The **Scot BC Quality OPS (Scottish Bladder Cancer Quality** Performance Indicators influencing Outcomes, Prognosis and Surveillance) clinical project

Paramananthan Mariappan¹²

1. Edinburgh Bladder Cancer Surgery, Department of Urology, Western General Hospital, Edinburgh, United Kingdom.
2. University of Edinburgh, Edinburgh, United Kingdom.

Correspondence:

Mr. Paramananthan Mariappan MBBS; FRCS(Urol), PhD, FEBU, CBU(Mal)
Consultant Urological Surgeon
Edinburgh Bladder Cancer Surgery,
Department of Urology,
Western General Hospital,
Crewe Road South,
Edinburgh EH4 2XU,
United Kingdom.
Tel: +44-(0)131-5371000
E-mail: param.mariappan@nhslothian.scot.nhs.uk
Twitter handle: @ParamMariappan

Word count: 749

**Keywords:** Bladder cancer; Quality Indictors; Quality control; Real world outcomes; Effectiveness; Efficiency; Scotland; Prognosis; Translational Research.

**Acknowledgments:** The author is very grateful for the support from the following project collaborators and their teams: Mr. Imran Ahmad, Mr. Tarik Amer, Prof. Lars Dyrskjot Andersen, Dr. Simon Baker, Mr. Jaimin Bhatt, Ms. Mary Brown, Mr. Richard Bryan, Prof. James W.F. Catto, Mr. Rohit Chahal, Mr. Alexander Chapman, Mr. Altaf Chaudhry, Mr. John DeSouza, Mr. Konstantinos Dimitropoulos, Mr. Barend Dreyer, Prof. Charlie Gourley, Nurse Specialist Jennifer Gray, Mr. Sami Hamid, Mr. Vishwanath Hanchanale, Prof. Ewen Harrison, Mr. Rami Hassan, Mr. David Hendry, Mr. Graham Hollins, Prof. Syed A. Hussain, Mr. Mark Johnson, Mr. Allan Johnston, Prof. Robert Jones, Mr. Rajesh Nair, Mr. Ghalam M. Nandwani, Prof. John Norrie, Ms. Sara Ramsey, Mr. Henry Scowcroft, Clinical Nurse Specialist Claire Sharpe, Ms. Helen Simpson, Mr. Ashwin N. Sridhar, Mr. Benjamin G. Thomas, Mr. Ramesh Thurairaja, Mr. Matthew Trail, and Prof.
Special thanks are also due to The National Cancer Quality Steering Group, Public Health Scotland, Cathy Dunn and The Scottish Access Collaborative, and clinicians, nurse practitioners/specialists, and audit personnel from all three Scottish cancer networks (SCAN, WoSCAN, and The Northern Alliance) and members of the NCRI Bladder and Renal Group. This clinical project would not have been possible without the national QPI programme that is funded by the Scottish Government.
“Quality is not an act, it is a habit” - Aristotle.

At the turn of the century, it became apparent that the surgeon played a vital role in the observed variability (even heterogeneity) of outcomes in Bladder Cancer [1]. Further selective scrutiny revealed that surgeon experience and the use of a standardised reporting tool (or diagram) contributed to enhanced outcomes [2], emphasising the need for quality control.

Having consequently introduced a standardised Bladder Cancer proforma into our service in 2005, we sought to gauge the association between the elusive ‘experience’ and outcomes using an objective quality surrogate and selected the sampling rates of Detrusor Muscle (DM) in all Transurethral Resection of Bladder Tumour (TURBT) procedures [3]. Collaborating with colleagues in Aberdeen, we went on to validate these findings, recommending the benchmark pentafacta (experienced surgeon/ supervisor, documenting tumour features on a bladder diagram, documenting resection completeness, single post-TURBT chemotherapy instillation, and sampling DM) for standardisation and quality control [4]. Building on this foundation, augmented by a clinician-led optimised patient-centred pathway, a phased programme of Effectiveness & Efficiency for Edinburgh’s Bladder Cancer Surgical service was developed. With concomitant real world data, this programme informed standards and facilitated shared best practice and regional collaboration within the South East of Scotland, forming the basis for the Scot BC Quality OPS clinical project.

The Bladder Cancer QPI programme -

In 2008, The Scottish Government, recognising the need to improve cancer survival and address healthcare in-equalities/variance, published ‘Better Cancer Care, An Action Plan’[5], which introduced Quality Indicators (QIs) within our public-funded, egalitarian healthcare system. Aiming to nurture a culture of continuous quality improvement, by
standardisation, regular review of real-time healthcare data, feedback and implementation of change within a robust governance framework; the programme allowed for monitoring effectiveness and efficiency, along with aspects of safety - essential QI programme elements [6].

The description of development, implementation and governance aspects of our QPI programme are published [7, 8] and beyond the scope of this article. Development and implementation of the 12 Bladder Cancer QPIs commenced in 2012; enforcing standards for TURBT, pathology reporting, surgery/bladder preservation in MIBC nationally in April 2014. Individual Health Board accountability towards QPI annual reporting and audit-driven service change permitted evaluation and comparison of compliance to quality standards [9].

The National Clinical Collaborative -

Whilst health boards collect data on compliance to QPIs [9]; endpoints like recurrence, progression, longitudinal interventions and outcomes are not in the remit. Therefore Scot BC Quality OPS was developed as a clinical collaborative project to evaluate commensurate clinical outcomes. It has a (Multi Arms Multi Stage) MAMS-style design, allowing for progressive expansion consequent to QPI modifications, emerging evidence/questions, and expanding collaboration. The project’s initial premise was addressing the challenges in NMIBC, namely: (a) evaluate benefits of unified standards; (b) produce reliable contemporaneous real-world prognostic tools; (c) inform and support creation of less onerous surveillance protocols; and (d) create real-world Translational Research platforms. There are currently 7 Work Packages (WP) in progress/scheduled (Figure 1).
Evaluates the clinical impact of QPIs on outcomes in patients diagnosed with Bladder Cancer during the first cycle, between April 2014 and March 2017 (N=4246). This WP currently has 3 phases:

Phase 1 - described the quality of initial TURBT and its association with QPI compliance, tumour features, hospital volume and surgeon category [10].

Phase 2 - describes 5-year outcomes in NMIBC (n=3153) and association with QPI compliance, producing a contemporary real-world prognostic tool.

Phase 3 - in collaboration with The Usher Institute, aims to use data from Phase 2 to develop an App for prognostic calculation and surveillance schedule.

WP 2 -

With reduction in long-term risk of recurrence and progression noted in Edinburgh, a set of novel surveillance protocols for Low and High grade NMIBC was introduced, streamlining local and regional practice. The Scottish Access Collaborative workstream facilitated adoption of these for national use (Figure 2). Data on surgery (with related QPIs) and surveillance using these protocols are collected on the TRAKCare® platform. Central collation of such data, linked to the QPIs forms the national database.

WP 3 -

Collection of bio-specimens linked to prospective data from WP 2 (i.e. reflecting standardised management (QPIs) and surveillance), creating a real-world platform for Translational Research.

WP 4 through WP 7 are listed in Figure 1.
The Scot BC Quality OPS project aims to create a reliable dataset, evaluating real world effectiveness and efficiency consequent to standardisation of Bladder Cancer treatment and surveillance in Scotland - we’re open for collaboration.
REFERENCES


