# Measuring the Quality of Outcomes in Healthcare using HIPE data

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# Overview

- Why focus on quality?
- What is quality?
- A little health economics
- PROMs example
- Implications for HIPE and ABF

# Revolution in the air?

- Quality, outcomes, value, cost
- **ICHOM**: purpose is to transform health care systems worldwide by measuring and reporting patient outcomes in a standardized way.
- **IHI:** Science of Quality Improvement
- “Rating hospitals by the stars: The feds’ latest plan to measure quality is the most controversial”
- “Value Based Care reaching new heights!”
- PROMs

# Same as it ever was …

- “Really the whole hospital problem rests on one question: What happens to the cases? [. . .] We must formulate some method of hospital report showing as nearly as possible what are the results of the treatment obtained at different institutions. This report must be made out and published by each hospital in a uniform manner, so that comparison will be possible. With such a report as a starting-point, those interested can begin to ask questions as to management and efficiency.”

- (Dr Eugene Codman, Address to the Philadelphia County Medical Society, 1913)

# Assessing outcomes and processes

- Chronic disease (Outcomes depend on primary and informal care as well as hospital care; behavioural change often an issue as well)
- Everything else (Outcomes depend primarily on hospital treatment and follow-up)
- Clinical measures
- Patient preferences

# The Porter Approach:
# Principles of Value-Based Health Care Delivery

- Value is measured for the **care of a patient's medical condition** over the full cycle of care
- Outcomes are the **full set of health results for a patient's condition** over the care cycle
- Costs are the **total costs of care for a patient's condition** over the care cycle
- Value = outcomes relative to cost

# Accountable Care Organisations

- Merit-Based Incentive Payment System (CMS)
- Based on the MIPS **composite performance score**, physicians and practitioners will receive positive, negative, or neutral adjustments
- Score based on

1. Quality
2. Resource use
3. Clinical Practice improvement activities
4. Use of Electronic Health Record technology

# Health Economics Theory

- If the price per patient treated is fixed, hospitals have an incentive to raise quality to attract more patients.
- This incentive is greater if hospitals face more rivals and if patient choice amongst hospitals is not restricted
- Hospitals compete on treatments with the largest profitability and elasticity; compare AMI, knee replacement and dementia
- Observable versus unobservable quality
- Imperfect information a feature of healthcare situations
- Competition can rarely be observed directly

# Health Economics Evidence, U.S. I

- "**Association between the Hospital Value-Based Purchasing pay for performance program and patient mortality in US hospitals: observational study**" (Figueroa et al, BMJ, 2016)
- Compared 30 day mortality rates for AMI, heart failure and pneumonia in 4,267 acute care hospitals (2/3 in the program)
- **No** evidence that HVBP led to lower mortality rates.
- Nations considering similar pay for performance programs may want to consider alternative models to achieve improved patient outcomes.

# Health Economics Evidence, U.S. II

- **Hospital Competition, Quality, and Expenditures in the U.S. Medicare Population (**Colla et al, NBER WP, 2014)
- Medicare data on 20 million hospital admissions; various measures of quality;
- Greater competition leads to higher quality for AMI but **not** for hip and knee replacements (opposite to theoretical prediction)
- For dementia patients, more competition is associated with **lower** quality

