

# National Prostate Cancer Audit

## 2017 Update

Dr Ajay Aggarwal

Consultant Clinical Oncologist Guy's & St Thomas' NHS Trust

Honorary senior lecturer King's College London

# National Prostate Cancer Audit

- Commissioned by HQIP on behalf of NHS England and Welsh Government
- Based at Clinical Effectiveness Unit, RCS – LSHTM
- Managed as partnership with BAUS and BUG
- National Cancer Registry and Analysis Service PHE as data partner
- Audit started in April 2013



# National Prostate Cancer Audit

## Aim:

- The N  
Wale

## Prior

- Inc

-

- I

•

•

•

**NPCA**  
National Prostate Cancer Audit

**First Year Annual  
Organisation of S  
of Existing Clinical**

**NPCA**  
National Prostate Cancer Audit

**Second  
of exis  
from th  
2015**

**NPCA**  
National Prostate Cancer Audit

**Third Year Annual Report -  
Results of the NPCA Prospective Audit  
and Patient Survey  
2016**

# Prospective audit: Annual Report 2017

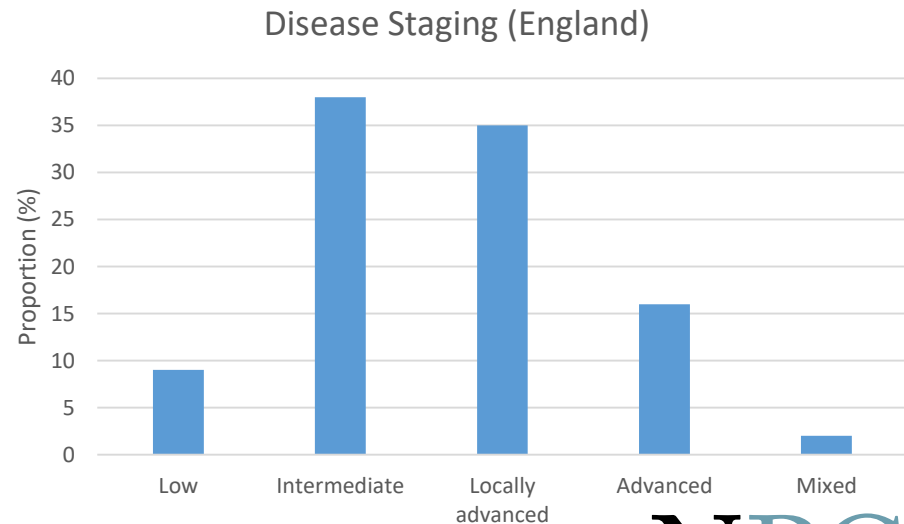
- Men diagnosed 1 April 2015 – 31 March 2016 in England & Wales
- National demographic information
  - Diagnostic & staging process
  - Treatments received
- Performance indicators
  - Variation in **disease presentation**
  - **Treatment allocation**
  - Risk-adjusted comparison of the **performance of treatment centres** in England
  - Implementation of NHS England 'outlier process'

# Results in England

- **Prospective audit data (1<sup>st</sup> April 2015 – 31<sup>st</sup> March 2016)**
- All NHS Trusts participated in Audit
- 39,613 men newly diagnosed with PCa (Cancer Registry)
- Case ascertainment 100%
- 38,950 could be linked to a valid NHS provider
- Data completeness
  - Performance Status (42% → 45%)
  - ASA (35% → 34%)

# Diagnosis & Staging (England)

- Slight increase in TP biopsy (11%→12%)
- Increase in use of mpMRI (44%→51%)
  - Pre-biopsy (56%→73%)
- More complete staging information(82%→91%)
  - Low (9%)
  - Intermediate (38%)
  - Locally advanced (35%)
  - Metastatic (16%)
  - Mixed (2%)



# Radical Prostatectomy (England)

- **5,864 men underwent RP (52 surgical centres)**
- Robotic (70%→74%) Laparoscopic (19%→13%)
- Nerve-sparing (53%)
- Positive margin status (31%)
- Lymphadenectomy (31%)

# Key findings: AR 2017 (1)

- All NHS providers of prostate cancer are participating in the NPCA
- The **proportion of men presenting with metastatic disease at diagnosis is stable** in England and Wales
- **Changes in diagnostic & staging practice** are apparent
  - Use of mpMRI pre-biopsy is increasing
  - Evidence of newer biopsy techniques including transperineal approach



# NPCA performance indicators

## Disease presentation & treatment allocation (*sMDT-level*)

- 1) Metastatic disease at diagnosis<sup>1</sup>
- 2) Potential “over-treatment” of low-risk disease
- 3) Potential “under-treatment” of locally advanced disease

## Treatment-related outcomes (*treatment centre-level*)

- 4) 90-day emergency readmission rate following RP<sup>2</sup>
- 5) Severe GU toxicity within 2 years of RP<sup>2,3</sup>
- 6) Severe GI toxicity within 2 years of EBRT<sup>2,3</sup>

