

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

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58 ***“Quality is not an act, it is a habit” - Aristotle.***

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

63 Having consequently introduced a standardised Bladder Cancer proforma into our service in
64 2005, we sought to gauge the association between the elusive ‘experience’ and outcomes using
65 an objective quality surrogate and selected the sampling rates of Detrusor Muscle (DM) in all
66 Transurethral Resection of Bladder Tumour (TURBT) procedures [3]. Collaborating with
67 colleagues in Aberdeen, we went on to validate these findings, recommending the benchmark
68 pentafacta (experienced surgeon/ supervisor, documenting tumour features on a bladder
69 diagram, documenting resection completeness, single post-TURBT chemotherapy instillation,
70 and sampling DM) for standardisation and quality control [4]. Building on this foundation,
71 augmented by a clinician-led optimised patient-centred pathway, a phased programme of
72 Effectiveness & Efficiency for Edinburgh’s Bladder Cancer Surgical service was developed.
73 With concomitant real world data, this programme informed standards and facilitated shared
74 best practice and regional collaboration within the South East of Scotland, forming the basis
75 for the ***Scot BC Quality OPS*** clinical project.

76 *The Bladder Cancer QPI programme -*

77 In 2008, The Scottish Government, recognising the need to improve cancer survival and
78 address healthcare in-equalities/variance, published [**“Better Cancer Care, An Action**](#)
79 [**Plan**](#)”[5], which introduced Quality Indicators (QIs) within our public-funded, egalitarian
80 healthcare system. Aiming to nurture a culture of continuous quality improvement, by

81 standardisation, regular review of real-time healthcare data, feedback and implementation of
82 change within a robust governance framework; the programme allowed for monitoring
83 effectiveness and efficiency, along with aspects of safety - essential QI programme elements
84 [6].

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

91 *The National Clinical Collaborative -*

92 Whilst health boards collect data on compliance to QPIs [9]; endpoints like recurrence,
93 progression, longitudinal interventions and outcomes are not in the remit. Therefore **Scot BC**
94 **Quality OPS** was developed as a clinical collaborative project to evaluate commensurate
95 clinical outcomes. It has a (Multi Arms Multi Stage) MAMS-style design, allowing for
96 progressive expansion consequent to QPI modifications, emerging evidence/ questions, and
97 expanding collaboration. The project's initial premise was addressing the challenges in
98 NMIBC, namely: (a) evaluate benefits of unified standards; (b) produce reliable
99 contemporaneous real-world prognostic tools; (c) inform and support creation of less onerous
100 surveillance protocols; and (d) create real-world Translational Research platforms. There are
101 currently 7 Work Packages (WP) in progress/ scheduled (Figure 1).

102

103 *WP 1 -*

104 Evaluates the clinical impact of QPIs on outcomes in patients diagnosed with Bladder Cancer
105 during the first cycle, between April 2014 and March 2017 (N=4246). This WP currently has
106 3 phases:

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

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

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

113

114 *WP 2 -*

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

121

122 *WP 3 -*

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

126

127 WP 4 through WP 7 are listed in Figure 1.

128

129 The *Scot BC Quality OPS* project aims to create a reliable dataset, evaluating real world
130 effectiveness and efficiency consequent to standardisation of Bladder Cancer treatment and
131 surveillance in Scotland - we're open for collaboration.

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