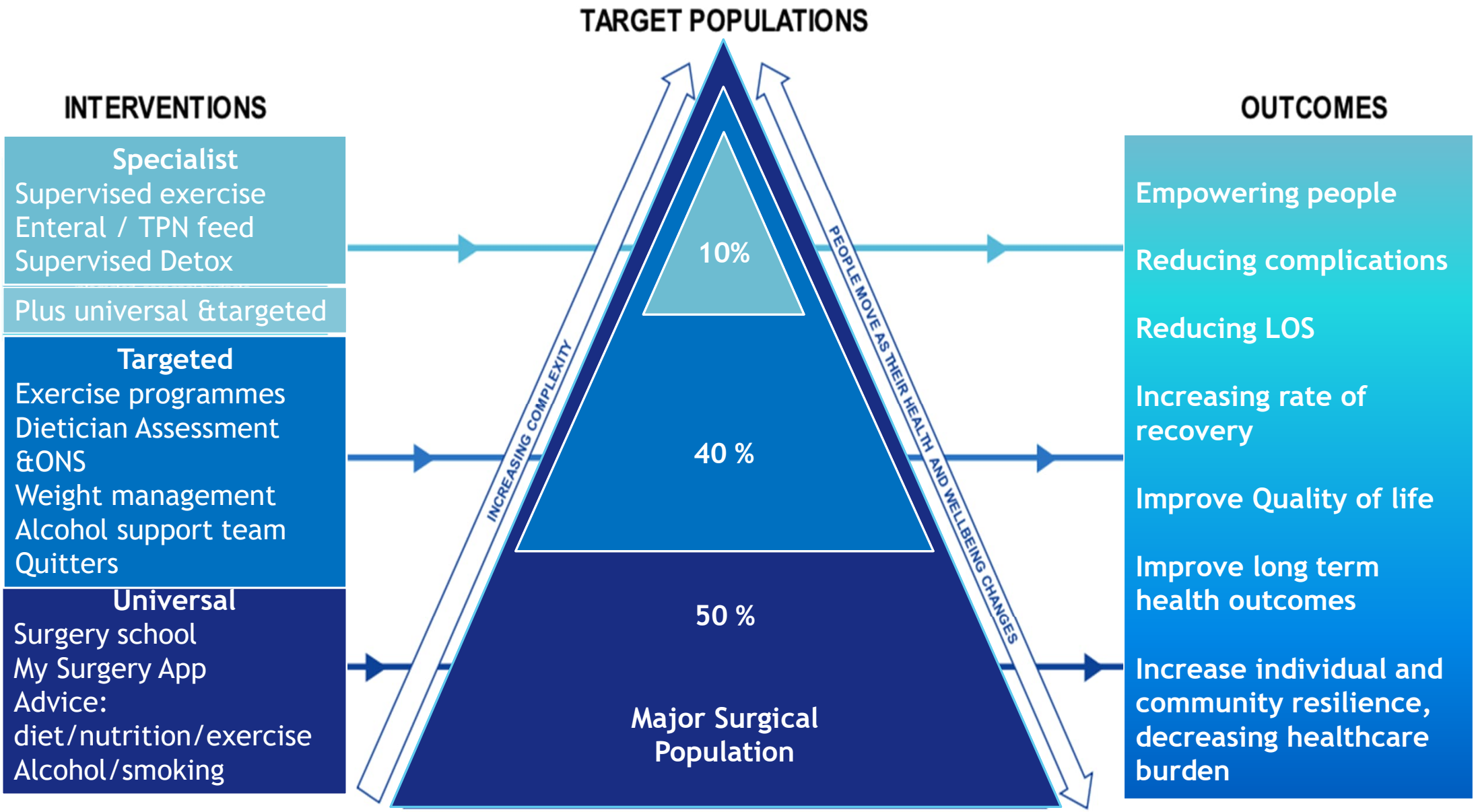
Multimodal prehabilitation

- Exercise
- Nutrition
- Psychological support
- Smoking / alcohol Cessation



Surgery, fitness and recovery

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Plus universal &targeted
Targeted
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Reducing complications
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Increasing rate of recovery
Improve Quality of life
Improve long term health outcomes
Increase individual and community resilience, decreasing healthcare burden

Universal Prehabilitation Interventions

Surgery School: Pre-operative Education

- 60% of invited attended
- 94% would recommend
- 46% changed behaviour
- Reduced length of stay and complications

Anaesthesia 2021 doi:10.1111/anae.15393

Original Article

Development and evaluation of a novel pre-operative surgery school and behavioural change intervention for patients undergoing elective major surgery: Fit-4-Surgery School

I. Fecher-Jones,[1] C. Grimmett,[2] M. R. Edwards,[3] J. S. Knight,[4] J. Smith,[5] H. Leach,[6] H. Moyses,[7] S. Jack,[8] M. P. W. Grocott[9] and D. Z. H. Levett[10]

Patient Experience

"Initially I came to school feeling that it wouldn't make any difference but once it was over, I was very happy with it and made lots of changes to my fitness"

"Patient's husband - I sing your praises to everyone, the school was definitely worth doing"

"It's nice to know that you are on somebody's radar.. Not just given an op date and that's it, you come in and go home"

"As a relative, I found this morning very insightful and reassuring for my father. It was above expectation, very good service. Even the areas which weren't relevant were interesting information too"

Virtual Surgery School

'Very informative and helpful. I hope this programme continues as it is an eye opener. Well done.'

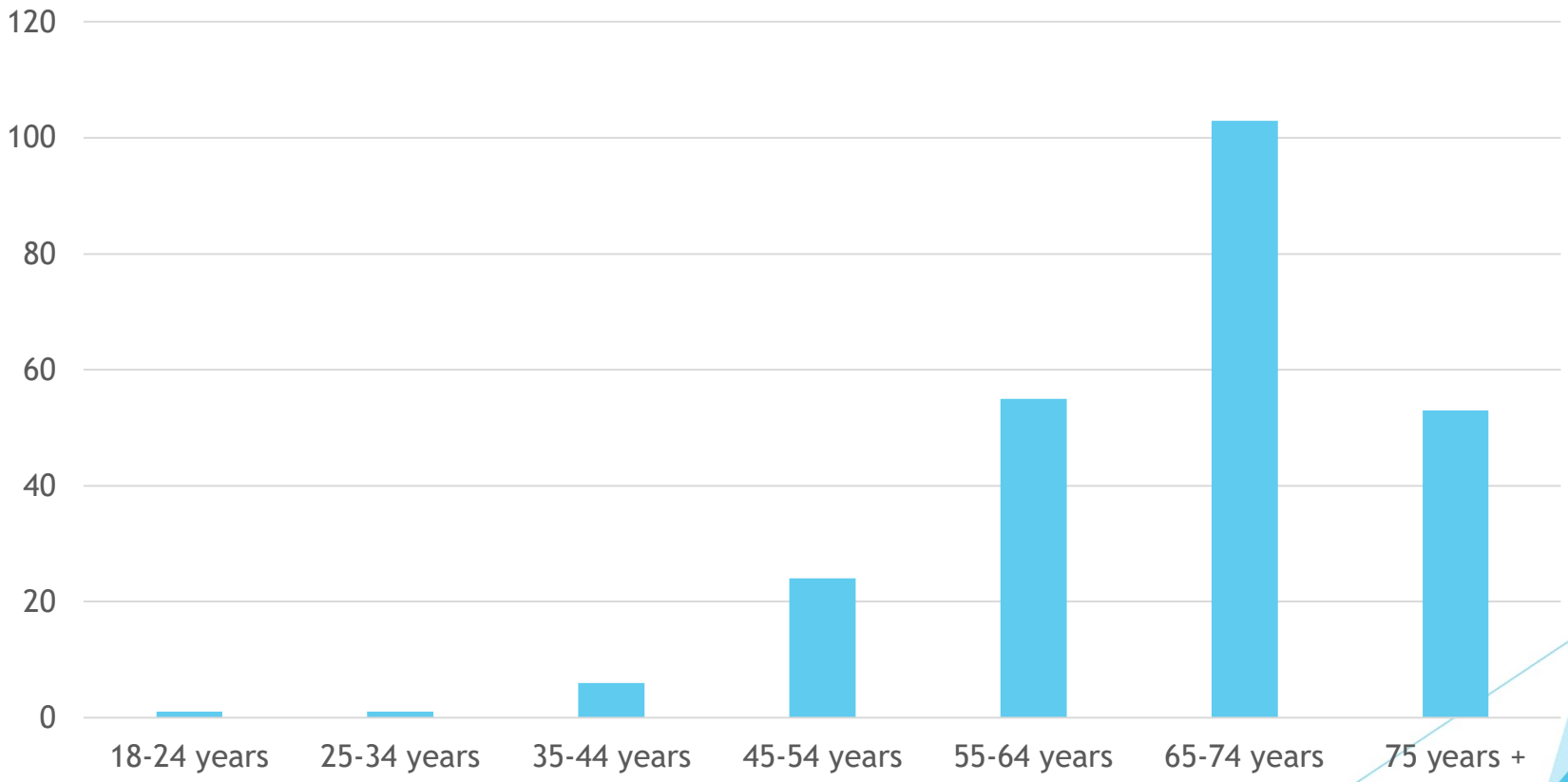
'Brilliant presentation, very useful. Makes you think about how important it is to make changes to your lifestyle preop'

- Virtual school better attended than face-to-face (69%)
- Well accepted by patients (95% satisfaction)
- 79% intended to change behaviour
- Potential accessibility challenges

(Fecher-Jones et al 2021)

Adaption of a face- to-face group behaviour change intervention (surgery school) in response to COVID19
Fecher-jones, I.; Grimmett, C.; [illegible]
International Journal of Behavioral Medicine ; 28(SUPPL 1):S8-S9, 2021.

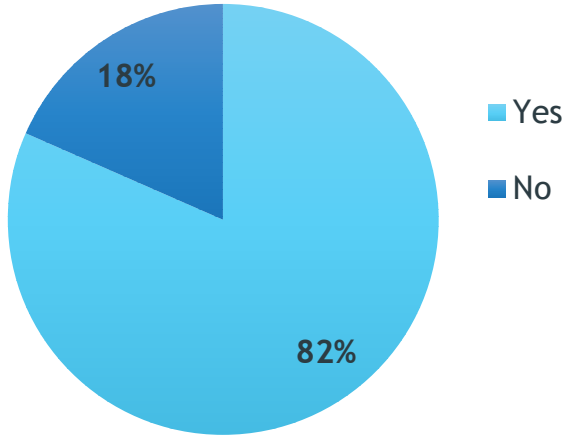
Age of Patients attending Virtual Surgery School

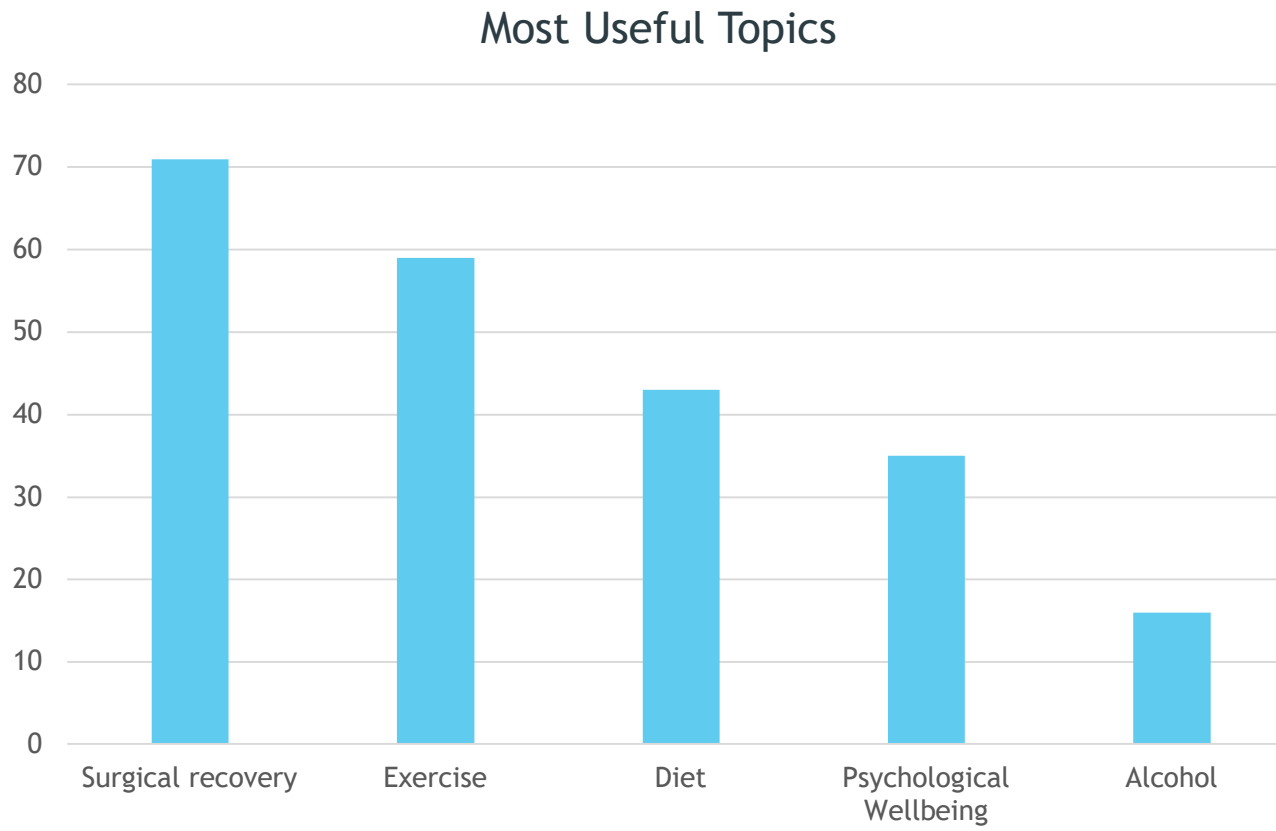


61% Male; Female 37%; Other 4%

Virtual Surgery School Intention to Change Behaviour

Do you plan to make any changes to your lifestyle in preparation for surgery as a result of this session?





