Scottish Cancer Recovery Group
National Cancer Quality Steering Group

Bladder Cancer
Clinical Quality Performance Indicators
Engagement Document

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1. National Cancer Quality Programme

Better Cancer: Ambition and Action (2016)[1] details a commitment to delivering the national cancer quality programme across NHSScotland, with a recognised need for national cancer QPIs to support a culture of continuous quality improvement. Addressing variation in the quality of cancer services is pivotal to delivering improvements in quality of care. This is best achieved if there is consensus and clear indicators of what good cancer care looks like.

Small sets of cancer specific outcome focussed, evidence based indicators are in place for 19 different tumour types. These QPIs ensure that activity is focussed on those areas that are most important in terms of improving survival and individual care experience whilst reducing variation and supporting the most effective and efficient delivery of care for people with cancer. QPIs are kept under regular review and are responsive to changes in clinical practice and emerging evidence.

A programme to review and update the QPIs in line with evolving evidence is in place as well as a robust mechanism by which additional QPIs will be developed over the coming years.

1.1 Quality Assurance and Continuous Quality Improvement

The ultimate aim of the programme is to develop a framework and foster a culture of continuous quality improvement, whereby real time data is reviewed regularly at an individual Multi-Disciplinary Team (MDT)/Unit level and findings actioned to deliver continual improvements in the quality of cancer care. This is underpinned and supported by a programme of regional and national comparative reporting and review.

NHS Boards are required to report against QPIs as part of a mandatory, publicly reported, programme at a national level. A rolling programme of reporting is in place, with approximately three national tumour specific summary reports published annually. These reports highlight the publication of the QPIs in the Cancer QPI Dashboard which includes comparative reporting of performance against QPIs at MDT/Unit level across NHSScotland, trend analysis and survival. This approach helps to overcome existing issues relating to the reporting of small volumes in any one year.

In the intervening years tumour specific QPIs are monitored on an annual basis through established Regional Cancer Network and local governance processes, with analysed data submitted to Public Health Scotland (PHS) (previously ISD Scotland) for inclusion in the Cancer QPI Dashboard and subsequent national summary report. This approach ensures that timely action is taken in response to any issues that may be identified through comparative reporting and systematic review.

2. Quality Performance Indicator (QPI) Development Process

The QPI development process was designed to ensure that indicators are developed in an open, transparent and timely way. The development process can be found in appendix 1.

The Bladder Cancer QPI Development Group was convened in August 2012, chaired by Dr Sophie Barrett, Consultant Medical Oncologist. Membership of this group included clinical representatives drawn from the three regional cancer networks, Healthcare Improvement Scotland, ISD and patient/carer representatives. Membership of the development group can be found in appendix 2.

3. QPI Formal Review Process

As part of the National Cancer Quality Programme a systematic national review process has been developed, whereby all tumour specific QPIs published are subject to formal review following 3 years analysis of comparative QPI data.

Formal review of the Bladder Cancer QPIs was undertaken in for the first time in March 2018. A Formal review Group was convened, chaired by Mr Stuart Robertson, Consultant Head and Neck Surgeon. Membership of this group included Clinical Leads from the three Regional Cancer Networks and membership of this group can be found in appendix 3.

The 2nd Cycle of Formal Review commenced in June 2021 following reporting of 6 years of QPI data. This cycle of review is more selective and focussed on ensuring the ongoing clinical relevance of the QPIs. A Formal Review Group was convened with Dr Noelle O'Rourke, Consultant Clinical Oncologist and National Lead for the Scottish Cancer Network appointed as Clinical Advisor/Chair to the group. Membership of this group can be found in appendix 4.

The formal review process is clinically driven with proposals for change sought from specialty specific representatives in each of the Regional Cancer Networks. Formal review meetings to further discuss proposals will be arranged where deemed necessary. The review builds on existing evidence using expert clinical opinion to identify where new evidence is available, and a full public engagement exercise will take place where significant revisions have been made or new QPIs developed.

During formal review QPIs may be archived and replaced with new QPIs. Triggers for doing so include significant change to clinical practice, targets being consistently met by all Boards and publication of new evidence. Where QPIs have been archived, for those indicators which remain clinically relevant, data will continue to be collected to allow local / regional analysis of performance as required.

Any new QPIs have been developed in line with the following criteria:

- **Overall importance** – does the indicator address an area of clinical importance that would significantly impact on the quality and outcome of care delivered?

- **Evidence based** – is the indicator based on high quality clinical evidence?

- **Measurability** – is the indicator measurable i.e. are there explicit requirements for data measurement and are the required data items accessible and available for collection?

4. Format of the Quality Performance Indicators

QPIs are designed to be clear and measurable, based on sound clinical evidence whilst also taking into account other recognised standards and guidelines.

- Each QPI has a **short title** which will be utilised in reports as well as a fuller **description** which explains exactly what the indicator is measuring.

- This is followed by a brief overview of the **evidence base and rationale** which explains why the development of this indicator was important.

- The measurability **specifications** are then detailed; these highlight how the indicator will actually be measured in practice to allow for comparison across NHSScotland.

- Finally a **target** is indicated, this dictates the level which each unit should be aiming to achieve against each indicator.

In order to ensure that the chosen target levels are the most appropriate and drive continuous quality improvement as intended they are kept under review and revised as necessary, if further evidence or data becomes available.

Rather than utilising multiple exclusions, a tolerance level has been built into the QPIs. It is very difficult to accurately measure patient choice, co-morbidities and patient fitness therefore target levels have been set to account for these factors. Further detail is noted within QPIs where there are other factors which influenced the target level.

Where 'less than' (<) target levels have been set the rationale has been detailed within the relevant QPI. All other target levels should be interpreted as 'greater than' (>) levels.

5. Supporting Documentation

A national minimum core dataset and a measurability specification document have been developed in parallel with the indicators to support the monitoring and reporting of Bladder Cancer QPIs. The updated document will be implemented for patients diagnosed with Bladder Cancer on, or after, 1st April 2021.

6. Quality Performance Indicators for Bladder Cancer

QPI 1: Multi-Disciplinary Team Meeting Discussion

QPI Title:	Patients with bladder cancer should be discussed by a multidisciplinary team (MDT) prior to definitive treatment.	
Description:	Proportion of patients with bladder cancer who are discussed at MDT meeting before definitive treatment. Please note: The specifications of this QPI are separated to ensure clear measurement of patients with: (i) Muscle Invasive Bladder Cancer (MIBC) (ii) Non Muscle Invasive Bladder Cancer (NMIBC)	
Rationale and Evidence:	Evidence suggests that patients with cancer managed by a multi-disciplinary team have a better outcome. There is also evidence that the multidisciplinary management of patients increases their overall satisfaction with their care[2]. Discussion prior to definitive treatment decisions being made provides reassurance that patients are being managed appropriately.	
Specification (i):	**Numerator:**	Number of patients with MIBC discussed at the MDT before definitive treatment (this includes: neo-adjuvant SACT, radical cystectomy, radiotherapy and supportive care only).
	Denominator:	All patients with MIBC.
	Exclusions:	• Patients who died before first treatment.
Specification (ii):	**Numerator:**	Number of patients with NMIBC discussed at the MDT following histological confirmation of bladder cancer.
	Denominator:	All patients with NMIBC.
	Exclusions:	• No exclusions.
Target:	95% The tolerance within this target is designed to account for situations where patients require treatment urgently.	

