Defining Quality Metrics for Active Surveillance: The Michigan Urological Surgery Improvement Collaborative Experience

THERE is increasing national emphasis on documenting quality in health care. Quality measures are being incorporated into payment models for various medical conditions. In fact, the Centers for Medicare and Medicaid Services has 2 electronic clinical quality measures related to prostate cancer, but neither of these pertain to active surveillance (AS). Several groups have attempted to define quality measures for prostate cancer care but metrics specifically designed to ensure high quality active surveillance remain unexplored.[1,2]

The Michigan Urological Surgery Improvement Collaborative (MUSIC) was established in 2011 with the goal of improving outcomes for patients with urological conditions in academic and community urology practices throughout the state of Michigan. To measure and improve the quality of active surveillance in Michigan, MUSIC developed 6 internal quality measures that may be useful to the wider urological community (see figure).

The Roadmap for Favorable Risk Prostate Cancer (FRPC) is critical to understanding how MUSIC conceptualizes active surveillance.[3] It is important to note that the Roadmap provides guidance to urologists, whereas final management decisions are made by individual urologists together with their patients. The roadmap and the quality measures proposed here pertain only to men with FRPC, defined as newly diagnosed Grade Group (GG) 1 and low volume GG2 prostate cancer (3 or fewer cores of GG2 with no more than 50% maximal core involvement of GG2 in any single core). From 2012 to 2019, 14,395 men were diagnosed with FRPC in MUSIC, of whom 8,084 were managed on AS. The underlying suppositions are that 1) all such men should consider active surveillance and engage in shared decision making with their provider with none immediately defaulting to treatment, and 2) for men who choose surveillance the performance of surveillance can be measured over time. The Roadmap breaks down active surveillance into 2 phases. The Consideration Phase is the first few months after the initial diagnosis during which the patient and provider engage in shared decision making and weigh management options (AS vs treatment). The Surveillance Phase is the period during which long-term surveillance ensues in men who have chosen surveillance.

Of the 6 quality measures 4 pertain to the Consideration Phase (see figure). The first measure is confirmatory testing, defined as the proportion of eligible men undergoing either repeat biopsy, prostate magnetic resonance imaging (MRI) with or without biopsy, and/or a commercially available genomic classifier within 6 months of diagnosis. We advocate for the use of at least 1 early confirmatory test (within 6 months of diagnosis) as this data point likely aids in shared decision making regarding surveillance vs treatment. MRI obtained before the diagnostic biopsy similarly fulfills the criteria of a confirmatory test, as it serves to mitigate the sampling error associated with the initial biopsy and aids in shared decision making in the same fashion as MRI after biopsy.

The second measure is simply verified active surveillance, defined as the proportion of men with affirmative selection of AS in the primary medical record and not having active treatment within 6 months of diagnosis. The third measure is consideration of active surveillance, defined as the proportion of Roadmap eligible men on verified surveillance or having a confirmatory test. The action of obtaining a confirmatory test demonstrates that consideration was given to active surveillance even if the man ultimately opts for treatment. The fourth measure is active treatment despite confirmatory testing, defined as the proportion of men having a confirmatory test yet undergoing treatment within 6 months. This measure was designed to identify reflex ordering of confirmatory tests. In contrast with the first 3 measures, a lower result is associated with higher quality.

Although the initial implementation of active surveillance in appropriate cases is important to measure, how active surveillance is being performed in the long run is also important. Thus, the last 2 measures pertain to the Surveillance Phase. The fifth quality measure is performance of surveillance,

