

Reorganising specialist cancer surgery for the 21st century: a mixed methods evaluation

RESPECT-21

Professor Naomi Fulop
UCL

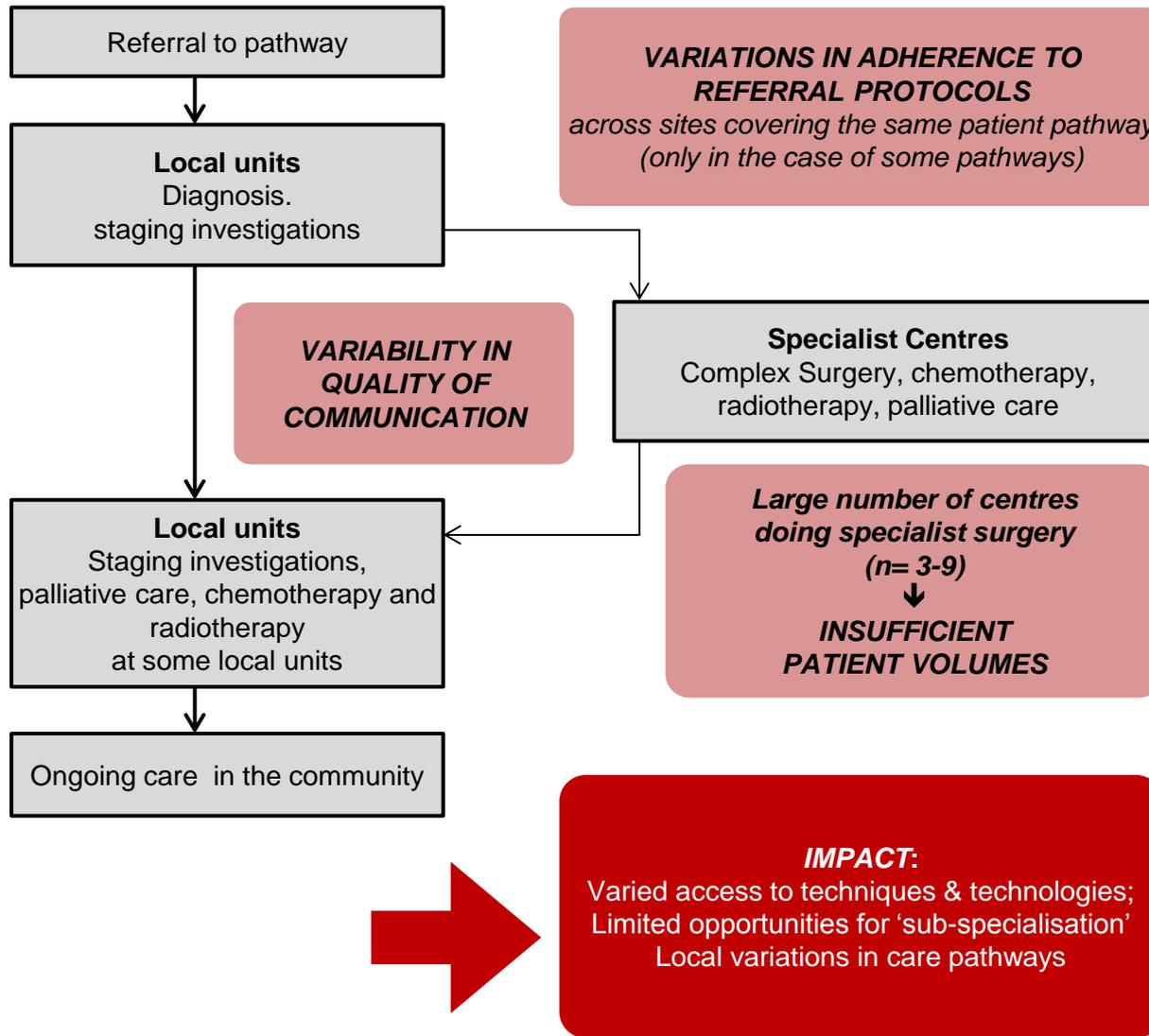
UCLH Cancer Collaborative Annual Review Event
26 June 2018