Revision(s):	***No change to QPI***

QPI 2: Quality of Transurethral Resection of Bladder Tumour (TURBT)

QPI Title:	Transurethral resection of bladder tumour (TURBT) procedures undertaken should be of good quality.	
Description:	Proportion of patients with bladder cancer who undergo good quality TURBT. **Please note:** The specifications of this QPI are separated to ensure clear measurement of the following at initial resection: (i) Use of a bladder diagram / detailed description with documentation of tumour location, size, number and appearance; (ii) Whether the resection is complete or not; and (iii) Whether detrusor muscle included in the specimen.	
Rationale and Evidence:	TURBT is considered to be the gold standard initial treatment of Non Muscle Invasive Bladder Cancer (NMIBC), with the aim of completely removing all macroscopic tumours and obtaining tissue for essential pathological evaluation[3]. The risk of recurrence is as high as 70%[3, 4]. Most recurrences are detected at the first check cystoscopy following initial TURBT and therefore attributable to residual disease or missed tumours at initial TURBT. These recurrences have been shown to vary according to the quality of the initial TURBT[5]. Several surgical factors have hence been found to be associated with a good quality TURBT; thereby have been shown to be a surrogate for quality of TURBT[6,7]. These factors have been incorporated into this QPI. It is recommended that a TURBT is performed in a systematic manner whereby a complete resection with detrusor muscle in the sample is the ultimate aim[4,6,7,8]. Adequate documentation (use of a bladder diagram) with a conclusion regarding radicality or residual tumour is recommended[4,5,6,8]. The procedure should be carried out by an experienced surgeon, and when carried out by a trainee this should be under supervision of an experienced operator[7]. Specifications (i) and (ii) of this QPI focus on the quality of documentation in relation to the TURBT (i.e. reflecting the attention to detail); while specification (iii) relates to the quality of the surgical TURBT procedure and is confirmed on histology.	
Specification (i):	**Numerator:**	Number of patients with bladder cancer who undergo TURBT where a bladder diagram / detailed description with documentation of tumour location, size, number and appearance has been used at initial resection.
	Denominator:	All patients with bladder cancer who undergo TURBT.
	Exclusions	• Patients undergoing palliative resection.

(Continued overleaf)

QPI 2: Quality of Transurethral Resection of Bladder Tumour……. (continued)

Specification (ii):	**Numerator:**	Number of patients with bladder cancer who undergo TURBT where it is documented whether the resection was complete or not at initial resection.
	Denominator:	All patients with bladder cancer who undergo TURBT.
	Exclusions	• Patients undergoing palliative resection. • Patients with very small tumours (≤5mm).
Target:	Specifications (i) and (ii): 95% The tolerance within this target level accounts for cases where there may be uncertainty whether the resection was complete or not at initial resection.	
Specification (iii):	**Numerator:**	Number of patients with high grade NMIBC who undergo TURBT where detrusor muscle is included in the specimen at initial resection.
	Denominator:	All patients with high grade NMIBC who undergo TURBT.
	Exclusions	• Patients undergoing palliative resection. • Patients with very small tumours (≤5mm). • Patients with bladder diverticular tumours.
Target:	Specification (iii): 90% The tolerance within this target level accounts for the fact that it is not always possible to include detrusor muscle within the specimen.	

Please note:
Additional information on the total number of complete / incomplete resections will be reported across NHS Boards alongside this QPI. This data will be reviewed to identify any variation in clinical outcomes for patients undergoing Transurethral Resection of Bladder Tumour (TURBT).

Revision(s):	***Specification (i)*** ○ ***Removed exclusion of patients with very small tumours (≤5mm).*** ***Specification (iii)*** ○ ***Denominator changed from all bladder cancer to high grade NMIBC.*** ○ ***Target increased from 80% to 90%.*** ***Additional information to be included on total number of patients with complete / incomplete resection.***

QPI 3: Mitomycin C Following Transurethral Resection of Bladder Tumour (TURBT)

QPI Title:	Patients with low grade Ta non muscle invasive bladder cancer (NMIBC) who undergo TURBT should receive a single instillation of mitomycin C (or other alternative chemotherapy agent[a]) within 24 hours of resection, unless contraindicated.	
Description:	Proportion of patients with low grade Ta NMIBC who undergo TURBT who receive a single instillation of mitomycin C (or other alternative chemotherapy agent) within 24 hours of resection.	
Rationale and Evidence:	The recurrence rate in NMIBC is as high as 70%[9]. Treatment by TURBT alone can eliminate TaT1 tumours completely, however these tumours in particular commonly recur causing progression to MIBC[4]. Tumour features (number, size, grade and stage) and quality of TURBT determine overall recurrence rates. However, TURBT causes tumour cells to be dispersed within the bladder during the procedure and these could get re-implanted in the bladder mucosa, subsequently being detected as recurrence. By destroying floating cancer cells and those that have been implanted on the resection site, a single instillation of intravesical chemotherapy confers an absolute reduction in tumour recurrence of 12%[10] While there is no evidence to support any difference in efficacy between the various agents[4], the use of mitomycin C is ubiquitous in the UK and therefore specified as the main agent in the QPI. A single instillation of mitomycin C (or other alternative chemotherapy agent) within 24 hours of TURBT for NMIBC is recommended[3,4,7,8]. The single wash should not be given if perforation of the bladder wall has occurred during the TURBT. A single instillation of intravesical chemotherapy should be used to reduce the risk of recurrent disease following resection[10].	
Specifications:	**Numerator:**	Number of patients with low grade Ta NMIBC who undergo TURBT who receive a single instillation of mitomycin C (or other alternative chemotherapy agent) within 1 day of initial TURBT.
	Denominator:	All patients with low grade Ta NMIBC who undergo initial TURBT.
	Exclusions	• No exclusions.
Target:	80% The tolerance within this target is designed to account for situations where patients have severe haematuria, which requires continuous irrigation or surgical intervention. It also accounts for those patients where there has been intra or extraperitoneal perforation, and those with high risk of extravasation. Additionally, at time of TURBT it is often difficult to identify if disease is superficial, invasive or high/low grade therefore in order to minimise over-treatment some patients with suspected muscle invasive bladder cancer may not receive mitomycin C (or another alternative chemotherapy agent).	

[a] Other alternative chemotherapy agents include epirubicin, pirarubicin and gemcitabine.

Revision(s):	• ***QPI updated to include 'other alternative chemotherapy agents'.*** • ***Denominator changed from 'all NMIBC' to patients with low grade Ta NMIBC.*** • ***Increased target from 60% to 80% to accommodate this more focussed group of patients.***

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT)

QPI Title:	A second resection or early cystoscopy (± biopsy) should be carried out within 6 weeks of initial TURBT in patients with high grade and/ or T1 non muscle invasive bladder cancer (NMIBC), when detrusor muscle is absent or when initial resection is incomplete.	
Description:	Proportion of patients who have undergone TURBT with high grade and/ or T1 NMIBC, where detrusor muscle is absent from specimen or initial resection is incomplete, who have a second resection or early cystoscopy (± biopsy) within 6 weeks of initial TURBT. **Please Note:** the specifications of this QPI are separated to ensure clear measurement of specific patients who have undergone TURBT: (i) With T1 (all grades) or select high grade Ta* NMIBC; (ii) With high grade NMIBC where detrusor muscle absent from specimen; and (iii) With NMIBC where initial resection is incomplete.	
Rationale and Evidence:	It is well established from white light TURBT series that 33%-53% of high risk NMIBC have residual disease following an initial TURBT[5]. This risk is high when detrusor muscle is absent in the initial resection specimen[6]. The presence of residual disease is a poor prognostic indicator, especially in pT1 disease[3,4]. A second TURBT in high risk NMIBC improves the recurrence-free survival. Understaging, i.e. not detecting muscle invasive bladder cancer in the initial TURBT, occurs in 4%-25% pT1 cancers and can potentially be detrimental to the patient[3,4]. Evidence suggests that re-TURBT should be performed if the primary resection was not radical, e.g. if there is no detrusor muscle in the sample (with the exception of TaG1 tumours and primary CIS) and/or where the initial specimen shows a T1 tumour[3,4]. The second TURBT should be performed at 2-6 weeks after initial resection[3,4].	
Specification (i):	**Numerator:**	Number of patients with T1 (all grades) or select high grade Ta* NMIBC who have undergone TURBT who have a second TURBT or early cystoscopy (± biopsy) within 6 weeks (42 days) of initial resection.
	Denominator:	All patients with T1 (all grades) or select high grade Ta* NMIBC who have undergone TURBT.
	Exclusions	• Patients where TURBT has been carried out for palliation. • Patients who have undergone early cystectomy. • Patients with confirmed metastatic disease.

(continued overleaf….)