# Health Economics Evidence, U.K. I

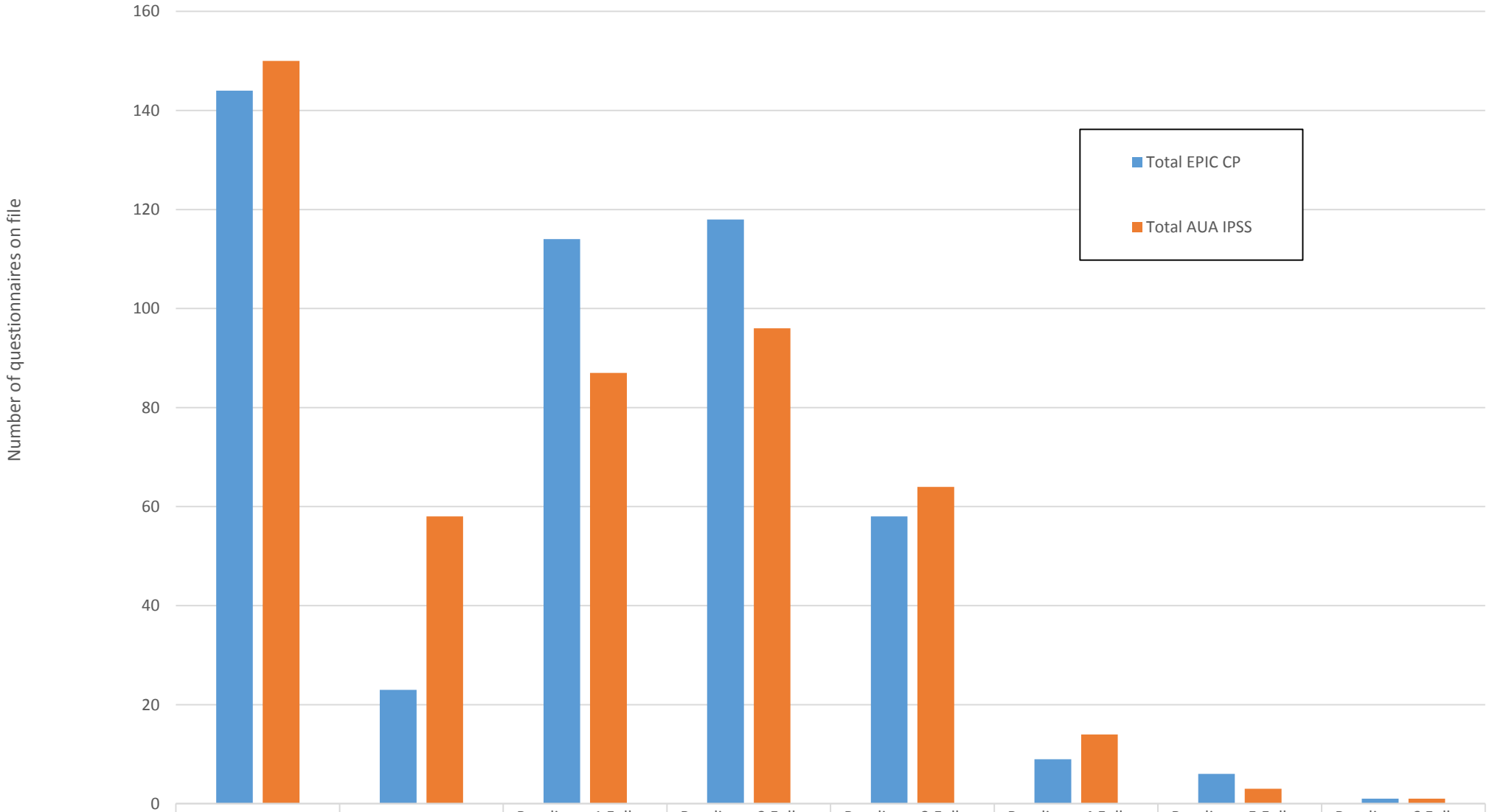
- Alistair McGuire and John Van Reenen, LSE, 2015
- Substantial body of evidence in the UK that competition between hospitals has improved efficiency and patient outcomes
- Examples include the average length of stay between admission and operations and reducing mortality rates.
- Some improvements generated by competition came from improved management practices.
- Equity of access to hospital elective care also improved so inequality fell as quality increased.

