



# **Compliance with the NICE guidelines for VTE prophylaxis for adult patients undergoing surgery in a district general hospital: a sustainable Quality Improvement Project**

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- An abstract of the initial cycle was submitted for a poster at Trainee Conference 2020
- Second prize Sustainability Learning Day GAIN-WM and Y-GAS 2023

# Synopsis

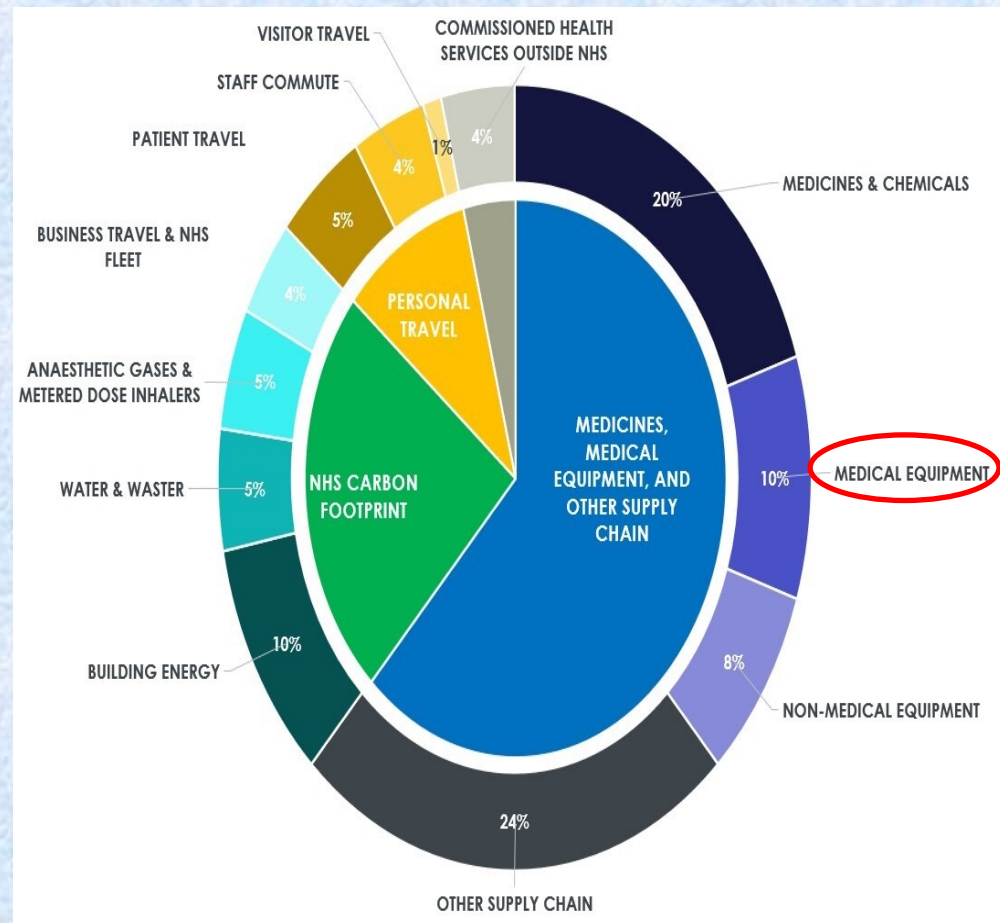
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- Results if 2<sup>nd</sup> audit cycle
- Conclusion



# Introduction



- NICE Guidelines NG89
  - Use either anti-embolism stockings (AES) or intermittent pneumatic compression devices (IPC) +/- pharmacological prophylaxis based on the risk assessment.
- It was observed that
  - many patients had both AES and IPC in theatre
  - a few patients with no risk factors had AES
- NHS contributes 4% of England's GHG emissions



# Aims & Objectives



- To ensure VTE thromboprophylaxis for adults undergoing surgery as per NICE guidance: ***clinical impact***
- To reduce financial costs arising from inappropriate use: ***economical impact***
- To reduce carbon footprint arising from inappropriate mechanical thromboprophylaxis: ***environmental impact***
- To educate and improve awareness among theatre staff empowering them to question practice: ***social impact***



# Methodology



- Prospective data collection included 100 adult patients undergoing surgery in various theatres
- Source of data: Anaesthetic chart, VTE risk assessment and perioperative pathway.
- Period of data collection:
  - First cycle: Aug 2019 to Nov 2019
  - Second cycle: Aug 2022 to Nov 2022
- Site: Pinderfields General Hospital, Wakefield.