NIHR | Southampton Biomedical Research Centre

Patient Empowerment

'Enabling people to choose to take control over and make decisions about their lives'

The Patients

'I think I knew everything I wanted to know about the operation from the teaching and the booklet'

'The people there knew how to do their job – you could tell they were experienced, they know what to do so it gives you more confidence'

The Staff

' They know a lot more, they are better prepared, they know what to expect and can explain what is going to happen to them'

'They seem more confident, less worried'

Session has improved my confidence in facing the upcoming surgery

This is a very useful and helpful seminar with excellent advice and information

I am grateful to have had the opportunity to receive much information and advice in a succinct, condensed and digestible format.

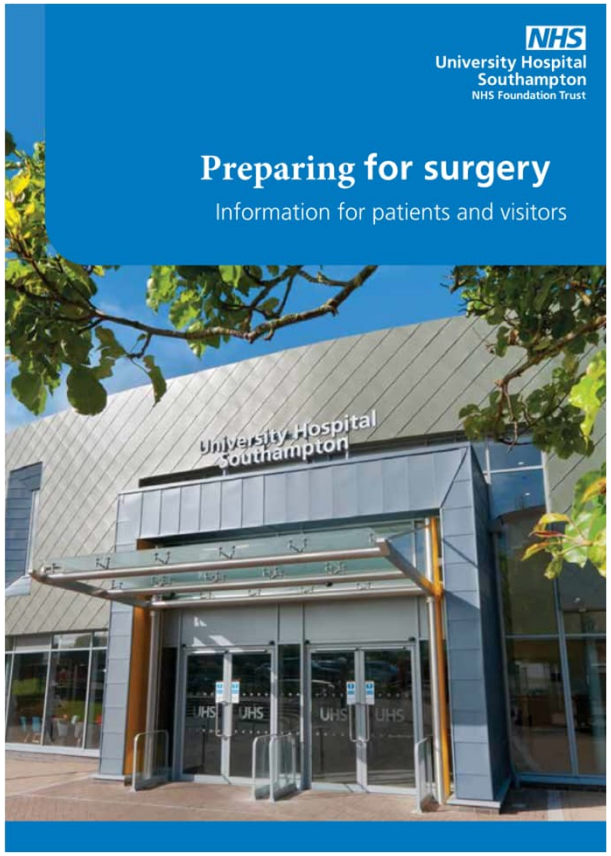
Very well presented

Everything was clearly explained and easy to understand. Thank you.

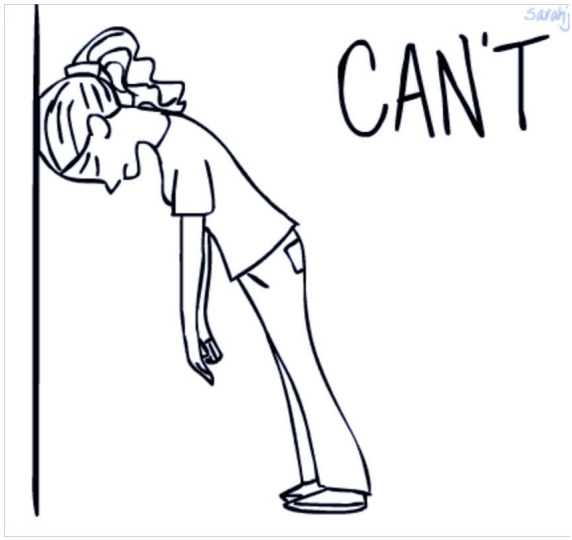
I'm glad it was online. A trip into Southampton , along with the car park charge, would have made this far less appealing.

I thought course was adapted very well to the need to be delivered virtually.

Relaxed atmosphere. Inclusive if need be. All bases covered to get the best outcome having surgery.



The Borg Rating of Perceived Exertion (RPE) scale			
Exercise intensity level	Exertion rating		Description
Low	0	Nothing at all	You will not be out of breath.
	1	Just noticeable	You could continue the exercise or activity all day.
	2	Very slight	You could continue the exercise or activity for hours.
	3	Slight	You will be able to hold a conversation without getting out of breath.
	4	Slight to moderate	You will be able to speak a few sentences while carrying out the exercise or activity.
Moderate	5	Moderate	You will still be able to hold a conversation, but you will need to make an effort to keep going with the exercise or activity.
	6	Some difficulty	You will find it slightly harder to breathe and you will find it takes more effort to keep going with the exercise or activity.
	7	Moderately severe	You will be able to speak in short sentences, but you will need to make a constant effort to keep going with the exercise or activity.
High	8	Severe	You will struggle to say more than two to three words at a time, and you will need to concentrate fully to keep going with the exercise or activity.
	9	Very severe	You will be almost completely out of breath and find it difficult to speak at all.
	10	Maximal shortness of breath	Maximal effort. You will be completely out of breath and unable to talk.



- Lack of time
- Lack of fun and enjoyment
- Lack of self-motivation
- Lack of self-efficacy
- Injuries
- Lack of self-management skills
- Lack of encouragement/support
- Poor role models
- Environmental factors

Behavioural Change

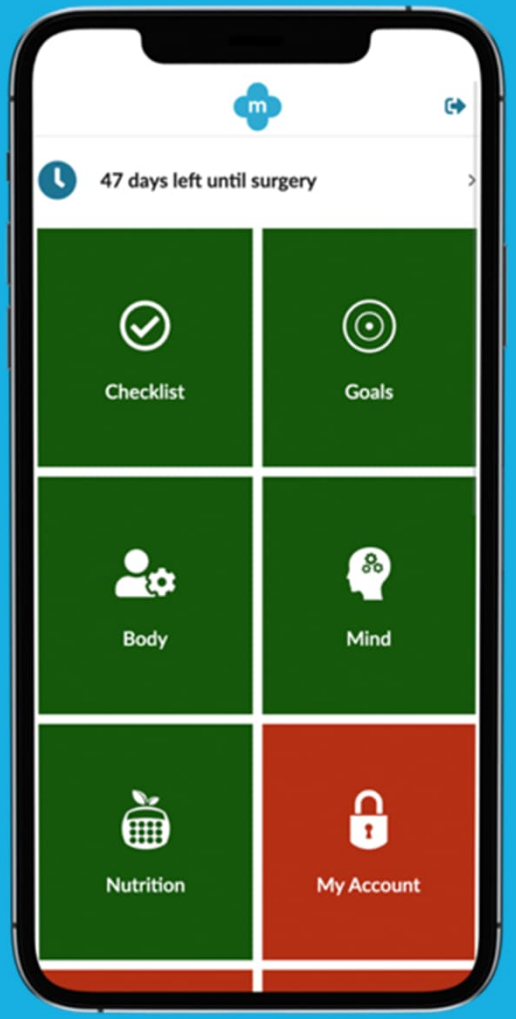
1. Be specific in your advice
2. Put the patient in charge
3. Measure progress and feedback
4. Make sure they have support
5. Be clear how the change will have impact for them personally
   - Motivational Interviewing
   - SMART goals
   - Diarying
   - Support
   - Accountability
   - Nudging
   - Rewards

Universal Prehabilitation Intervention:

myOp

NHS Digital

myOp is a digital therapeutic which is designed to be prescribed to patients to reduce post-operative complications.



BODY

- Aerobic fitness programme
- ACBT
- Smoking and Alcohol cessation
- Managing other medical conditions

MIND

- Mindfulness-based Cognitive Therapy course
- Education on what to expect, how to participate in recovery

NUTRITION

- Comprehensive nutritional advice
- Based on the Eatwell Guide

CHECKLIST

- Dynamic checklist
- Signposts to key parts of the App
- Encourages engagement

GOALS

- SMARTER goal setting
- Track progress and achievements

SCREENING

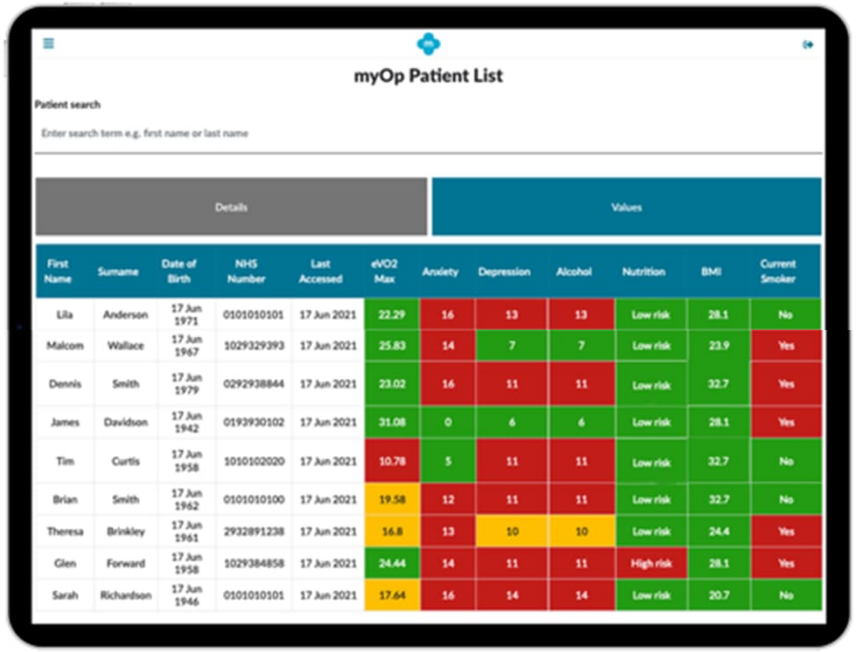
- DASI, HADS, Alcohol Audit and Nutrition screening
- Scores used to direct and prompt patient engagement

Screening and Clinician Dashboard:

myOp supports clinical teams in delivering digitally enhanced care

The myOp clinician interface enables:

- Rapid risk stratification
- Identification of patients who need targeted interventions
- Remote management with 2 way chat and video consultations
- MDT working



First Name	Surname	Date of Birth	NHS Number	Last Accessed	eVO2 Max	Anxiety	Depression	Alcohol	Nutrition	BMI	Current Smoker
Lila	Anderson	17 Jun 1971	0101010101	17 Jun 2021	22.29	16	13	13	Low risk	28.1	No
Malcom	Wallace	17 Jun 1967	1029329393	17 Jun 2021	25.83	14	7	7	Low risk	23.9	Yes
Dennis	Smith	17 Jun 1979	0292938844	17 Jun 2021	23.02	16	11	11	Low risk	32.7	Yes
James	Davidson	17 Jun 1942	0193930102	17 Jun 2021	31.08	0	6	6	Low risk	28.1	Yes
Tim	Curtis	17 Jun 1958	1010102020	17 Jun 2021	10.78	5	11	11	Low risk	32.7	No
Brian	Smith	17 Jun 1962	0101010100	17 Jun 2021	19.58	12	11	11	Low risk	32.7	No
Theresa	Brinkley	17 Jun 1961	2932891238	17 Jun 2021	16.8	13	10	10	Low risk	24.4	Yes
Glen	Forward	17 Jun 1958	1029384858	17 Jun 2021	24.44	14	11	11	High risk	28.1	Yes
Sarah	Richardson	17 Jun 1946	0101010101	17 Jun 2021	17.64	16	14	14	Low risk	20.7	No

Create a body goal

What activty are you going to do? E.g. go for a walk or go swimming.