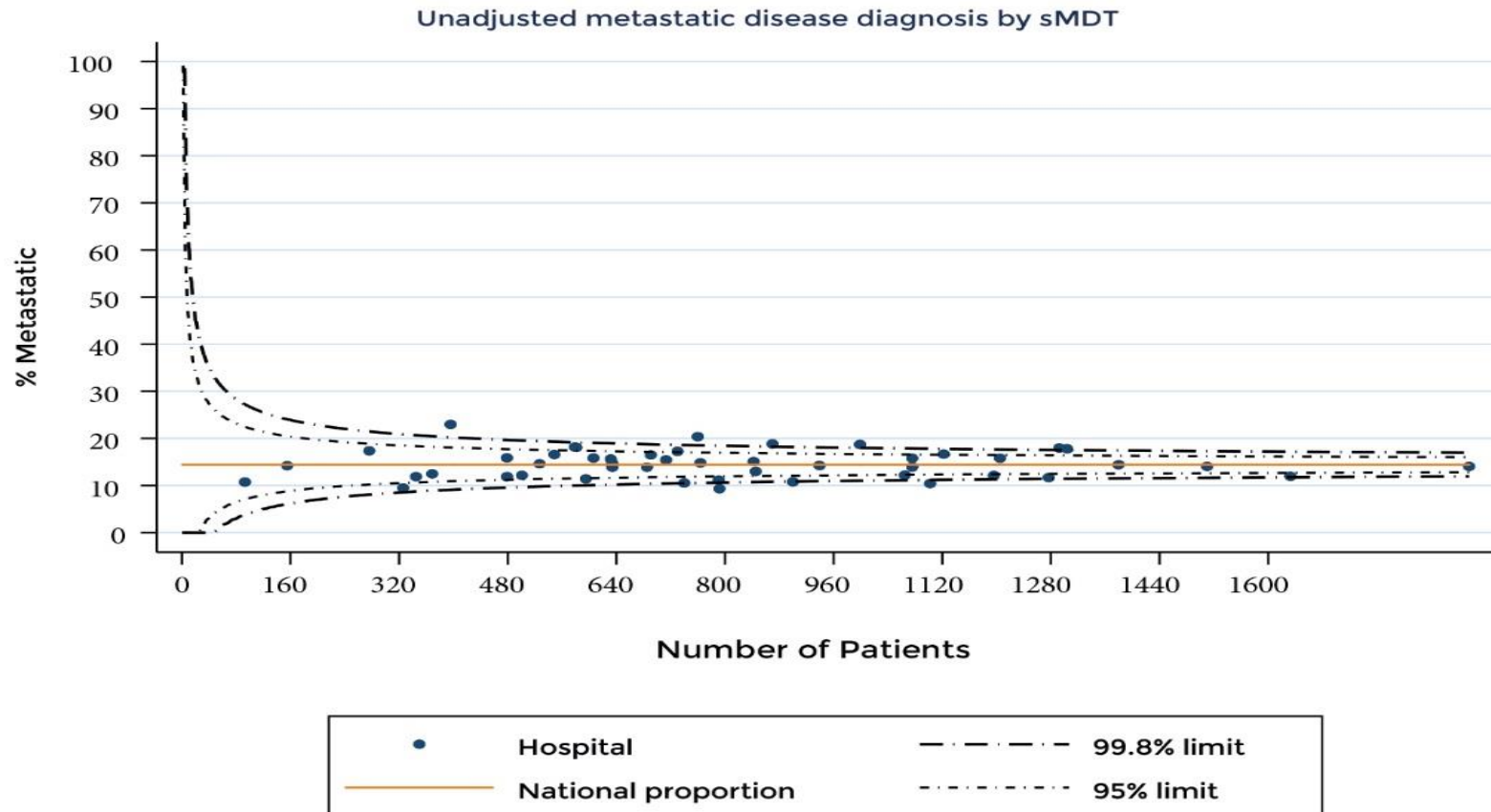
*1 England & Wales. Due to lack of PEDW and RTDS data in Wales, PI 2-6 analysis performed for England only*

