



# Greener Clinical Pathways: Redesigning Care for Net Zero

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Net Zero and Sustainability, Getting It Right First Time (GIRFT)



# Getting It Right First Time (GIRFT)

- National QIP
- Clinically led
- Focus on **unwarranted variation**
- Data driven
- 'Deep dive' visits
- **Best practice**
- Pathway redesign
- Co-development
- **Implementation**



 <b>About us</b> More information on the GIRFT programme	 <b>Workstreams</b> Specialties, programmes and associated projects	 <b>Academy</b> Best practice clinical resources, and guidance	 <b>Reports</b> All the GIRFT national report pdfs	 <b>Webinars</b> Online events and information
 <b>Medical specialties</b>	 <b>Surgical specialties</b>	 <b>Further Faster</b>	 <b>Cross cutting themes</b>	 <b>National Consultant Information Programme (NCIP)</b>

# Getting It Right First Time (GIRFT)

## STUDY

### Volume-outcomes associations for parathyroid surgery in England

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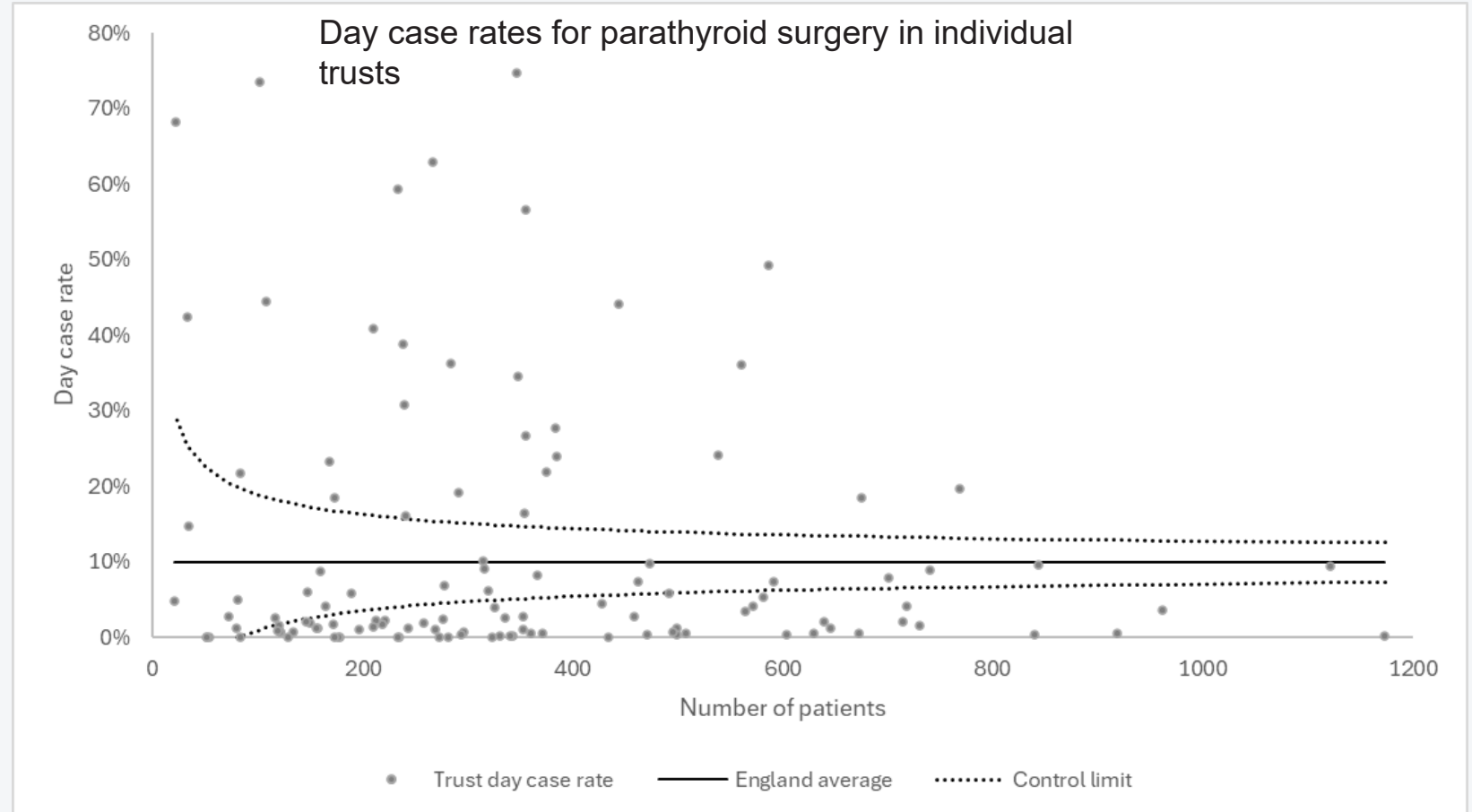
#### Endocrinology

