Transforming
Clinical Audit Data into
Quality Improvements

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Improvement Partnership

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Introduction

Purposes of this book

This book is intended for someone who is working through the *Transforming Clinical Audit Data into Quality Improvements* learning package. The book has two purposes, which are:

- a short reference on the technical content in the *Transforming Clinical Audit Data into Quality Improvements* slides that are part of this package

- a workbook with practical scenarios to work on as you go through the slides.

The learning package

The learning package consists of six modules on the clinical audit process, each taking about 30 to 40 minutes to complete. The modules are:

- Module 1 — Checking clinical audit findings

- Module 2 — Reporting on clinical audit findings

- Module 3 — Analysing variation in clinical practice

- Module 4 — Analysing shortcomings in patient care

- Module 5 — Planning and taking the right actions to achieve improvement

- Module 6 — Checking if improvement was achieved.

For each module, there is a slide presentation on what's involved in each of these steps in the clinical audit process, and there is a voice-over on the slide presentation explaining the content.

Purposes of the package

The package assumes that you have designed a clinical audit, including how you are measuring the quality of care, and that you have collected the data for the audit. The package is about what to do to transform the clinical audit data into improvements in care that actually benefit patients or patient care.

The package recognises that effective action on clinical audit findings isn't always taken in a clinical service or healthcare organisation for various reasons. It is intended to assure that the stages in the clinical audit process that have to do with reporting and analysing clinical audit findings and taking action on the findings are being carried out properly.

Module 1 — Checking clinical audit findings

Learning objectives

By the end of this module, you should know how to:

- check the validity and reliability of clinical audit data

- review cases that did not meet clinical audit standards, if the subject of the clinical audit is about clinical care, to contribute to the validity of the data.

Why validity and reliability of clinical audit data are important

If clinical audit data are NOT valid and reliable, all of the following can happen:

- Impressions about the quality of patient care based on the data can be WRONG.

- Clinical staff can discredit the clinical audit and not look further at the 'true' quality of care.

- The clinical audit process itself can be discredited.

Key terms

Key terms in this module are defined in the box.

Principle	Meaning
Validity in data collection	Clinical audit findings **truly represent** the **quality** of patient care for the subject of the audit. Data validity is about the **correctness of data** and **how well the data give a true picture** of what is happening.
Reliability in data collection	The extent to which the data are the same no matter who collects the data or when a person collects the data. Data are reliable if: • different people, collecting the same data from exactly the same sources using the same tools, have exactly or almost exactly the same findings, or • the same person, collecting the same data twice from the same data sources at different times using the same tools, has exactly or almost exactly the same findings.

Factors that can affect data validity and data reliability

Some factors that can affect data validity and data reliability are in the box.

Factors that can affect data validity	Factors that can affect data reliability
Getting the wrong cases for the clinical audit	Lack of or unclear, incomplete or inaccurate definitions or instructions for the data collectors
Not having a reasonable number of cases for the subject of the clinical audit	Unclear or inconsistent or poorly designed form or tool or spreadsheet to record data
Not having complete and accurate definitions and instructions for data collectors	Inconsistency in data among different data sources, with lack of guidance on which data source to use
Missing cases	Lack of training for data collectors
Data are available but are missing from the clinical audit data collected	Data collector fatigue

How to test validity of clinical audit data

Guidance for testing the validity of clinical audit data is in the box.

How to test validity of clinical audit data	Yes	No
Ask the following questions about the preparation for data collection.		
1. Were the following all specified carefully and agreed by the clinical group involved before data were collected: The **exact cases** to be **included** in and **excluded** from the audit? The **number** of cases to be included? Complete and accurate **definitions of all terms** used in the clinical audit standards? Complete and workable **instructions for the data collectors** on **how to make decisions** about whether or not the clinical audit standards are being met?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
2. Were arrangements made to **quality control data** entered into any data collection forms and/or data processing package?	☐	☐
3. Was every effort made to get: **All** the cases? **All** the data?	☐ ☐	☐ ☐
4. Was the following specifically reported? **Missing** cases (as much as is known about the cases)? **Missing** data?	☐ ☐	☐ ☐

How to test reliability of clinical audit data

Guidance for testing the reliability of clinical audit data is in the box. What is called **inter-rater reliability** means the **degree of agreement among people collecting data** or making observations on what they decide when collecting the **same** data from the **same** sources using the **same** directions.

How to test inter-rater reliability for a clinical audit

1. **Decide** on the degree of inter-rater reliability that is, level of agreement among data collectors, **that will be accepted**.

2. Have **at least two data collectors** who have been trained to collect data for the audit. Provide the data collectors with the materials they will need, for example, the data collection protocol, forms, access to a computer or a random number table. Include a small number of cases, for example, 5 or 10, depending on the amount of data to be collected per case.

3. Have the data collectors:

   • collect the **same data** from the **same sources** for the **same cases** using the **same data collection tools and guidance materials** without any discussion among them until all data are collected and recorded by each data collector

   • **make notes of** any **issues** they identify when collecting data.

4. **Compare the decisions** made by the data collectors and count the following:

   • the total number of bits of data (items) for which there was complete agreement, that is, there were no discrepancies among the data collectors

   • the total number of bits of data (items) collected. The total number of bits of data is the number of items collected per case multiplied by the number of cases in the test. It doesn't matter how many people were data collectors in the test.

5. If a continuous variable is used in clinical audit, such as recording the exact time interval between referral received and booking an appointment, agree on a margin of error, for example ±5%, that will be considered as agreement.

6. Divide the total number of bits of data (items) for which there was complete agreement by the total number of bits of data (items) collected and multiply by 100 to get a **percentage of** inter-rater **agreement**.

7. Decide **if** the **percentage of** inter-rater **agreement is** the **same as or better than** the **acceptable level** set for the audit.

8. Note the **reasons for** any **discrepancies and issues** identified by the data collectors and take action to resolve reasons for threats to reliability, such as revising definitions and instructions or the form or screen layout.

9. **Repeat** the steps described **until the desired level of reliability is achieved**.

10. When there is only one data collector, the person uses the data collection forms and collects data from the same set of data sources for the same cases twice with a time interval between the two sessions of data collection. Then steps 4 to 9 above are carried out to compare the decisions and calculate the percentage of agreement.

Reliability testing can be done prior to data collection and as 'spot checks' during data collection.

What you know after collecting data — and what is unknown

In summary, you have the following information after you have completed collecting data:

- the **number** of cases that were **consistent with the criterion** in each clinical audit standard in the audit

- the **number** of cases that were **consistent with any exception** that was specified in a clinical audit standard for each clinical audit standard

- the **number** of cases that were **not consistent with either an audit criterion or an exception** for each clinical audit standard

- the **number** of cases that were **consistent with the criterion or an exception for all the clinical audit standards** in the audit

- the **total number** of cases that were included for each clinical audit standard.