# Health Economics Evidence, U.K. II

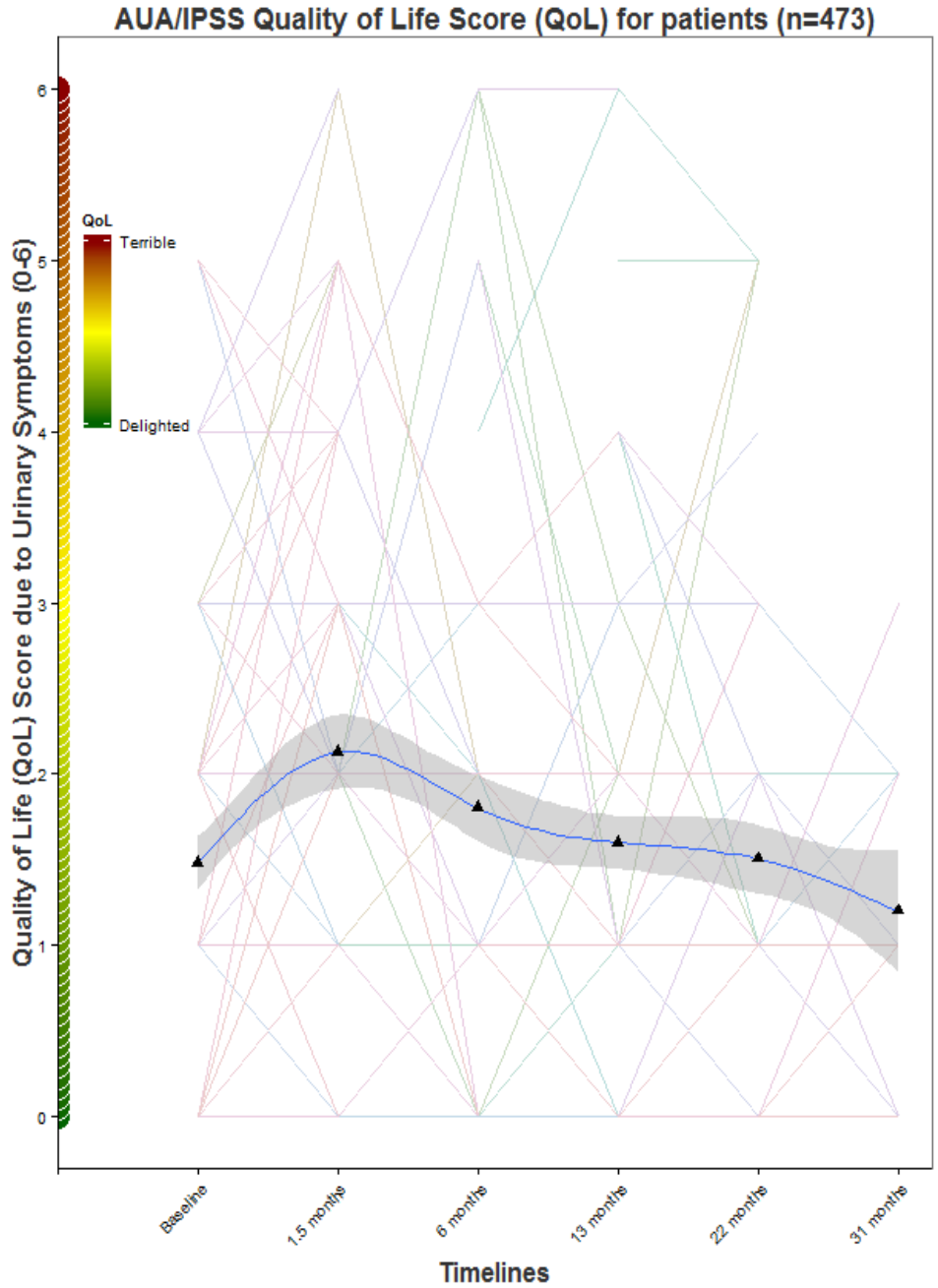
- Kristensen et al, "**Long-Term Effect of Hospital Pay for Performance on Mortality in England**", NEJM, 2014
- Analysed 30-day in-hospital mortality among 1,825,518 hospital admissions for eight conditions, three of which were covered by a financial-incentive program, Advancing Quality.
- Short-term relative reductions in mortality for conditions linked to financial incentives in hospitals participating in a pay-for-performance program in England were **not maintained**.