- Evaluation of centralisation of specialist cancer surgical services for urological (bladder, prostate, kidney) and oesophageal gastric (OG) cancers in London Cancer and Manchester Cancer
- Funded by NIHR Health Services & Delivery Research Programme, 2015-2019
- See published protocol: Fulop NJ et al. Reorganising specialist cancer surgery for the twenty-first century: a mixed methods evaluation (RESPECT-21). *Implement Sci* 2016;11(1):155 doi: 10.1186/s13012-016-0520-5.

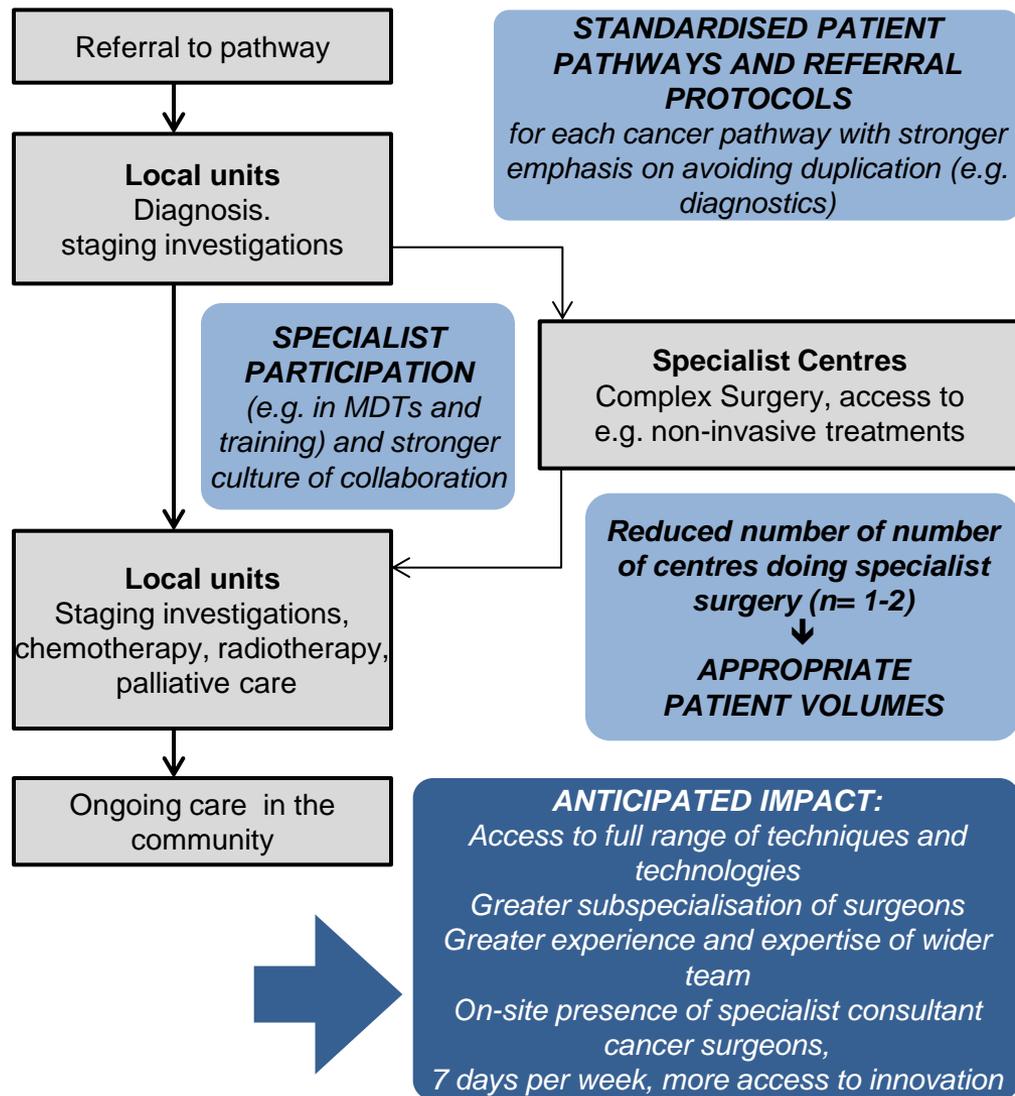
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- **Acknowledgement:** Neil Cameron, David Holden, Colin Jackson, Michael Aitchison, Laura Vallejo-Torres, Sarah Darley