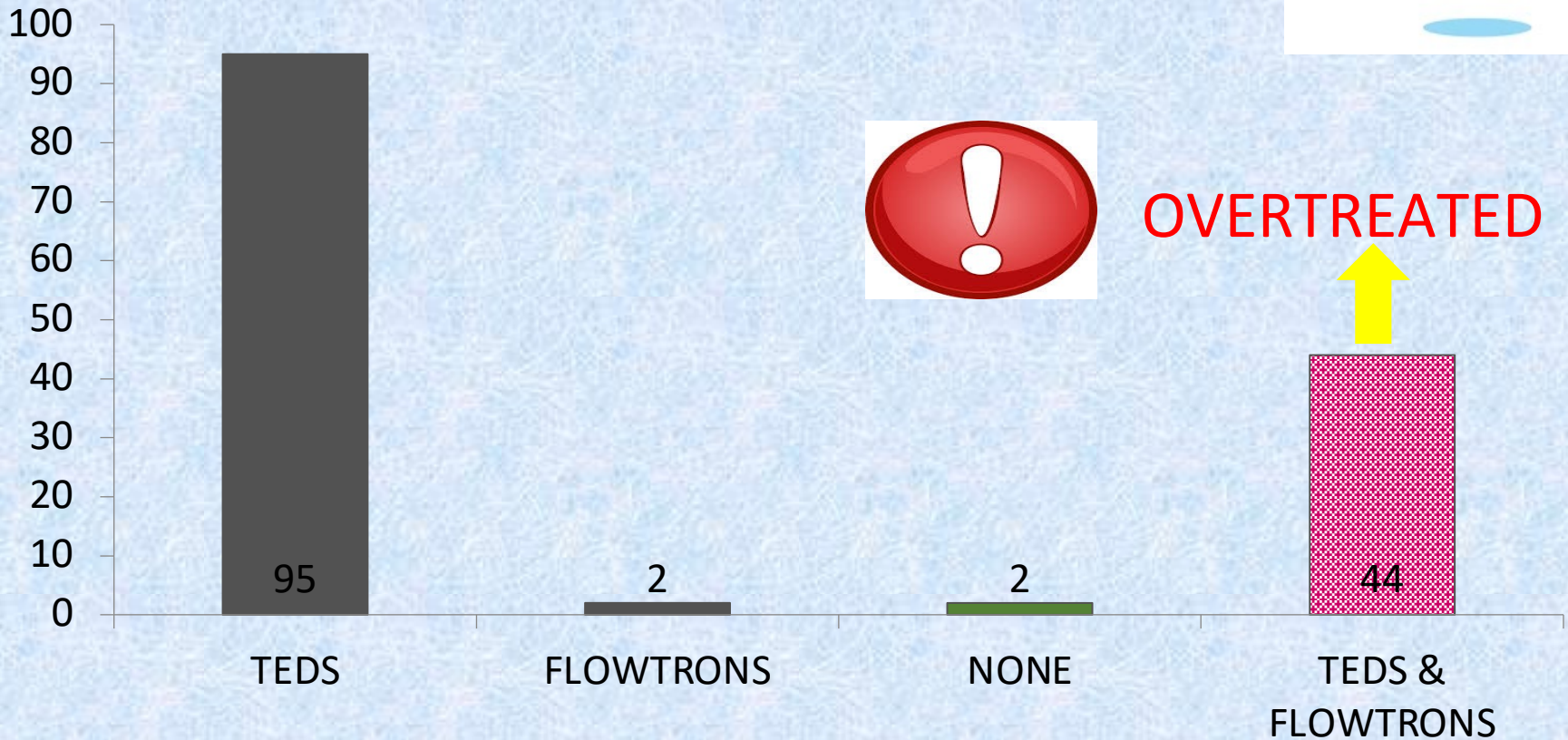
# Data collection sheet



- Age
- Sex
- BMI
- ASA grade
- Comorbidities
- Day-case or inpatient
- VTE Risk score
- Surgery
- Type of anaesthetic
- Total anaesthetic time
- TEDS used: Y/N
- Flotrons used: Y/N
- Pharmacological prophylaxis: Y/N
- Patient position
- IV fluids

# Results of 1st cycle

## Use of mechanical thromboprophylaxis



Extra expense £ 660 per hundred patients

# Changes implemented



## THINK VTE

### TED STOCKINGS OR FLOWTRONS OR BOTH??

- TEDS- £1.93 per pair
- Flowtrons- £9.52- £23.70 per pair depending on size

### NICE GUIDELINES 2018

SURGERY	RECOMMENDATION
Abdominal, thoracic and bariatric surgery	Either anti-embolism stockings <b>OR</b> intermittent pneumatic compression until mobility not significantly reduced.
Head and Neck surgery- Oral, Maxillofacial and ENT	Either anti-embolism stockings <b>OR</b> intermittent pneumatic compression
Orthopaedic surgeries	
• Fragility fractures of pelvis, hip or proximal femur	Intermittent pneumatic compression at admission if pharmacological prophylaxis is contraindicated.
• Joint replacements	Pharmacological prophylaxis with anti-embolism stockings until discharge
• Non-arthroplasty knee surgery, foot and ankle surgery	Pharmacological prophylaxis if requiring immobilisation, total anaesthesia time >90 min, VTE risk outweighs bleeding
• Upper limb surgery	Not needed if giving local or regional anaesthetic for upper limb surgery.