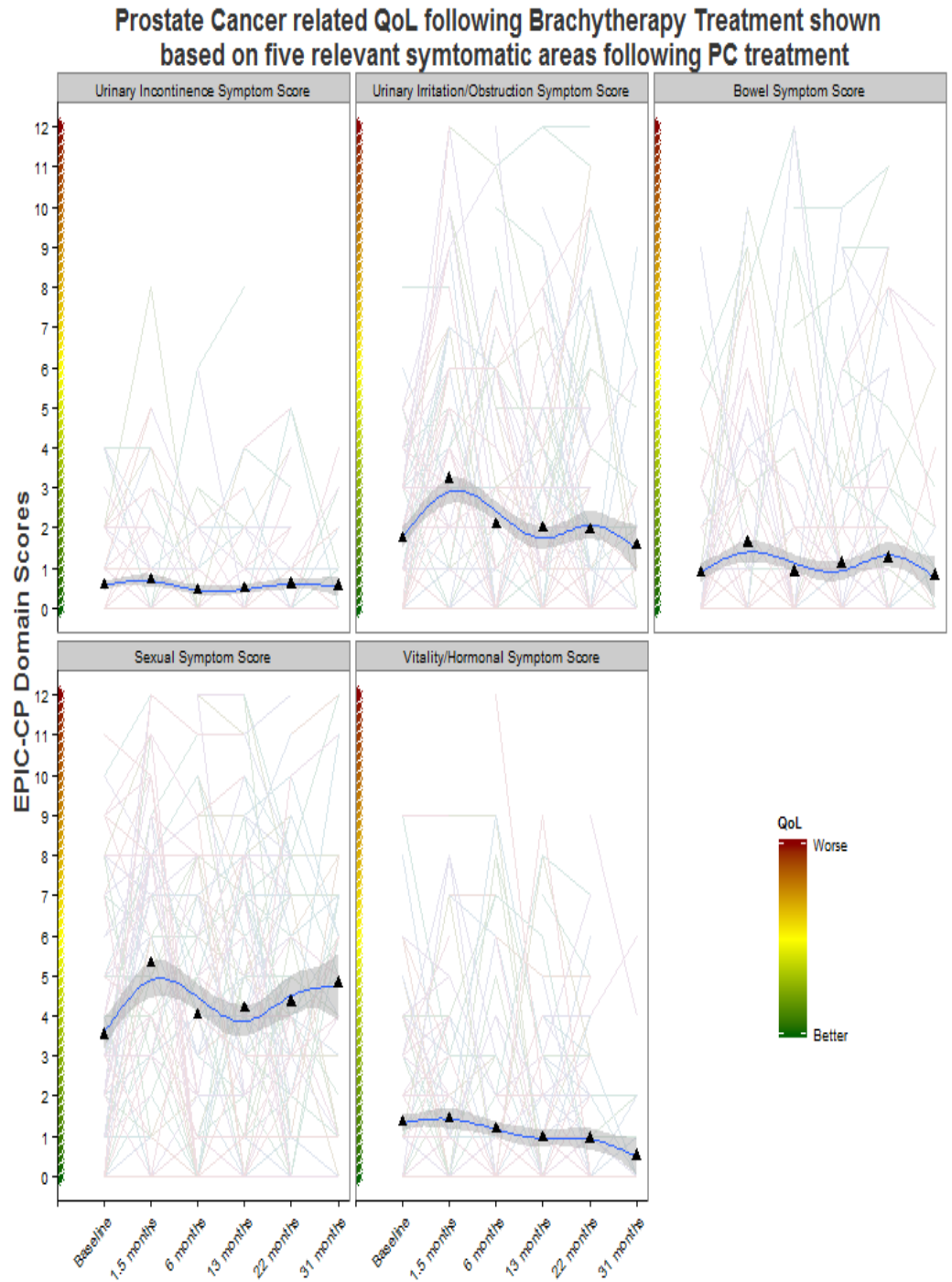
# Case study: Galway brachy therapy results, PROMS