*2 Adjusted for age and comorbidity*

*3 Men diagnosed 1 April 2014 – 31 March 2015 enabling 2 year follow-up*

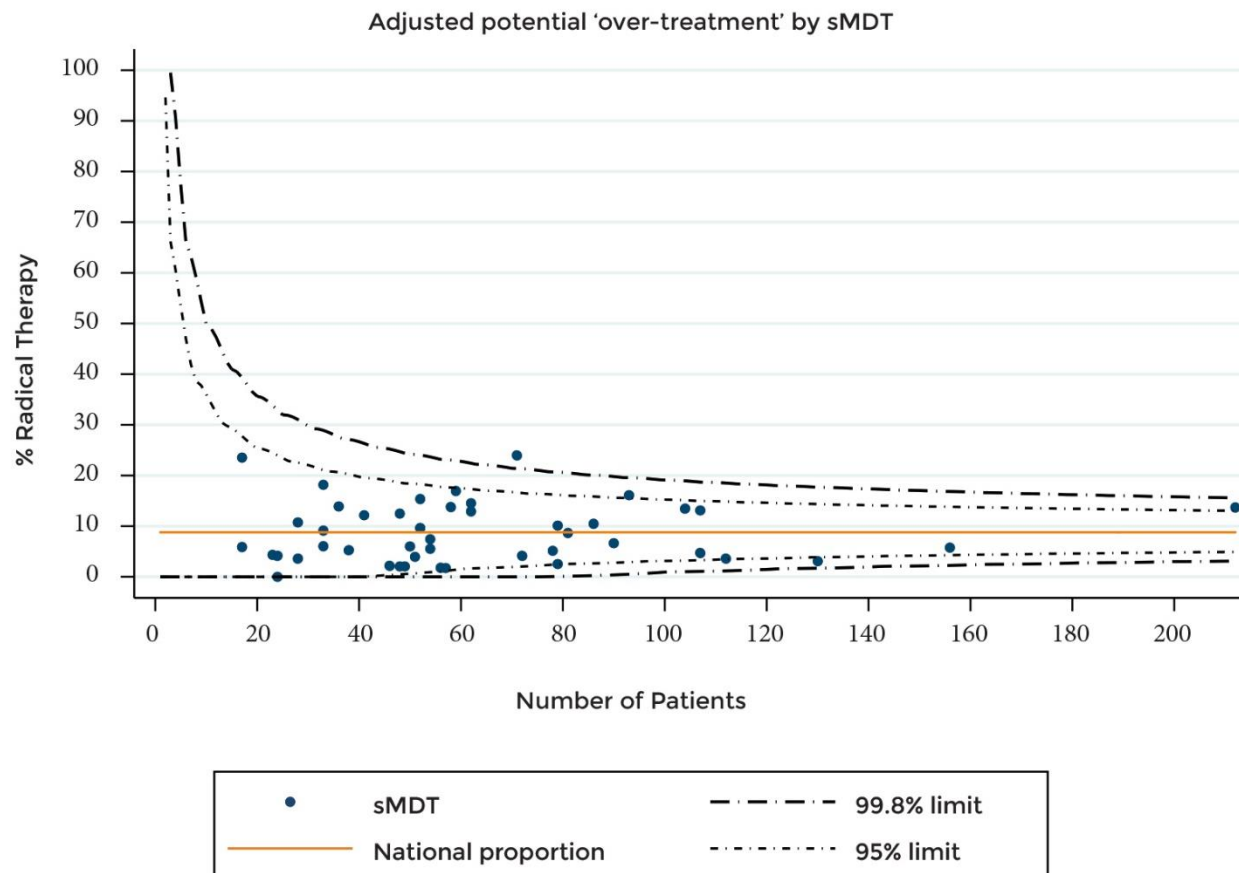
# Men diagnosed with metastatic disease: England

16% (10% - 25% across sMDTs)



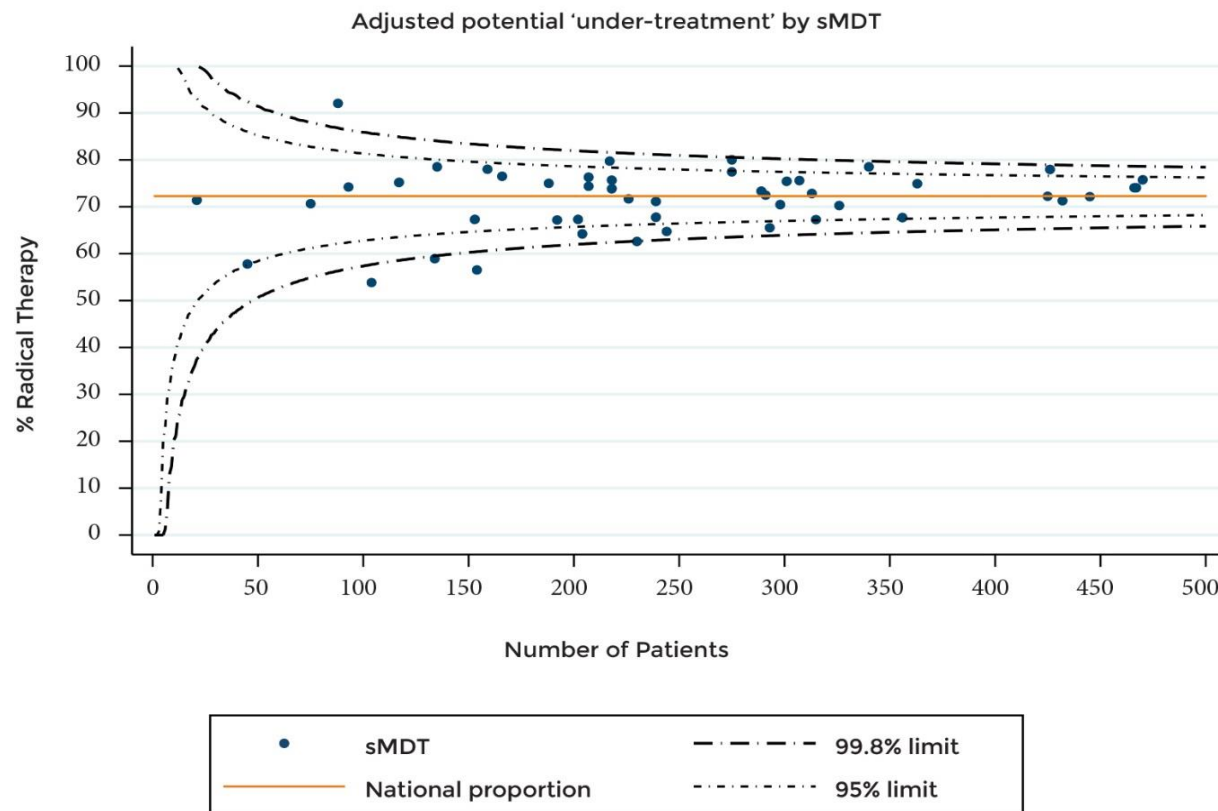
# Men with low-risk disease receiving radical treatment: England