USE EITHER TEDS

**OR**

FLOWTRONS.

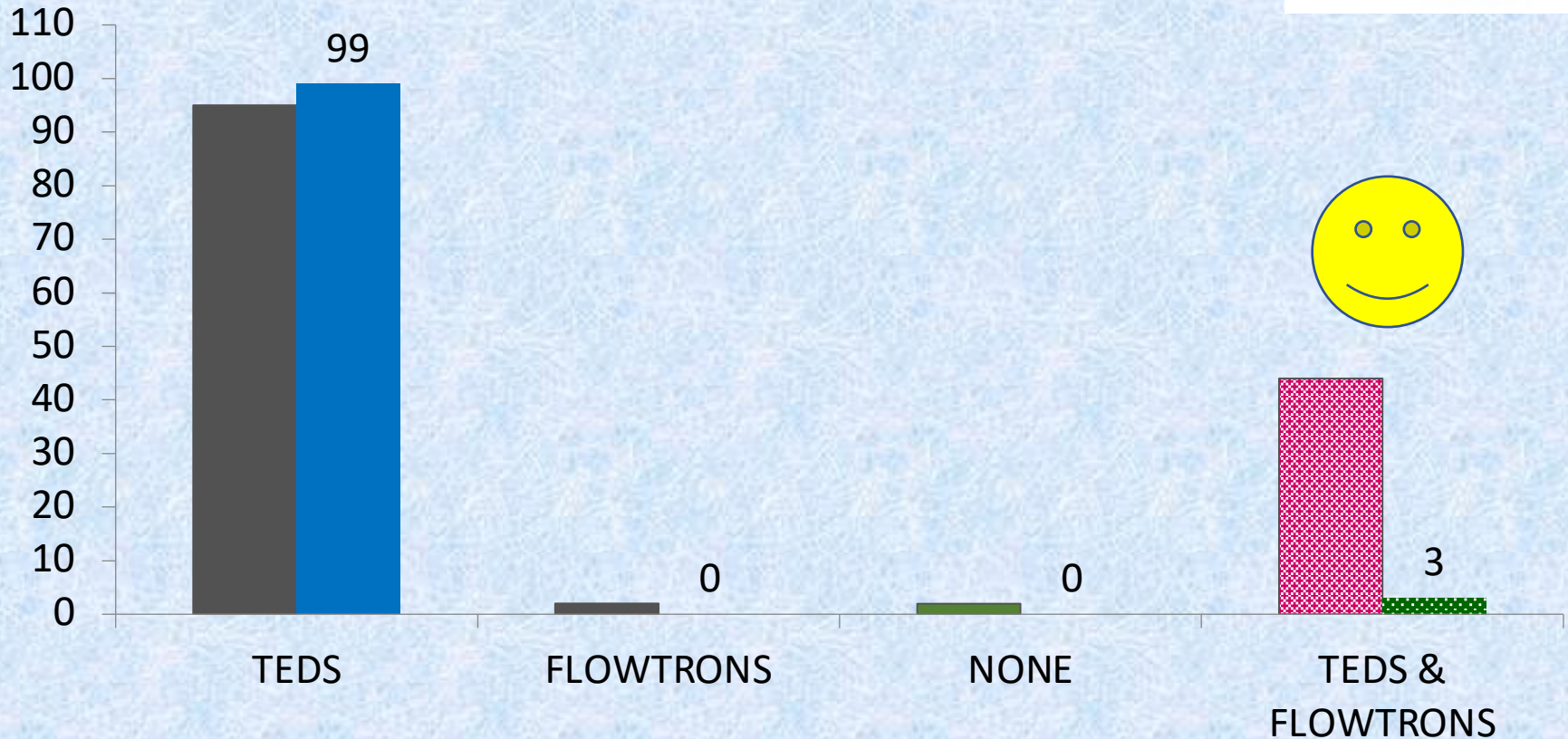
- Presented in department governance meeting.
- Educational posters introduced in all anaesthetic rooms.