GIRFT Programme National Specialty Report

Professor John Wass and Mark Lansdown  
GIRFT clinical lead for endocrinology and GIRFT clinical ambassador

February 2021

- Recommended developing surgical networks
- Minimum of operations needed/year (20/surgeon)
- 90% day case rate



# Greener Patient Pathways

- **Sustainable models of care**
- Estates and facilities
- Travel and transport
- Supply chain
- Medicines
- Food, catering and nutrition
- Research, innovation, offsetting
- Workforce, networks, system leadership
- Funding and financial mechanisms
- Adaptation
- Communities and engagement

## Delivering a 'Net Zero' National Health Service



# GIRFT and Greener pathways



Net Zero and Sustainability



**Sustainable Care Pathways**






# The ELLA framework

- Greener pathways in **high volume** areas
- Co-developed
  - **Clinical** reference group
  - **Patient** reference group
  - **Scientific** reference group
- Equivalent or superior patient care
- Consider **co-benefits**
- Mitigate risks
- Drive **implementation**
- Measure and monitor impact



## Research methods and reporting

**Environmental Lessons Learned and Applied (ELLA): a new framework for identifying, prioritising and implementing decarbonisation interventions in clinical care pathways**

Joseph B John ,<sup>1,2</sup> William K Gray ,<sup>2</sup> Chantelle Rizan,<sup>3</sup> Kristin J Konnyu,<sup>4</sup> Forbes McGain ,<sup>5</sup> Manraj Phull,<sup>6</sup> John Ford,<sup>7</sup> Paula R Williamson,<sup>8</sup> Edward Nickell,<sup>2</sup> Kieran O'Flynn,<sup>2,9</sup> Tim Briggs,<sup>2</sup> John S McGrath<sup>2,10</sup>





**NHS**  
England

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NHS IMPACT  
Improving Patient Care Together

BAU  
BRITISH ASSOCIATION  
OF UROLOGICAL SURGEONS

The British Association  
of Urological Surgeons

Royal College  
of Surgeons  
of England

**GIRFT Greener pathways**  
A practical guide to decarbonising the bladder  
cancer care pathway  
December 2024




GIRFT is part of an aligned set of programmes within NHS England

**NHS**  
England

**GIRFT**  
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**GIRFT Greener Pathways**  
A practical guide to decarbonising  
the total hip replacement pathway  
January 2026