- Evidence of association between higher volume and better outcomes in some clinical settings
- Higher volume associated with better outcomes of specialist surgery for urological and OG cancers
- Longstanding UK/international recommendations to centralise specialist services; an ongoing priority
- Potential to improve care provision and outcomes
 - Provide full range of specialists and technologies
 - High volume increases experience, facilitates specialisation

Changes being studied (before)

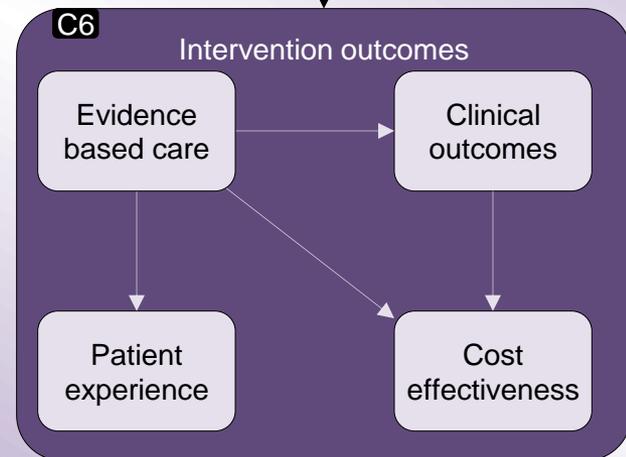
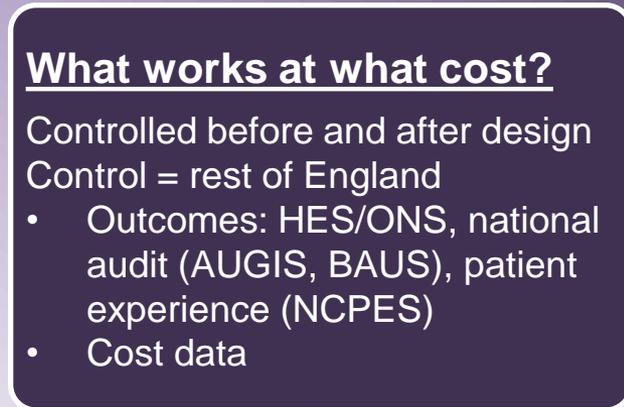
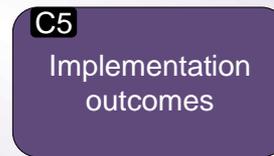
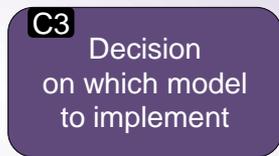
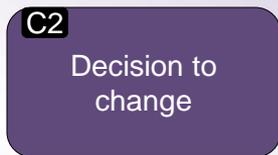


Changes being studied (after)



- ***London Cancer***
 - Changes to all 4 pathways implemented by **April 2016**
- ***Manchester Cancer***
 - Originally, changes to all 4 pathways due Dec 2015 (Later revised to Dec 2016)
 - Currently...
 - **OG** cancers: implementation by **Sept 2018**
 - **Urological** cancers: not yet known
- **REAL WORLD EVALUATION!**

1. What are **patient, public and professional preferences** in relation to these centralisations?
2. What were the **key processes in centralising** specialist cancer surgery services in the two regions?
3. What is the **impact of the centralisations on staff and healthcare provider organisations**, including ways of working, skill mix, and approaches to collaboration?
4. What is the **impact on provision of care**, in terms of clinical processes and outcomes?
5. What is **the impact on patient experience**, including choice and continuity of care?
6. What is the **cost and cost-effectiveness** of the changes?
7. How might **lessons** from centralising specialist cancer surgery services be applied in future centralisations of specialist cancer services and other specialist settings?