*****High grade Ta which are multifocal (more than 1) or large (>3cm)

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT)..... continued

Specification (ii):	**Numerator:**	Number of patients with high grade NMIBC who have undergone TURBT where detrusor muscle absent from specimen who have a second TURBT or early cystoscopy (± biopsy) within 6 weeks (42 days) of initial resection.
	Denominator:	All patients with high grade NMIBC who have undergone TURBT where detrusor muscle absent from specimen.
	Exclusions:	• Patients where TURBT has been carried out for palliation. • Patients who have undergone early cystectomy. • Patients with confirmed metastatic disease.
Specification (iii)	**Numerator:**	Number of patients with NMIBC who have undergone TURBT where initial resection is incomplete who have a second TURBT or early cystoscopy (± biopsy) within 6 weeks (42 days) of initial resection.
	Denominator:	All patients with NMIBC who have undergone TURBT where initial resection is incomplete.
	Exclusions:	• Patients where TURBT has been carried out for palliation. • Patients who have undergone early cystectomy. • Patients with confirmed metastatic disease.
Target:	80% The tolerance within this target is designed to account for situations where patients are not fit enough for a further operation, where patients are frail and a thin bladder wall is suspected and where there is imaging which suggests re-TURBT is not required or where PDD (photodynamic diagnosis) TURBT has been carried out. It also accounts for those patients where there has been intra or extraperitoneal perforation.	

Revision(s):	***Specification (i) and (iii) – no changes*** ***Specification (ii) – removed low grade G2 tumours from the denominator***

QPI 5: Pathology Reporting

Revision(s):	***QPI archived*** ***All regions have met and exceeded the 90% target over a number of years and consistent pathology reporting according to guidelines is now considered standard practice.***

QPI 6: Lymph Node Yield

QPI Title:	For patients undergoing primary radical cystectomy for bladder cancer the extent of lymph nodes examined should be maximised.
Description:	Proportion of patients with bladder cancer who undergo primary radical cystectomy where at least level 2 pelvic lymph node dissection (to the middle of the common iliac artery or level of the crossing of the ureter) has been undertaken.
Rationale and Evidence:	Adequate lymph node yield is important for accurate staging. Evidence suggests that this should be an integral part of cystectomy[12]. It is important that at least the area of the standard node dissection needs to be removed[8]. It is therefore important that a meticulous lymph node dissection is performed to obtain the maximum number of nodes[11].
Specifications:	**Numerator:** Number of patients with bladder cancer who undergo primary radical cystectomy where at least level 2 pelvic lymph node dissection (i.e. to the middle of the common iliac artery or level of the crossing of the ureter) has been undertaken. **Denominator:** All patients with bladder cancer who undergo primary radical cystectomy. **Exclusions:** • Patients undergoing salvage cystectomy.
Target:	95% The tolerance within this target accounts for situations where patients are not fit enough to undergo extensive lymphadenectomy.

Revision(s):	***Target increased from 90% to 95%.***

QPI 7: Time to Treatment

QPI Title:	Patients with muscle invasive bladder cancer (MIBC) undergoing treatment with radical intent should commence treatment as soon as possible.	
Description:	Proportion of patients with MIBC who commence radical treatment within 6 weeks of their diagnosis of MIBC, or within 8 weeks of completing treatment[b] where patients are undergoing neoadjuvant chemotherapy. **Please note:** The specification of this QPI will be separated to ensure clear measurement of patients undergoing: (i) Radical treatment (cystectomy or radiotherapy); and (ii) Neoadjuvant chemotherapy	
Rationale and Evidence:	Patients with bladder cancer should have cystectomy within 3 months of diagnosis as this has optimum survival benefit, if delayed for more than this time it can increase the risk of progression and cancer specific death[11,12]. Neoadjuvant chemotherapy should be offered to suitable patients prior to definitive radical therapy (this includes radical cystectomy, radical radiation therapy, or preoperative radiotherapy and cystectomy[12]. This treatment should be commenced as soon as possible following diagnosis. Evidence suggests that patients who undergo radical cystectomy up to 12 weeks after neoadjuvant chemotherapy show no increased risk of complications or nodal metastases[13]. In order for this QPI to remain challenging and drive improvement on the timeline between diagnosis and treatment of MIBC, the QPI Formal Review Group have agreed to reduce the timeframe from 12 weeks to 6 weeks.	
Specification (i):	**Numerator:**	Number of patients with MIBC who undergo radical cystectomy or radiotherapy only within 6 weeks of diagnosis of MIBC.
	Denominator:	All patients with MIBC undergoing radical cystectomy or radiotherapy only.
	Exclusions:	• No exclusions.
Specification (ii):	**Numerator:**	Number of patients with MIBC who have neoadjuvant chemotherapy who undergo cystectomy or chemoradiation within 8 weeks of completing treatment.
	Denominator:	All patients with MIBC undergoing neo-adjuvant chemotherapy.
	Exclusions:	• No exclusions.
Target:	90% The tolerance within this target accounts for situations where patients are not fit enough to undergo treatment within the required timescales due to other medical conditions.	

[b] The completion of treatment is measured from the last dose of the final cycle of neoadjuvant chemotherapy.

Revision(s):	***Specification (i) timeframe changed from 3 months to 6 weeks from the time between diagnosis and radical treatment (cystectomy or radiotherapy)*** ***Rationale statement been updated to account for change in timeframe.***

QPI 8: Volume of Cases per Centre / Surgeon

QPI Title:	Radical cystectomy should be performed by surgeons who perform the procedure routinely in hospitals where there is an appropriate volume of such cases.
Description:	Number of radical cystectomy procedures performed by a specialist centre, and surgeon over a 1 year period.
Rationale and Evidence:	Although evidence has shown varied results, recent studies have shown that there is a positive relationship between volume and re-intervention rates[14,15]. The literature demonstrates that radical cystectomy procedures should be undertaken within high volume centres to improve surgical outcomes and reduce mortality[16,17]. Within each network, bladder cancer should be managed by multidisciplinary teams, with surgical and other radical treatments administered by those with appropriate expertise and caseloads[11].
Specifications:	Number of radical cystectomy procedures performed by each centre / surgeon in a given year. **Exclusions:** • No exclusions.
Target:	Minimum 20 procedures per centre, with a minimum of 10 procedures per surgeon in a 1 year period. This is a minimum target level and is designed to ensure that all surgeons performing radical cystectomy perform **a minimum of** 10 procedures per year. **Please Note:** Varying evidence exists regarding the most appropriate target level for surgical case volume. In order to ensure that the target level takes account of level 1 evidence and will drive continuous quality improvement as intended this performance indicator will be kept under regular review. It is recognised that multiple factors affect overall performance and that the end point focus must be clinical outcomes in what is a team delivered goal. It is recommended that where two consultants operate together on the same patient each should count the case in his/her numbers as this best reflects the partnership accountability of such shared procedures.

Please note:
SMR01 data will be utilised to support reporting and monitoring of this QPI rather than clinical audit. This will maximise the use of data which are already collected and remove the need for any duplication of data collection. Standard reports will be specified and direct access will be given for each Board to run these reports to ensure nationally consistent analysis and reporting.

Revision(s):	***No change to QPI***

QPI 9: Oncological Discussion

QPI Title:	Patients with muscle invasive bladder cancer (MIBC) should have all treatment options discussed with them prior to radical cystectomy.	
Description:	Proportion of patients with MIBC who have radical surgery who met with an oncologist prior to radical cystectomy.	
Rationale and Evidence:	Evidence has shown that an informed discussion with patients to outline the aims, benefits and toxicity of treatment is necessary before therapy begins[11]. Clinical judgement is required to assess the risks and benefits of prescribing chemotherapy. In elderly patients or in those with significant co-morbid illness treatment related toxicity may outweigh any advantages to chemotherapy[11].	
Specifications:	**Numerator:**	Number of patients with MIBC who undergo cystectomy who met with an oncologist prior to radical cystectomy.
	Denominator:	All patients with MIBC who undergo radical cystectomy.
	Exclusions:	• No exclusions.
Target:	60% The tolerance within this target accounts primarily for the fact that due to co-morbidities and fitness levels not all patients are deemed at multi-disciplinary team meeting clinically appropriate for radical radiotherapy or neo-adjuvant chemotherapy. It is acknowledged that some patients with MIBC are specifically excluded from radical radiotherapy (e.g. due to the presence of carcinoma in situ), and neoadjuvant chemotherapy (e.g. due to impaired renal function). In addition, the tolerance accounts for those patients who may decline to see an oncologist or who undergo emergency cystectomy.	