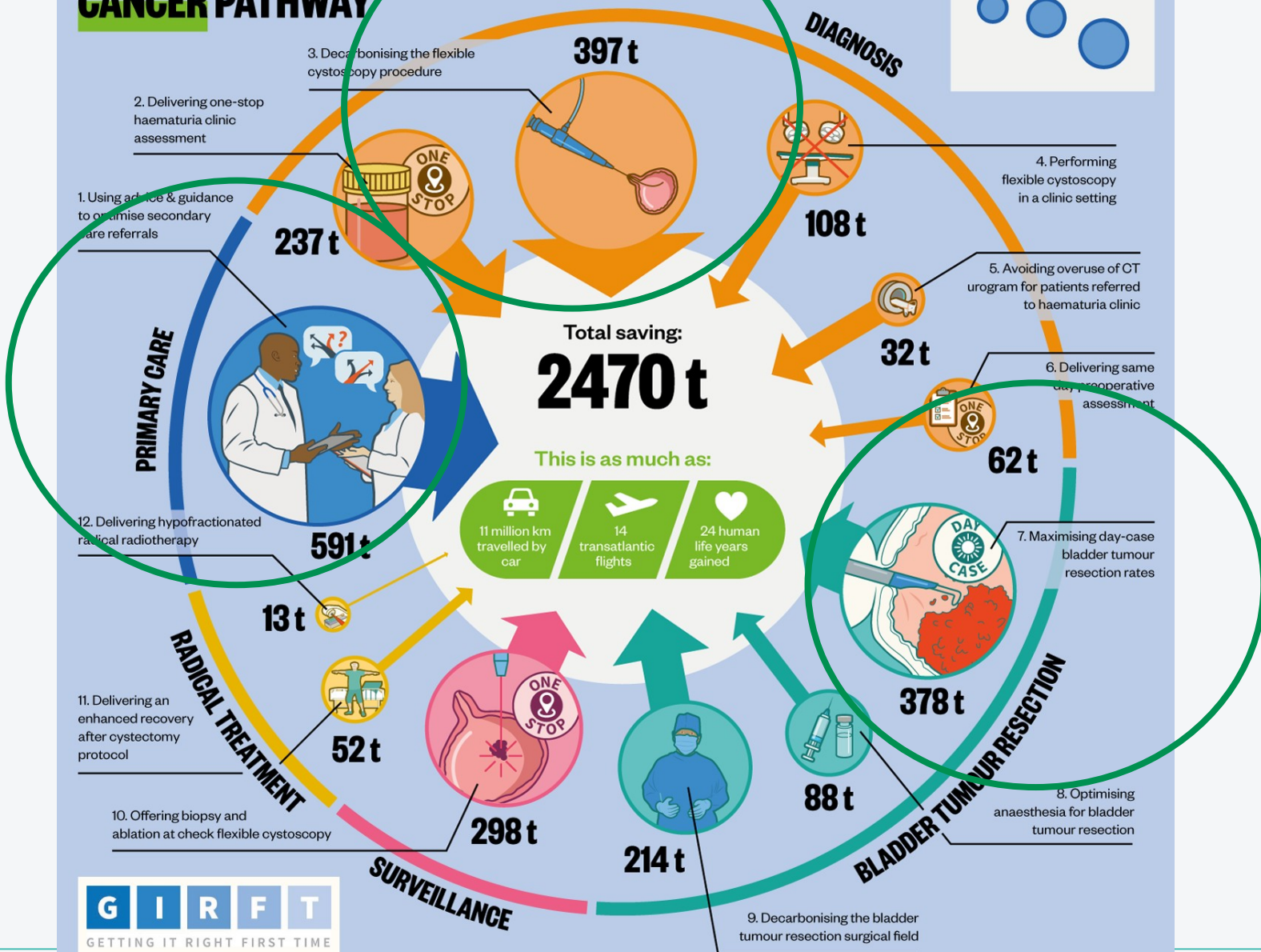


# DECARBONISING THE BLADDER CANCER PATHWAY

12 recommendations to reduce emissions in urology

In order to meet the NHS legal net zero target by 2045, many health services will need to be redesigned. The GIRFT team have drafted 12 recommendations, as shown below, which could make substantial reductions in greenhouse gas emissions, and in many cases also lead to better and/or more efficient care.

Circle areas are proportional to greenhouse gas savings  
t = tonnes of CO<sub>2</sub> equivalent across England per annum