If the clinical audit subject is about clinical care, what **remains unknown** is **whether or not the cases** that were **not consistent** with either an audit criterion or an exception **represent clinically justifiable care. There is a threat to the validity of clinical audit data if these cases are not clinically reviewed.**

How to review individual cases not meeting a clinical audit standard

Guidance for reviewing individual cases not meeting a clinical audit standard for a clinical subject is in the box.

How to review individual cases not meeting clinical audit standards

1. Review each case to see if there is **any clinical justification** for not meeting clinical audit standards. Explanations may be because of any of the following:

   - A poorly expressed or **unclear** clinical audit **standard**

   - **Poor** or incomplete **definitions and instructions for** data collection

   - **Error** in data collection

   - No exceptions were specified but one or more **exceptions emerge** in an actual case

   - **Exceptions not previously specified** emerge, which may include any of the following:

     – A **forgotten** exception, meaning that a common exception was overlooked when the clinical audit standards were developed, for example, that a patient is offered but declines a particular treatment

     – A **rare** exception, meaning that a patient has an unusual diagnosis or condition, other than the condition that was the subject of the clinical audit, which would require that treatment specified in a clinical audit standard has to be adjusted

     – A **complex** exception, meaning that a patient has several diagnoses or conditions being managed simultaneously and the treatment specified in a clinical audit standard has to be adjusted

     – A **'state-of-the-art'** exception, meaning that the evidence base doesn't exist or is conflicting about whether or not there is an exception to the clinical audit standard and colleagues cannot agree about a particular exception.

2. **Find** any **cases of clinically acceptable care**, that is, the case is clinically justified as a variation from a clinical audit standard.

3. **Count** the number of **cases** that did not meet a clinical audit standard but were subsequently **justified clinically**.

Practise checking on validity and reliability and planning case review

For one or both of the clinical audits that follow, read the description of the design and criteria for the audit and note any concerns you have related to the validity and reliability of the data collected for the audit. Also, consider how you might arrange to carry out review of the cases that did not meet the clinical audit standards.

1. **Recording of observations for patients newly admitted to a mental health facility**

Objective:	Increase the proportion of newly admitted patients who have observations carried out on a timely basis
Patients and time period:	200 adults selected at random from all adults of working age admitted to inpatient areas over the past 6 months
Data collection strategy and sources:	Retrospective data collection, using patient records
Clinical audit team:	Consultant psychiatrists, junior doctors, psychologists, nurses, occupational therapists, social services lead, service managers and the risk manager (All agreed to the design and standards)

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. For the first 72 hours after admission, at least once every shift, a summary of the following about the patient is documented: (a) mental status **and** (b) physical status **and** (c) presence or absence of any risk behaviours	100% of shifts for (a) – (c)	None	See the patient record. 'Mental status' means, for example, orientation, mood, attitude. 'Physical status' means, for example, speech, movement. 'Risk behaviour' means, for example, suicide attempt, self-harm or attack on others or ideas about harming self or others.
2. Within 2 hours after admission, the patient's care plan states the level of observation to be carried out for the first 72 hours following admission	100% of patients	None	See the patient's record. 'Level of observation' means General Observation, Intermittent Observation, Within Eyesight Observation and Within Arms Length Observation.

Findings following data collection

The findings after data collection was completed are in the table. The row titled All shows the number of cases that met both standard 1 and standard 2.

Standard	Met Criterion n	Met Exception n	Require Review n	Total cases n
1	168	0	32	200
2	156	0	44	200
All	142	0	58	200

Do you have any concerns related to the validity and reliability of the data collected?

❏ **Yes** ❏ **No**

Explain your decision ....

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How would you arrange for the review of the cases that were not consistent with either an audit criterion or an exception for each clinical audit standard? Who do you think should participate in the review of cases that did not meet a clinical audit standard?...

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How could the review of cases be done, for example, would you have one person or several of the team members make decisions and feed back the results to the whole group or have the whole group review each case?..

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2. Communicating with patients about their condition and treatment for type 2 diabetes

Objective: Ensure that the communication with patients diagnosed with type 2 diabetes is acceptable to patients and enables patients to feel confident about managing self-care

Patients and time period: All patients from 6 GP practices who were newly diagnosed with type 2 diabetes 6 to 9 months ago

Data collection strategy and sources: Retrospective data collection, using a patient survey

Clinical audit team: General practitioners, specialist diabetes nurse, practice nurses

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. The patient states that s/he feels confident about managing the diabetes	100% of patients	None	See the responses to a patient survey questionnaire. The patient indicates 'agree' or 'strongly agree' on a 5–point scale where the other choices are 'neither agree nor disagree', 'disagree' and 'strongly disagree'.
2. The patient states that the communication about diabetes has been the following: (a) provided just before or just when it was needed **and** (b) delivered in a non-judge-mental way **and** (c) interactive (two-way) **and** (d) supportive and motivational	100% of patients for (a) – (d)	None	Same as above

Findings following data collection

The findings after data collection and collation from the survey questionnaires are in the table. The row titled All shows the number of cases that met both standard 1 and standard 2.

Standard	Met Criterion n	Met Exception n	Require Review n	Total cases n
1	70	0	20	90
2	59	0	31	90
All	52	0	38	90

Do you have any concerns related to the validity and reliability of the data collected?

❏ Yes ❏ No

Explain your decision ....
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How would you arrange for the review of the cases that were not consistent with either an audit criterion or an exception for each clinical audit standard? Who do you think should participate in the review?...
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How could the review of cases be done, for example, would you have one person or several of the team members make decisions and feed back the results to the whole group or have the whole group review cases?...
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Module 2 — Reporting clinical audit findings

Learning objectives

By the end of this module, you should know how to:

- calculate final compliance with clinical audit findings properly

- present and lead discussion of clinical audit findings with clinical staff.

What you know after collecting data and reviewing cases that varied from clinical audit standards

In summary, you have the following information for each clinical audit standard after you have completed collecting data and reviewed cases that varied from the clinical audit standard:

- the **number** of cases that were **consistent with the criterion** in each clinical audit standard in the audit

- the **number** of cases that were **consistent with any exception** that was specified in each clinical audit standard

- the **number** of cases that were **found to represent acceptable clinical care after review of individual cases that did not meet a standard during data collection**, for each standard

- the total **number** of cases **not meeting a** clinical audit **standard** that were **not justified** on any clinical grounds, for each standard

- the **total number** of cases that were included for each clinical audit standard.

How to calculate final compliance

When calculating compliance with clinical audit standards, add the number of cases meeting the criterion and the number meeting any exceptions, along with any adjustments to the numbers following clinical review of cases that did not meet a standard during data collection. The formulas are in the box on the next page.