- 2015-16: 8% (EBRT 4%; RP 2%; BT 2%)
- 2014-15: 12% (EBRT 5%; RP 3%; BT 4%)



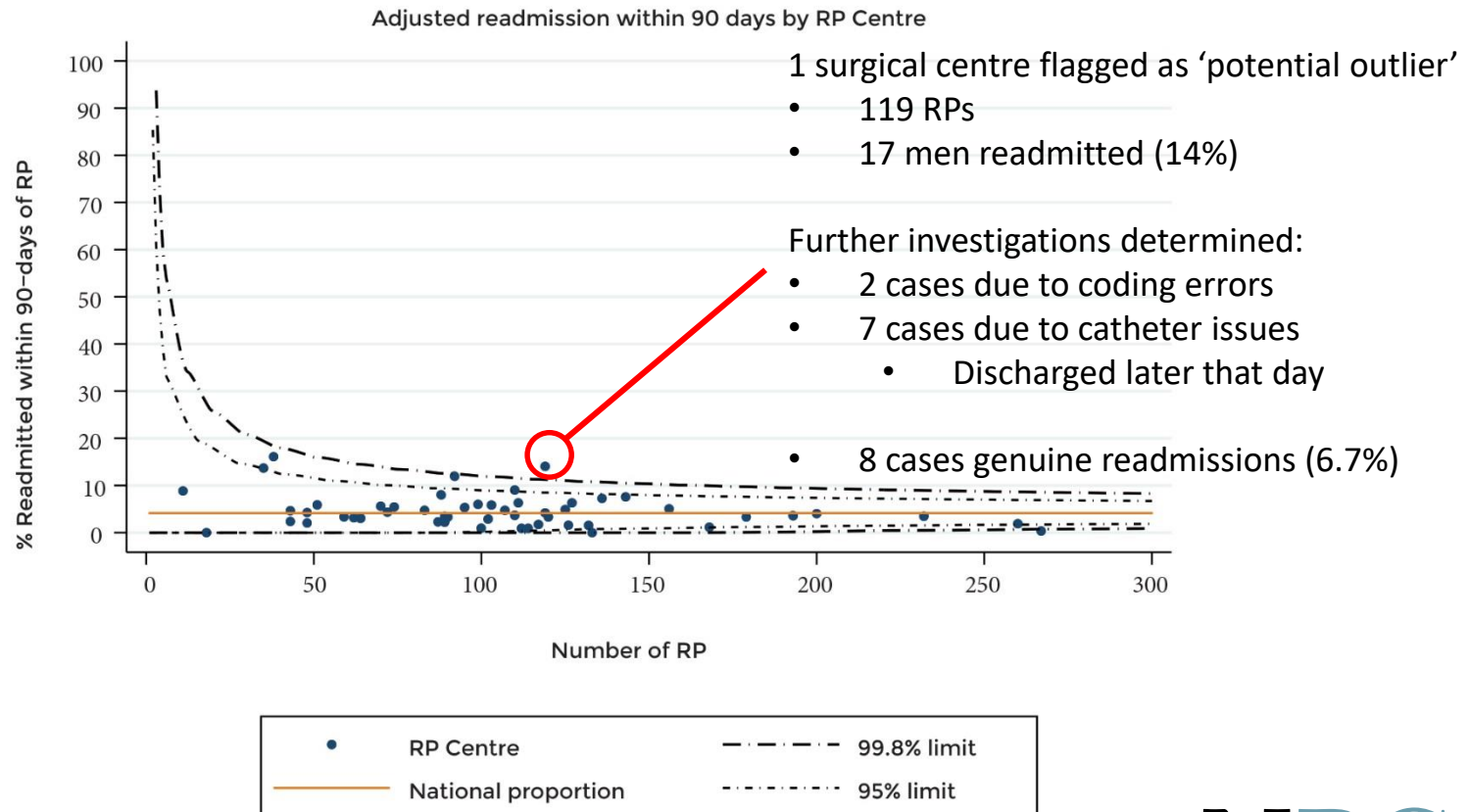
# Men with locally advanced disease receiving radical treatment: England

