

**University of Birmingham and University of York Health Economics
Consortium (NCCID)**

Development feedback report on piloted indicators

QOF indicator area: Acute kidney injury (AKI)

Pilot period: 1st October 2016 – 28th February 2017

Potential output: Recommendations for NICE menu

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Summary of recommendations

Indicator

1. The practice establishes and maintains a register of all patients aged 18 years and over with an episode of AKI in the preceding 12 months.

Acceptability recommendation:

Band 3: 50-59% of practices support inclusion

Implementation recommendation:

Band 3: major problems identified during piloting or anticipated in wider implementation. Indicator requires further work and/or piloting.

Cost effectiveness recommendation:

See summary report.

Issues to consider:

Issue	Detail	Mitigating activity
Recording of diagnosis	This is currently identified primarily through hospital discharge letters with some primary care managed episodes. Approaches to coding were variable both within and between practices.	It is possible that needing to create a register would lead to more standardised recording practices, but some education and support is likely to be necessary.
Time frame for register	Should this be an annually constructed register or should it include all patients with an episode of AKI after a given date. Subsequent indicators would be restricted to patients with an episode recorded in the preceding 12 months.	

Indicator

2. The percentage of patients aged 18 years and over with an episode of AKI in the preceding 12 months who have had a medication review within 1 month of the record of diagnosis.

Acceptability recommendation:

Band 4: <50% of practices support inclusion

Implementation recommendation:

Band 3: major problems identified during piloting or anticipated in wider implementation.
Indicator requires further work and/or piloting.

Cost effectiveness recommendation:

See summary report.

Issues to consider:

Issue	Detail	Mitigating activity
Date of the event	Practices entered a variety of dates as the date of the episode including admission, diagnosis and discharge. This effects the equitable functioning of the indicator across practices.	
Potential duplication	Is a medication review required if the patient has returned to normal renal function and be recommenced on medication prior to discharge?	
Cross-year issues	If this was to be implemented in QOF we would need to adjust the business rules to ensure that patients diagnosed at the end of the QOF year would have their care assessed.	

Indicator

3. The percentage of patients with an episode of AKI in the preceding 12 months who have had a serum creatinine, eGFR and either an ACR or PCR recorded within 3 months of the record of diagnosis.

Acceptability recommendation:

Band 3: 50-59% of practices support inclusion.

Implementation recommendation:

Band 3: major problems identified during piloting or anticipated in wider implementation.
Indicator requires further work and/or piloting.

Cost effectiveness recommendation:

See summary report.

Issues to consider:

Issue	Detail	Mitigating activity
Date of the event	As above	
Potential duplication	As above	
Cross year issues	As above	

Indicator

4. The percentage of patients with an episode of AKI in the preceding 12 months who have been given written information about AKI within 1 month of the record of diagnosis.

Acceptability recommendation:

Band 4: <50% of practices support inclusion.

Implementation recommendation:

Band 3: major problems identified during piloting or anticipated in wider implementation. Indicator requires further work and/or piloting.

Cost effectiveness recommendation:

See summary report.

Issues to consider:

Issue	Detail	Mitigating activity
Secondary care responsibility	A number of practices felt that information should be given by the clinician making the diagnosis, who was most frequently in secondary care.	
Tick box exercise	Practices referred to leaflets being posted and not necessarily discussed with patients in the context of a consultation.	
Cross year issues	As above	

Background

As part of the NICE-managed Quality and Outcomes Framework (QOF) process, all clinical and health improvement indicators are piloted, using an agreed methodology, in a representative sample of GP practices across England, Scotland, Wales and Northern Ireland.

The aim of piloting is to test whether indicators work in practice, have any unintended consequences and are fit for purpose.

Practice recruitment

Number of practices recruited:	29
Number of practices dropping out:	2
Number of practices unable to interview:	0
Number of practices interviewed:	27

[26 GPs, 6 practice nurses, 9 practice managers and 1 health care assistant = 42 primary care staff]

All percentages reported have been calculated using the 29 practices recruited to the pilot as the denominator.