RQ: What are patient, public and professional preferences in relation to these centralisations?

- Conducting a discrete choice experiment (DCE) to examine preferences for the changes to patients, the public, and professionals:
 - preferences for centralisation
 - relative importance of attributes of surgical services
 - how preferences vary between stakeholders
- A DCE is a technique used to uncover how individuals value selected attributes of a service
- Paper: Vallejo-Torres L, et al. Discrete-choice experiment to analyse preferences for centralizing specialist cancer surgery services. Br J Surg 2018 10.1002/bjs.10761.

- Three sub-groups:
 - Patients
 - Public
 - Health care professionals
- Total sample size 444 (national)
 - 206 Patients
 - 111 Health care professionals
 - 127 Public
- Mixture of online & hard-copy postal surveys
- Assisted by survey company *Quality Health*

Choice 1	Centre A	Centre B
Travel time to the hospital to have surgery (door to door, one way)	Up to 30 minutes	Between 60 and 90 minutes
Risk of serious complications from surgery	5% chance of serious complications	1% chance of serious complications
Number of operations the centre carries out each year for each type of cancer	100 operations per centre per year	10 operations per centre per year
Risk of death within 30 days of surgery	0.5% chance of dying	1.5% chance of dying
Access to a specialist multidisciplinary team to decide treatment	Local MDT	Specialist MDT
Availability of specialist surgeon cover after the operation	Specialist surgeon 24 hours a day, seven days a week	Specialist surgeon during normal working hours and general surgeon for the rest of the time

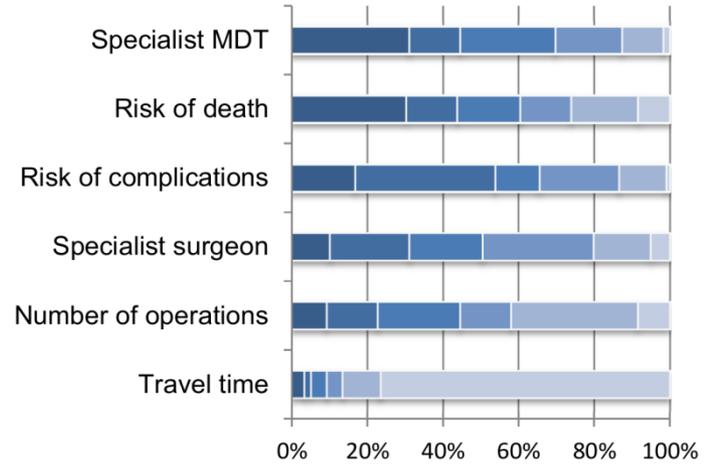
Which centre would you choose for surgery? (Tick one box only.)