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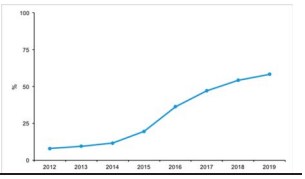
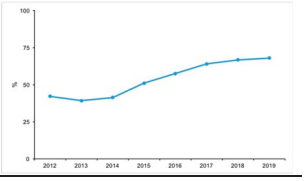
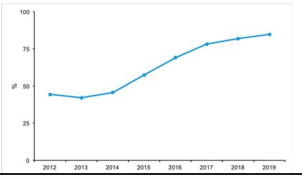
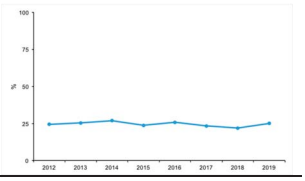
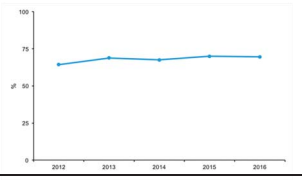
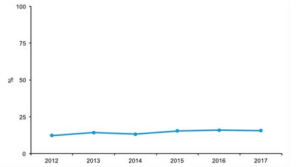
Quality Metric	Numerator	Denominator	MUSIC Experience Since 2012
Consideration Phase			
1. Confirmatory Testing	Patients with a repeat biopsy, prostate MRI +/- biopsy, or genomic test within 6 months of diagnosis	All newly diagnosed FRPC patients with 6 months of follow up since diagnosis	
2. Verified Active Surveillance	Patients assigned to AS and with no active treatment within 6 months of diagnosis	All newly diagnosed FRPC patients with 6 months of follow up since diagnosis	
3. Consideration of Active Surveillance	Verified AS patients plus patients who underwent confirmatory testing	All newly diagnosed FRPC patients with 6 months of follow up since diagnosis	
4. Active Treatment Despite Confirmatory Testing	Patients who undergo active treatment within 6 months of confirmatory testing	All FRPC patients with 6 months of follow up since a confirmatory test	
Surveillance Phase			
5. Performance of Surveillance	Verified AS patients with 3 PSAs and 1 tumor burden assessment (MRI, biopsy, or both) within the first 42 months on AS	Verified AS patients with 42 months of follow up since diagnosis	
6. Transition to Treatment	Verified AS patients that underwent treatment within 2 years of diagnosis	All FRPC patients on AS with at least 24 months of follow up since diagnosis	

MUSIC quality measures for active surveillance

defined as the proportion of men on active surveillance who undergo 3 prostate specific antigen (PSA) measurements and at least 1 MRI scan or biopsy within the first 36 months of the Surveillance Phase. This metric does not include confirmatory tests or PSAs obtained in the 6-month Consideration Phase. Acknowledging that the intensity of the testing while on surveillance may be individualized based on risk and patient preferences, we measure what we believe is the minimum level of surveillance testing for any man who is truly on active surveillance (as opposed to watchful waiting).

The sixth quality measure is transition to treatment, defined as the proportion of patients on active surveillance transitioning to treatment within 2 years of diagnosis. Although men may transition to treatment for legitimate reasons, this measure should remain low with appropriate initial decision making as well as ongoing efforts to keep patients free from treatment.

Implementation of quality measures for incentive payment involves decisions regarding the period of measurement (eg annually) and who is evaluated (individual providers, individual practices or statewide). Statewide threshold levels of 3 of these measures (consideration of active surveillance, confirmatory testing and performance of surveillance) have already been used by Blue Cross Blue Shield of Michigan in their value based reimbursement program. Threshold levels or allowable deviations of these quality measures for individual urologists or urology practices have not been implemented in our state.

Herein, we propose 6 quality measures for active surveillance. This quality improvement approach has some limitations. We do not yet know the ultimate impact of these quality measures across the population of men with prostate cancer. Also, the measures could be further refined. For example, several of the measures involve the concept of obtaining a confirmatory test but do not account for whether the test result is reassuring.[4,5] The timing of confirmatory testing is certainly debatable. AS quality metrics may eventually need to become more sophisticated to measure whether providers act on relevant clinical information in an appropriate fashion in order to provide the highest quality patient care.

Defining quality and selecting metrics that correlate to clinically meaningful outcomes are challenging. Furthermore, choosing an appropriate and realistic target for quality improvement metrics is a point of ongoing debate. How good is good enough?

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