Revision(s):	***No change to QPI***

QPI 10: Radical Radiotherapy with Concomitant Systemic Anti-Cancer Therapy (SACT)

QPI Title:	Patients undergoing radical radiotherapy for transitional cell carcinoma of bladder should be considered for concomitant systemic anti-cancer therapy (SACT).
Description:	Proportion of patients with transitional cell carcinoma of the bladder (T2-T4) undergoing radical radiotherapy receiving concomitant SACT.
Rationale and Evidence:	A well conducted randomised trial[18] concluded treating patients with transitional cell carcinoma of the bladder with combined chemotherapy (5FU and mitomycin C) as opposed to radiotherapy alone significantly improves local control with no significant increase in toxicity. The National Cancer Institute states that "systemic chemotherapy has been incorporated with definitive radiation therapy to develop a more effective bladder-sparing approach for patients with locally advanced disease"[19].
Specifications:	**Numerator:** Number of patients with transitional cell carcinoma of the bladder (T2-T4) receiving radical radiotherapy treated with concomitant SACT **Denominator:** All patients with transitional cell carcinoma of the bladder (T2-T4) receiving radical radiotherapy. **Exclusions:** • Patients enrolled in a clinical trial.
Target:	50% The target accounts for the fact that patients with cardiac disease may not be suitable to receive this type of treatment. It also accounts for the fact that due to co-morbidities and fitness not all patients will require or be suitable for radical radiotherapy with SACT.

Revision(s):	***QPI changed from concomitant chemotherapy to concomitant SACT.***

QPI 11: 30/90 Day Mortality after Treatment for Bladder Cancer

QPI Title:	30/90 day mortality following treatment with curative intent for bladder cancer.	
Description:	Proportion of patients with bladder cancer who die within 30/90 days of treatment with curative intent (radical cystectomy or radiotherapy) for bladder cancer.	
Rationale and Evidence:	Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi-Disciplinary Team (MDT)[20]. Outcomes of treatment, including treatment related morbidity and mortality should be regularly assessed. Treatment should only be undertaken in individuals that may benefit from that treatment, that is, treatments should not be undertaken in futile situations. This QPI is intended to ensure treatment is given appropriately, and the outcome reported on and reviewed. Please note 30 Day Mortality for Systemic Anti-Cancer Therapy (SACT) is measured separately within QPI 13 – see page 23	
Specifications:	**Numerator:**	Number of patients with bladder cancer who receive treatment with curative intent (radical cystectomy or radiotherapy) that die within 30/90 days of treatment.
	Denominator:	All patients with bladder cancer who receive treatment with curative intent (radical cystectomy or radiotherapy).
	Exclusions:	• No exclusions.
	Please Note:	This indicator will be reported by treatment modality, i.e. surgery and radiotherapy as opposed to one single figure.
Target:	<3% - 30 day <5% - 90 day	

Revision(s):	***SACT element has been removed from this QPI therefore this QPI will now measure surgical and radiotherapy mortality only.*** ***SACT will be measured separately within a standardised 30 Day Mortality (SACT) QPI across all tumour types – see QPI 13.***

QPI 12: Clinical Trial and Research Study Access

Revision(s):	***The Clinical Trial & Research Study Access QPI which is standard across all tumour sites is currently included in the Bladder Cancer QPI document. (Not currently under review).***

QPI 13: 30 Day Mortality following Systemic Anti-Cancer Therapy (SACT)

QPI Title:	30 day mortality following Systemic Anti-Cancer Therapy (SACT) treatment for bladder cancer	
Description:	Proportion of patients with bladder cancer who die within 30 days of SACT treatment.	
Rationale and Evidence:	Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi-Disciplinary Team (MDT)[20]. Outcomes of treatment, including treatment related morbidity and mortality should be regularly assessed. Treatment should only be undertaken in individuals that may benefit from that treatment, that is, treatments should not be undertaken in futile situations. This QPI is intended to ensure treatment is given appropriately, and the outcome reported on and reviewed.	
Specifications:	**Numerator:**	Number of patients with bladder cancer who undergo SACT that die within 30 days of treatment.
	Denominator:	All patients with bladder cancer who undergo SACT.
	Exclusions:	• No exclusions.
Target:	<5%	

Revision(s):	***New standard SACT mortality QPI added to all tumour types.*** ***The measurement will be revised to use data from Chemocare (electronic chemotherapy prescribing system) for reporting in order to utilise existing data and provide a more accurate picture of all patients with Bladder Cancer undergoing Systemic Anti-Cancer Therapy.***

QPI 14: Early Recurrence in Patients with Non-Muscle Invasive Bladder Cancer (NMIBC)

QPI Title:	The risk of early recurrence in patients with non-muscle invasive bladder cancer (NMIBC) should be minimised.	
Description:	Proportion of patients who have undergone TURBT with low grade pTa cancer where recurrence is found at first follow up cystoscopy, or with pT1 who have residual cancer or pathological MIBC (pT2) at early re-TURBT. **Please Note:** the specifications of this QPI are separated to ensure clear measurement of the following: (i) Recurrence at first follow-up cystoscopy (RRFFC) in patients with low grade pTa cancer; (ii) Residual cancer at early re-TURBT in patients with pT1; and (iii) Pathological MIBC (pT2) at early re-TURBT in patients with pT1.	
Rationale and Evidence:	Effective clearance of cancer and obtaining information to accurately stage NMIBC is critical to determining future treatment and prognosis. The most reliable measure of TURBT quality in patients with NMIBC is the risk of early recurrence, because the cancer found at this stage (in a patient who's had a complete TURBT), represents cancer that has been left behind at the initial TURBT. Early recurrence is the strongest predictor of subsequent recurrence and progression both in low and high grade NMIBC[4, 22- 26]. Evidence suggests that tumour status at 3 months is the strongest prognostic factor for future progression and recurrence[4, 23]. Further prognostic factors have been found in selected patient populations e.g. In patients with T1 tumours, the findings of residual T1 disease at second TURBT is an unfavourable prognostic factor[4,25].	
Specification (i):	**Numerator:**	Number of patients with low grade pTa NMIBC where recurrence is found at first follow up cystoscopy.
	Denominator:	All patients with low grade pTa NMIBC.
	Exclusions:	• No exclusions.
Target:	<10%	
Specification (ii):	**Numerator:**	Number of patients with pT1 NMIBC who have undergone TURBT and have residual cancer at early re-TURBT.
	Denominator:	All patients with pT1 NMIBC who have undergone re-TURBT.
	Exclusions:	• Patients in whom concomitant cis is present in the tumour specimen. • Patients with incomplete resection at initial TURBT.
Target:	<20%	

QPI 14: Early Recurrence in Patients with Non-Muscle Invasive Bladder Cancer (NMIBC)……..continued

Specification (iii)	**Numerator:**	Number of patients with pT1 NMIBC who have undergone TURBT and have Pathological MIBC (pT2) at early re-TURBT.
	Denominator:	All patients with pT1 NMIBC who have undergone re-TURBT.
	Exclusions:	• Patients with incomplete resection at initial TURBT.
Target:	<1%	

Revision(s):	***NEW QPI***

7. Survival

Improving survival forms an integral part of the national cancer quality improvement programme. Bladder cancer survival analysis will be reported and analysed on a 3 yearly basis by Public Health Scotland (PHS). The specific issues which will be addressed will be identified by an expert group ahead of any analysis being undertaken, as per the agreed national cancer quality governance and improvement framework.