I will....

When are you going to do it? E.g. Every day or every weekend.

When...

Where are you going to do it? E.g. i n the park, at the lesiure centre. (Optional)

Where...

Continue

Confirm your body goal

That looks great! Please check it and make sure it's right before you proceed.

I will go for a long walk every day in the park

Things that might stop me:
Bad weather
Looking after the girls

I will overcome this by:
Wear a waterproof coat
Going on another day

To change this goal just click the back button to go back. Or you can edit it from the Goals screen after you've saved it.

Save this goal

Save this goal and create another goal

Cancel this goal

Well done

You've added an achievement to your diary, doesn't that feel great.

What next?

Add another achievement

View my goals

View my checklist

How hard did you have to work during that workout?

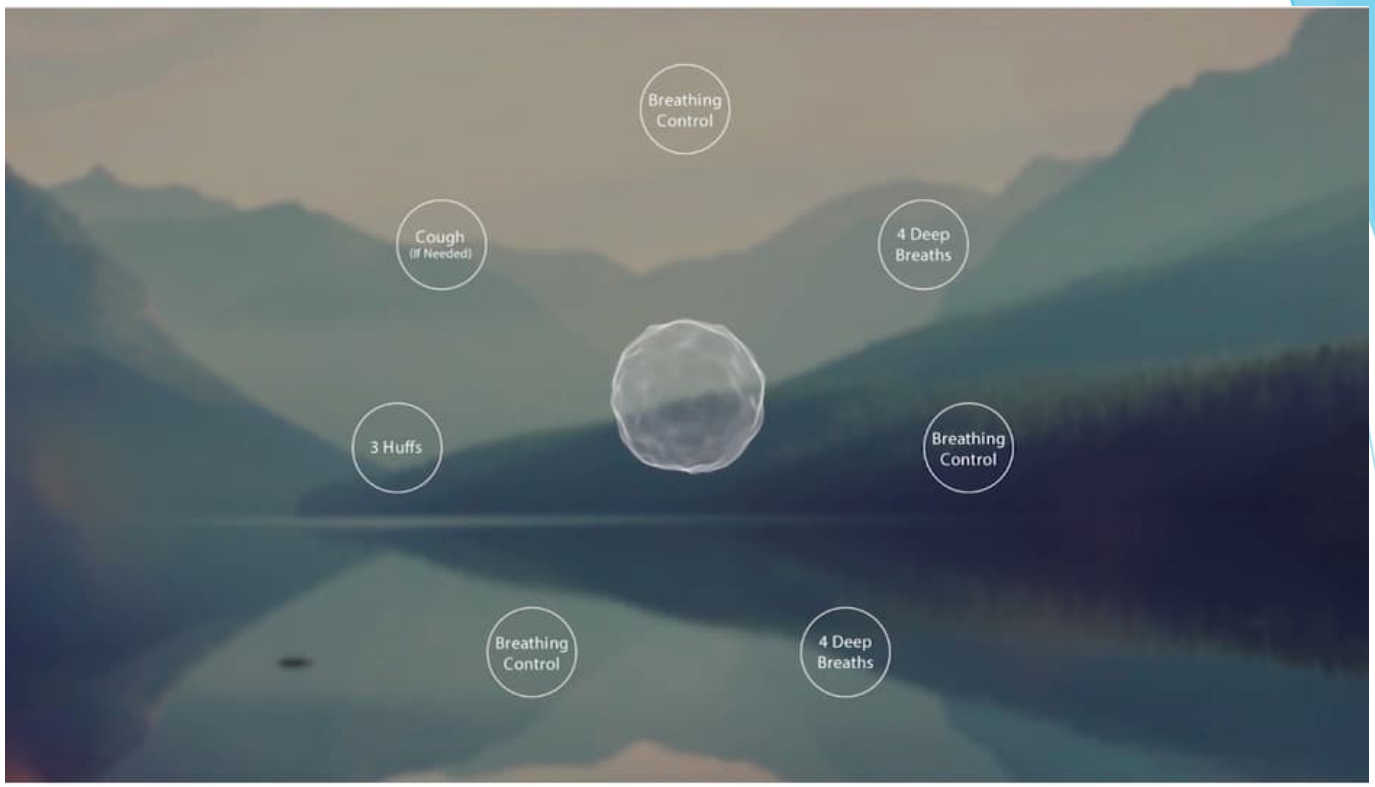
5

Breathing faster, can talk but can't sing, have to breath between sentences

0 10

No effort at all Flat out, as hard as I could

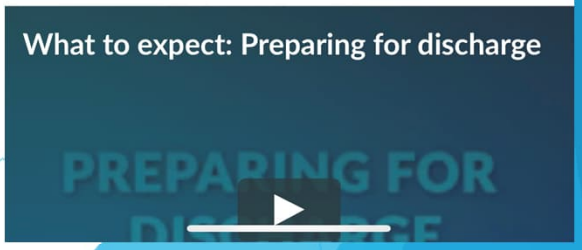
Continue



Breathing 3: The myOp Breathing Exercises

Educational Material

What to expect at pre-assessment and surgical clinics



Digital Partnership Award
UHS, UoS, Norfolk and Norwich, University of North Midlands MyMHealth

Aim: To evaluate the feasibility of using MyOp in surgical pathways

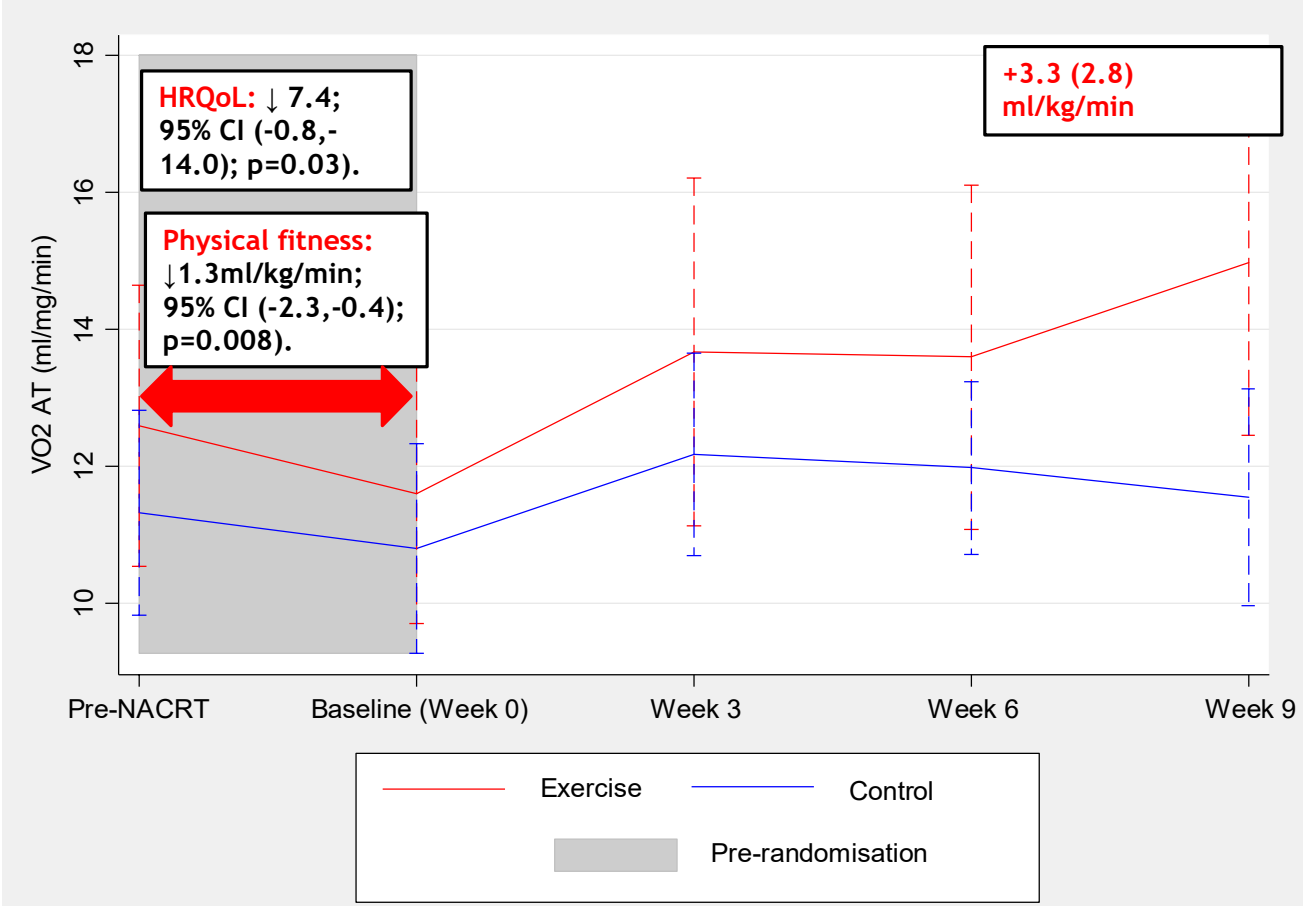
NIHR | Southampton Biomedical Research Centre

iPOETTS International Prehabilitation Society

University of Southampton | University Hospital Southampton NHS NHS Foundation Trust

Targeted/Specialised Prehabiltation

Supervised
High Intensity Interval Training and Fitness



Exercise training adherence: 96 %

Secondary outcome: Health related quality of life

Patients reported ***positive changes*** in their ***physical, psychological well-being and their HRQoL***

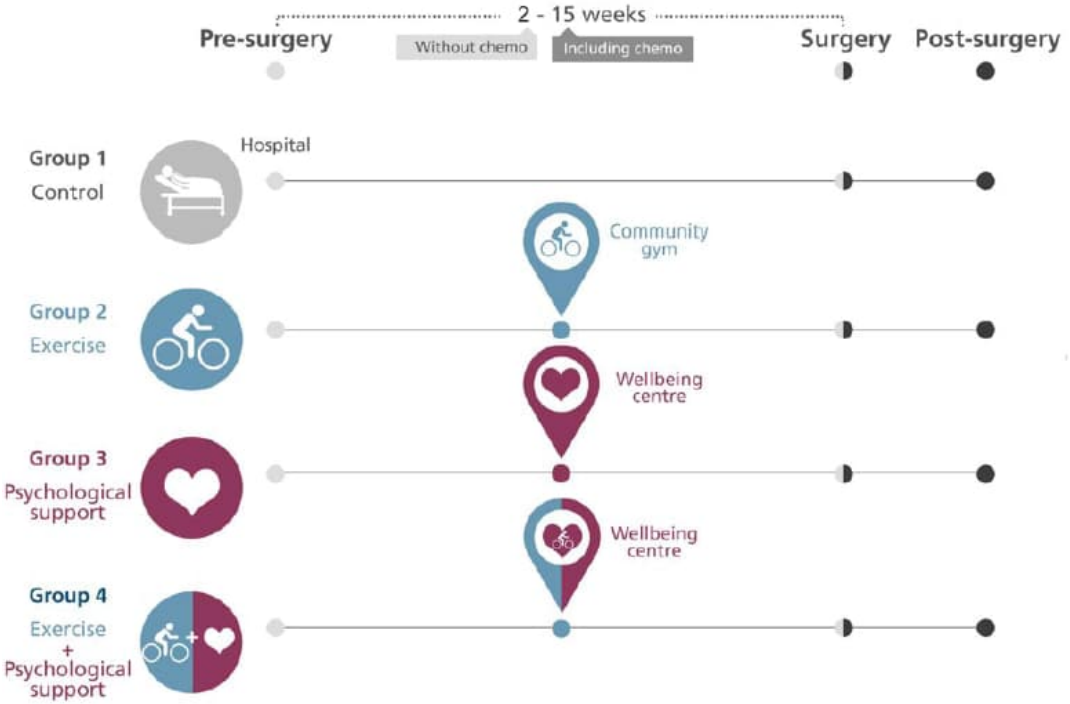
Patients reported a ***major impact of cancer and CRT*** on their ***physical, social and psychological well-being.***