- 2015-16: 73% (49% EBRT; 22% RP; 2% BT)
- 2014-15: 61% (42% EBRT; 18% RP; 1% BT) - 2014



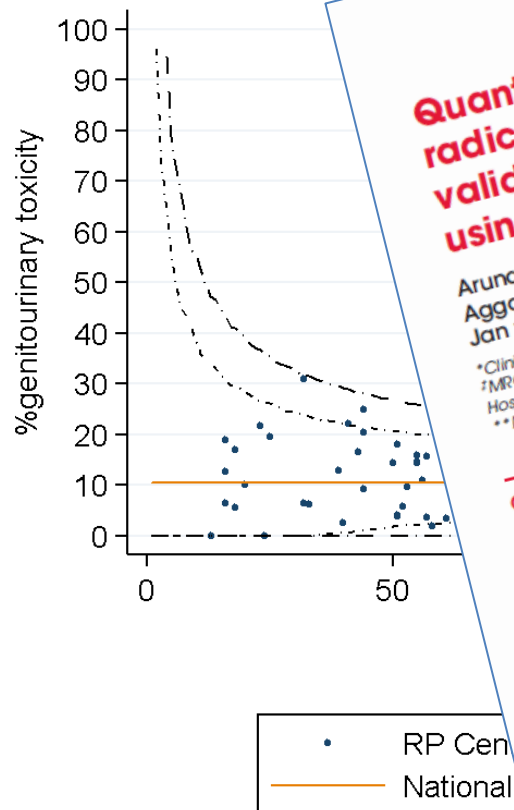
# Readmission within 90 days following RP: England

- 2015-16: 4% (0% - 16%; 1 'potential' outlying surgical centre)
- 2014-15: 5% (range 0% - 17%)



# Severe GU toxicity within 2 years following RP: England

- April 2014 – March 2015 (n = 2,940 underwent RP)
- 11% experienced at least one GU complication



## Quantifying severe urinary complications after radical prostatectomy: the development and validation of a surgical performance indicator using hospital administrative data

Arunan Sujenthiran\*, Susan C. Charman\*\*†, Matthew Parry\*, Julie Nossiter\*, Ajay Aggarwal†, Prokar Dasgupta†, Heather Payne§, Noel W. Clarke†, Paul Cathcart\*\* and Jan van der Meulen†

\*Clinical Effectiveness Unit, Royal College of Surgeons of England, †London School of Hygiene and Tropical Medicine, ‡MRC Centre for Transplantation, King's College London, §Department of Oncology, University College London Hospitals, London, \*Department of Urology, Christie and Salford Royal NHS Foundation Trusts, Manchester, and \*\*Department of Urology, Guy's and St Thomas' NHS Foundation Trust, London, UK

### Objectives

To develop and validate a surgical performance indicator based on severe urinary complications that require an intervention within 2 years of radical prostatectomy (RP), identified in hospital administrative data.

### Patients and Methods

Men who underwent RP between 2008 and 2012 in England were identified using hospital administrative data. A transparent coding framework based on procedure codes was developed to identify severe urinary complications which were grouped into 'stricture', 'incontinence' and 'other'. Their validity as a performance indicator was assessed by evaluating the consistency with diagnosis codes and association with patient and surgical characteristics. Kaplan-Meier methods were used to assess time to first occurrence and multivariable logistic regression was used to estimate adjusted odds ratios (ORs) for patient and surgical characteristics.

### Results

A total of 17 299 men were included, of whom 2695 (15.6%) experienced at least one severe urinary complication within

2 years. High proportions of men with a complication had relevant diagnosis codes: 86% for strictures and 93% for incontinence. Urinary complications were more common in men from poorer socio-economic backgrounds (OR comparing lowest with highest quintile: 1.45; 95% confidence interval [CI] 1.26–1.67) and in those with prolonged length of hospital stay (OR 1.54, 95% CI 1.40–1.69), and were less common in men who underwent robot-assisted surgery (OR 0.65, 95% CI 0.58–0.74).

### Conclusion

These results show that severe urinary complications identified in administrative data provide a medium-term performance indicator after RP. They can be used for research assessing outcomes of treatment methods and for service evaluation comparing performance of prostate cancer surgery providers.