The Bladder Cancer QPI Group has identified, during the QPI development process, the following issues for survival analysis:

- 2 and 5 year overall survival

To ensure consistent application of survival analysis, it has been agreed that a single analyst on behalf of all three regional cancer networks undertakes this work. Survival analysis will be scheduled as per the national survival analysis and reporting timetable, agreed with the National Cancer Quality Steering Group and Scottish Cancer Recovery Group. This reflects the requirement for record linkage and the more technical requirements of survival analyses which would make it difficult for individual Boards to undertake routinely and in a nationally consistent manner.

8. Areas for Future Consideration

The Bladder Cancer QPI Groups have not been able to identify sufficient evidence, or determine appropriate measurability specifications, to address all areas felt to be of key importance in the treatment of Bladder Cancer and therefore in improving the quality of care for patients affected by Bladder Cancer.

The following areas for future consideration have been raised across the lifetime of the Bladder Cancer QPIs.

- Neobladder/ urinary reconstruction for patients undergoing cystectomy.
- Enhanced Recovery After Surgery (ERAS) programme utilisation for cystectomy cases.
- Bacillus Calmette-Guerin (BCG) and/or cystectomy for patients with high risk non muscle invasive bladder cancer.
- Maintenance intravesical chemotherapy.
- Photodynamic Diagnosis (PDD)
- Risk Stratification in Patients with NMIBC.

9. Governance and Scrutiny

A national and regional governance framework to assure the quality of cancer services in NHSScotland has been developed; key roles and responsibilities within this are set out below. Appendices 5 and 6 provide an overview of these governance arrangements diagrammatically. The importance of ensuring robust local governance processes are in place is recognised and it is essential that NHS Boards ensure that cancer clinical audit is fully embedded within established processes.

9.1 National

- Scottish Cancer Taskforce
    - Accountable for overall national cancer quality programme and overseeing the quality of cancer care across NHSScotland.
    - Advising Scottish Government Health and Social Care Directorate (SGHSCD) if escalation required.

- Healthcare Improvement Scotland
    - Proportionate scrutiny of performance.
    - Support performance improvement.
    - Quality assurance: ensure robust action plans are in place and being progressed via regions/Boards to address any issues identified.

- Public Health Scotland (PHS) (previously Information Services Division))
    - Publish national comparative report on tumour specific QPIs and survival for three tumour types per annum and specified generic QPIs as part of the rolling programme of reporting.

9.2 Regional – Regional Cancer Networks

- Annual regional comparative analysis and reporting against tumour specific QPIs.
- Support national comparative reporting of specified generic QPIs.
- Identification of regional and local actions required and development of an action plan to address regional issues identified.
- Performance review and monitoring of progress against agreed actions.
- Provide assurance to NHS Board Chief Executive Officers and Scottish Cancer Recovery Group that any issues identified have been adequately and timeously progressed.

9.3 Local – NHS Boards

- Collect and submit data for regional comparative analysis and reporting in line with agreed measurability and reporting schedule (generic and tumour specific QPIs).
- Utilise local governance structures to review performance, develop local action plans and monitor delivery.
- Demonstrate continual improvements in quality of care through on-going review, analysis and feedback of clinical audit data at an individual multidisciplinary team (MDT) or unit level.

10. How to participate in the engagement process

In order to ensure wide inclusiveness of clinical and management colleagues from across NHSScotland, patients affected by bladder cancer and the wider public, draft documentation will be widely circulated for comment and feedback. This will include professional groups, health service staff, voluntary organisations and other relevant individuals.

10.1 Submitting your comments

Submission of comments on the Bladder Cancer QPIs are available via the Scottish Government Consultation Hub (website details below):

All responses should be submitted by 8th February 2022 to:

Website: Scottish Government - Citizen Space (consult.gov.scot)

If you require any further information regarding the engagement process please use the email address below.

Email: BladderQPIPublicEngagement@gov.scot

10.2 Engagement feedback

At the end of the engagement period, all comments and responses will be collated for review by the Bladder Cancer QPI Formal Review Group. Those who have participated in the engagement process will receive an overview of the changes made and a copy of the final Bladder Cancer QPI document.

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11. Appendices

Appendix 1: QPI Development Process

Preparatory Work and Scoping

The preparatory work involved the development of a structured briefing paper by Healthcare Improvement Scotland. This paper took account of existing, high quality, clinical guidance and provided a basis for the development of QPIs.

The scope for development of Bladder Cancer QPIs and a search narrative were defined and agreed by the Bladder Cancer QPI Development Group. The table below shows the final search criteria used in the literature search.

Inclusion	Exclusion

• Primary bladder cancer
• Primary urethral cancer
• Diagnosis
• Staging
• Surgical management of disease
• Intravesical therapy (includes intravesical chemotherapy and immunotherapy, BCG and/or interferon).
• Non-surgical management of disease (neo adjuvant/adjuvant chemotherapy, radiotherapy)
• Surveillance of superficial (non-invasive) bladder cancer.
• Adults only
• 2005 to present day
• English only
	• Related cancers, including:
	  • Renal Pelvis/Upper Urinary Tract Urothelial Cancers
	  • Secondary bladder cancer
	  • Prostate cancer (extension into the bladder)
	• Prevention
	• Pre-cancerous conditions
	• Screening
	• Primary care/referral
	• Communication, information sharing and support
	• Follow up
	• Recurrence/relapsed disease management
	• Palliative/end of life care (pain management, end of life counselling, hospice management)
	• Clinical trials recruitment and protocol

Table 1: Bladder Cancer Search Criteria

A systematic search was carried out by Healthcare Improvement Scotland using selected websites and two primary medical databases to identify national and international guidelines.

Thirteen identified guidelines were appraised for quality using the AGREE II[27] instrument. This instrument assesses the methodological rigour used when developing a guideline. Four of the guidelines were not recommended for use. Nine were recommended for use with consideration of their applicability or currency.

The Bladder Cancer Development group defined evidence based, measurable indicators with a clear focus on improving the quality and outcome of care provided.

The Group developed QPIs using the clinical recommendations set out in the briefing paper as a base, ensuring all indicators met the following criteria:

- **Overall importance** – does the indicator address an area of clinical importance that would significantly impact on the quality and outcome of care delivered?
- **Evidence based** – is the indicator based on high quality clinical evidence?
- **Measurability** – is the indicator measurable i.e. are there explicit requirements for data measurement and are the required data items accessible and available for collection?

Engagement Process

A wide clinical and public engagement exercise was undertaken as part of development in June 2013 where the Bladder Cancer QPIs, along with accompanying draft minimum core dataset and measurability specifications, were made available on the Scottish Government website. During the engagement period clinical and management colleagues from across NHS Scotland, patients affected by Bladder Cancer and the wider public were given the opportunity to influence the development of Bladder Cancer QPIs.

Draft documentation was circulated widely to professional groups, health service staff, voluntary organisations and individuals for comment and feedback.

Following the engagement period all comments and responses received were reviewed by the Bladder Cancer QPI Development Group and used to produce and refine the final indicators.

Appendix 2: Bladder Cancer QPI Development Group Membership (2012)

Name	Designation	Cancer Network / NHS Board
Sophie Barrett (Chair)	Consultant Medical Oncologist	
Lauren Aitken	Urology Cancer Audit Facilitator	SCAN / NHS Lothian
Prasad Bolina	Consultant Urologist	SCAN / NHS Lothian
Bob Cromb	Patient Representative	
John De Souza	Consultant Urologist	WoSCAN / NHS Lanarkshire
David Douglas	Consultant Urologist	NOSCAN / NHS Highland
Maria Fyfe	Patient Representative	
Maureen Hamill	Clinical Nurse Specialist	WoSCAN / NHS Forth Valley
Michele Hilton Boon	Programme Manager	Health Improvement Scotland
Graham Hollins	Consultant Urologist	WoSCAN / NHS Ayrshire and Arran
Julian Keanie	Consultant Radiologist	SCAN / NHS Lothian
Martin Keith	Senior Cancer Information Officer	NOSCAN / NHS Dumfries and Galloway
Stephen Lang	Consultant Pathologist	NOSCAN / NHS Tayside
Alistair Law	Consultant Oncologist	SCAN / NHS Lothian
Scott Little	Clinical Nurse Specialist	SCAN / NHS Lothian
Kelly Macdonald	Project Manager	National Cancer QPI Development Programme
Param Mariappan	Consultant Urologist	SCAN / NHS Lothian
Julie McNab	Clinical Quality Service Coordinator	WoSCAN / NHS Lanarkshire
Brian Murray	Principle Information Development Manager	Information Services Division
Marie O'Donnell	Consultant Pathologist	SCAN / NHS Lothian
Allison Robertson	Clinical Nurse Specialist	NOSCAN / NHS Tayside
Iona Scott	Project Manager	National Cancer QPI Development Programme
Saatchi Swami	Consultant Urologist	NOSCAN / NHS Grampian
Evelyn Thomson	Regional Manager (Cancer)	WoSCAN
Jan Wallace	Consultant Oncologist	WoSCAN / NHS Greater Glasgow and Clyde