Piloted indicators

1. The practice establishes and maintains a register of all patients aged 18 years and over with an episode of AKI in the preceding 12 months.
2. The percentage of patients aged 18 years and over with an episode of AKI in the preceding 12 months who have had a medication review within 1 month of the record of diagnosis.
3. The percentage of patients with an episode of AKI in the preceding 12 months who have had a serum creatinine, eGFR and either an ACR or PCR recorded within 3 months of the record of diagnosis.
4. The percentage of patients with an episode of AKI in the preceding 12 months who have been given written information about AKI within 1 month of the record of diagnosis.

Assessment of clarity, reliability, feasibility, and acceptability

Clarity

During both the focus group and piloting questions were raised about the definition of AKI, suggesting a lack of familiarity with the guidance.

Reliability and feasibility

We were able to develop business rules to support this indicator. However, due to their relative complexity (supporting multiple episodes) and the low level of coding engagement during the pilot these will require further testing prior to widespread implementation.

Issues to be resolved prior to implementation:

Issue	Detail	Mitigating activity
Time frame for the register	Should this be an annually created register or should it include all patients with a recorded episode after a given date?	
Date of event	Practices entered a variety of dates as the date of the episode including admission, diagnosis and discharge. This affects the equitable functioning of the indicator across practices.	
Exception reporting	We did not model exception reporting for recent diagnosis or registration. The committee may wish to reflect upon whether including these exception reporting reasons is desirable. Additional Read/ SNOMED codes will also be required to support exception reporting in QOF.	
Cross year issues	If this was to be implemented in QOF we would need to adjust the business rules to ensure that patients diagnosed at the end of the QOF year would have their care assessed.	

Acceptability

Many practices felt that these were interesting measures of valuable clinical care. However, they were divided as to whether they were suitable for incentivisation or appropriate for primary care. Despite this, QOF was identified as a useful tool for awareness raising in general practice.

“So I think it’s a good marker of quality and I think it also offers an opportunity for review...I think overall, it’s something which would be useful to incorporate within QOF.” (GP, Practice ID20)

“For it to be included in the QOF people will think more about AKI... And I think that’s the most positive aspect of it.” (GP, Practice ID07)

“Acute kidney injury is certainly a very important topic, definitely important that it should be recognised and recorded, but not convinced that a lot of the things in this indicator were best placed in primary care ...” (GP, Practice ID14)

Some practices expressed a view that QOF was designed for the management of long-term conditions and that the inclusion of acute care management was the ‘thin end of the wedge’. They were concerned that QOF could lose its focus upon chronic care management.

“So I will favour this as a quality marker. I think if you’re gonna scrutinise how we manage acute illness, that’s a whole different ball game, cause this is not chronic disease management. This is acute illness management, so what have I now gotta do? Be looking at how well I’m scoring and coding people when I’m managing them when they’re acutely ill? Come on. Whatever next?” (GP, Practice ID29)

“Why are we focusing on AKI? There are a lot of situations when an acute incident should prompt a review ... Is it going to herald how we manage acute episodes because QOF has always concentrated on routine care and this is looking at acute care really, or a response to an acute incident. That could be a slippery slope to go down. It doesn’t sit with the rest of QOF.” (GP Practice ID13)

Many practices that were supportive of the indicators as measures of quality had reservations about their suitability for use in a measurement framework and felt that more development work was required.

“No, no, I just think AKI is too difficult, basically, to stick into QOF, quite honestly, would be me total opinion.” (GP, Practice ID22)

“... it’s really hard to say it’s just a primary care thing and then for primary care to be adversely penalised for what could end up being due to communication difficulties in secondary care isn’t. It’s a hard one actually, it’s clinically quite sensible, completely sensible but the actual logistics of it make it a little trickier.” (GP, Practice ID01)

Indicator 1: register

Nineteen practices (65.5%) felt that being able to produce a register was an indicator of quality in general practice, with 16 (55.2%) of these feeling that it was suitable for inclusion in QOF. Inclusion in QOF was also felt to be beneficial as it would raise awareness of the condition and the role of general practice in managing and monitoring it.