# Results of 2nd cycle



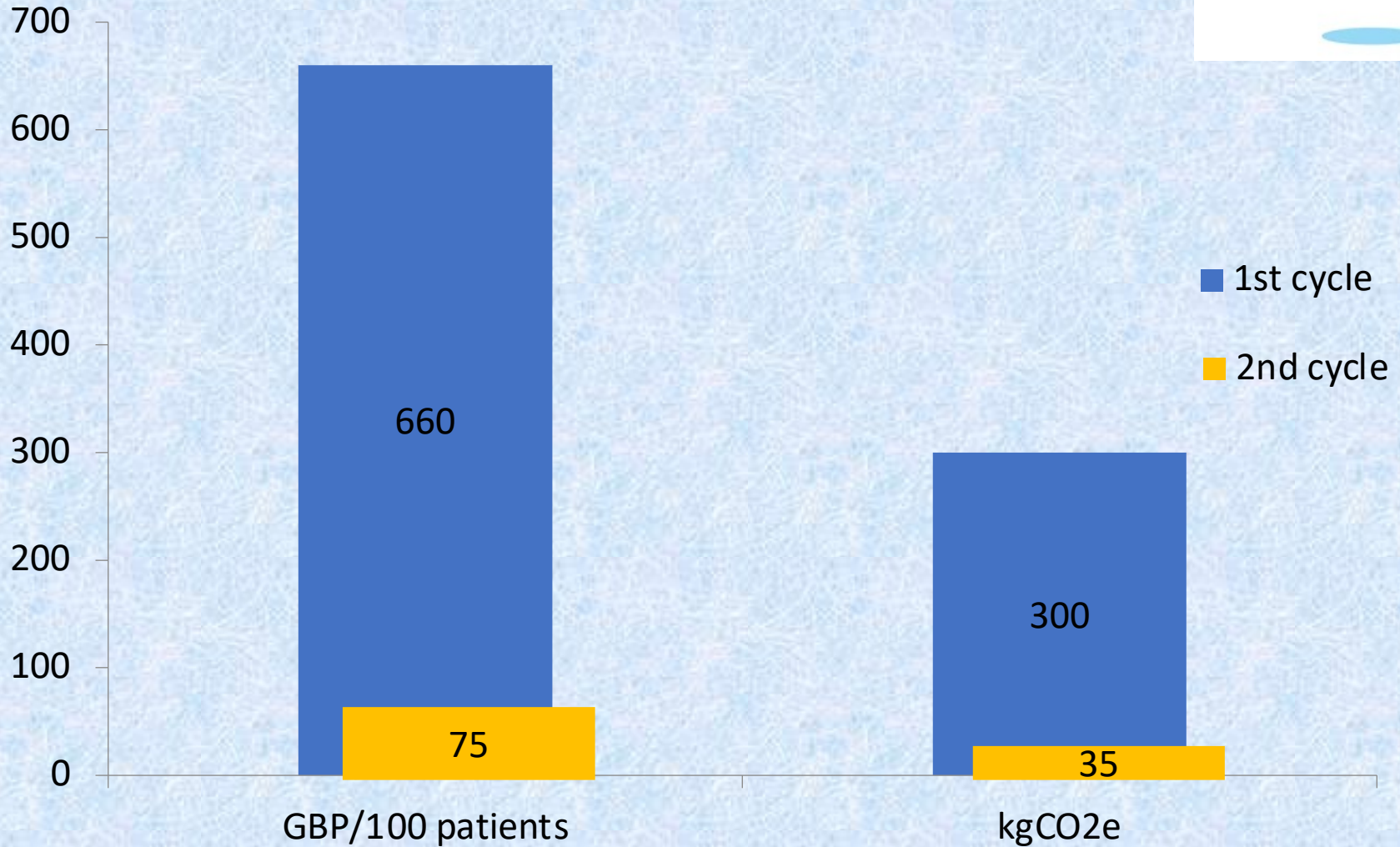
## Use of mechanical thromboprophylaxis



Bar diagrams on right: 2<sup>nd</sup> cycle, compared against 1<sup>st</sup> cycle (on left)

# Results of 2nd cycle

-economical & environmental impact



# Conclusion



- Patient safety improved through better adherence to VTE guidelines.
- Reduction in over-usage of flotrons and TEDS – ultimately led to financial savings and reduction of carbon footprint.
- Lesser waste generation for incineration ( disposal method recommended by the manufacturers of both TEDS and Flotrons) and hence decrease in carbon emissions from waste disposal. (not calculated as not weighed)

# References



1. All Party Parliamentary Thrombosis Group (APPTG) Survey Results 2018. <http://apptg.org.uk/wp-content/uploads/APPTG-annual-survey-report-2018-compressed.pdf>
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3. National Health Service. Delivering a 'Net Zero' National Health Service. NHS England and NHS Improvement, 2020
4. Environmental outcomes: carbon footprinting for healthcare 2022. Centre for Sustainable Healthcare