Centre A

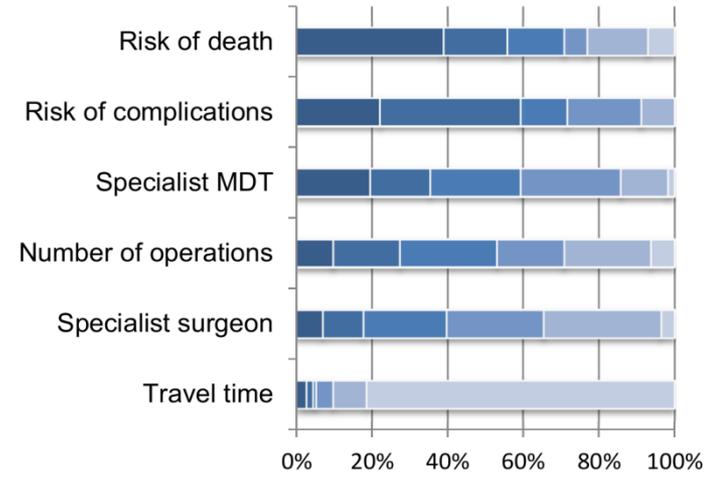
Centre B

Findings: ranking of attributes

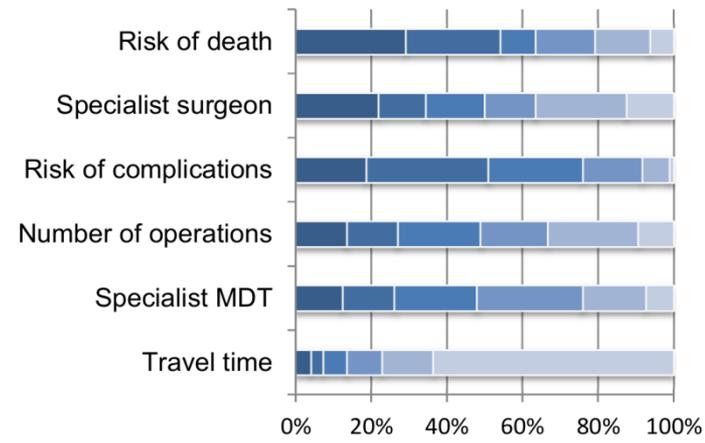
Patients (n=119):



Public(n=113):



Professionals (n=96):



- Most important
- 2
- 3
- 4
- 5
- Least important

How much longer are patients willing to travel?

- **75 mins** for each 1% reduction in risk of **serious complications**
- **307 mins** for each 1% reduction in risk of **mortality** at 30 days
- **5 mins** for each **additional operation** performed by unit per year
- **234 mins** to have case seen by specialist **MDT** rather than local MDT
- **174 mins** to have **24/7 specialist cover**, rather than in-hours

- Respondents' preferences were consistent across the three groups
- Individuals prefer attributes with better values (shorter travel times, lower risk of death and lower risk of complication, and access to more specialised centres, teams and surgeons)
- Preferences were particularly influenced by the risk of complications, the risk of death and the access to specialist MDT
- Travel time was considered the least important factor
- **Preferences were therefore found to be consistent with the goals of centralisation**

- Hypothetical
- Sample representativeness
- Other attributes affected by centralisation not included (e.g., travel costs)
- Assumes respondents understand ‘probability’
- Generalisability to different types of cancer (especially where risk of mortality and complications is very low)

- Planners who are redesigning services might consider, measure and communicate the impact of the reorganisation on the factors identified as being important in this study
- For centralisation to be judged favourably by patients, the public and health professionals compared with a non-centralised model, it needs to demonstrate improvements in outcomes
- Even though travel time was identified as the least important factor, the DCE analysis showed that this factor still plays a role in people's preferences for care, and so should not be ignored

- **RQ: What is the impact of the centralisations on provision of care, in terms of clinical processes and outcomes?**
- HES + national audit data – to analyse the impact of centralisation on a range of outcomes and intermediate measures
 - including patient experience
 - to delineate the association between the outcomes and intermediate measures