For each clinical audit standard

$$\text{Percentage compliance with a clinical audit standard following review} = \frac{\left(\substack{\text{Number of cases meeting the Criterion}} + \substack{\text{Number of cases meeting any Exception(s)}}\right) + \left(\substack{\text{Number of cases determined as meeting the Criterion or any Exception(s)}}\right)}{\text{Number of cases to which the standard applies}} \times 100$$

from data collection   from clinical review

If all the standards in the audit applied to all cases

$$\text{Percentage compliance with all clinical audit standards following review} = \frac{\left(\substack{\text{Number of cases meeting the Criterion for all the clinical audit standards}} + \substack{\text{Number of cases meeting any Exception(s) for all the clinical audit standards}}\right) + \left(\substack{\text{Number of cases determined as meeting the Criterion or any Exception(s) for all the clinical audit standards}}\right)}{\text{Number of cases to which all the standards applied}} \times 100$$

from data collection   from clinical review

How to display clinical audit findings

Display clinical audit findings in a table or a bar chart. Show the percentage of compliance with each clinical audit standard and with all clinical audit standards, when all the standards apply to the cases in the audit.

Clinical audit findings for clinical audit on discharge management (166 patients)

Table. Number and percentage of cases that complied with clinical audit standards for discharge management

Measure	Met Criterion		Met Exception		Did not pass review		Final compliance	
	Number	%	Number	%	Number	%	Number	%
1	150	90.4	0	0.0	11	6.6	155	93.4
2	114	68.7	0	0.0	19	11.4	147	88.6
3	101	60.8	32	19.3	47	28.3	151	91.0
All	93	56.0	32	19.3	69	41.6	129	77.7
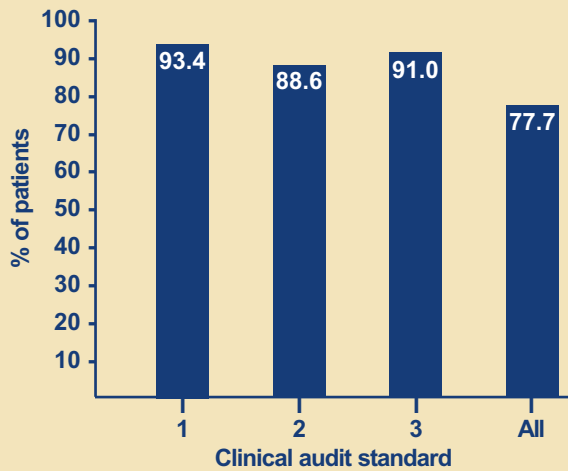
Why clinical review of individual cases is important

There are two ways to make judgements about quality of patient care, each using a different type of measure of quality:

• **Explicit measures** describe with **clear and complete operational definitions** what is to be observed and how a judgement is to be made about quality. Clinical audit standards are explicit measures.

• **Implicit measures** rely on **judgements of clinicians** who review and analyse cases without explicit guidance, using their knowledge, skills and experience as the basis for making decisions about quality.

The characteristics of each type of measure are shown in the diagram in the box.

Using explicit and implicit measures of quality

Poor care	Good care

Assume the ←→ *line represents:*

Actual quality

Can be rated as poor

Quality judged using explicit measures
Clinical exceptions not previously recognised

Can be rated as good

Quality judged using implicit measures
Clinical judgement accounting for deficiencies in actual care
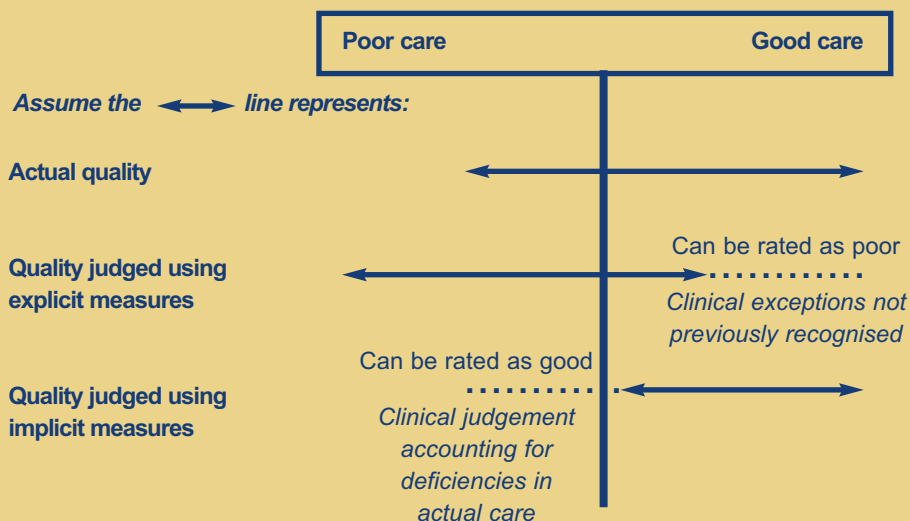
Given the strengths and weaknesses of both types of measures, the best approach to clinical audit is to use a two-stage screening process. In the first stage, cases are screened using explicit clinical audit standards. In the second stage, cases that are not completely consistent with explicit standards are screened by clinicians using their clinical expertise and judgement, that is, using implicit measures.

Practise on the importance of reviewing cases of clinical care

Reflect on the importance of reviewing cases that have not been consistent with a clinical audit standard when the subject of the audit is about clinical care.

What are the advantages of this approach — what points would you make to colleagues to engage them in review of individual cases? ....

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What might happen if cases are not reviewed to find those that are clinically justified? ....

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How to plan for a presentation on clinical audit findings

If you are presenting clinical audit findings to a clinical group, prepare carefully for the presentation, using the guidance in the box on the next page.

How to plan for a presentation on clinical audit findings

1. Decide what you want to achieve through the presentation — your **objectives**. For example, you may want clinical staff to:

    •   know the final compliance with the clinical audit standards — for each standard and for all standards if the standards apply to all the cases in the audit

    •   know that any individual cases that did not comply with a clinical audit standard were reviewed to find any possible clinical justification

    •   if the clinical audit findings indicate that there are shortcomings, accept that there are some shortcomings in the delivery of patient care and that improvements in quality are needed and agree that analysis of the shortcomings is required to learn what action is appropriate to achieve improvement.

2. Consider **what will have to happen during the presentation** for you to achieve your desired objectives. For example, you could decide that the following are needed:

    •   a complete explanation of the clinical audit, including the background, design and standards and how they were agreed, and so on

    •   questions and discussion on anything that is unclear about the clinical audit design and the findings

    •   a recognition of shortcomings in care

    •   an agreement to analyse the shortcomings to identify the causes and know what type of action to take.

3. Decide what **information, materials and support you will need** for your presentation. For example, you may want to use a slide presentation on the audit; you may want to brief a supportive colleague or the meeting chair in advance of the presentation; or you may want to use quality improvement tools with your colleagues to identify shortcomings and their potential causes.

4. Reflect on **how you will know if the presentation has been successful**, for example, through the questions asked, comments made or concerns expressed by colleagues.

5. **Prepare to handle possible reactions** to the clinical audit findings from colleagues, including lack of belief about the findings, disagreement with the design of the audit, or cynicism about the possibility of achieving improvements.

Practise planning a presentation

For the clinical audit on recording of observations for patients newly admitted to a mental health facility and/or the audit on communicating with patients newly diagnosed with type 2 diabetes, plan how you would present the findings. For each of the audits, what is known after data collection and review of cases and the final compliance with the clinical audit standards is provided in the tables on the next page.