“So this was great really in that it triggered quite a discussion in our clinical meeting, so I took this along to the GPs and we looked at how we deal with incoming information about AKI” (PN, Practice ID30)

Cases were primarily identified from hospital discharge summaries, and a number of practices noted that they were now receiving this information more regularly. There was however differences in the quality of discharge information which practices with a number of local hospitals noted as an area of concern.

“...I don't know whether the hospital actually records it for us to record as AKI.” (GP, Practice ID24)

“...one of the hospitals has been, in the last three months, been giving discharge summaries that have been very clear about, this is the diagnosis and an action plan that follows this set number of criteria ... The other hospital doesn't do the same and so I'm not sure whether we are aware of it in such a systematic way and that worries me...” (GP, Practice ID23)

Some cases were identified from laboratory alerts, although there were some concerns about the robustness of these systems. Cases identified and managed in primary care tended not to be recorded as AKI, although some practices were trying to address this.

“ ... theoretically the lab is supposed to alert us to any AKI ... but in my experience it's bloody hit and miss.” (GP, Practice ID13)

“We, we started to code those [community diagnoses], probably within the last six months or so.” (GP, Practice ID08)

Within our cohort of pilot practices AKI was under-recorded. Practices reported that creating an AKI register would require a change in coding practice. This was in relation to highlighting the need for this to be added to the patient record for clinical coders within the practice and gaining familiarity with the codes to be used. Practices reported that they had started to make these changes and to consider the systems needed for this to happen.

“... we're not very good at read coding it. Erm, because all I could find in the period is just one patient, and I suspect there probably are a few more ...” (GP, Practice ID29)

“... that's coded on to the system and we're beginning to do that again it's probably something we weren't doing systematically and hopefully we'll start to do it a lot more systematically now... and we've developed a template...” (GP, Practice ID25)

“...so you know the registers will be very poor at the moment and it will be a number of years before the practice will be coding this appropriately.” (GP, Practice ID18)

"...not all the coders were necessarily picking up on AKI [hmm] and then not all the doctors were using the AKI template..." (GP, Practice ID12)

Eight practices (27.6%) felt that this was unsuitable for QOF and a further three practices (10.3%) were uncertain. This was primarily due to a perception that this was not a suitable clinical area for the QOF and the division of responsibility with secondary care. These practices reported that follow-up care was happening where this was identified as necessary by secondary care and that having a set of indicators was not necessary.

"Yeah normally a hospital, quite often a hospital would discharge them and say the patient has stopped the ACE inhibitor, please review U&Es and blood pressure at two weeks and recommence if you feel it's necessary and really just we do that anyway so every individual is different so for this it's just too general a condition to be able to be specific of how are you going to manage it and in terms of monitoring it." (GP, Practice ID16)

The date of the episode of AKI was recorded variously as the date of hospital admission, the date of discharge or, where practices had access to test results, the date the AKI was noted. This will need standardisation if the remaining indicators are to function in an equitable manner between practices.

Indicator 2: medication review

Eighteen practices (62.1%) felt that this was a marker of quality, with 14 of these (48.3%) identifying this indicator as suitable for QOF. Although three of these practices felt that the timescale for the medication review should be extended to three months. All practices felt that this was an important aspect of care and reported undertaking medication reviews, but on a more opportunistic basis, supported by follow-up instructions in any discharge letters. Creating a system to support follow-up was viewed as important.