Loughney 2019 POM

Multimodal Prehabilitation and Clinical Outcomes: Wesfit: UK Multicentre RCT

wesfit Fit4Surgery

WESSEX CANCER TRUST



- Major abdominal cancer surgery
- 2 weeks to 8 weeks

NHS Wessex Cancer Alliance

NHS England

Jack, West 2021 F1000

Virtual Multi-modal Prehabilitation

SafeFit Trial: virtual clinics to deliver a multimodal intervention to improve psychological and physical well-being in people with cancer. Protocol of a COVID-19 targeted non-randomised phase III trial

Chloe Grimmett ,[1] Andrew Bates,[2] Malcolm West,[2,3] Samantha Leggett,[2] Judit Varkonyi-Sepp,[2] Anna Campbell,[4] June Davis,[5] Stephen Wootton,[6,7] Clare Shaw,[8] Rachael Barlow,[9] Joanna Ashcroft,[10] Andrew Scott ,[11] Helen Moyes,[2] Lesley Hawkins,[12] Denny Z H Levett,[2,13] Fran Williams,[14] Michael P W Grocott,[2,13] Sandy Jack[2]

BMJ OPEN 2021 Grimmet et al

- Covid 1st wave
- UK wide
- Exercise, nutritional support and psychological support
- Pre and 6 months post op
- https://safefit.nhs.uk
- Health related QoL
- Fitness, nutritional status, psychological distress
- 1200 in 1 year

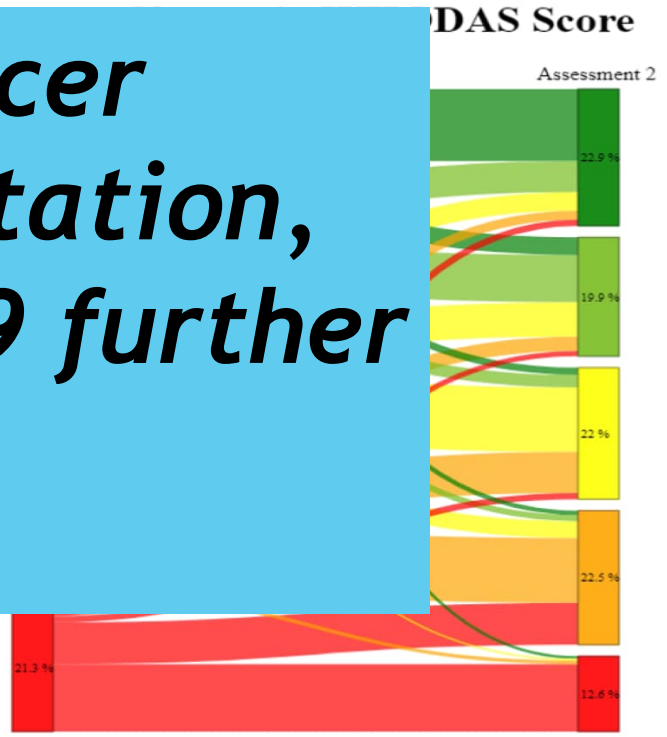
Clinical Implementation in the NHS: Multimodal Prehabilitation

Nutrition
PREHAB 4 CANCER
GREATER MANCHESTER
Exercise
Wellbeing

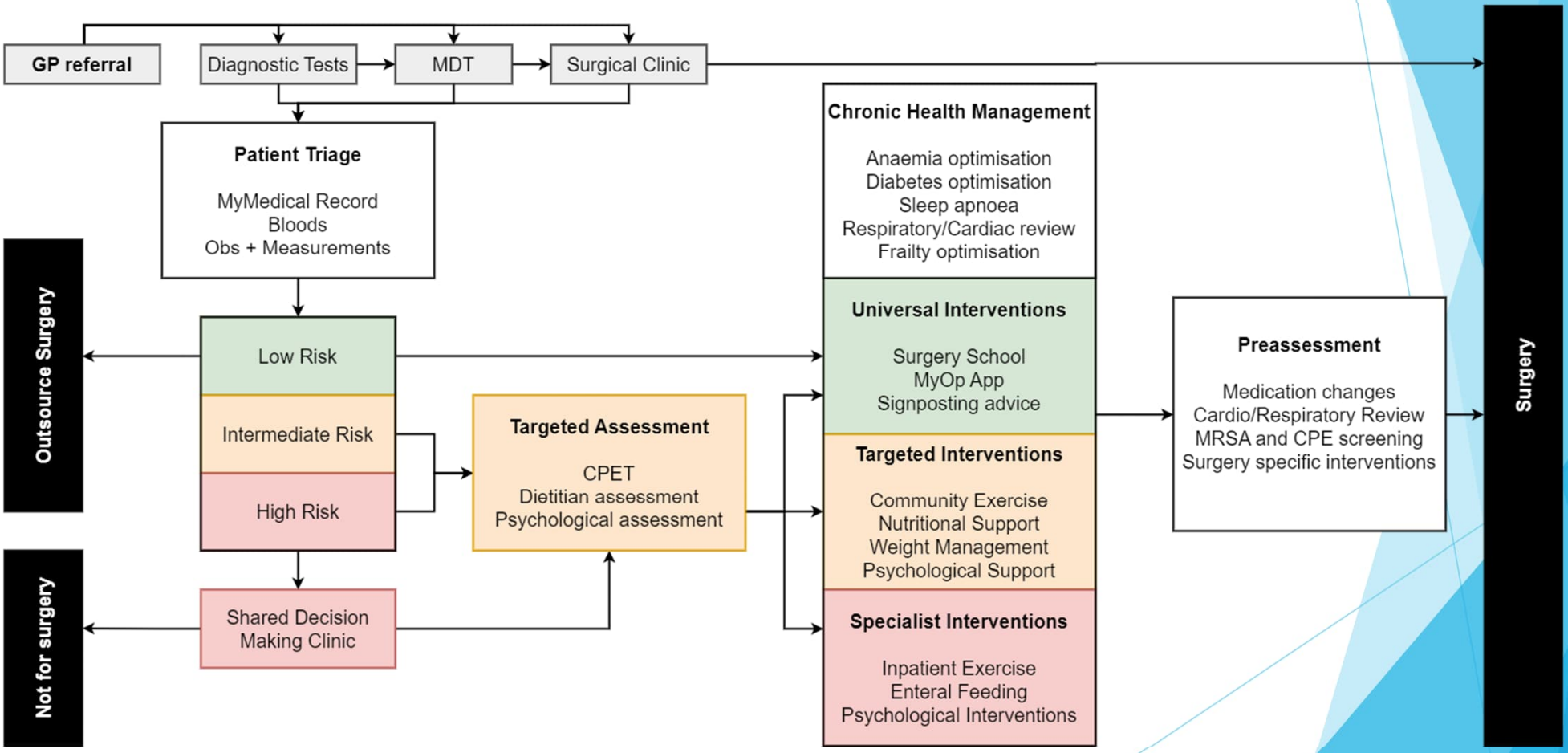
SCW
NHS
South, Central and West
Commissioning Support

Greater Manchester integrated care system

For every 1000 colorectal cancer patients undergoing prehabilitation, resources are released for 179 further patients to undergo surgery



Re-structuring Perioperative Care Pathways

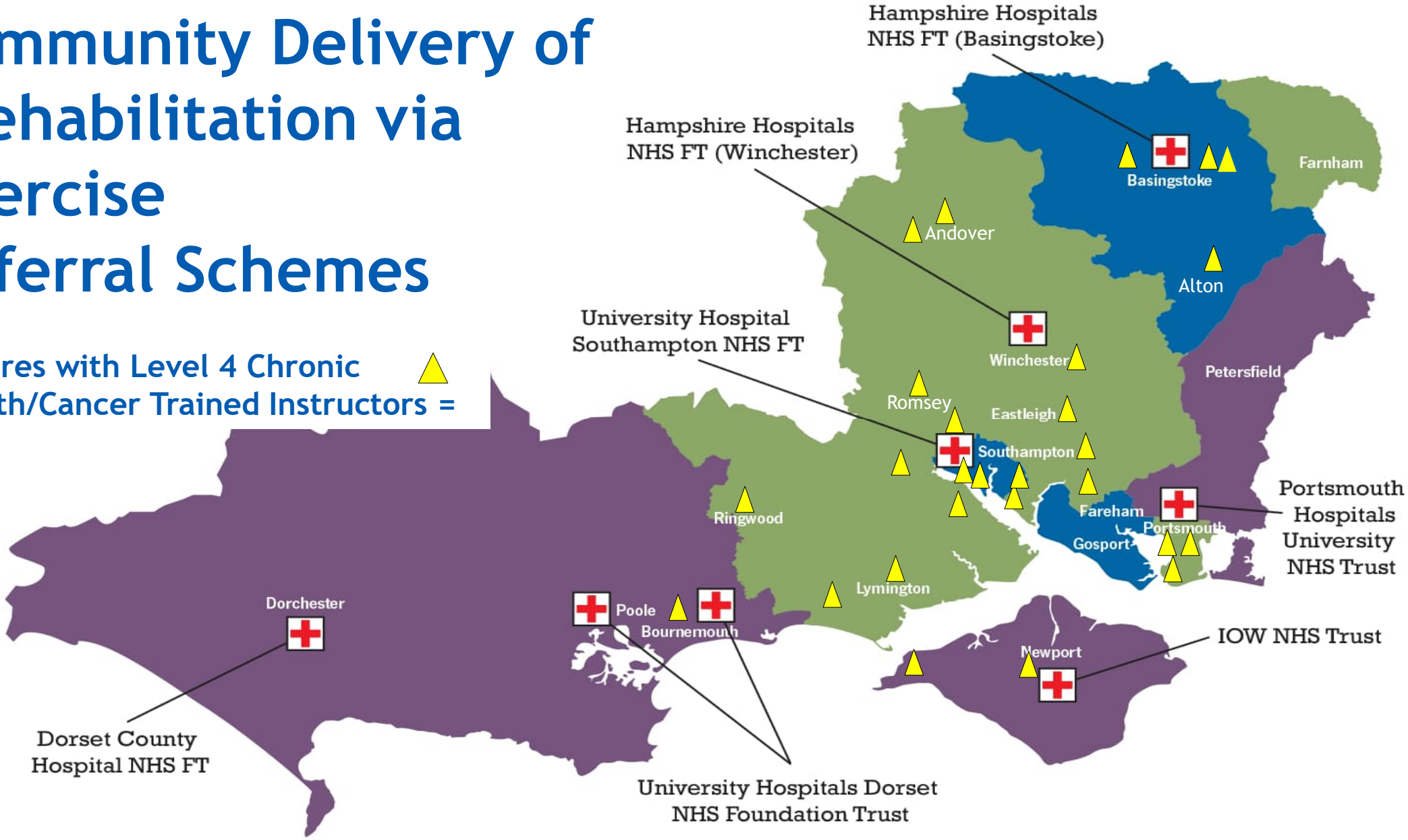


Exercise	Nutrition	Psychology
Universal • MyOp App • Surgery School • 1 month gym pre-op • 1 month gym post-op	**Universal** • MyOp App • Surgery School	**Universal** • MyOp App • Surgery School • Cancer Nurse Specialist
Targeted • 3/week supervised HIT in community gym • 2 weeks min pre-op • 1 month post-op	**Targeted** • High protein ONS • Dietician directed optimisation	**Targeted** • Clinical psychologist directed intervention • Psychological Support in community
Specialist • 3/week supervised HIT in hospital • 2 weeks min pre-op	**Specialist** • NG/TPN feeding pre-op	**Specialist** • Psychiatric/psychological treatment

Community Delivery of Prehabilitation via Exercise Referral Schemes

Key:

Centres with Level 4 Chronic health/Cancer Trained Instructors = ▲

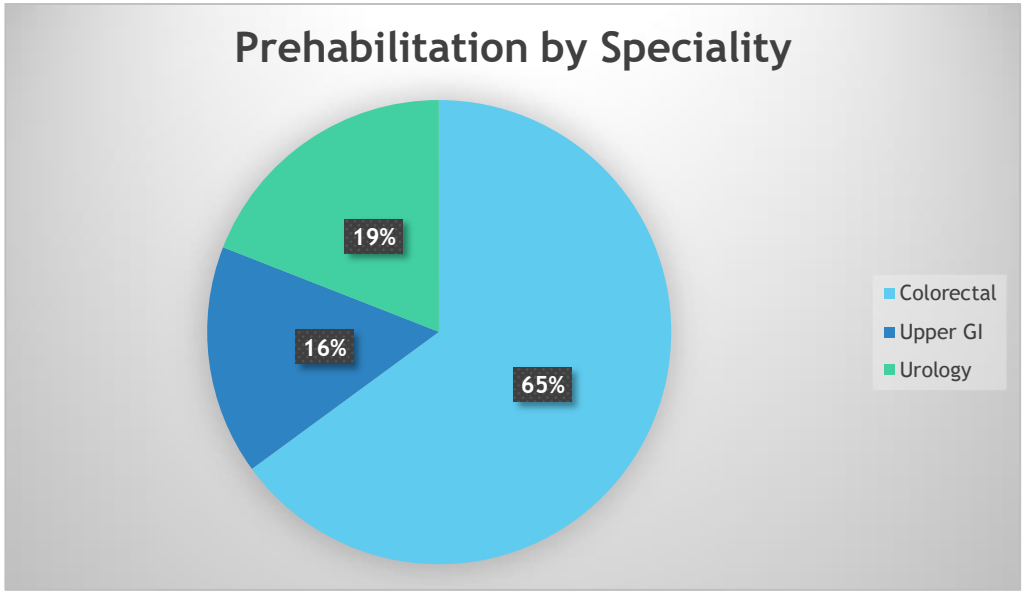


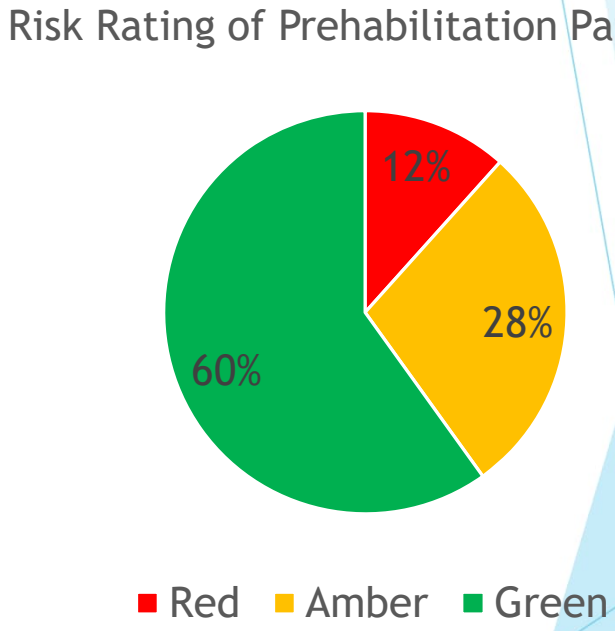
Prehabilitation Service: Overall cost-benefit

Intervention Level	Cost Per Patient	Cost for 500 patients
Staffing Costs	£172.50	£86,250
Intervention Costs	£488.63	£244,316
Total Costs	**£661.13**	**£330,566**
Cost Savings	-£1390.43	-£695,215
Increased Income	-£661.50	-£330,750
Total Benefits	**-£2051.93**	**-£1,025,965**
OVERALL SAVINGS OF PREHABILITATION	**£1390.80**	**£695,400**

NIHR | Southampton Biomedical Research Centre

Pilot Prehabilitation Service in Cancer Surgery (n=462)





- ALL red rated (high risk) patients consented to supervised exercise
- 20% of green patients declined gym membership as they were already self managing

SUMMARY

- Pathway modification is essential to achieve the aims of perioperative medicine
- Early digital screening allows identification of modifiable risk factors early in the pathway
- The majority of surgical patients can self screen using a digital tool
- Early identification of poorly controlled comorbidities allows timely pre-operative optimization and involvement of other specialities on a needs-based basis
- There are workforce implications of digital implementation and identifying unmet need
- Prehabilitation is clinically effective, feasible and cost effective
- Digitally assisted prehabilitation is promising but needs further evaluation

Acknowledgements

Research

- Mike Grocott/Prof Sandy Jack (Fit-4-Surgery research Lead)
- Chloe Grimmet (Behavioural Scientist)
- Judit Varkonyi-Sepp (Clinical Psychologist)
- Lewis Matthews (PhD ACF - nutrition)
- David Harvie (ACF – Frailty)
- Frances Wensley (ACF MyOperation)
- Sandy Jackman (ACF CIPHER)
- Malcolm West (Academic Colorectal surgeon)
- Lesley Hawkins (Research Manager)
- Samantha Leggatt (Trial Manager)
- Andy Bates (Research Nurse)
- Steve Wootton (Academic Nutrition)

Clinical

Denny Levett (Clinical Lead)

Martyn White (Perioperative Care Lead ACP)

Imogen Fecher (PhD student and Nursin Band 8)

Gilly Ansell (Deputy POM lead)

Alice Aarvold (Deputy POM lead)

Charlie Allan (Perioperative Anaemia Lead)

Mark Edwards (Pre-assessment Lead)

Ester Acainas Davila

Carin Dear

Paddy Taply

Claire Halloran

Kate Donovan

Mel Cooper (Manager/Admin)

Stephanie Berry (Admin)

Lisa Shepperd (Anaemia Lead nurse)

James Otto – (Exercise physiologist/prehab)

Gurinder Rayat (Exercise physiologist)

Prehabilitation Dietician – starting in next 6 weeks

after a couple of sessions on the bike I thought: "actually, I quite like this". And I was feeling better

Prehabilitation helps you contribute to your cancer story - so you have your own ownership and don't just feel you are being 'done to

I would definitely recommend it to anybody … Very, very much so. It's very much--- it's very worth doing

After the surgery, what I did was--- right at the very start, I downloaded CT yoga exercises. So, even when I was in hospital, I was doing CT yoga exercises. And my personal trainer hasn't taken me back yet. She said she won't (laughing) until September. But what I've been doing is a lot of walking. And that's--- that's certainly helping as well

It makes you feel more in control of your treatment.

I certainly felt that the exercise really did prepare me. It did help. Because I was at a pretty low ebb when I started. So, you know, I was really at a low ebb and this gave me something to go forward

Takes your mind off it all - something to focus on.

I've only gone and bought myself a bike so I can carry on with the hills

What is digital prehabilitation?

- An app
- A platform
- Advice
- A wearable
- ? Live supervision

Designing a digital intervention

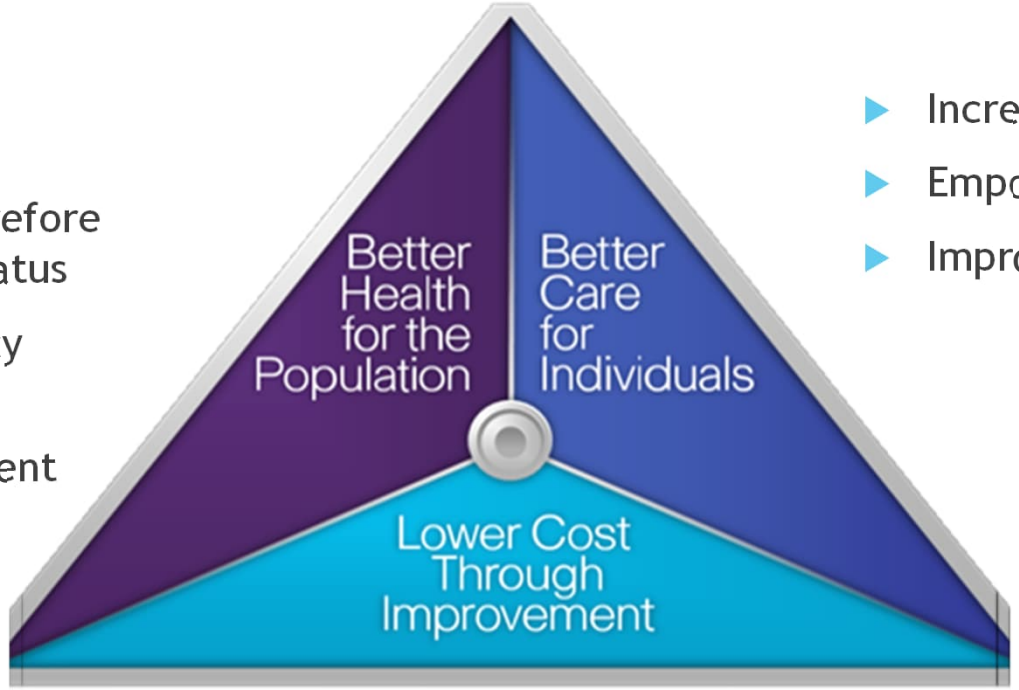
- CO-DESIGN WITH PATIENTS
- PROTOTYPE INTERVENTION
- REFINE
- FEASIBILITY

Study	Study characteristics	Sample characteristics	Intervention characteristics	Main outcome	Results
Blasco et al., 2020[27]	RCT	N = 86: Aged 60–80 years, to undergo total knee replacement surgery.	D: 4 weeks before TKA INT: PE TH: Home group implemented training domiciliary. Pt. where called once a week, to check compliance.	Overall balance and ADL function.	The two groups receiving the intervention had improvements in overall balance, compared CON (group 2 vs. group 1, p = 0.010; group 3 vs group 1, p = 0.012). No difference between home-based and hospital-based training (p = 0.953).
Bouwsma et al., 2018[31]	Cluster RCT	N = 433: Aged 18–65 years, scheduled for hysterectomy and/or adnexal surgery.	D: From 2 to 18 month. INT: PI TH: Interactive web portal: facilitating self-management, by individual convalescence advice.	Duration until full sustainable return to work.	Median time for return to work was 49 days (IQR 27 –76) for the intervention group, and 62 days (IQR 42 –85) for the control group.
Buvanendran et al., 2021[28]	RCT	N = 157: Aged 18–85 years, undergoing total knee arthroplasty.	D: Either 8 or 4 weeks of telehealth Cognitive-behavioral therapy (CBT) or 4 weeks in person. INT: PI TH: The first and last session of CBT was made in person. Other session where completed using telehealth, not further specified.	Effectiveness of CBT measured with the PCS-score.	In phase 2 the difference of the PCS-score from inclusion to the surgery, between the two groups was −6, 95%CI (−10; −2).
Halder et al., 2021[32]	RCT	N − 132: Women ≥18 years, receiving surgery for stress urinary incontinence/pelvic organ prolapse.	D: ≥3 days before surgery INT: PI TH: Telephone call: Additional information on surgery and to review surgical/perioperative expectations.	Surgical Preparedness, measured by the Preoperative Preparedness Questionnaire.	Pt. receiving telehealth call were more prepared for surgery than those who received usual preoperative counseling alone (83 vs 59%, p < 0.01).
Jungae et al., 2021[29]	RCT	N = 60: Women scheduled to undergo total knee arthroplasty (TKA).	D: 3 weeks before TKA. INT: PT group: PE. PE group: PE and PI. TH: PT group: video call to follow intervention and receive supervision. PE group: Daily notification, motivation and education via telephone call.	Isokinetic Strength Assessment in Quadriceps.	Significant differences were observed across the three time points in 60°/s extension peak torque and 180°/s extension peak torque. The intervention in the PT and PE group improved muscle strength, ROM and functional outcomes.
Van der Meij et al., 2019[33]	RCT	N = 344: Aged 18–75 years, scheduled for adnexal, hernia inguinal surgery/ cholecystectomy	D: 4 weeks before surgery. INT: PI, PE TH: Website, App and activity tracker: E-health program offered personalized care. Control group: usual care and access to placebo website.	Patient-Reported Outcomes Measurement Information System (PROMIS), Physical Function (PROMIS-SF).	Median time until return to normal activity was 21 days (IQR 17–24) in the intervention group and 26 days[20–32] in the control group (adjusted HD 1.38, 95% CI(1.09–1.73; p = 0.007).