1. Recording of observations for patients newly admitted to a mental health facility

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. For the first 72 hours after admission, at least once every shift, a summary of the following about the patient is documented: (a) mental status **and** (b) physical status **and** (c) presence or absence of any risk behaviours	100% of shifts for (a) – (c)	None	See the patient record. 'Mental status' means, for example, orientation, mood, attitude. 'Physical status' means, for example, speech, movement. 'Risk behaviour' means, for example, suicide attempt, self-harm or attack on others or ideas about harming self or others.
2. Within 2 hours after admission, the patient's care plan states the level of observation to be carried out for the first 72 hours following admission	100% of patients	None	See the patient's record. 'Level of observation' means General Observation, Intermittent Observation, Within Eyesight Observation and Within Arms Length Observation.

Findings from data collection and case review

Standard	From data collection		From review	Cases to which the standard applied	Percentage compliance with standard
	Met Criterion n	Met Exception n	Passed Review n		
1	168	0	10	200	89%
2	156	0	14	200	85%
All	142	0	6	200	74%

Who would you want to attend the presentation? ....

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What would be your objectives for the presentation? ....

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What information would you present and in what form?..

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2. Communicating with patients about their condition and treatment for type 2 diabetes

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. The patient states that s/he feels confident about managing the diabetes	100% of patients	None	See the responses to a patient survey questionnaire. Examples of confidence and managing diabetes are in the questions. The patient indicates 'agree' or 'strongly agree' on a 5–point scale where the other choices are 'neither agree nor disagree', 'disagree' and 'strongly disagree'.
2. The patient states that the communication about diabetes has been the following: (a) provided just before or just when it was needed **and** (b) delivered in a non-judge-mental way **and** (c) interactive (two-way) **and** (d) supportive and motivational	100% of patients for (a) – (d)	None	Same as above. Examples of non-judgemental, interactive, supportive and motivational are in the questions.

Findings from data collection and review of neutral or negative ratings

Standard	From data collection		From review	Cases to which the standard applied	Percentage compliance with standard
	Met Criterion n	Met Exception n	Passed Review n		
1	70	0	5	90	83.3%
2	59	0	8	90	74.4%
All	52	0	10	90	68.9%

Who would you want to attend the presentation? ....

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What would be your objectives for the presentation? ....

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What information would you present and in what form? ....

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Module 3 — Analysing variations in clinical practice

Learning objectives

By the end of this module, you should know how to:

• use a run chart to identify special cause and common cause variation in clinical practice

• act appropriately on special cause and common cause variation.

How to display and interpret variation in clinical audit findings

The percentage of cases that complied with a clinical audit standard tells you about day-to-day practice and if there is or isn't a problem with the quality of care. However, if there is a problem, a clinical group may want to know more about the variation from audit standards. To display and interpret variation in clinical practice:

• **Put clinical audit data into a run chart**, if you can.

• Analyse and **interpret patterns in the run chart** to find the type of variation.

A run chart gives a statistical basis for making decisions about the type of variation that is happening, as defined in the box.

Term	Meaning
Run chart	A display of data points **plotted in chronological order**, that is, the data points are plotted **in the sequence in which the events they represent occurred**, for the purpose of identifying patterns and data points that indicate the **amount and type of variation** in a process or outcome

Guidance for constructing a run chart is in the box.

How to construct and analyse a run chart

1. Clarify the aspect of care that is to be plotted on a run chart for your purposes.

2. Collect data on **at least 25 cases.**

3. Draw vertical and horizontal axes.

4. Label the vertical axis with the thing being plotted, eg, number of inappropriate referrals per day or time from receipt of referral to appointment. Label the horizontal axis with the unit of observation to be tracked, eg, patients, days.

5. Determine the scale for the vertical axis using a number 20 percent larger than the largest data value for the top and 20 percent smaller than the smallest data value for the bottom.

6. Plot the data points on the chart in the order in which the things they represent **occurred**.

7. Connect the data points.

8. Calculate the mean or the median of the plotted numbers. Draw a line on the chart to represent the mean or median.

9. Analyse the chart to find out if there is common cause or special cause variation, using the rules to find a special cause.

10. Decide on the type of action to be taken based on the analysis.

Types of causes of variation

There are two types of variation in work processes. They are called:

- common cause
- special cause.

The meanings of the terms are explained in the box.

Type of variation	Meaning
Common cause	Variation in a process that results from the way **a process is designed** and that occurs at **random**
Special cause	Variation in a process that results from **factors** that are **not related to** the way a **process** is designed and for which **special** or assignable **causes** can be **identified**

Properties of each type of variation are in the box.

Properties of common cause and special cause variation	
Common cause variation	**Special cause variation**
The process is **stable statistically**, that is, the variation is random.	The process is **not stable statistically**, that is, the variation is not random.
You can tell **how or how well the process or outcome works**, that is, its capability, for example, how long it normally takes to carry out the process.	Because the process or outcome is not stable, its **capability is not known**. It is not always possible to tell when the special cause will affect the process or outcome again and/or what its effect on the process will be.
You can **predict how the process will work in the future**, for example, how long the process is likely to take for the next 50 patients.	The process or outcome is **not predictable**. Past performance cannot be used with any degree of certainty to say what will happen in the future.
The process or outcome is **in statistical control**.	The process or outcome is not **in statistical control**.

How to look for patterns in a run chart

Rules based on probability statistics have been developed to help you identify if special cause variation is happening. **If data do not comply** with any of the rules, then **special cause variation** is **unlikely** to be present. If special cause variation is not present, then conclude that **common cause variation is present**.

Some rules for identifying special cause variation are in the boxes that follow.

Rules to enable identifying special causes

Rule 1 — Shift

Eight or more consecutive **points** that are either all above or all below the mean or median. Ignore values on the mean or median and continue to count points. Points on the mean or median do not make or break a shift.
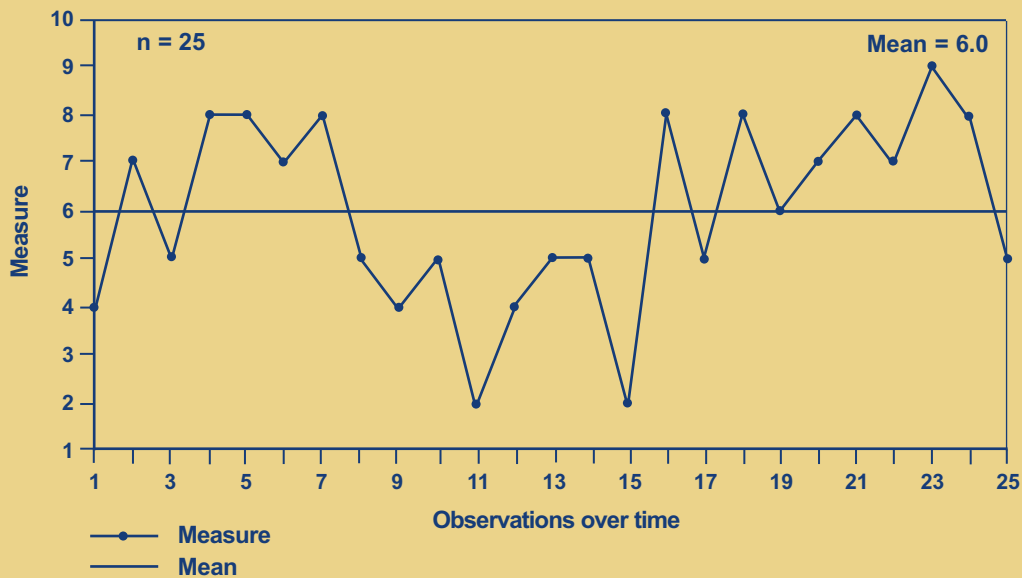
Rule 2 — Trend