Cancer type	Primary outcomes	Secondary outcomes
Prostate cancer	<ul style="list-style-type: none"> Proportion of men with length of stay longer than 3 days Proportion of men readmitted as an emergency within 90 days of surgery 	<ul style="list-style-type: none"> Length of stay Readmission Surgical complications (conversion to open surgery, rectal injury, bowel injury (other than rectal injury), blood transfusion) Post-operative complications (wound infection, chest infection, sepsis, haematuria, urine leak, anastomotic leak, haemorrhage / bleeding, ileus, pelvic haematoma, return to theatre, lymphocele) Diagnostic outcomes: proportion of men diagnosed with clinically significant prostate cancer (using number of men biopsied as the denominator) Patient experience, including choice of treatment, access to services, confidence in staff, communication, effectiveness of teamwork and opportunity to participate in research
Bladder cancer	<ul style="list-style-type: none"> 30 day post-operative mortality (national figure (2012)=2.4%)³⁹ 	<ul style="list-style-type: none"> Length of stay Proportion of patients receiving neo-bladder reconstruction Surgical complications (measured by Clavien-Dindo grading) Patient experience, including choice of treatment, access to services, confidence in staff, communication, effectiveness of teamwork and opportunity to participate in research
Renal cancer	<ul style="list-style-type: none"> 30 day post-operative mortality (anticipated figure=10.5%)⁴⁰ 	<ul style="list-style-type: none"> 30 day readmission %of cases of T1a tumours having nephron sparing surgery Length of stay Surgical complications (measured by Clavien-Dindo grading) Conversion from laparoscopic (including robotically assisted) to open surgery Patient experience, including choice of treatment, access to services, confidence in staff, communication, effectiveness of teamwork and opportunity to participate in research
OG cancer	<ul style="list-style-type: none"> 30 day post-operative mortality (national figure (2013)=1.7%)³⁷ 	<ul style="list-style-type: none"> % of patients offered endoscopic resection for tumours staged as T1a Length of stay % Complete R0 resection (i.e. full removal of tumour) Surgical complications – anastomotic leak Patient experience, including choice of treatment, access to services, confidence in staff, communication, effectiveness of teamwork and opportunity to participate in research

Process measures (all)

- Waiting times (within 62 days of referral, 31 days of decision to treat)
- Number of procedures per surgeon per year
- Proportion of cases where surgery is an emergency procedure

Mediating factors (all)

- Patient characteristics (age, gender, ethnicity, socioeconomic status)
- Cancer stage
- Whether procedure is a salvage procedure

- Between-region difference-in-differences (DiD) analysis using rest of England as a comparator
 - Patient-level risk adjustment
 - Trust-level DiD analysis
 - Similar approach used in previous studies (Sutton et al., *NEJM* 2012; Morris et al, *BMJ* 2014)
- Repeat using synthetic controls, defining a control group that closely resembles regions in which centralisation occurred in terms of the outcomes in the period before the changes, based on a weighted combination of Trusts from the rest of England
- Patient-level regression analysis to relate intermediate measures to outcomes

RQ: What were the **key processes** in centralising specialist cancer surgery services in London Cancer and Manchester Cancer?

RQ: What is the **impact on staff and healthcare provider organisations**, including ways of working, skill mixes and approaches to collaboration?

Implementing major system change (MSC): role of provider networks

- MSC: “coordinated, system-wide change affecting multiple organizations and care providers, with the goal of making significant improvements in efficiency of health care delivery, the quality of patient care, and population-level patient outcomes” (Best et al., 2012).
- Networks have potential to address ‘wicked problems’ and facilitate MSC (Ferlie et al., 2011).
- Studies have identified the characteristics of successful networks (Brown et al. 2016)
- Most research on the role of networks in the UK has focussed on managed clinical networks and has not considered MSC in the context of more recent network configurations (during and post 2012 reforms).

- The aims of this sub-study were to:
 - Develop an understanding of how the LC network influenced MSC
 - Explore the characteristics of the LC network that contributed to the successful implementation of MSC
 - Identify lessons learned from the successful implementation of the centralisation of specialised cancer surgery that could be relevant to other contexts.
- Qualitative study design
 - Data collection
 - Interviews (n=69), observations (88 hrs.), documents (over 100)
 - Data analysis
 - Based on conceptual framework
 - Thematic analysis, Inductive/deductive