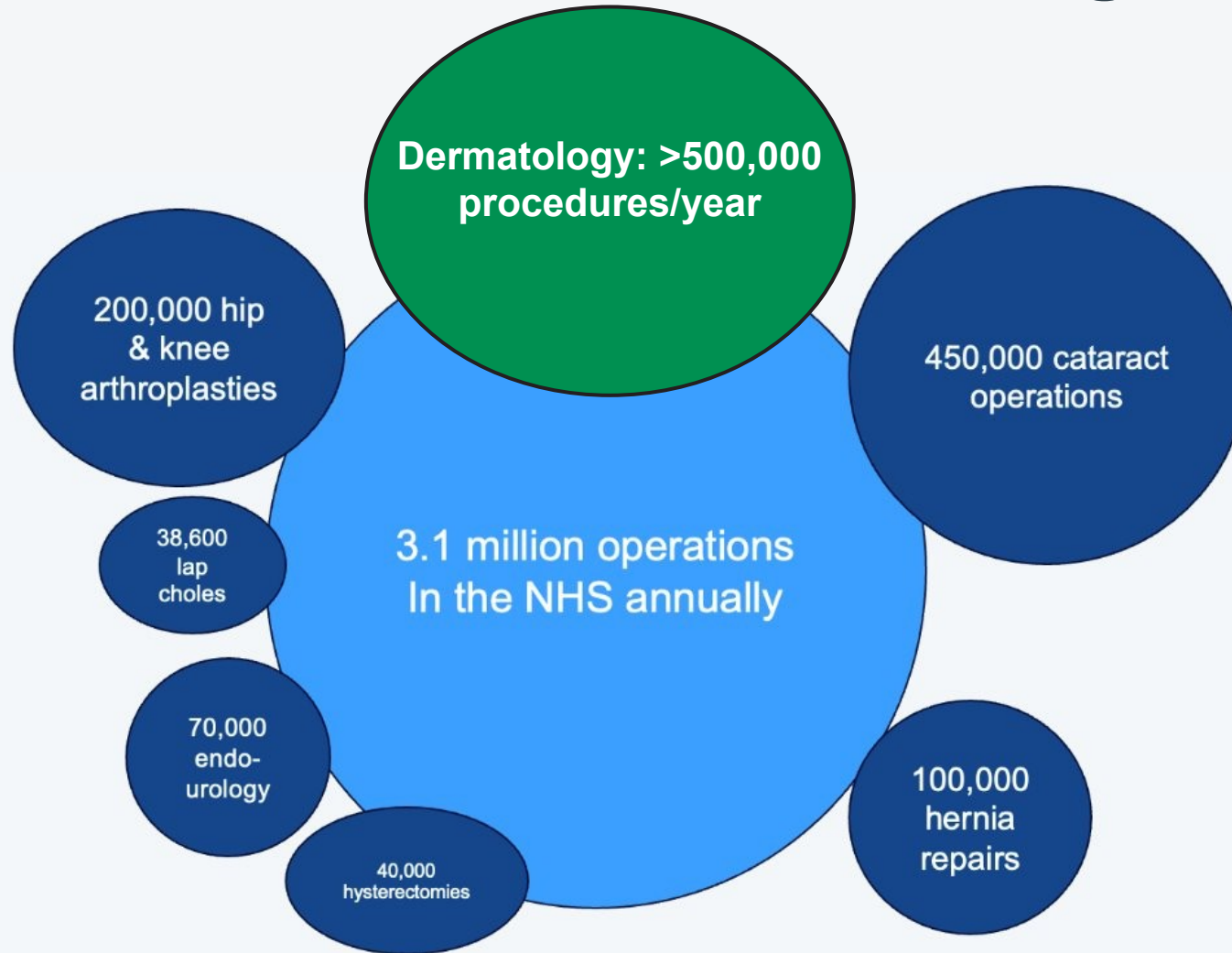




# Applying the ELLA framework to the skin lesion pathway

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# ELLA framework: Selecting the pathway



- High number of annual procedures
- Commonest UK cancer
- More 2WW referrals than any other specialty

# ELLA framework: Evidence review



REVIEW

Environmental Impact and Sustainability Associated with the Practice of Dermatology

Same-day surgery promotes sustainability in dermatology

<https://doi.org/10.1093/ced/llad048>

Sustainability and Procedural Dermatology

ACADEMIC

The Carbon Impact of Skin Cancer Surgery

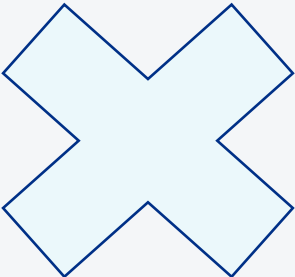
Longlist of opportunities for greener care

# ELLA framework: Initial modelling

Intervention	Decarbonisation mechanism	Emissions savings per case	Number of cases (annual)
Switch from sterile to non-sterile gloves for skin biopsies	Life cycle assessments have shown non-sterile gloves have a lower environmental impact compared to sterile gloves	<b>0.417kgCO<sub>2</sub>e</b>  (difference in carbon footprint of x1 pair of sterile V non-sterile gloves)	<b>238,170</b>  Model health system data for annual number of skin biopsies/year