### Keywords

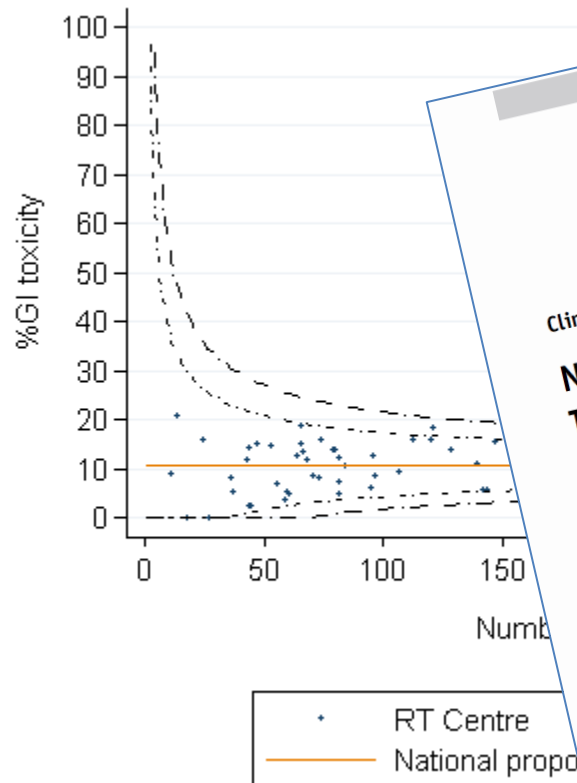
radical prostatectomy, performance indicator, urinary complications

England and Canada [2–6]; however, none define a coding system to identify these complications explicitly or assess their validity as a performance indicator.

In the present study, a transparent coding framework is proposed, based on procedure codes, to identify severe urinary complications. Comparisons with relevant diagnostic codes and procedure codes will be made to ensure consistency.

# Severe GI toxicity within 2 years following EBRT: England

- April 2014 – March 2015 (n = 5,039 underwent EBRT)
- 11% experienced at least one GI complication (no outlying performance)



Clinical Investigation

## National Population-Based Study Comparing Treatment-Related Toxicity in Men Who Received Intensity Modulated Versus 3-Dimensional Conformal Radical Radiation Therapy for Prostate Cancer

A. Sujenthiran, MRCS,\* J. Nossiter, PhD,\* S.C. Charman, MSc,\*  
M. Parry, MRCS,\*† P. Dasgupta, FRCS,† J. van der Meulen, PhD,†  
P.J. Cathcart, FRCS,§ N.W. Clarke, FRCS,|| H. Payne, FRCR,†  
and A. Aggarwal, FRCR†,¶

\*Clinical Effectiveness Unit, Royal College of Surgeons of England; †Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine; ‡Medical Research Council Centre for Transplantation, National Institute for Health Research Biomedical Research Centre, King's College London; §Department of Urology, and ¶Radiotherapy, Guy's and St Thomas' NHS Foundation Trust; ||Department of Urology, The Christie and Salford Royal NHS Foundation Trusts; and ¶Department of Oncology, University College London Hospitals, London, United Kingdom

Received May 31, 2017, and in revised form Jul 20, 2017. Accepted for publication Jul 26, 2017.