Six **lines** between consecutive points all of which are going up or down. If the value of two or more consecutive points is the same, ignore the lines connecting the points when counting. Identical points do not make or break a trend.
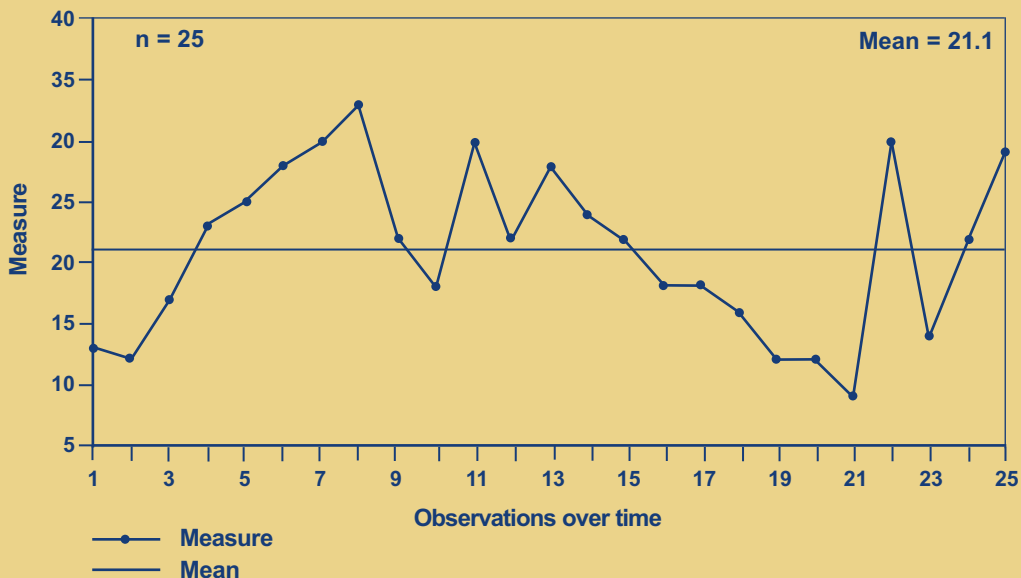
Rules to enable identifying special causes

Rule 3 — Astronomical (freak) value

A **point** that is blatantly different from all other points around it
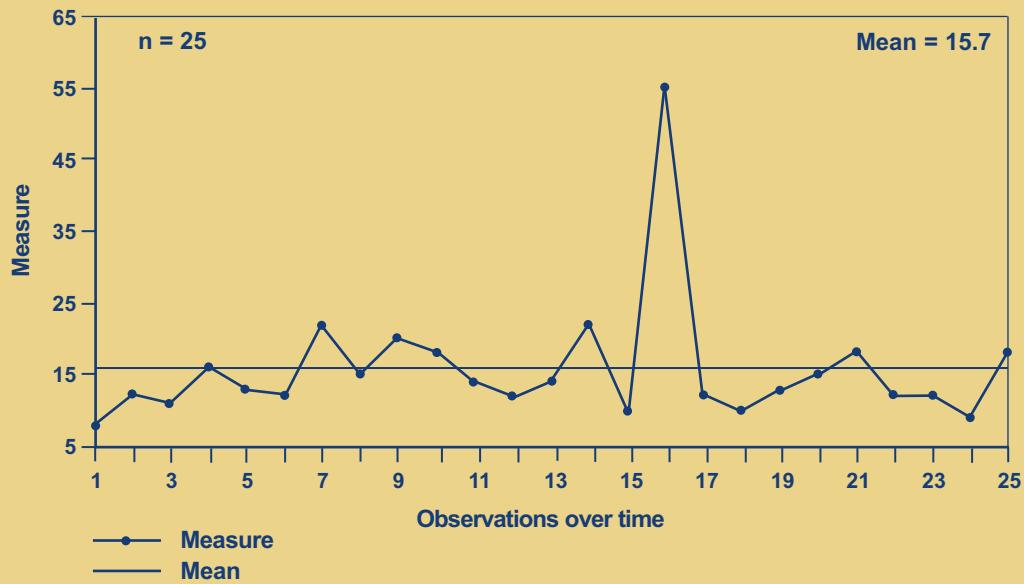
Rule 4 — Zigzag

Lines between consecutive points alternatively going up and down 13 times. If the value of two or more consecutive points is the same, it breaks the zigzag.
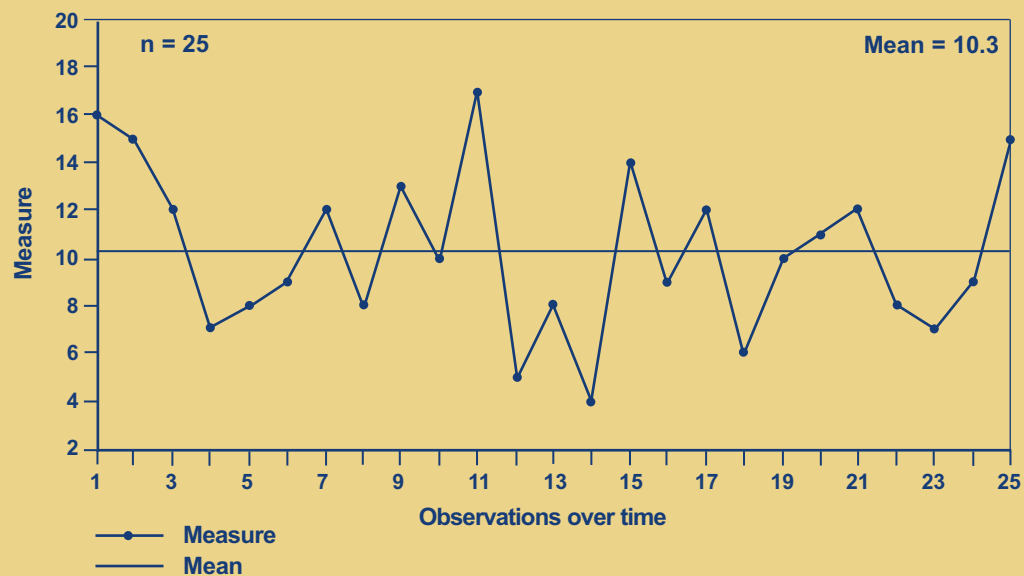
Rule 5 — Repeating (cyclic) pattern