Name	Designation	Cancer Network / NHS Board
Phyllis Windsor	Consultant Oncologist	NOSCAN / NHS Tayside

NOSCAN - North of Scotland Cancer Network
SCAN - South East Scotland Cancer Network
WoSCAN - West of Scotland Cancer Network

Appendix 3: Bladder Cancer QPI Formal Group Membership (2018)

Name	Designation	Cancer Network / NHS Board
Stuart Robertson (Chair)	Consultant Head and Neck Surgeon	WoSCAN / NHS Greater Glasgow & Clyde
Imran Ahmad	Consultant Urological Surgeon	WoSCAN / / NHS Greater Glasgow & Clyde
Jaimin Bhatt	Consultant Urological Surgeon	WoSCAN / / NHS Greater Glasgow & Clyde
Lorna Bruce	Audit Manager	SCAN
Jen Doherty	Project Co-ordinator	National Cancer Quality Programme
Rehan Khan	Consultant Urological Surgeon	WoSCAN / NHS Lanarkshire
Param Mariappan	Consultant Urological Surgeon	SCAN / NHS Lothian
G Mustafa Nandwani	Consultant Urological Surgeon	NOSCAN / NHS Tayside
Lorraine Stirling	Project Officer	National Cancer Quality Programme

Formal review of the Bladder Cancer QPIs have been undertaken in consultation with various other clinical specialties.

NOSCAN - North of Scotland Cancer Network
SCAN - South East Scotland Cancer Network
WoSCAN - West of Scotland Cancer Network

Appendix 4: Bladder Cancer QPI Formal Group Membership (2021)

Name	Designation	Cancer Network / NHS Board
Noelle O'Rourke (Chair)	Consultant Clinical Oncologist and National Lead	Scottish Cancer Network
Imran Ahmad	Consultant Urological Surgeon	WoSCAN
Jaimin Bhatt	Consultant Urological Surgeon	WoSCAN
Lorna Bruce	Audit Manager	SCAN
John De Souza	Consultant Urological Surgeon	WoSCAN
Jen Doherty	Project Co-ordinator	National Cancer Quality Programme
Hilary Glen	Consultant Medical Oncologist	WoSCAN
Rob Jones	Consultant Medical Oncologist	WoSCAN
Rehan Khan	Consultant Urological Surgeon	WoSCAN
Param Mariappan	Clinical Lead	SCAN
Andrew Martindale	Clinical Lead	NCA
Bryan McKellar	Deputy Regional Manager (Cancer)	NCA
Mustafa Nandwani	Consultant Urological Surgeon	NCA
Lorraine Stirling	Project Officer	National Cancer Quality Programme
Kate Robertson	Cancer Support Manager	NCA
Nkem Umez-Eronini	Clinical Lead	WoSCAN

Formal review of the Bladder Cancer QPIs have been undertaken in consultation with various other clinical specialties.

NCA - North Cancer Alliance
SCAN - South East Scotland Cancer Network
WoSCAN - West of Scotland Cancer Network

Appendix 5: Pathology Reporting Requirements

Transurethral Resection of Bladder Tumour (TURBT) Specimens

For TURBT specimens, the following core data items should be included within the microscopic report.

- Tumour subtype*
- Grade of tumour*
- Stage of tumour (TNM stage)*
- Presence or absence of detrusor muscle
- Lymphatic vascular invasion*
- Associated CIS*

For pTa or pTis tumours, lymphatic vascular invasion should be recorded as 'not applicable'.

Cystectomy Specimens

Assessment of cystectomy specimens should take note of the following core items within the microscopic report. .

- Tumour subtype*
- Grade of tumour*
- Stage of tumour (TNM stage)*
- Lymphatic vascular invasion*
- Associated CIS*
- Microscopic margin status
- Lymph nodes – total number and number of positive nodes

For pT0 tumours, or those where the microscopic pathology report does not give a TNM stage but states that no viable tumour is present, data items should be recorded as 'not applicable' (with the exception of 'lymph nodes'). This scenario usually occurs in the context of prior neoadjuvant therapy, although it can sometimes occur following prior TURBT, even in patients who have not had neoadjuvant therapy.

For pTa or pTis tumours, lymphatic vascular invasion should be recorded as 'not applicable'.

** Required for both TURBT and cystectomy specimens*

Appendix 6: Transurethral Resection of Bladder Tumour (TURBT) Proforma

The following proforma is included as a template to assist with reporting of TURBT procedures.

Name:

DOB:

Hospital Number:

Date:

Consultant:

Anaesthesia:

Anaesthetist: Dr.

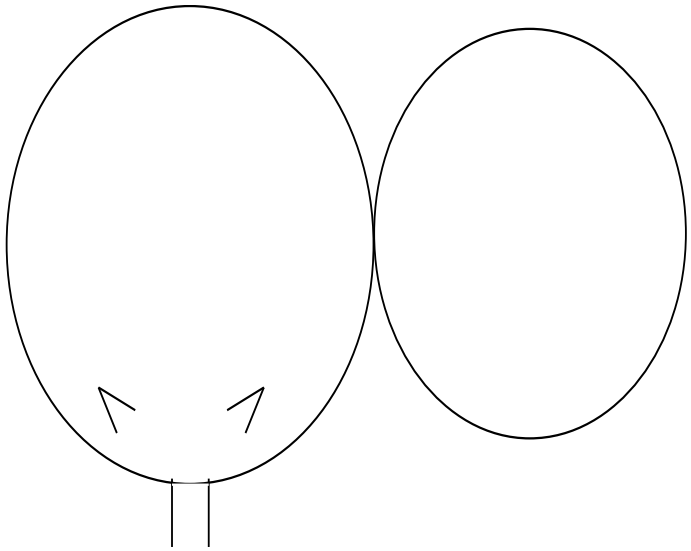
Operation:

Surgeon:

Supervisor: (scrubbed/ un-scrubbed) **Supervisor completed op: Yes/ No**

Indication: First cystoscopy/ new tumour / recurrence / check

Findings (delete or circle accordingly):



Tumour number: 1 2 3 >3

Appearance: papillary/ solid/ mixed/
Red patch

Size of largest tumour (mm):