# Key findings: AR 2017 (2)

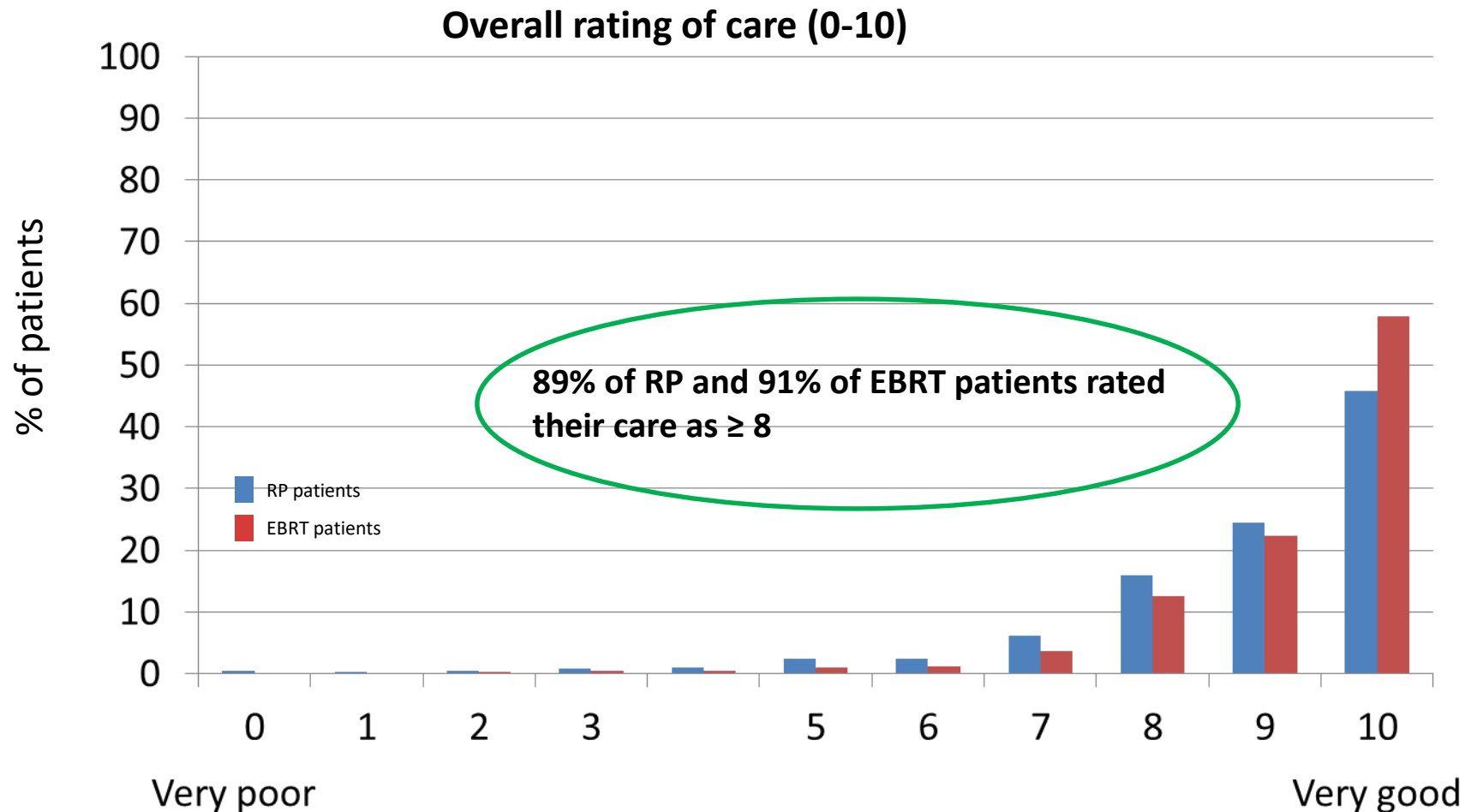
- Potential 'over-treatment' of men with low-risk disease declined
- 
- Reduction in the potential 'under-treatment' of men
- Within two years of undergoing radical treatments, **1 in 10 men experience:**
  - GU complication post-RP
  - GI complication post-RT
- NPCA uses a risk-adjusted approach to compare provider performance in England and **identify outlying performance**



# NPCA patient survey

- NPCA initiated a patient survey to determine:
  - functional [impact of radical treatment on patients' lives](#) (EPIC-26, EQ-5D-5L)
  - patients' views of their [experience of care following diagnosis and treatment](#)
- [All men who underwent radical treatment](#) 18 months after diagnosis
- Data collection in England started in October 2016
  - Achieved a high response rate during the first 7 months of data collection for men diagnosed Apr – Oct 2015: 6,611/9,111 patients (73%)
  - Data collection ceased May 2016 (type II objections)
  - Restarted August 2017 in England and started in Wales

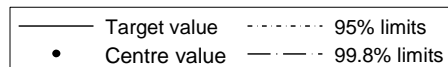
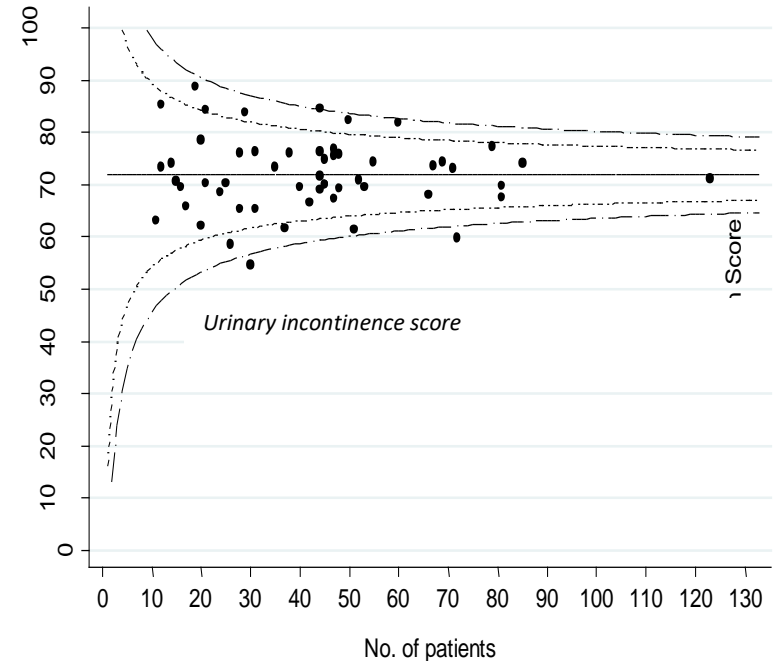
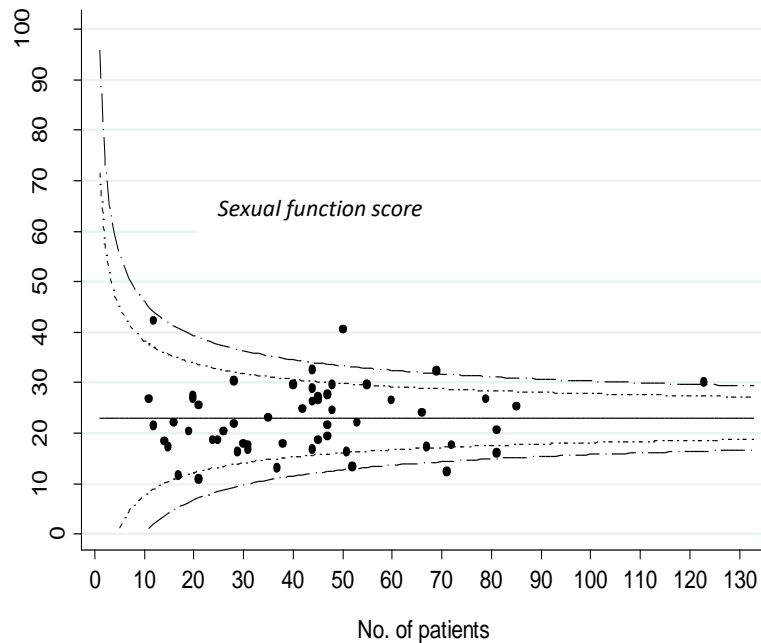
# AR2016: overall experience of care