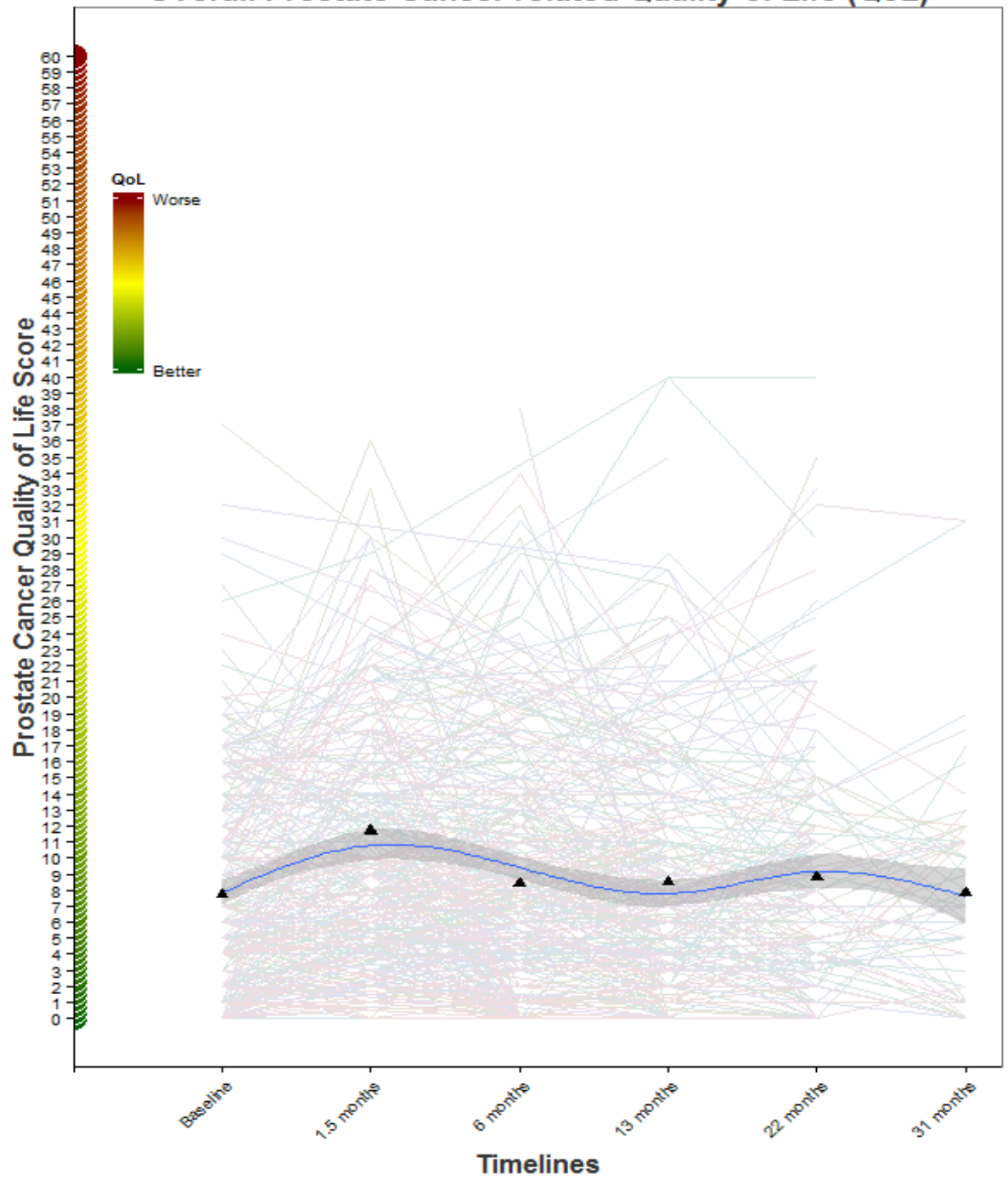
- Professor Frank Sullivan, Prostate Cancer Institute, NUI Galway
- Galway American Urological Association (Urinary bother scores) 475 patients over 4 years
- Galway brachy Expanded Prostate Composite Index (EPIC) scores 475 patients over 4 years




| | No Baseline | Only Baseline | Baseline + 1 Follow up | Baseline + 2 Follow up | Baseline + 3 Follow up | Baseline + 4 Follow up | Baseline + 5 Follow up | Baseline + 6 Follow up |
|---|---|---|---|---|---|---|---|---|
| Total EPIC CP | 144 | 23 | 114 | 118 | 58 | 9 | 6 | 1 |
| Total AUA IPSS | 150 | 58 | 87 | 96 | 64 | 14 | 3 | 1 |


AUA/IPSS Quality of Life Score (QoL) for patients (n=473)
Quality of Life (QoL) Score due to Urinary Symptoms (0-6)
QoL
Terrible
Delighted
0
1
2
3
4
5
6
Baseline
1.5 months
6 months
13 months
22 months
31 months
Timelines


Prostate Cancer related QoL following Brachytherapy Treatment shown based on five relevant symtomatic areas following PC treatment
Urinary Incontinence Symptom Score
Urinary Irritation/Obstruction Symptom Score
Bowel Symptom Score
Sexual Symptom Score
Vitality/Hormonal Symptom Score
EPIC-CP Domain Scores
0
1
2
3
4
5
6
7
8
9
10
11
12
Baseline
1.5 months
6 months
13 months
22 months
31 months
QoL
Worse
Better


Overall Prostate Cancer-related Quality of Life (QoL)
QoL
Worse
Better
Prostate Cancer Quality of Life Score
60
59
58
57
56
55
54
53
52
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
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13
12
11
10
9
8
7
6
5
4
3
2
1
0
Baseline
1.5 months
6 months
13 months
22 months
31 months
Timelines

# Conclusion on PROMs

- QoL important and all metrics show high levels of return to good baseline treatment
- Can be done but few actually doing it here
- Instead we are measuring KPI’s, process related metrics, wait times, trolley numbers, bed sores, falls etc.

# Implications for HIPE and ABF

- Need more measurement to complement HIPE data
- But danger of excessive measurement
- Scope for hospital competition in Ireland?