"Yeah, because I think this makes you aware of it...and aware of your prescribing and the impact of your actions on ... this is just a really good one for that co-morbidity really." (GP, Practice ID23)

"I think it's developing a system, but that definitely some have come through and I've been able to code them and because of that, I've also been able to say, 'Oh, I can see this patient needs a Medication Review' and tell the appropriate GP to do it ... So ... it's a difficult one to achieve but, I can see how it could be achieved and I think it would be a very good step towards quality." (PN, Practice ID30)

"...if the coder identifies it as AKI they can then send a follow-up appointment out to them." (GP, Practice ID12)

"I need to see them back to review to see which ones they need to go back on. So it, it does give you that incentive to just take that step." (GP, Practice ID04)

Twelve practices (41.4%) did not think this was suitable for inclusion in QOF, with a further practice (3.5%) being unsure. This was primarily due to concerns about whether primary care or secondary care should be responsible for ongoing care, that having a target failed to support individualised care, the timeliness of discharge letters and that this represented a potential unnecessary duplication of care if the patient had recovered renal function and had medication restarted prior to hospital discharge.

“But, there is another question which is – do you believe that the care is the responsibility of the GP? Which is a difficult one, isn’t it?” (GP, Practice ID19)

“We have a problem with timely delivery of discharge letters, so therefore that has a knock-on effect on the other things in your indicator.” (GP, Practice ID14)

“... the whole timescale just seems to have set up as though it was a chronic disease [okay] and it's an acute clinical problem.” (GP, Practice ID05)

Indicator 3: renal function check

Nineteen practices (65.5%) felt that this was a marker of quality with 15 of these (51.7%) identifying it as suitable for QOF. As with the medication review, many practices received follow-up requests on hospital discharge letters, and felt that this care was happening already. Although they also noted that they were difficulties associated with obtaining urine samples for ACR/PCR testing and that they tended to focus upon creatinine and eGFR monitoring.

“Normally when you see AKI on a discharge letter it does often come with the advice repeat U&Es within two weeks, four weeks six weeks, etc. So hopefully it's being done. It's a good one... - I think it was easy to get the bloods but people often forgot to take their urines or we forgot to prompt them for it.” (GP, Practice ID12)

Eleven practices (37.9%) did not feel that this was suitable for inclusion in QOF for the same reasons as above in relation to medication reviews. On practices (3.5%) was uncertain as to whether this should be considered for QOF.

“I just wonder whether – are we doing needless duplicate work if their GFR has recovered pre-discharge to have to do it again within three months?” (GP, Practice ID13)

“Would I want it marked in for the extra three months, just to do it to everybody; even people who don’t need it done, just to get a QOF point? No, not really.” (GP, Practice ID08)

Indicator 4: written information

Twelve practices (41.4%) felt that this was an indicator of quality in general practice with 11 of these (37.9%) feeling that it was suitable for QOF. These practices felt that the giving of written

information was important and that it was easy to achieve. However, they felt that the leaflets to be used should not be determined centrally to allow for local variation.

"I'm not averse to it [giving information]. I think it – yeah, it might help." (GP, Practice ID32)

Fourteen practices (48.3%) did not think that this indicator should be considered for QOF, with a further two practices (6.9%) being uncertain. Many of these practices felt that it was important that this information was given at the point of diagnosis and identified this as a secondary care responsibility.

"Yeah, so that has to be given from the hospital. It's more about the quality of Secondary Care and if they're capable of doing that, that's a sign of quality." (GP, Practice ID27)

"I was going to say, if anyone should give them written information it should probably be secondary care, shouldn't it?" (GP, Practice ID24)

There were also concerns that this would become a 'tick-box' activity rather than a meaningful discussion with the patient as to how to protect their kidney function in the future and what to do if they became unwell. A small number of practices referenced local information schemes which focused upon educating patients about 'sick day' rules.

