How well are we doing?

This is about…	Measuring adherence to recommended practice		
Applicable to level(s)	Single practice	Network of practices	Regional or national networks
Likely skills and resources needed	Clinical Administrative Data collection and analysis		
Likely difficulty	✍ ✍		
Likely time commitment	⧗ ⧗		
Do…	Think about what routinely recorded clinical data might already be available		
Don't…	Attempt to construct overly complicated indicators		
Illustrations	*From research studies* Variations in achievement of evidence-based, high-impact quality indicators in general practice. Prescribed opioids in primary care. High risk prescribing in primary care patients particularly vulnerable to adverse drug events.		
Helpful resources	Healthcare Quality Improvement Partnership.		

What is already known about variations in practice?

There are well recognised variations in clinical practice across all healthcare sectors. The size of these variations can only partly be accounted for by factors such as demographics and case mix. Where patients are not receiving recommended care and analyses have accounted for differences in patient populations, such variations can be considered inappropriate.

We found that the likelihood of patients receiving recommended care or achieving recommended outcomes depended upon which general practice they were registered at.[1] For processes of care, there were seven-fold differences in the likelihood of high-risk prescribing (typically involving NSAIDs) and two-fold difference in the likelihood of being prescribed recommended treatment for the secondary prevention of myocardial infarction. For recommended outcomes, there was a ten-fold difference in the likelihood of achieving blood pressure control in hypertension and a four-fold difference in diabetes control (combined blood pressure, HbA1c and cholesterol targets). Many of these variations could not be explained away by demographic differences in patient populations (e.g. age, social deprivation) and is likely to be related to differences in clinical behaviour.

Some analyses can also highlight particular 'at risk' patient groups. For example, we found that both long-term and strong opioid prescribing were more likely in women aged over 65 years (compared to women under 50 years), missed appointments and increasing levels of polypharmacy.[2]

Indicator development

Consider:

- Whether there are existing indicators or sets of routinely collected data which will be sufficient for your needs, e.g. prescribing indicators, Quality and Outcome Framework (QOF) data.
- The advantages and disadvantages of measuring processes or outcomes of care (Box 1).
- The advantages and disadvantages of single or composite (combined) indicators (Box 2).
- How reliably and accurately coded routinely collected data are. Some types of data are generally coded reliably in general practice (e.g. prescribing, certain diagnostic tests, diagnoses for patients on disease registers) whilst others are not (e.g. referrals, diagnoses not systematically recorded for disease registers).

Steps in development include:

- Defining the targeted patient ('denominator') population (e.g. all coded type 2 diabetes) or particular sub-populations (e.g. coded type 2 diabetes with recorded poorer control).
- Defining those ('numerator') patients with evidence of a recommended clinical intervention offered or received or meeting defined treatment targets.
- Deciding whether to collect data to understand any likely variations in practice, e.g. patient demographics, co-morbidities.
- Developing or adapting existing searches of electronic patient data.
- Piloting and refining searches prior to large scale data collection.

Data collection

Consider:

- How to include all or sample general practices to ensure the data apply to 'typical' practices which have not self-selected.
- Seeking approval, if required, from general practices for data collection.
- Adherence to information governance requirements.

Analysis and interpretation

What to look for:

- Overall level of adherence for each indicator; if high there may be no need for further action except for positive feedback; if low or lower than expected, consider further action if room for improvement exists.
- Patterns of variation between general practices, e.g. can substantial variation confidently be explained away by known differences in practice population demographics?
- Patterns of variation between any patient sub-groups, e.g. age, gender, co-morbidities.
- Likely chance variation, especially when dealing with smaller numbers of practices or patients.
- Unexpected findings to prompt consideration and investigation of plausible alternative explanations, e.g. errors in searches, limitations of coding.

The analysis of variations can help focus action, e.g. on specific groups of general practices or groups of patients.

Box 1. Considerations in measuring processes and outcomes of care.[3]

Process of care indicators	Outcome indicators
Useful if there is strong evidence predicting better outcomes if process of care followed, e.g. reduced stroke risk for anticoagulation in atrial fibrillation	Can assess what are ultimately important to patients, e.g. quality of life
Less useful if patient outcomes not tightly linked to processes of care, e.g. screening or case-finding for depression[4]	Factors other than healthcare provided may influence outcomes, e.g. co-morbidities
Measurement can help understand variations in patient outcomes, e.g. higher levels of asthma exacerbations might be linked to poorer provision of patient asthma plans[5]	May need to adjust statistically for casemix to enable fair comparisons between practices
Often available as routinely collected data, e.g. prescribing, test ordering	Intermediate outcomes can help assess responses to treatment, e.g. blood pressure control

Box 2. Considerations in using single or composite (combined) indicators.[6]

Single indicators	Composite indicators
Often simpler to apply, e.g. proportion of people with diabetes whose blood pressure is adequately controlled	Can summarise one or more key aspects of quality of care to help rapid interpretation of indicators, e.g. proportion of people with diabetes who receive all recommended processes of care
Allow detection of specific aspects of care that need attention, e.g. albumin:creatinine ratios in chronic kidney disease	Composite indicators only as good as their underlying single indicators