Pederson 2023 Surgeon

Value of Prehabilitation and Optimisation

- Improve Health Behaviours and therefore long-term health status
- Improve Self Efficacy
- Improve long term condition management



- Increase speed of recovery
- Empowerment
- Improve Quality of Life

- Reduce Hospital costs by reducing complications, length of stay, critical care utilization, emergency readmissions, cancellations on the day of surgery

Personalised Prehabilitation in High-risk Patients Undergoing Elective Major Abdominal Surgery

A Randomized Blinded Controlled Trial

Variable	Control	Intervention	p
	n=63	n=62	
Hospital LOS	13 (20)	8 (8)	0.078
ICU LOS	4 (13)	1 (2)	0.078
Surgical re-intervention	6 (10%)	2 (3%)	0.273
Patients with complications	39 (62%)	19 (31%)	**0.001**
Complications per patient	1.4 (1.6)	0.5 (1.0)	**0.001**
Mortality	1 (2%)	1 (2%)	1.000

Barberan-Garcia *Annals of Surgery* 2017

Prehab Patient Feedback

Excellent service - really good gym, had 3 session pre op and 3 session post op - really glad to have it in the recovery period. felt much stronger going into surgery. Would 100% recommend.

Extremely impressed with prehab - particularly useful having supervised so didn't 'over do it' - breathing exercises at surgery school helped lots.

Prehab was really really useful - felt much more prepared and back to normal quicker than anticipated. Has since returned to the gym and now has a full membership attending twice weekly. Op brought forward hence did not receive full course but ok with this.

Would very much recommend prehab to anyone in the run up to surgery - felt much more prepared. Found surgery school really useful -- had never been to hospital before so gave a good insight for him and his family.


BREAK OUT

Breakout Topics

Workshop 3: Steveston Room	Workshop 4: Airport Ballroom
Pre-Surgical Screening	Reducing Patient Wait Times

WORKSHOP #3:

PRE-SURGICAL SCREENING

Perioperative Care Alignment and Digital Solution Committee

MD FRCPC Anesthesiology
PCADS Chair
Medical Lead Geo 1 Anesthesiology Island Health
Advisory Board Member BC Anesthesia Society
Chair of the Anesthesia Quality Committee Island Health

SPECIALIST SERVICES COMMITTEE

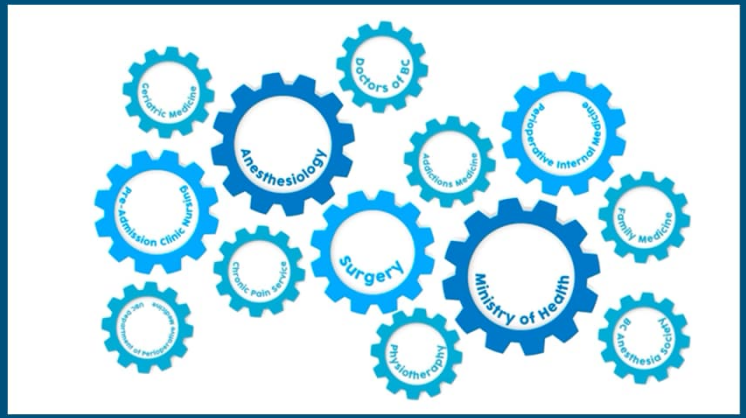
British Columbia ANESTHESIOLOGISTS' SOCIETY

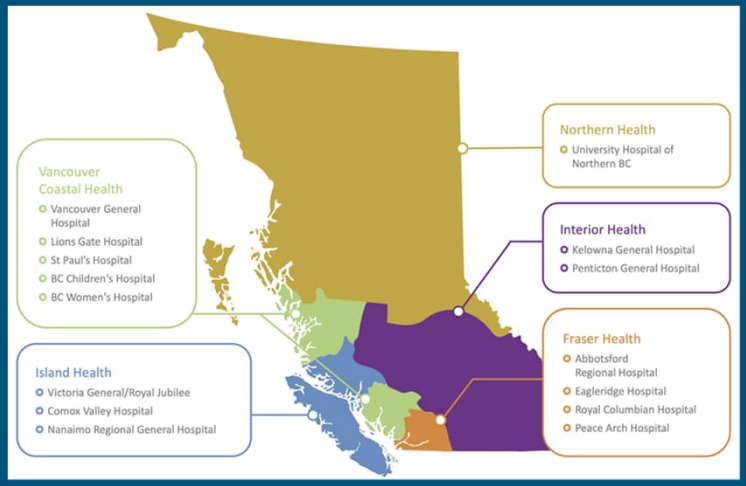
GOALS of PCADS: Preop Care Alignment

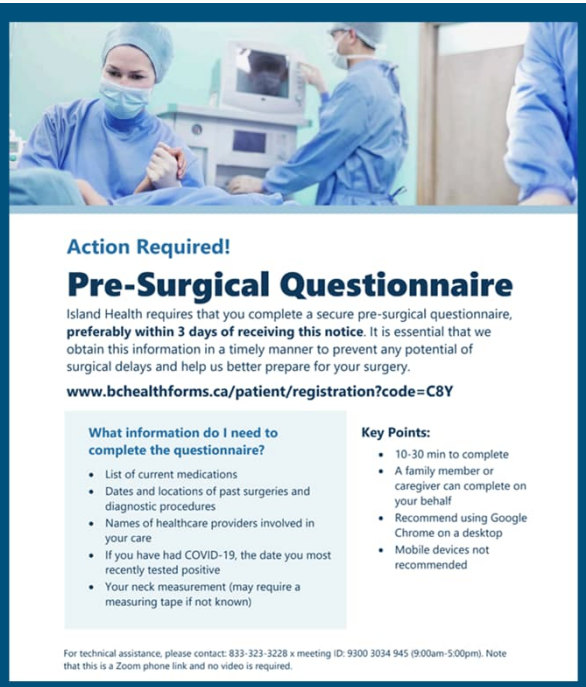
1. Patient Screener Questions
2. Preoperative Investigations Grid
3. Perioperative Medication Management Guidelines
4. Prehabilitation and Optimization Recommendations

PCADS Membership:

- Anesthesiologists (all health authorities)
- Chronic Pain and Transitional Pain Specialists
- Perioperative Internal Medicine
- Geriatrics Medicine
- Addictions Medicine
- BC Anesthesiology Society President
- Division Head of UBC Dept Periop Medicine
- Doctors of BC President
- Surgeons
- Family Medicine
- Pre Admission Clinic Nursing
- Patient Partners
- Ministry of Health surgical services and digital team







Action Required!

Pre-Surgical Questionnaire

Island Health requires that you complete a secure pre-surgical questionnaire, **preferably within 3 days of receiving this notice**. It is essential that we obtain this information in a timely manner to prevent any potential of surgical delays and help us better prepare for your surgery.

www.bchealthforms.ca/patient/registration?code=C8Y

What information do I need to complete the questionnaire?

- List of current medications
- Dates and locations of past surgeries and diagnostic procedures
- Names of healthcare providers involved in your care
- If you have had COVID-19, the date you most recently tested positive
- Your neck measurement (may require a measuring tape if not known)

Key Points:

- 10-30 min to complete
- A family member or caregiver can complete on your behalf
- Recommend using Google Chrome on a desktop
- Mobile devices not recommended

For technical assistance, please contact: 833-323-3228 x meeting ID: 9300 3034 945 (9:00am-5:00pm). Note that this is a Zoom phone link and no video is required.

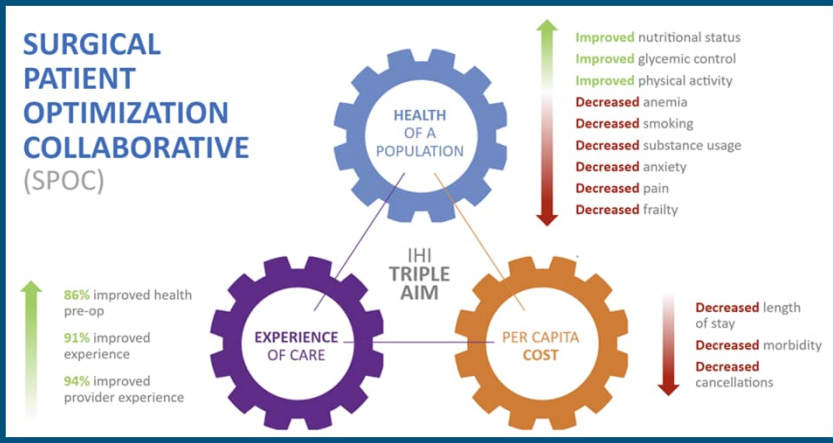
PCADS

=

PSS MVP MoH

+

SPOC by DOBC



Ministry of Health Digital Enablement

PCADS Clinical Content

Summary for Clinicians

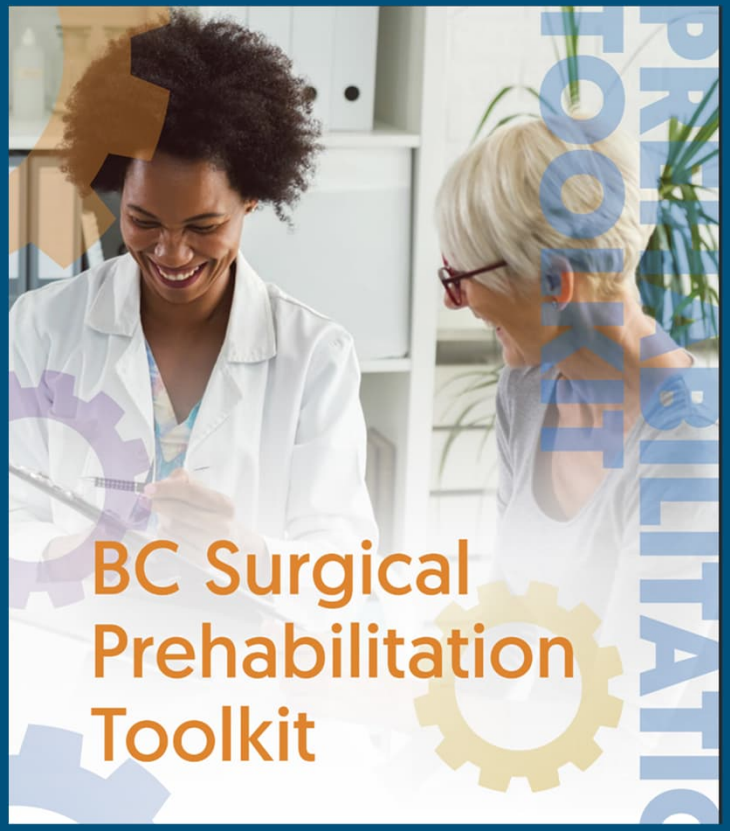
PCADS Economic Analysis:

An Economic Analysis of the Newly Developed Pre-surgery Digital Screening Tool was recently completed by Prioritize Consulting Ltd.