Points that appear in a pattern with such regularity that chance alone cannot explain the pattern
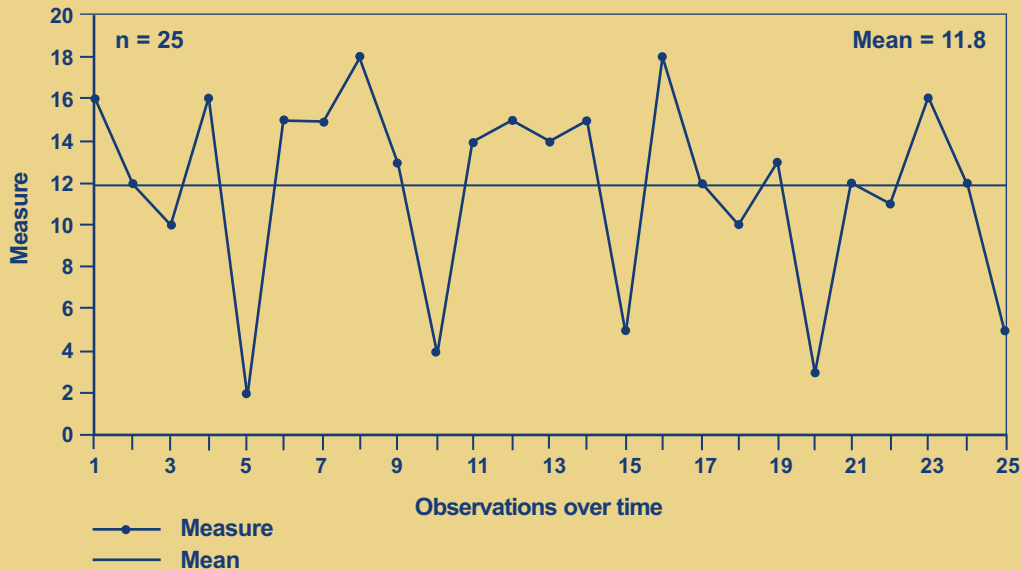
How to anticipate the type of action needed

The type of variation — common cause or special cause — in a process determines the nature of the action to take to bring about improvement. The types of actions to be taken for common cause and special cause variation are in the box.

Type	Action
Common cause variation	**Decide if the amount of variation is or isn't acceptable. If it isn't, improve the process**.
	Acknowledge that the process has a capability that won't improve unless the process itself is improved.
	Find out how the current process works.
	Identify factors that are contributing to the common cause variation.
	Decide on where and how the process has to be changed to get an improvement.
	Redesign the process.
	Implement the redesigned process — if only on a pilot basis.
	Repeat measurement to determine the impact of the redesign.
	Do not do nothing — **study the process and redesign it**.

Type	Action
Special cause variation	**Eliminate (if it has a negative effect) or reproduce (if it has a positive effect) the special cause.**
	Do not change the process until you have learned about the special cause.
	Determine when and why the special cause occurred.
	• If it caused a negative effect, learn how to prevent or eliminate it.
	• If it caused a positive effect, learn how to build its effect into the current process.
	Do not do nothing — **investigate and learn**.

Practise analysing run charts to identify special cause variation

For the run charts that follow, decide:

- **if the run chart indicates common cause or special cause variation**

- **if the process is stable statistically, with a known capability and predictable**

- **the action(s) you would recommend.**

1. **Objective: Reduce the number of patients on every-15-minute Intermittent Observation who do not have an observations every 15 minutes**
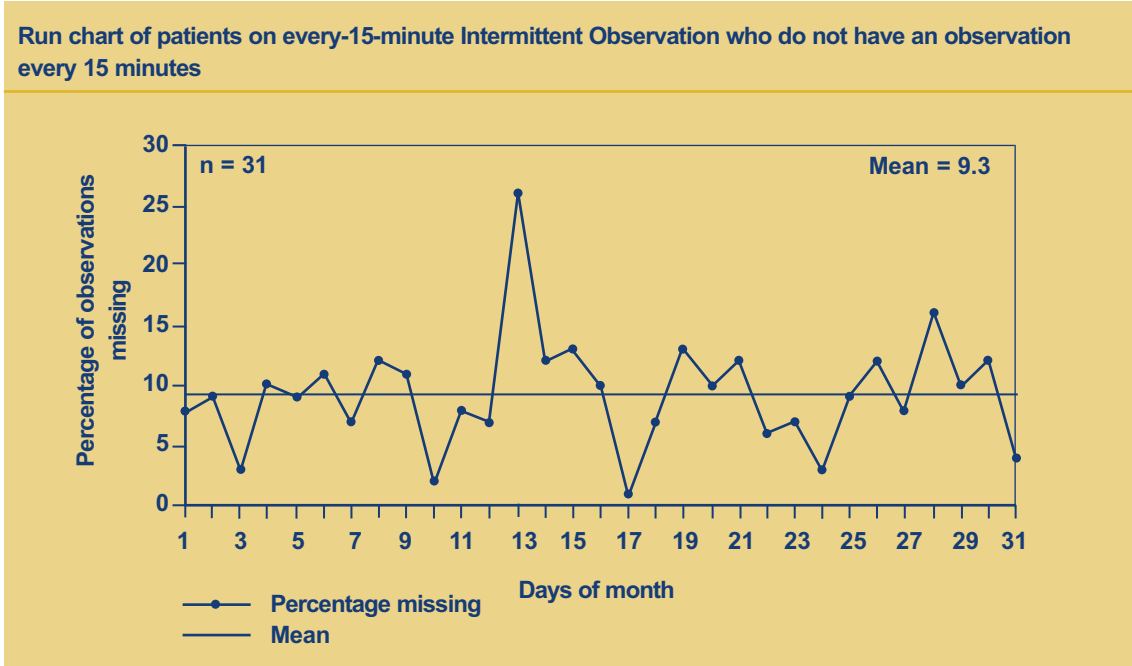
Run chart of patients on every-15-minute Intermittent Observation who do not have an observation every 15 minutes

n = 31

Mean = 9.3

Percentage of observations missing

Days of month

Percentage missing

Mean

What type of variation is present?   ❑ Special cause   ❑ Common cause

Explain your decision ....

....

Is the process of Intermittent Observation
statistically stable?   ❑ Yes   ❑ No

Does it have a known capability, ie, do you
know the percentage of required observations
that are likely to be done?   ❑ Yes   ❑ No

Is the process of Intermittent Observation predictable,
ie, can you predict the percentage of required
observations that are likely to be done in the future?   ❑ Yes   ❑ No

What type of action would you recommend? ....