<5 5-10 10-30 >30

Site(s):
R UO L UO Trigone Bl. neck

posterior wall anterior wall

R lateral wall L lateral wall

Urethra Dome Diverticulum

Complete resection: yes / no / not sure / Biopsy and diathermy only

Extra-peritoneal perforation: yes / no / thin wall/ cystoscopy only

EUA: cTa cT1 cT2 cT3 cT4 (2) Bladder mobile: yes / no / not sure

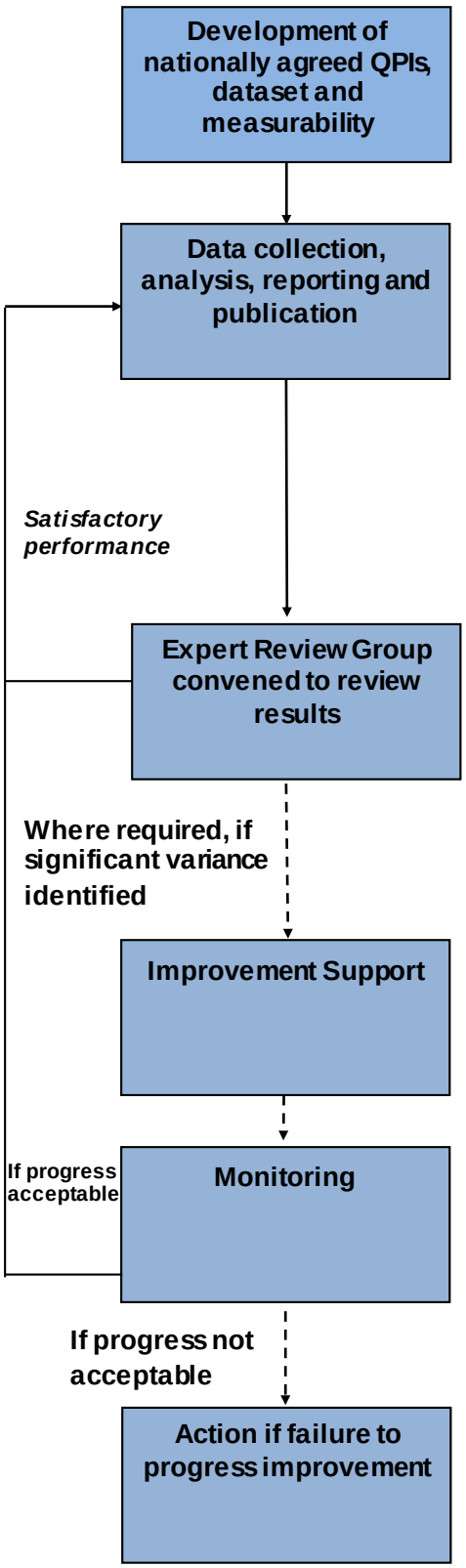
Postoperative Instructions: (1) Irrigation: yes / no
(2) Intravesical 40mg Mitomycin C within 24 hours: yes / no
(3) TWOC after 24H: yes / no If **no** keep catheter for ___ days
(4) MDT discussion: yes / no If **yes**, please complete yellow form
(5) Needs imaging: yes / no If **yes**, please specify:
(6) Other:

Follow up (Please tick):
(1) ☐ GA cystoscopy urgent/ in 6 weeks/ in 3 months
(2) ☐ GA cystoscopy + Biopsy/ diathermy (urgent)
(3) ☐ TURBT (urgent)/ TURBT + PDD
(4) ☐ Flexible cystoscopy in 3 months
(5) ☐ Pending histology and MDT decision

Signature + initials:

Appendix 7: 3 Yearly National Governance Process & Improvement Framework for Cancer Care

This process is underpinned by the annual regional reporting and governance framework (see appendix 8).



1. National QPI Development Stage

- QPIs developed by QPI development groups, which include representation from Regional Cancer Networks, Healthcare Improvement Scotland, ISD, patient representatives and the Cancer Coalition.

2. Data Analysis Stage:

- NHS Boards and Regional Cancer Advisory Groups (RCAGs)* collect data and analyse on yearly basis using nationally agreed measurability criteria and produce action plans to address areas of variance.
- Submit yearly reports to PHS for collation and publication every 3 years.
- National comparative report approved by NHS Boards and RCAGs.
- PHS produce comparative, publicly available, national report consisting of trend analysis of 3 years data and survival analysis.

3. Expert Review Group Stage (for 3 tumour types per year):

- Expert group, hosted by Healthcare Improvement Scotland, review comparative national results.
- Write to RCAGs highlighting areas of good practice and variances.
- Where required NHS Boards requested to submit improvement plans for any outstanding unresolved issues with timescales for improvement to expert group.
- Improvement plans ratified by expert group and Scottish Cancer Recovery Group.

4. Improvement Support Stage:

- Where required Healthcare Improvement Scotland provide expertise on improvement methodologies and support.

5. Monitoring Stage:

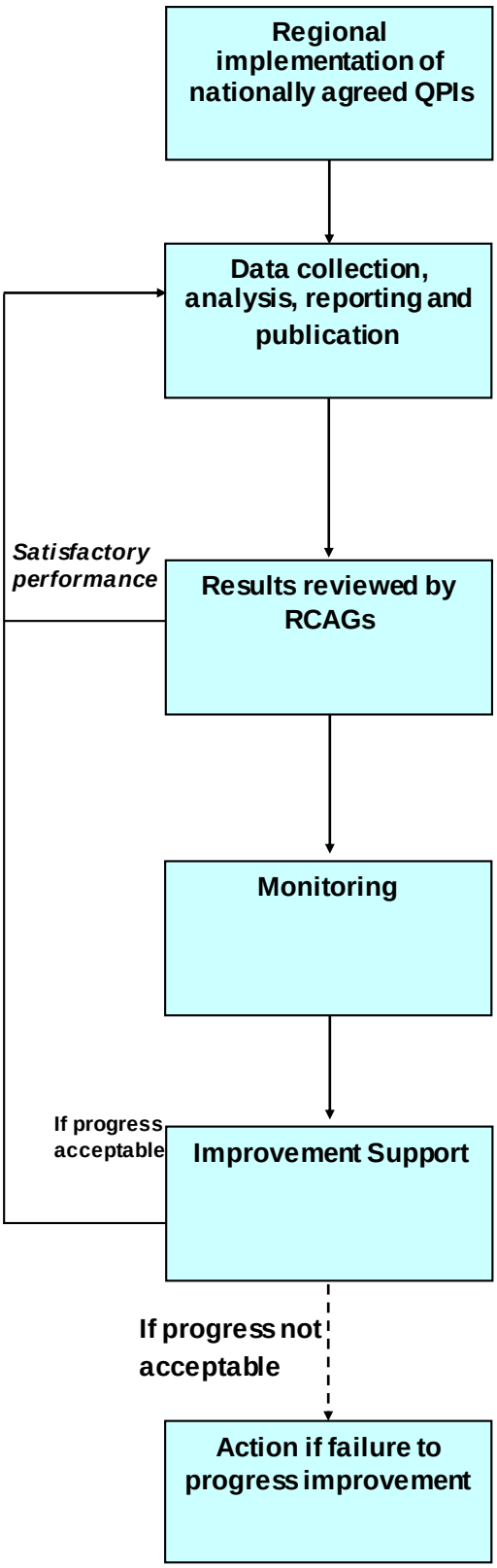
- RCAGs work with Boards to progress outstanding actions, monitor improvement plans and submit progress report to Healthcare Improvement Scotland.
- Healthcare Improvement Scotland report to Scottish Cancer Recovery Group as to whether progress is acceptable**.**

6. Escalation Stage:

- If progress not acceptable, Healthcare Improvement Scotland will visit the service concerned and work with the RCAG and Board to address issues.
- Report submitted to Scottish Cancer Recovery Group and escalation with a proposal to take forward to Scottish Government Health Department.

*The Regional Cancer Planning Group (South and East of Scotland) and the North Cancer Clinical Leadership Group (North Cancer Alliance) are equivalent to the Regional Cancer Advisory Group (RCAG) in the West of Scotland.

Appendix 8: Regional Annual Governance Process and Improvement Framework for Cancer Care



1. Regional QPI Implementation Stage:

- National cancer QPIs and associated national minimum core dataset and measurability specifications, developed by QPI development groups.
- Regional implementation of nationally agreed dataset to enable reporting of QPIs.

2. Data Analysis Stage:

- NHS Boards collect data and data is analysed on a yearly basis using nationally agreed measurability criteria at local/ regional level.
- Data/results validated by Boards and annual regional comparative report produced by Regional Networks.
- Areas of best practice and variance across the region highlighted.
- Yearly regional reports submitted to ISD for collation and presentation in national report every 3 years.

3. Regional Performance Review Stage:

- RCAGs* review regional comparative report.
- Regional or local NHS Board action plans to address areas of variance developed.
- Appropriate leads identified to progress each action.
- Action plans ratified by RCAGs.

4. Monitoring Stage:

- Where required, NHS Boards monitor progress with action plans and submit progress reports to RCAGs.
- RCAGs review and monitor regional improvement.

5. Improvement Support Stage:

- Where required Healthcare Improvement Scotland maybe requested to provide expertise to NHS Boards/RCAGs on improvement methodologies and support.