Approximate carbon savings per intervention

**0.417kgCO<sub>2</sub>e**

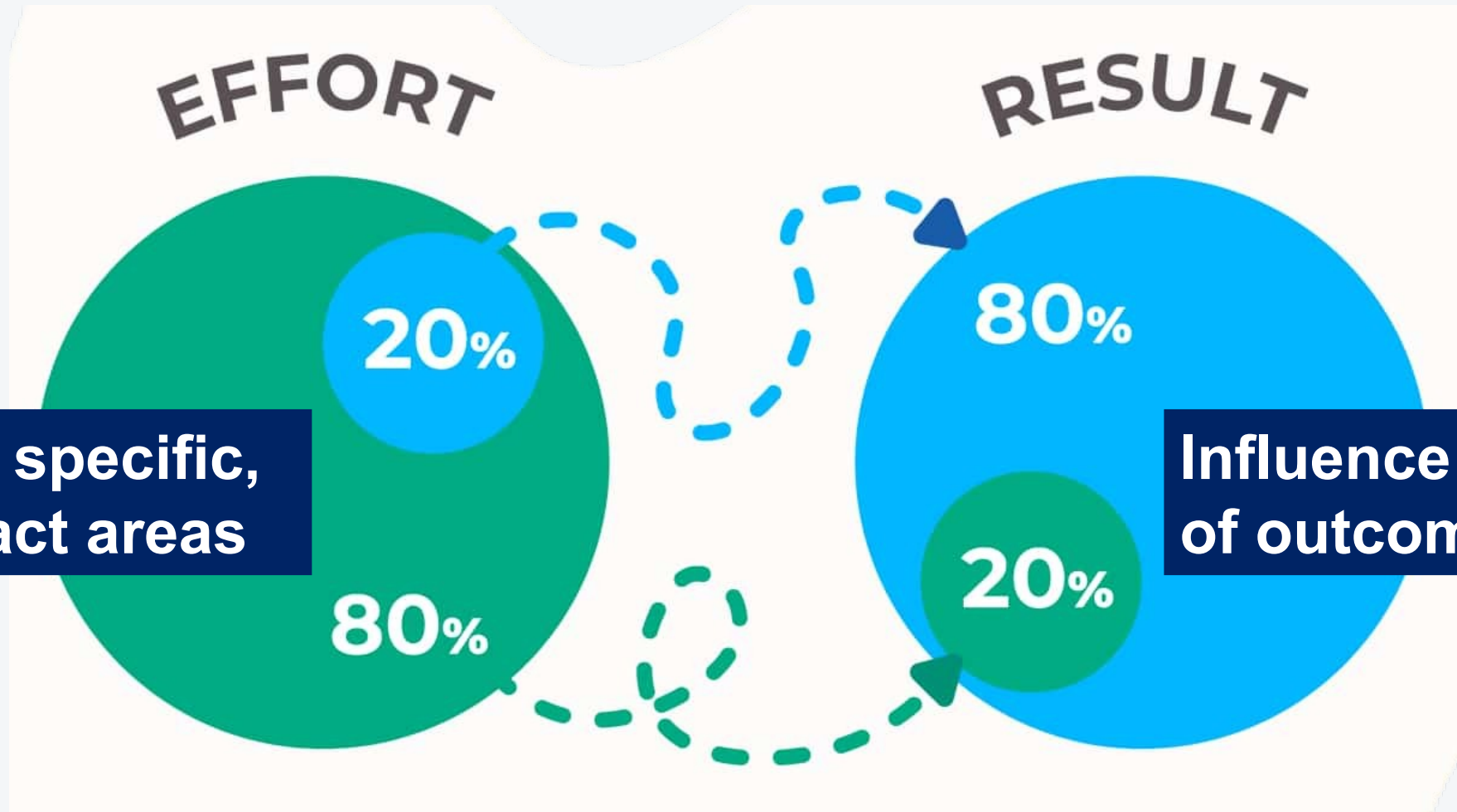


Number of applicable cases

**238170**

**Applied to all longlisted interventions**

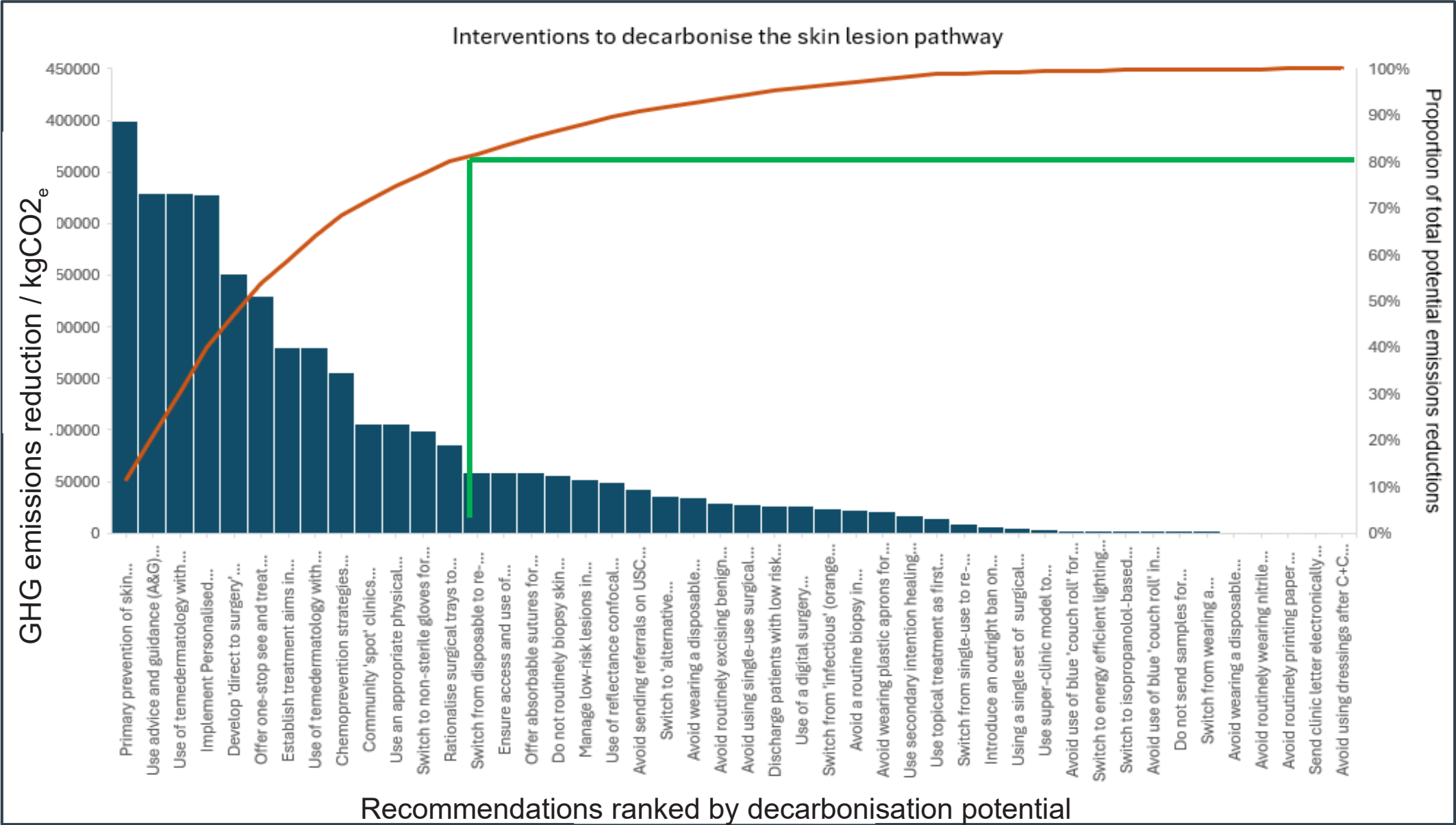
# ELLA framework: Pareto principle



**Focus on specific, high impact areas**

**Influence majority of outcomes**

# ELLA framework: Pareto analysis



# ELLA framework: shortlisted interventions

Highest impact clinical recommendations to decarbonise the skin lesion pathway
<b>Community care and referral/triage of skin lesions</b>
1. Skin cancer prevention
2. Use of advice and guidance (A&G) for skin lesions
3. Use of teledermatology for skin lesions
<b>Treatment decisions</b>
4. Avoidable skin procedures
5. Tailor treatment aims according to patient wishes
6. Management of low-risk skin lesions
<b>Streamlined pathway</b>
7. Use of 'Direct to surgery' pathway
8. Offer one stop 'see and treat' dermatology clinics
<b>Skin surgery</b>
9. Use an appropriate setting for skin procedures
10. 'Action-set' to decarbonise skin surgery procedures
11. Low carbon management of surgical waste
<b>Follow up/future</b>
12. Offer personalised stratified follow-up (PSFU) following cutaneous SCC (cSCC) diagnosis where suitable
13. Future considerations



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BDNG  
British Dermatological Nursing Group



MELANOMA  
FOCUS

## Clinical reference group

Expert clinical knowledge  
Pathway insights  
Clinical acceptability

## Patient reference group

Lived experiences  
Opinions and preferences

# ELLA framework: Co-benefits

## Benefits



### Emissions reduction

- 22 kg CO<sub>2</sub>e per case
- 4.6 tonnes CO<sub>2</sub>e per average unit annually \*
- 591 tonnes CO<sub>2</sub>e across England annually