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2. **Objective: Increase the timeliness of admission risk assessment for adult patients of working age admitted on an urgent basis**
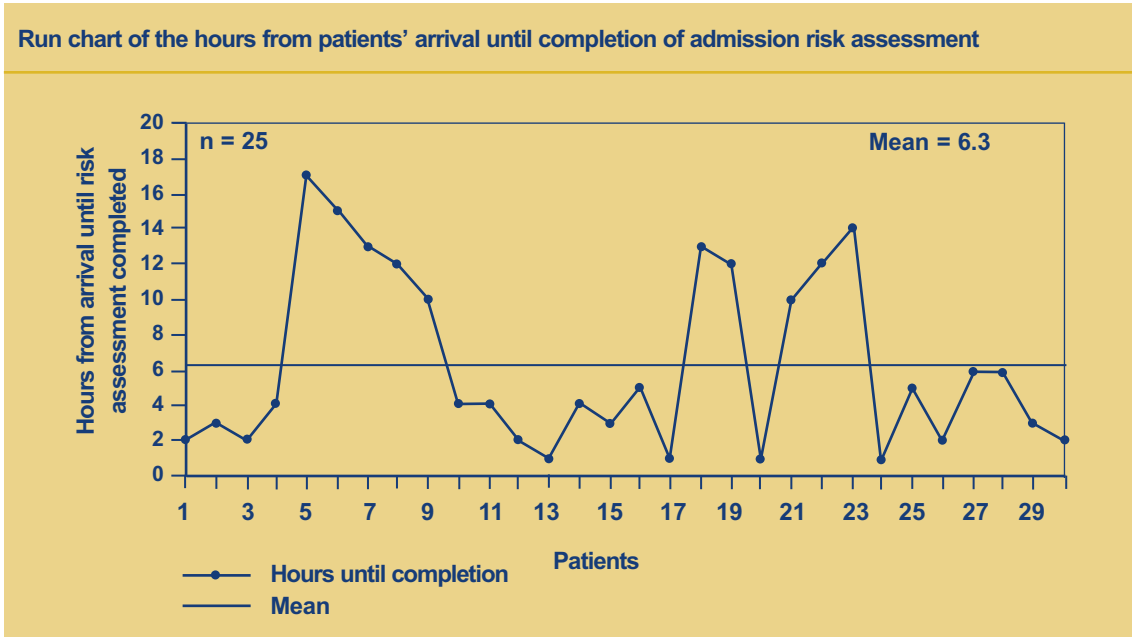
Run chart of the hours from patients' arrival until completion of admission risk assessment

What type of variation is present?   ❑ Special cause ❑ Common cause

Explain your decision ....

....

Is the process of doing an admission risk assessment
for adult patients of working age who are urgent
admissions statistically stable?   ❑ Yes   ❑ No

Does it have a known capability, ie, do you know how
long it will take?   ❑ Yes   ❑ No

Is the process of doing an admission risk assessment
predictable, ie, can you predict the range of time an
admission might take in the future?   ❑ Yes   ❑ No

What type of action would you recommend? ....

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3. **Objective: Increase the number of patients with type 2 diabetes who feel confident about managing hypoglycaemia and hyperglycaemia**

Run chart of the percentage of patients newly diagnosed with type 2 diabetes who feel confident about managing hypoglycaemia and hyperglycaemia

n = 25   Mean = 71.6

Y-axis: Percentage of patients who feel confident about managing (40 to 100)

X-axis: Month (1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 29, 25)

Legend:
— Percentage of patients diagnosed 2 months previously who feel confident
— Mean
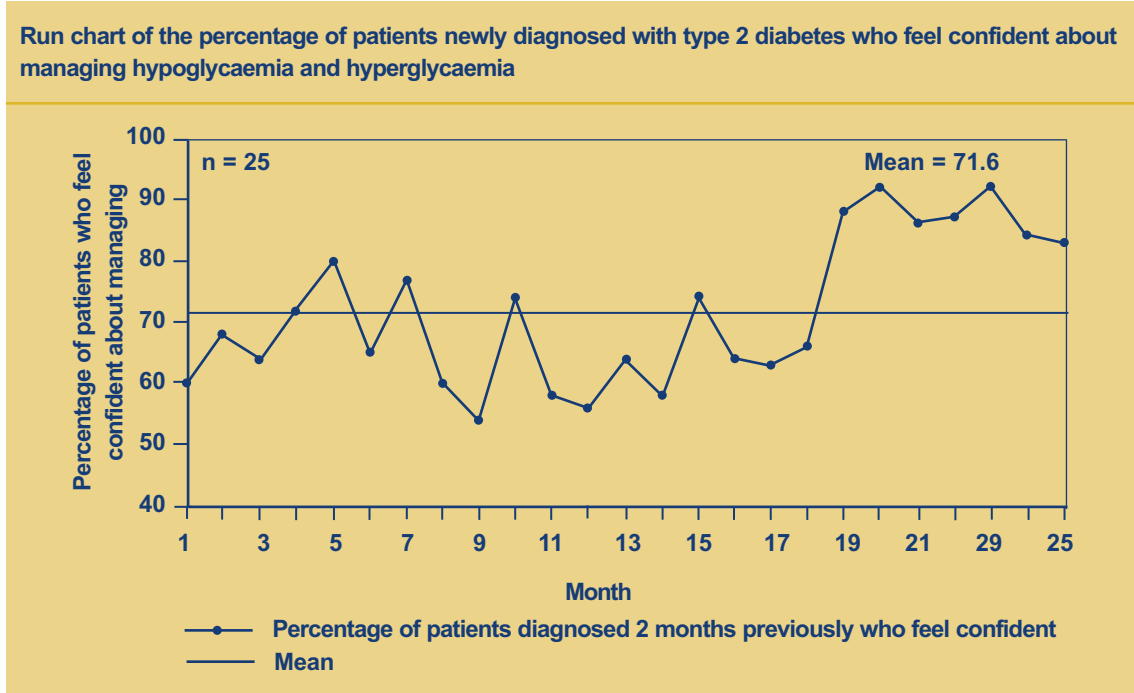
What type of variation is present?   ❑ Special cause ❑ Common cause

Explain your decision ....

....

Is the process of preparing patients who are newly diagnosed with type 2 diabetes in self-management of hypoglycaemia and hyperglycaemia statistically stable?   ❑ Yes   ❑ No

Does it have a known capability, ie, do you know the range of the percentage of newly diagnosed patients who feel confident about management of episodes of hypoglycaemia and hyperglycaemia?   ❑ Yes   ❑ No

Is the process of preparing patients for self-management of type 2 diabetes predictable, ie, can you predict how many patients next month will not feel confident with management of hypoglycaemia or hyperglycaemia?   ❑ Yes   ❑ No

What type of action would you recommend? ....

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Module 4 — Analysing shortcomings in patient care

Learning objectives

By the end of this module, you should know how to:

* state a problem revealed by a clinical audit

* use quality improvement tools to find causes of the problem and the nature of the action needed to achieve improvement.

How to focus on improvement

To work on achieving an improvement:

* Agree on the **problem(s)** represented by the clinical audit findings.

* Find the **root cause(s)** of the problem(s).

* Take **action** to remove or minimize the cause(s) of the problem(s).

Distinguish between a problem revealed by a clinical audit and the cause of the problem in order to take action on the cause(s) of a problem. The terms are explained in relation to clinical audit in the box.