- Comparative analysis of potential cost and benefits between current care and care that involves the proposed intervention (e.g. Pre-surgical Digital Screening Tool)

- 3 Main Areas of focus:
  - Effect of Earlier Prehab and Optimization
  - PAC Nursing Time Saved
  - Preoperative Investigation Reduction

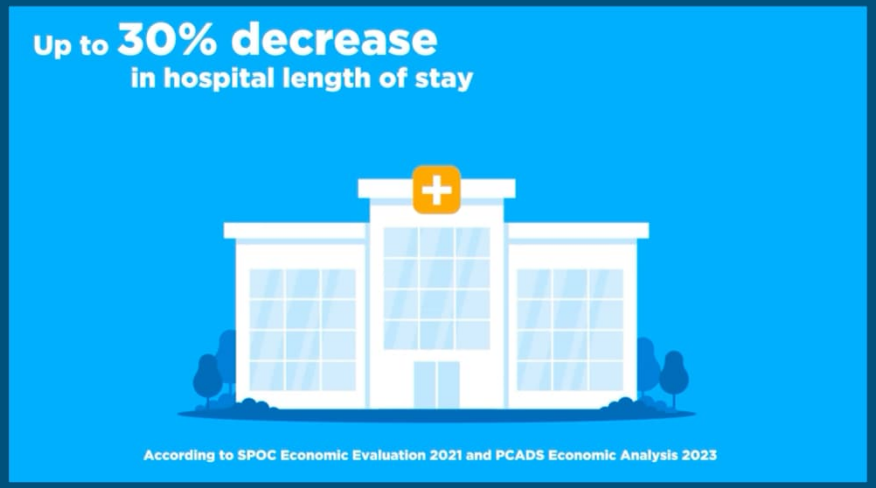
GOALS of PCADS: Preop Care Alignment



1. Patient Screener Questions
2. Preoperative Investigations Grid
3. Perioperative Medication Management Guidelines
4. **Prehabilitation and Optimization Recommendations**

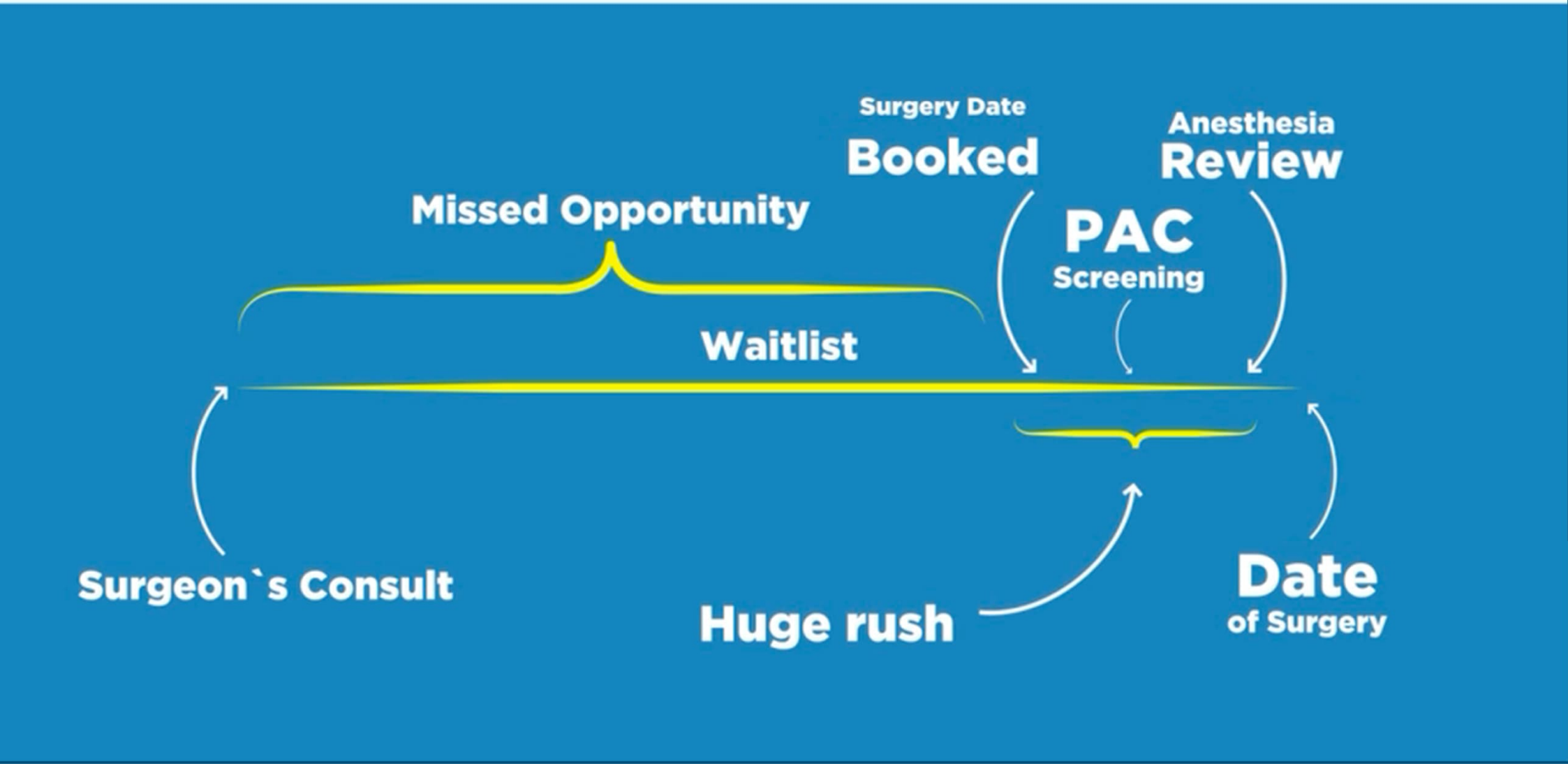
Benefits of a Digital PSS

Reducing COST: SPOC

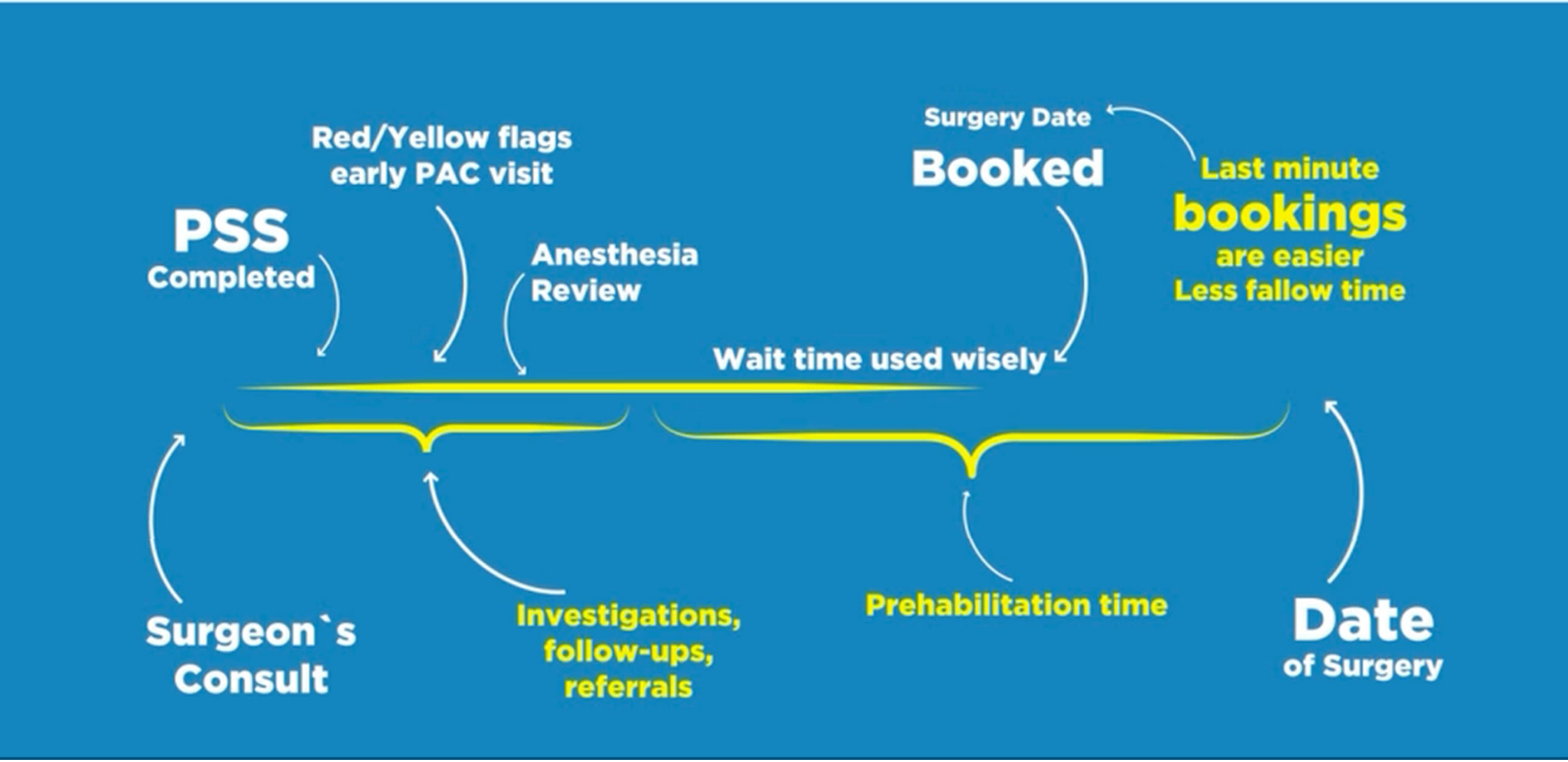


- Supports the reach of prehab and optimization by:
  - Summarizing goals
  - More TIME
- SPOC showed a NET cost savings of $1.5-5k per patient
- Prehabilitation earlier while the patient is on the waitlist is estimated to save over 8000 bed-days in BC in general surgery and orthopedics alone.

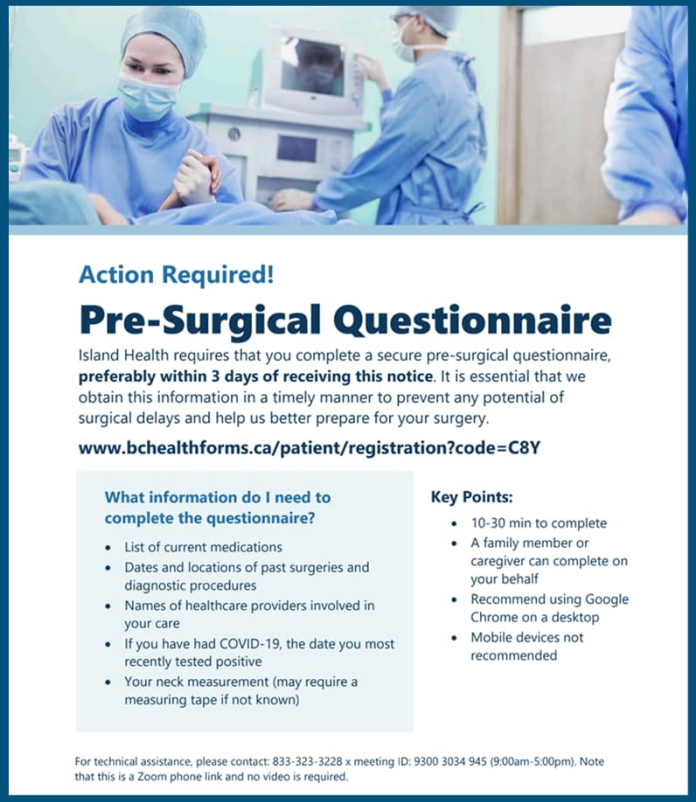
Current Surgical Timeline



Future Surgical Timeline



GOALS of PCADS: Preop Care Alignment



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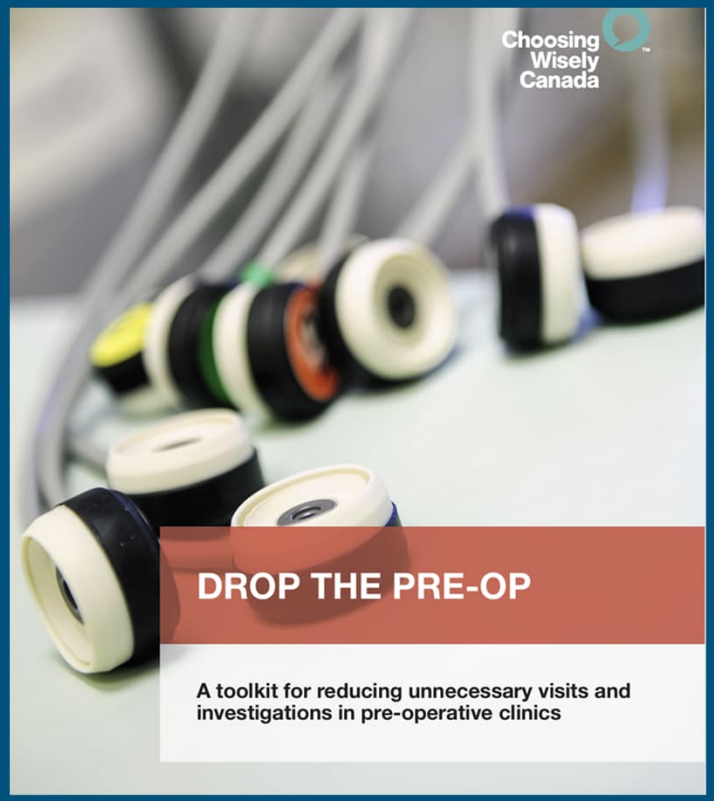
Benefits of a Digital PSS

Reducing COST: PAC

- No transcription required
- No cross referencing of guidelines
- Streamlined visit as questionnaire completed ahead of time