"...so I think it's a good idea to have written information I'm just not sure written information is necessarily something that should be in QOF." (GP, Practice ID25)

"A tick box and an indicator because it's not quality, is it?" (GP, Practice ID24)

Assessment of implementation

Assessment of piloting achievement

Indicator 1: register

As a register there is no achievement data to report. Prevalence across the cohort was 0.02% at the baseline extraction and 0.03% at the final extraction, indicating that AKI is under-coded in primary care. In terms of patient numbers the average register size was 3 patients (range 0 – 9) at the final upload.

Indicator 2: medication review

% patients receiving a medication review	Baseline	Final
Number of practices uploading	14	14
Practice population (from NHAIS)	118341	119968
Register	21	39
Excluded		
Rule 3: most recent episode <31 days before achievement date	0	0
Exception reported		
Rule 4: medication review declined	0	1
Total exceptions	0	1
Exceptions as a % of eligible population	0	0.00
Denominator	21	38
Numerator	3	8
Numerator as a percentage of denominator	14.29	21.05

The baseline extraction covers a 12 month time period and the final extraction a 5 month time period. To be counted as a success a medication review needed to be completed after each episode of AKI.

Indicator 3: renal function check

% patients receiving a renal function check	Baseline	Final
Number of practices uploading	14	14
Practice population (from NHAIS)	118341	119968
Register	21	39
Excluded		
Rule 3: latest AKI within 93 days of achievement date	0	0
Total exceptions	0	0
Exceptions as a % of eligible population	0	0
Denominator	21	39
Numerator	2	3
Numerator as a percentage of denominator	9.52	7.69

The baseline extraction covers a 12 month time period and the final extraction a 5 month time period. To be counted as a success a renal function check needed to be completed after each episode of AKI.

Indicator 4: written information

% patients given written information	Baseline	Final
Number of practices uploading	14	14
Practice population (from NHAIS)	118341	119968
Register	21	39
Excluded		
Rule 3: latest episode within 31 days of achievement date	0	3
Total exceptions	0	3
Exceptions as a % of eligible population	0	7.69
Denominator	21	36
Numerator	0	0
Numerator as a percentage of denominator	0	0

As before the baseline extraction covers a 12 month time period and the final extraction a 5 month time period. Where a patient had multiple episodes of AKI during these time periods then to be counted as a success written information needed to be given after each episode of AKI.

Changes in practice organisation

Most practices currently work on a case by case basis and add any post-discharge instructions regarding medication reviews and renal function checks to their clinical system as GP tasks. If this was to be considered for QOF it is likely that this approach would become more formal and practices would introduce systems for identification and follow-up. A small number of practices developed templates for recording this care as a result of participating in the pilot.

Resource utilisation and costs

Given the division of responsibility between primary and secondary care for follow-up of these patients and that some may have returned to normal renal function whilst in hospital there is the potential for duplication of medication reviews and renal function tests.

Barriers to implementation

There are three key barriers to implementation. Firstly, identifying the date of the episode of AKI. This is critical to the functioning of all the indicators underpinning the register. Practices reported using a variety of time points such as date of discharge, date of admission. Some systems of electronic transfer of information automatically populate this date. These differences mean that that the indicator does not operate equitably across all practices.

Secondly, communication issues between secondary and primary care. Whilst in most areas discharge information was received fairly promptly, there were some notable exceptions to this.

Again, this impacts upon the equitable functioning of the indicators between practices. It also weakens their ability to function as measures of primary care if time to complete activities is lost to delays in distributing discharge information.

Thirdly, practices will need to create new systems within the practice to manage the identification and follow-up of these patients. That may be best supported through local initiatives which include an educational component rather than a national incentive scheme. A small number of practices specifically mentioned needing resources to support this work.

Assessment of exception reporting

Given the low levels of recording of cases during the pilot we are unable to comment upon likely levels of exception reporting.

However, the committee may wish to consider whether the current standard QOF exception criteria are appropriate here. Specifically, patients with a recent diagnosis or recent registration with the practice (both defined as within the last 3 months) may be exception reported in QOF. Given that this is an acute condition which requires timely review these exception rules may be unsuitable and introduce inequity in the management of patients diagnosed towards the end of the QOF year.