### Patients

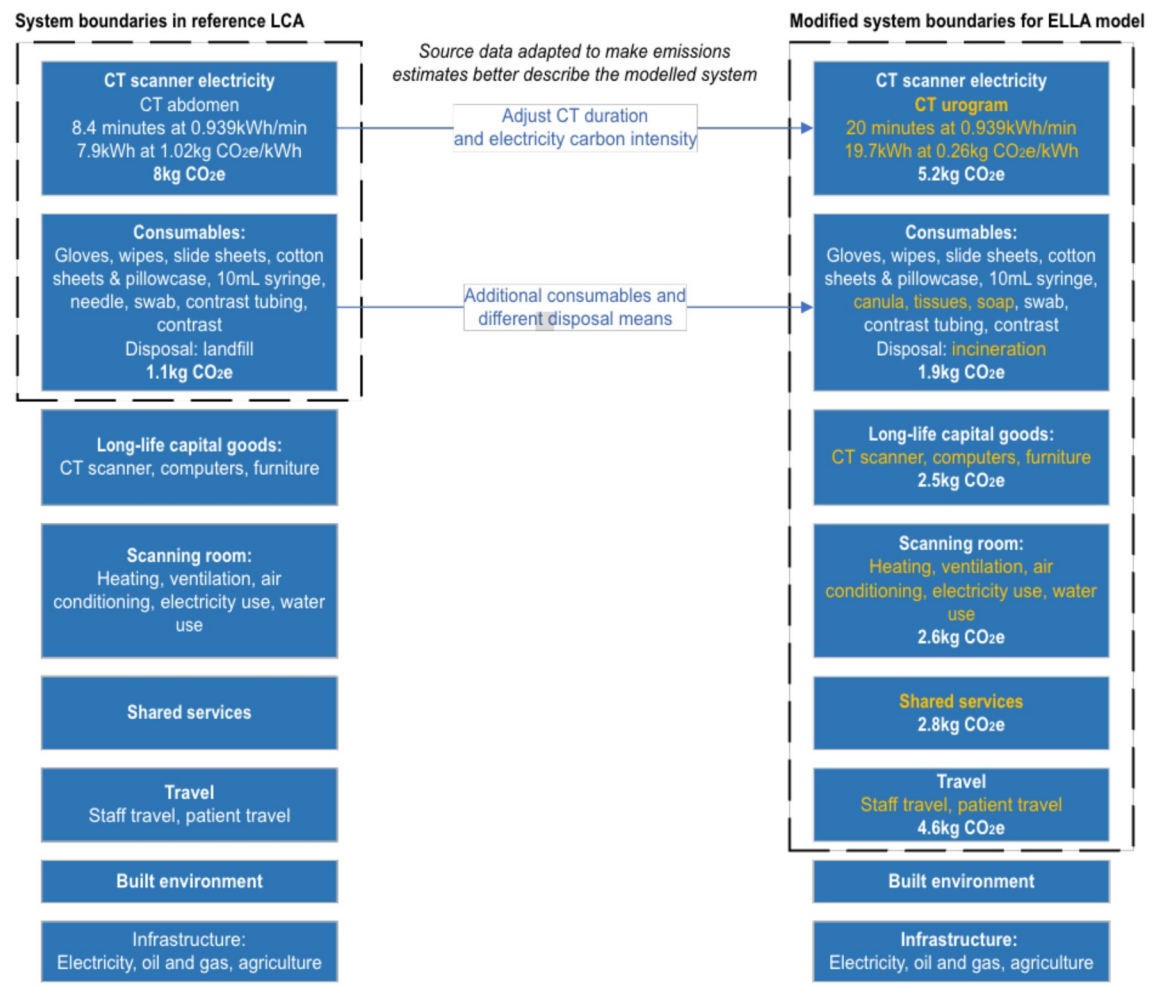
- Reduced worry
- Fewer referral delays
- Reduce travel/parking cost
- Avoid unnecessary investigations
- Care in right place, right time