Best et al. (1,15) framework	Adapted rule proposed by Turner et al. (15)	Characteristics of effective* networks identified in the healthcare literature
Feedback loops	Feedback may need to be combined with other tools to encourage behaviour change, e.g. financial incentives	Networks with established clear governance and reporting mechanisms and that have formal links with external organisations (10,13,22,23).
Combine designated and distributed leadership	Interplay of bottom-up and top-down leadership in achieving MSC; system-wide authority is needed to align multiple stakeholders over a large scale and encourage clinical commitment to system-wide improvement goals	Networks with decentralised decision-making power. Network leaders who are: visionary, strategic, trusted, dedicated, and have skills in negotiation and relationship-building. Network managers who contribute to the leadership of the network (9,10,13,22,24,25).
Engage physicians	Need to involve a range of stakeholders in planning MSC and have a system-wide governance structure to align their interests.	Networks that are inclusive and have broad membership (10,13,23,26,27).
Attend to history	Contextual factors can be a barrier to implementing lessons learned; political authority may be needed to challenge the existing context and enable more radical forms of transformation.	Networks with previous experience of creating change or improvement, lending credibility and providing a 'track record' of successful implementation of changes (13).
Involve patients and families	Awareness that the drivers of MSC influence how different stakeholders' views come to count during implementation; potential tension between patients' and others' perspectives.	Networks which involve patients to ensure network priorities are visibly aligned with their needs (10).

* Effective networks are defined as those reaching their stated goals (Cunningham et al. 2012).

Findings



LEADERSHIP

- London Cancer played a role in designating, training, and supporting clinical leaders (through network managers).
- Actors across the networks occupied leadership roles [distributed leadership].
- Clinical leaders combined clinical knowledge with training to acquire managerial and leadership skills.
- Leaders had a clear mandate and compelling message



ENGAGEMENT

- London Cancer was composed of a wide range of relevant stakeholders.
- Clinicians from specialist and local centres worked together to design the service specifications and plan the transfer of services.



HISTORY

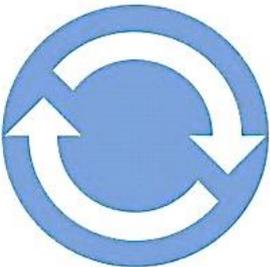
- Clinical pathway leaders drew from previous experience of MSC to anticipate challenges and maintain credibility.

Findings



PATIENTS AND FAMILIES

- Patient views were actively sought.
- Patient representatives acted on the pathway boards.
- There was resistance to the changes from some patient groups.



FEEDBACK LOOPS

- London Cancer compiled the evidence on the benefits of centralisation.
- Mechanisms such as Gateway Reviews were used to report progress and outcomes to commissioning bodies.



RESOURCING

- The reduction in funding led to the renegotiation of priorities and restructuring of London Cancer, but the network adapted to successfully implement the changes.

Lessons for implementation

- The case for change driving MSC was based on **clear evidence of improvements** in patient outcomes and experiences of care
- Leaders had a **clear mandate** and maintained a compelling message.
- Clinical leaders combined clinical knowledge with training to acquire **managerial and leadership skills**.
- The **development and support of leaders** across the network and **engagement of a wide range of relevant stakeholders** helped facilitate the changes
- **Patients, their families and members of the public** were engaged at all levels of MSC
- London Cancer developed **formal links with external organisations** to gain credibility and establish feedback loops
- **Constancy in leadership** ensured MSC implementation despite wider changes in the healthcare system
- **Previous examples** of similar types of MSC were used as a learning exercise as well as to prove that changes of this sort are possible
- Despite changes in funding, London Cancer was able to **adapt** and successfully implement the changes

- On-going study of implementation in GM and LC
 - Inter-organisational collaboration in London Cancer
 - Moving from competition to cooperation: the case of GMC surgery services
 - The meaning and effect of losing specialist cancer surgery provision
 - The cost of implementing reconfiguration
- Analysis of outcomes for London Cancer – June 2019
- Cost-effectiveness analysis – July 2019

Thank you!
Questions? Comments?



- Fulop NJ, et al. Reorganising specialist cancer surgery for the twenty-first century: a mixed methods evaluation (RESPECT-21). *Implementation Science* (2016): 11(1); 155.
- Vallejo Torres L, et al. Discrete choice experiment to analyse preferences for centralising specialist cancer surgery services. *BJS* (2018): 10.1002/bjs.10761.
- Melnychuk M, et al. Centralising specialist cancer surgery services in England: survey of factors that matter to patients and carers and health professionals. *BMC Cancer* (2018): doi:10.1186/s12885-018-4137-8

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