RP = radical prostatectomy; EBRT = external beam radiation therapy

# AR2016: PROMs by provider (surgical centre)

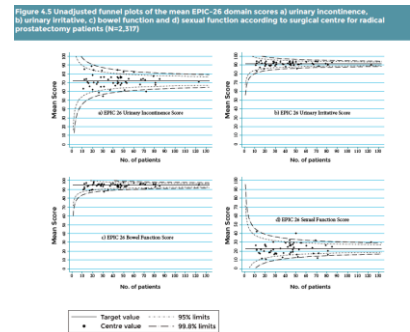
Unadjusted funnel plots showing mean domain scores by surgical centre with a volume of >10 RP patients



Data presented for 55 surgical centres

# NPCA: next steps

- **Development of website** enabling NHS providers to view results
  - compare performance against peers both regionally and nationally
  - outputs (reports, slide sets) to aid local quality improvement
- **Clinical Outcome Publication**
  - Publish unit level data on NHS Choices (February 2018)
  - Work with BAUS audit of consultant-level COP for RP
    - Data validation
    - Explore duplication of data collection
- **Supporting other quality improvement initiatives**
  - CQC's NCAB
  - GIRFT Urology Report



**Sacred Heart Hospital National Prostate Cancer Audit**

**HQIP** **CareQuality Commission**

**Key messages**

- Comparing this provider to other trusts on the 2017 Prostate Cancer Audit, performance was better in X metrics, worse in X metrics and similar in X metrics.
- In this context, 'similar' means that the trust's performance fell within the expected range.
- The national standard was met in X of 4 of the relevant metrics.

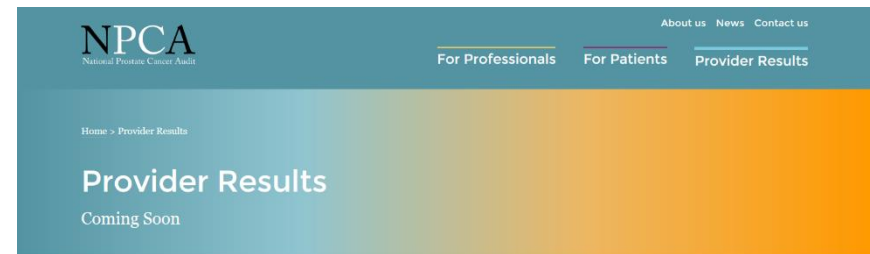
Metric	CQC Key Question	2017 Report	National Aggregate	National Standard	Comparison to other sites
730 cases	Most with complete information to determine disease status	Web Link	Y	Z	100%
500 cases	Percentage of patients who had an emergency readmission within 90 days of radical prostatectomy	Effective	Y	Z	n/a
500 cases	Percentage of patients experiencing a severe urinary complication requiring intervention following radical prostatectomy	Effective	Y	Z	n/a
500 cases	Percentage of patients experiencing a severe gastrointestinal complication requiring an intervention following radical prostatectomy	Effective	Y	Z	n/a

Data is submitted for approximately 100% of patients. Case ascertainment is therefore not presented separately.

**NPCA** National Prostate Cancer Audit

**Key**

- Positive outlier (above 95.8% control limit)
- Within expected range (95% CL)
- Negative outlier (below 95.8% control limit)
- Worse than expected (below 95% CL)



# National Prostate Cancer Audit

## Fourth Annual report 2017

On Behalf of the NPCA Team

Clinicians: NW Clarke / H Payne / P Cathcart / A Aggarwal

RCS Outcomes Team: J Van der Meulen / J Nossiter

Research Fellow: A Sujenthiram

Edinburgh, 23 November 2017

BAUS Section of Oncology Meeting