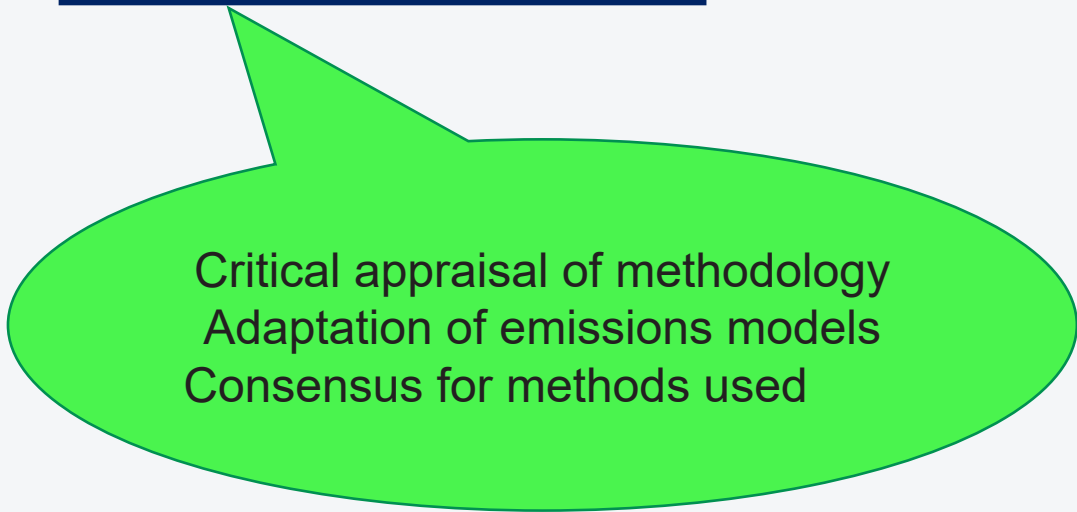
### Health service

- Prompt advice
- Lower referral costs for primary care
- Lower diagnostics demand
- Right patient, right clinic

# ELLA framework: adapting LCA data



Scientific reference group



Estimated carbon footprint for an abdominal CT in Australia

Adaptations to give estimated carbon footprint for full body CT in UK

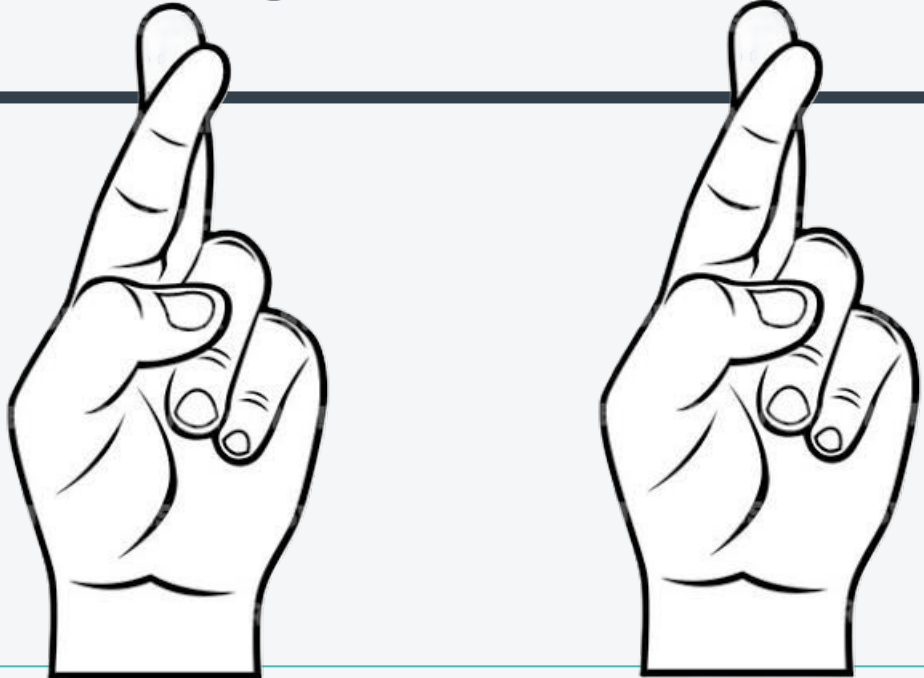
# ELLA framework: Adapting LCA data

- LCA analysis **reliability** (internal validity)
- LCA data **generalisability** (external validity) to region of interest (e.g. the UK)
  - Essentials: **Functional unit, life cycle stages, system boundaries, inventory**
- Considering quality of evidence in the **context** of your proposed changes to the pathway
  - **Substituting one activity for another (e.g. product swap) = high confidence required**
  - **Reducing activity (e.g. avoiding a test) = lower confidence acceptable**



# Skin lesion pathway - aiming for publication in July 2026

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# Next steps

## Greener Pathway Guides:

Urinary tract stones

Knee arthroplasty

Neck of femur fracture

Acute psychosis

Cataracts

## Methods:

- Incorporate full LCA
- Collaboration
- Scaling and international reach
- Barriers to implementation
- Evaluation framework



**Model Health System**  
[model.nhs.uk](http://model.nhs.uk)



# Conclusions

- Decarbonising clinical care pathways is a key part of the NHS move to net-zero
- ELLA framework offers data-driven methodology to guide this
- Next steps:
  - Scaling up
  - Considering barriers to implementation
  - Monitoring outcomes and evaluation
- Potential for substantial health system decarbonisation

# Contributors

## Sustainable Care Pathway Associate Leads

## Sustainable Care Pathway Lead



**Dr Joseph John**

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Urology specialty registrar, University of Exeter and Royal Devon University Healthcare NHS Foundation Trust ▶



**Dr Keith Gray**

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GIRFT academic content lead ▶



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