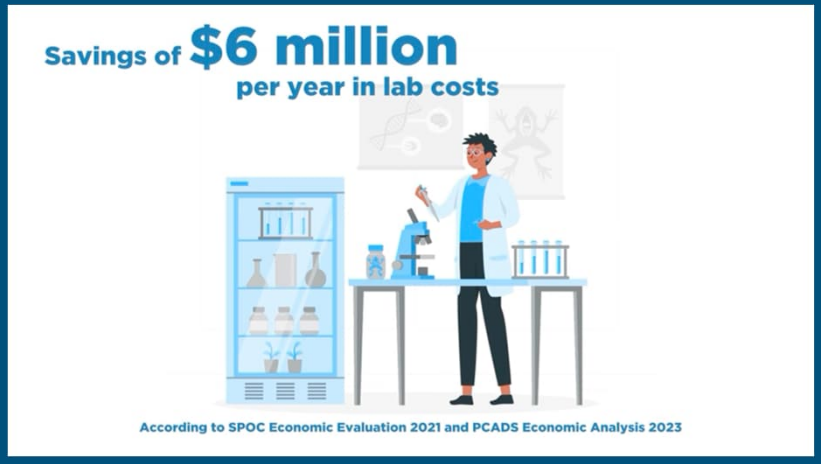
GOALS of PCADS: Preop Care Alignment



1. Patient Screener Questions
2. **Preoperative Investigations Grid**
3. Perioperative Medication Management Guidelines
4. Prehabilitation and Optimization Recommendations

Benefits of a Digital PSS

Reducing COST: LAB



- Facilitating choosing wisely implementation
- Reduce 360k tests per year in BC

Benefits of a Digital PSS

Improving the health of the population

- Leverages the motivation people have around surgery
- Reinforces lifestyle changes
- Empowers patients

Benefits of a Digital PSS

Improving health equity

- All patients and clinicians will have the benefit of prehab and optimization regardless of location within the province

Benefits of a Digital PSS

Improving patient experience

- Better prepared for surgery
- Less last minute surgical cancellations
- Improved postoperative outcomes
- More streamlined pre op experience

Benefits of a Digital PSS

Improving provider experience

- Tailored summary at our fingertips!
  - Less time on transcription
  - Less time completing risk scores
  - Less time cross referencing guidelines
  - More time to improve health outcomes and connect with our patients
- Less need to delay surgeries

Benefits of a Digital PSS

Climate Resilient Care

- Reducing unnecessary investigations
- Preventing adverse outcomes

GOALS of PCADS: Preop Care Alignment

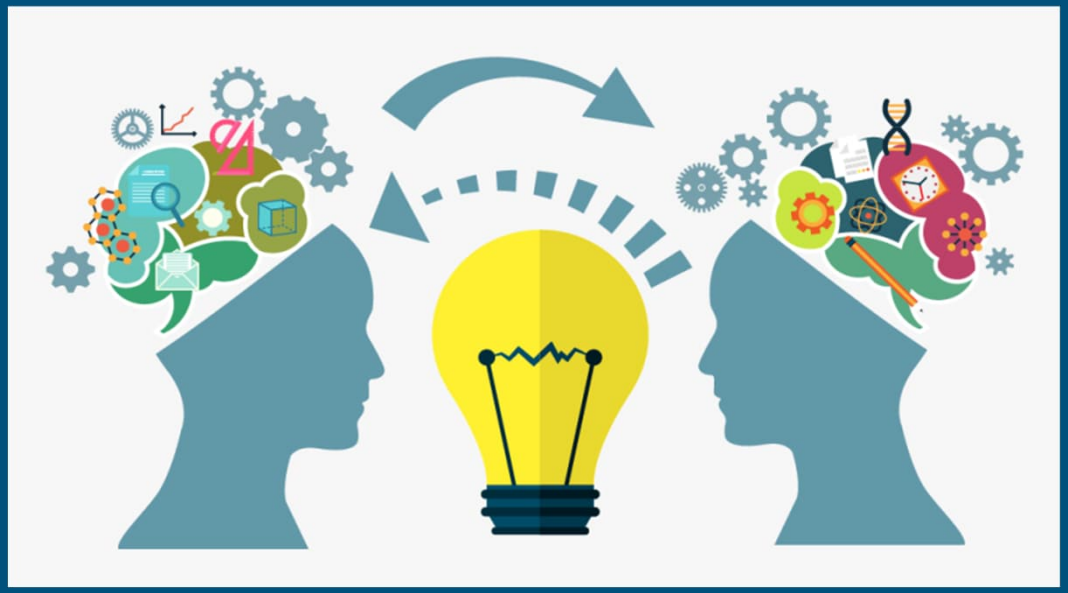
1. Patient Screener Questions
2. Preoperative Investigations Grid
3. **Perioperative Medication Management Guidelines**
4. Prehabilitation and Optimization Recommendations

Benefits of a Digital PSS

Patient Safety

- Perioperative medication management is extremely complex
- Up to date guideline driven medication management advice
- Summary at our fingertips

What innovative ideas do you have for implementing this province wide digital tool?



WORKSHOP 3 QUESTION:

What innovative ideas do you have for implementing a province-wide digital pre-surgical screener at your site specifically or throughout the province?

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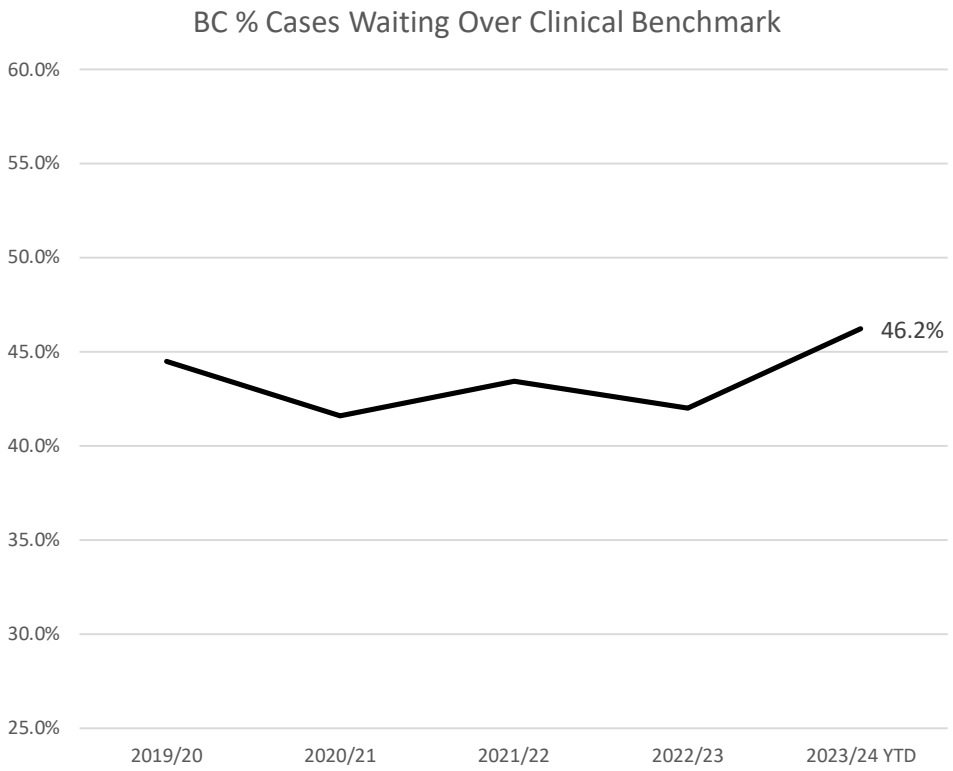
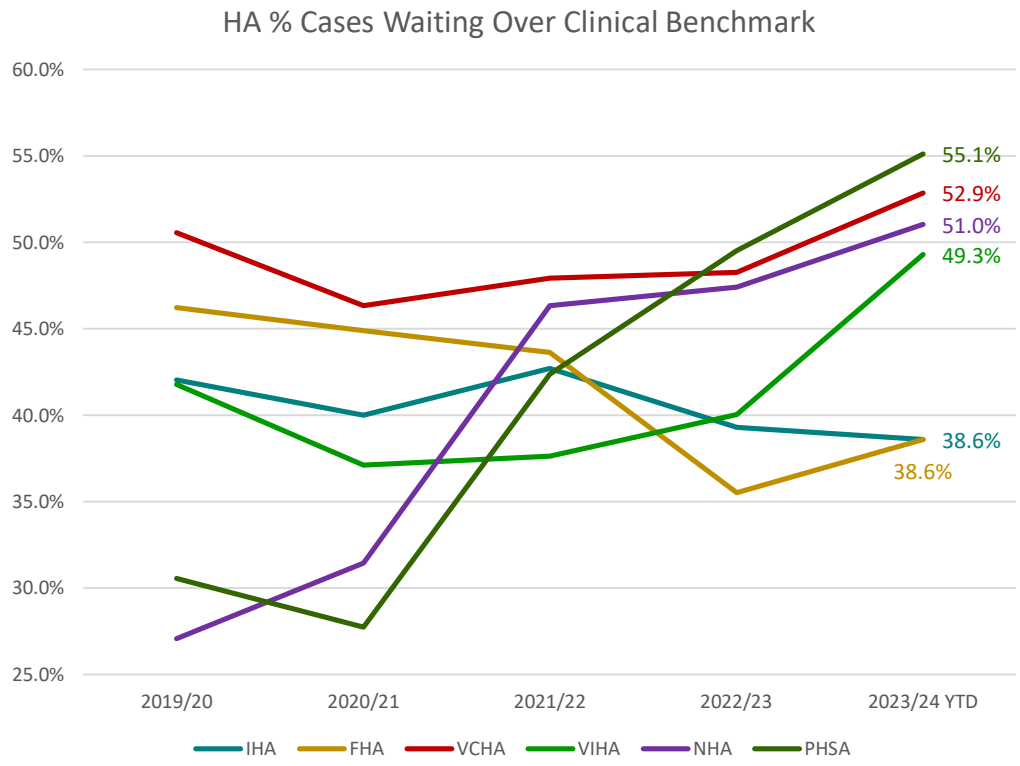
SLIDO.COM
#PCANWORKSHOP3

WORKSHOP #4:

REDUCING PATIENT WAIT TIMES

BC Surgical Wait Times





Wait Times – Current Strategies

- Central Intake
  - **19 Hip & Knee Replacement Programs**
  - **14 GI Endoscopy Single Entry Models**

- First In First out (FIFO)

HEALTH AUTHORITY	Baseline	Target	Actual	vs. Baseline	vs. Target
1	73%	80%	71%	-1%	-9%
2	71%	80%	78%	+6%	-2%
3	72%	80%	71%	-1%	-9%
4	74%	80%	75%	+1%	-5%
5	83%	80%	78%	-4%	-2%
6	79%	80%	74%	-6%	-6%
Overall	**73%**	**80%**	**74%**	**+1%**	**-6%**

Wait Times – Current Strategies

- Waitlist Management
- Diagnosis Code Selection
- OR Allocation

	Cases Waiting	Waiting Over 52 Weeks (%)	Waiting Over 104 Weeks (%)	Longest Waiter (Weeks)
HA 1	17,232	468 (2.7%)	20 (0.1%)	157
HA 2	20,003	907 (4.5%)	87 (0.4%)	207
HA 3	23,056	2,774 (12%)	580 (2.5%)	279
HA 4	19,806	1,500 (7.6%)	233 (1.2%)	302
HA 5	7,223	1,188 (16.4%)	247 (3.4%)	183
HA 6	4,501	724 (16.1%)	165 (3.7%)	277
BC	91,821	7,561 (8.2%)	1,332 (1.5%)	302

- Other

WORKSHOP 4 QUESTION:

What innovative solutions / ideas do you have for reducing patient wait times?

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BREAK

PCAN SUMMIT Evaluation

We need your help! Your feedback will help us understand what worked well and how we can improve for follow-up activities. Your information will remain confidential, and results will be shared with the PCAN planning team in aggregate form only.

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#PCANEVAL

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- Willingness to collaborate more often

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- Willingness to collaborate more often
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- The surgical priorities resonate with clinicians and administrators
- There is potential for improvement within current resources
- Attendees are committed to an improved surgical system in BC

PCAN Advisory Committee

Apply Now!

PCAN Innovation Funding

SPECIALIST SERVICES COMMITTEE
- PERIOPERATIVE CLINICAL ACTION NETWORK -
PCAN INNOVATION FUND GUIDE

What to expect from PCAN?

HUGE THANK YOU!

Shauna Polly

Minh-Yen Ly

Eric Young

Ana Cherry

Sonali Sharma