6. Escalation Stage:

- If progress not acceptable, RCAGs will escalate any issues to relevant Board Chief Executives. If progress remains unacceptable RCAGs will escalate any relevant issues to Healthcare Improvement Scotland.

*The Regional Cancer Planning Group (South and East of Scotland) and the North Cancer Clinical Leadership Group (North Cancer Alliance) are equivalent to the Regional Cancer Advisory Group (RCAG) in the West of Scotland.

Appendix 9: Glossary of Terms

5-Flourouracil (5FU)	Chemotherapy drug used to treat several types of cancers. Flourouracil belongs to the class of chemotherapy drugs know as anti-metabolites, which interfere with the cells making DNA and RNA, which stop the growth of cancer cells.
Anterior exenteration	Surgery to remove the organs in the pelvis; this includes the urethra, lower part of the ureters, uterus, cervix, vagina, and bladder.
AUA	American Urological Association
Bacillus Calmette-Guerin (BCG)	May be used to treat early-stage cancer, but is used most commonly to prevent the recurrence of non muscle invasive bladder cancer.
BAUS	British Association of Urological Surgeons
Bladder mucosa	The innermost portion of the urinary bladder is the mucosa
Chemotherapy	The use of drugs used to kill cancer cells, to prevent or slow their growth.
Cisplatin/ Cisplatinum	Chemotherapy drug. Cisplatin is a clear fluid given as a drip (infusion).
Concomitant Chemotherapy	Chemotherapy which is given at the same time as another treatment.
Continuous Irrigation	A continuous infusion of a sterile solution into the bladder. Continuous bladder irrigation is primarily used following genitourinary surgery to keep the bladder clear and free of blood clots or sediment.
Contraindicated	A symptom or medical condition that makes a particular treatment or procedure inadvisable because a person is likely to have a bad reaction.
Curative Intent	Treatment which is given with the aim of curing the patient or the cancer.
Cystectomy	Surgical removal of the bladder, usually for invasive cancer.
Cystoscopy	Endoscopy of the urinary bladder via the urethra, carried out with a cystoscope.
Detrusor Muscle	The muscle fibres of the bladder wall.
Disease specific survival	A method of estimating net survival. Only deaths attributable to the cancer of diagnosis are counted as deaths, giving the probability of survival in the absence of other causes of death.
EAU	European Association of Urology
Enhanced Recovery After Surgery (ERAS)	ERAS is a programme to optimise patients for surgery to ensure quickest possible recovery following procedure and reduce the length of time spent in hospital. This includes various techniques including early feeding/drinking and mobilisation following the procedure and making sure patient is as fit as possible before surgery, which includes liaising with the patients GP to ensure any long term conditions are well-controlled, e.g. diabetes, high blood pressure.
Extraperitoneal perforation	Perforation of the bladder outwith the peritoneum.
Grade	The grade of a cancer gives an idea of how quickly it may develop.
Intraperitoneal perforation	Perforation of the bladder within the peritoneal cavity.
Intravesical chemotherapy	Chemotherapy drugs are put directly into the bladder through a catheter. Chemotherapy drugs actively kill cancer cells.

Lamina propria	A type of connective tissue found under the thin layer of tissues covering a mucous membrane.
Lamina propria invasion	The cancer has grown into the layer of connective tissue beneath the bladder lining (see lamina propria).
Lymph Nodes	Small bean shaped organs located along the lymphatic system. Nodes filter bacteria or cancer cells that might travel through the lymphatic system.
Lymphadenectomy	A surgical procedure in which the lymph nodes are removed and a sample of tissue is checked under a microscope for signs of cancer.
Macroscopic	Visible to the naked eye.
Mitomycin C	Chemotherapy drug that is used to treat bladder cancer.
Morbidity	How much ill health a particular condition causes.
Mortality	Either (1) the condition of being subject to death; or (2) the death rate, which reflects the number of deaths per unit of population in and specific region, age group disease or other classification, usually expressed as deaths per 1,000, 10,000 or 100,000.
Multidisciplinary Team Meeting (MDT)	A meeting which is held on a regular basis, which is made up of participants from various disciplines appropriate to the disease area, where diagnosis, management and appropriate treatment of patients is discussed and agreed.
Muscle Invasive Bladder Cancer (MIBC)	Bladder cancer where the tumour has spread to the muscle layer of the bladder, or right through the wall of the bladder.
Muscularis propria	The muscular layer of the wall of a hollow organ such as the bladder.
Muscularis propria invasion	The cancer has grown into the muscle of the bladder wall under the connective tissue layer (see muscularis propria).
Neoadjuvant chemotherapy	Chemotherapy treatment which is given before cystectomy with the aim of improving the results of surgery and preventing the development of metastases.
Non Muscle Invasive Bladder Cancer (NMIBC)	Bladder cancer where the tumour is confined to the inner lining, or just below the inner lining, of the bladder.
Oncologist	A doctor who specialises in treating people with cancer.
Palliative	Anything which serves to alleviate symptoms due to the underlying cancer but is not expected to cure it.
Pathological	The study of disease processes with the aim of understanding their nature and causes. This is achieved by observing samples of fluid and tissues obtained from the living patient by various methods, or at a post mortem.
Peritoneum	The serous membrane of the abdominal cavity.
Photodynamic diagnosis (PDD)	PDD, also known as fluorescence cystoscopy, uses a fluorescent substance and a special microscope to show tumour margins (edges) so that more of the tumour can be removed.
Prognostic Indicator	Factors, such as staging, tumour type, and laboratory studies that may indicate treatment effectiveness and outcomes.
Progression	The process of cancer spreading or becoming more severe.
Radical Radiotherapy	The use of radiation to treat disease with the intent of curing.
Radical treatment	Vigorous treatment that aims at the complete cure of a disease rather than merely the relief of symptoms.
Radiotherapy	The use of radiation to treat disease.
Recurrence	The return of cancer after a period of time in which no cancer could be detected.
Resection	See surgery/surgical resection

Residual Disease	Disease which remains after any form treatment, e.g. surgery, chemotherapy or radiotherapy.
Ribonucleic acid (RNA)	A ubiquitous family of large biological molecules that perform multiple vital roles in the coding, decoding, regulation, and expression of genes
Salvage Cystectomy	Removal of the bladder after failed chemotherapy and radiation for malignancy.
Severe Haematuria	High levels of blood in the urine.
Stage	Stage is used to describe the size of the tumour and how far it may have spread within the body. Various staging systems are used to describe the cancer i.e. TNM.
Surgery / Surgical resection	Surgical removal of the tumour/lesion
Survival	The percentage of people in a study or treatment group who are alive for a certain period of time after they were diagnosed with or treated for a disease, such as cancer.
TNM	'TNM' stands for Tumour, Node, Metastasis. This system can describe the size of a primary tumour, whether the cancer has spread to the lymph nodes and whether the cancer has spread to a different part of the body (metastasised). The system uses numbers to describe the cancer. 'T' refers to the size of the cancer. 'N' refers to whether the cancer has spread to the lymph nodes. 'M' refers to whether the cancer has spread to another part of the body.
Toxicity	The extent to which something is poisonous or harmful.
Transitional cell carcinoma	Transitional cell carcinoma (TCC) is a type of cancer that typically occurs in the urinary system: the kidney, urinary bladder, and accessory organs
Transuretheral resection (TURBT)	A surgical procedure used to remove tumours on the bladder wall. TURBT may be used to diagnose bladder cancer or to treat non muscle invasive bladder cancer.
Urinary Reconstruction (neobladder)	When the urinary bladder is removed (due to cancer, other medical condition, or because the organ no longer works), another method must be devised for urine to exit the body. Urinary reconstruction and diversion is a surgical method to create a new way for you to pass urine.
Urothelial	Relating to the urothelium (as below). Urothelial bladder cancer is cancer which started in the urothelium.
Urothelium	The lining of the urinary tract, including the renal pelvis, ureters, bladder, and urethra.
White Light TURBT	A TURBT performed using a white light which shows up any areas of the bladder which may be abnormal.