Assessment of potential unintended consequences

Two potential unintended consequences were observed during piloting. Firstly, potential duplication of care between primary and secondary care. And secondly, the information giving indicator may become a 'tick-box' exercise, with leaflets being posted rather than forming part of a patient focused discussion.

Assessment of overlap with and/or impact on existing QOF indicators

There is no overlap with existing QOF indicators, although it is likely that patients on existing QOF registers will also appear on the AKI register.

Suggested amendments to indicator wording

No amendment to indicator wording is suggested at this time. However, whilst practices were interested and generally supportive of this topic being considered for QOF the indicators require further development prior to implementation.

Appendix A: Practice recruitment

We planned to recruit 34 practices in England and 2 in each of the Devolved Administrations. English practices were to be representative in terms of practice list size, deprivation and clinical QOF score. Given the limited variability in clinical QOF score we excluded practices with a score of $\leq 10^{\text{th}}$ centile. Practice list size and IMD scores were divided into tertiles and a 3x3 matrix created with target recruitment numbers for each cell. These are detailed in the table below.

	List size		
IMD Score	Low	Medium	High
Low	3	4	5
Medium	3	4	4
High	4	4	3

As previously presented to the Committee, practice recruitment has been extremely challenging. At the beginning of this pilot we had recruited 28 practices in England and 3 in the Devolved Administrations (2 in Northern Ireland, 1 in Scotland). Practice recruitment by strata is shown in the table below with cells in bold where we failed to meet target numbers. We also over recruited in one strata which is shown by the numbers in the table. Two practices in England withdrew from the pilot prior to it starting reducing the total numbers of pilot practices to 26 in England, 2 in Northern Ireland and 1 in Scotland.

	List size		
IMD Score	Low	Medium	High
Low	2/3	3/4	1/5
Medium	3/3	4/4	1/4
High	5/4	4/4	3/3

Appendix B: Indicator development

Following the June 2016 Advisory Committee meeting the NCCID was asked to develop new indicators focusing upon the care of patients with an acute kidney injury.

These indicators were developed in collaboration with Think Kidney in July/ August 2016 and therefore have not been discussed with a focus group of GPs.

Indicator wording as piloted

1. The practice establishes and maintains a register of all patients aged 18 years and over with an episode of AKI in the preceding 12 months.
2. The percentage of patients aged 18 years and over with an episode of AKI in the preceding 12 months who have had a medication review within 1 month of the record of diagnosis.
3. The percentage of patients with an episode of AKI in the preceding 12 months who have had a serum creatinine, eGFR and either an ACR or PCR recorded within 3 months of the record of diagnosis.
4. The percentage of patients with an episode of AKI in the preceding 12 months who have been given written information about AKI within 1 month of the record of diagnosis.

Appendix C: Acceptability and Implementation recommendations

Acceptability recommendations

One of the following recommendations is made based upon reported acceptability of the indicator to pilot practices.

Band 1: $\geq 70\%$ of practices support inclusion

Band 2: 60-69% of practices support inclusion

Band 3: 50-59% of practice support inclusion

Band 4: $< 50\%$ of practices support inclusion.

Implementation recommendations

One of the following recommendations is made based upon an assessment of issues or barriers to implementation reported during piloting.

Band 1: no problems identified during piloting or anticipated to arise. Indicator terms precisely defined.

Band 2: minor problems identified during piloting or anticipated to arise in wider implementation. Problems resolvable prior to implementation through either 1) an amendment to indicator wording, 2) an amendment to the business rules and/or 3) by giving further clarification of indicator terms in associated guidance.

Band 3: major problems identified during piloting or anticipated in wider implementation. Possibly resolvable through the actions described in band 2 but indicator requires further development work and/or piloting.

Band 4: major problems identified during piloting. Not immediately resolvable. Indicator not recommended for wider implementation.