Term	Meaning
Problem	Current actual practice that does not represent good practice or is not acceptable. A **problem** is like a **symptom**. It suggests that something is not right but it doesn't identify what's wrong.
Cause	The **reason** for the occurrence of the problem. A **cause** is like a **diagnosis**. It represents a conclusion of observation and investigation and it enables the development of a plan of action.

How to state a problem

State clearly the problem(s) revealed by a clinical audit for the following reasons.

* Everyone involved can have a shared understanding of exactly what the problem is.

* The problem statement is the basis for analysing causes and for planning actions to achieve improvements.

* You can inform others about the problems found through the clinical audit and their causes.

Explain a problem using these two parts as shown in the box:

- a word or words that describe(s) **the nature of the variation** from good practice, eg, lack of, late, dissatisfaction, inappropriate, unsafe, inconsistent, etc

- the **clinical audit standard** that is defining good practice.

<table>
<tr><td colspan="3">**Problem statement model**</td></tr>
<tr><td colspan="3">**...% of patients are not having .... (from clinical audit standard expressing evidence of quality)**</td></tr>
<tr><td>**Variation from good practice**</td><td>**+**</td><td>**Clinical audit standard**</td></tr>
<tr><td>The nature of the variation, eg, lack of, ineffective, late, unsafe, inconsistent,dissatisfaction, wasteful, not documented, inappropriate, etc</td><td></td><td>The specific aspect(s) of quality of care or service that is(are) varying from good practice</td></tr>
<tr><td colspan="3">**Refer to the actual percentage compared to the desired percentage of compliance with the clinical audit standard.**</td></tr>
</table>

Practise writing a problem statement

For the clinical audit standards and findings, write a statement of at least one problem that has been revealed by the audit.

1. Recording of observations for patients newly admitted to a mental health facility

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. For the first 72 hours after admission, at least once every shift, a summary of the following about the patient is documented: (a) mental status **and** (b) physical status **and** (c) presence or absence of any risk behaviours	100% of shifts for (a) – (c)	None	See the patient record. 'Mental status' means, for example, orientation, mood, attitude. 'Physical status' means, for example, speech, movement. 'Risk behaviour' means, for example, suicide attempt, self-harm or attack on others or ideas about harming self or others.
2. Within 2 hours after admission, the patient's care plan states the level of observation to be carried out for the first 72 hours following admission	100% of patients	None	See the patient's record. 'Level of observation' means General Observation, Intermittent Observation, Within Eyesight Observation and Within Arms Length Observation.

Findings from data collection and case review

Standard	From data collection Met Criterion n	Met Exception n	From review Passed Review n	Cases to which the standard applied	Percentage compliance with standard	Cases not meeting the standard or passing review
1	168	0	10	200	89%	22
2	156	0	14	200	85%	30
All	142	0	6	200	74%	52

Problem(s) revealed by the audit

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2. Communicating with patients about their condition and treatment for type 2 diabetes

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. The patient states that s/he feels confident about managing the diabetes	100% of patients	None	See the responses to a patient survey questionnaire. Examples of confidence and managing diabetes are in the questions. The patient indicates 'agree' or 'strongly agree' on a 5–point scale where the other choices are 'neither agree nor disagree', 'disagree' and 'strongly disagree'.
2. The patient states that the communication about diabetes has been the following: (a) provided just before or just when it was needed **and** (b) delivered in a non-judge-mental way **and** (c) interactive (two-way) **and** (d) supportive and motivational	100% of patients for (a) – (d)	None	Same as above. Examples of non-judgemental, interactive, supportive and motivational are in the questions.

Findings from data collection and review of neutral or negative ratings

Standard	From data collection Met Criterion n	From data collection Met Exception n	From review Passed Review n	Cases to which the standard applied	Percentage compliance with standard	Cases not meeting the standard or being acceptable
1	70	0	5	90	83.3%	15
2	59	0	8	90	74.4%	23
All	52	0	10	90	68.9%	28

Problem(s) revealed by the audit

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How to find the root cause of a problem

Use the following tools to analyse a problem in order to find the cause(s):

- fishbone diagram

- asking why five times

- analysing a process.

Fishbone

The tool is defined in the box and guidance for doing a fishbone diagram follows.

Term	Meaning
Fishbone diagram	A cause-and-effect diagram used to facilitate the identification of **factors** (causes) **contributing to** an outcome or **result** (effect). The diagram is useful for identifying and analysing multiple potential causes of a problem.

How to do a fishbone diagram

1. Draw a fishbone structure. Record in the head of the fish the problem, situation or effect you are analysing. Decide what the primary causes might be and label the spines on the diagram accordingly. Potential ways to identify primary causes are patients, processes or systems, equipment, environment, resources, staff or communication.
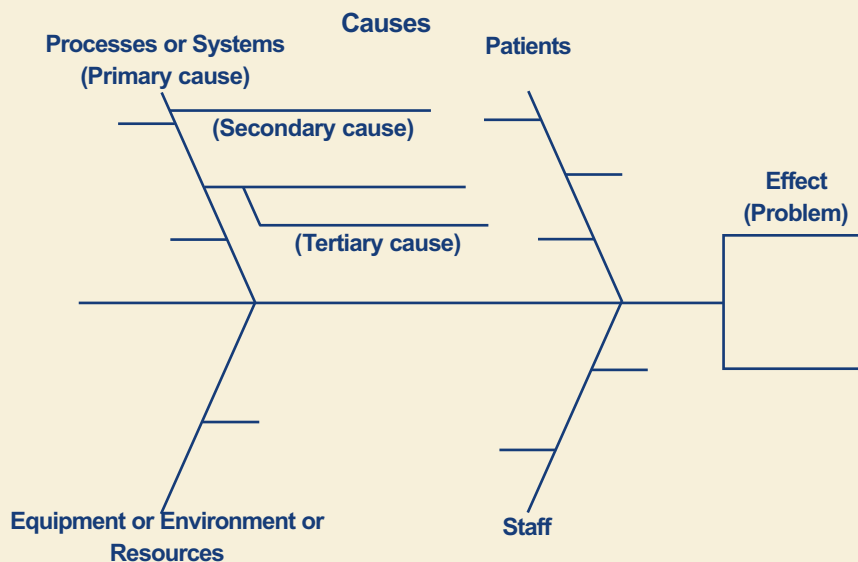
2. For each of the primary cause spines, think of ideas of causes that could be attributed to the primary cause. Attach your ideas (which are referred to as secondary causes) to the relevant primary cause spine. Attach any further explanations of a cause (which are referred to as tertiary causes) to the relevant spine.

3. When you have finished thinking up ideas, decide if you want to set priorities among the potential causes or if you feel that you need to investigate any of the causes thought of.

4. Use your conclusions to develop an action plan to address causes of the problem or to investigate further.

5. You could use asking why five times or process mapping (see the next sections) to investigate further.

Practise doing a fishbone diagram

Choose one of the problems you identified earlier from either of or both of the clinical audit findings on pages 28 to 30. Try using a fishbone diagram to identify what might be causing the problem.
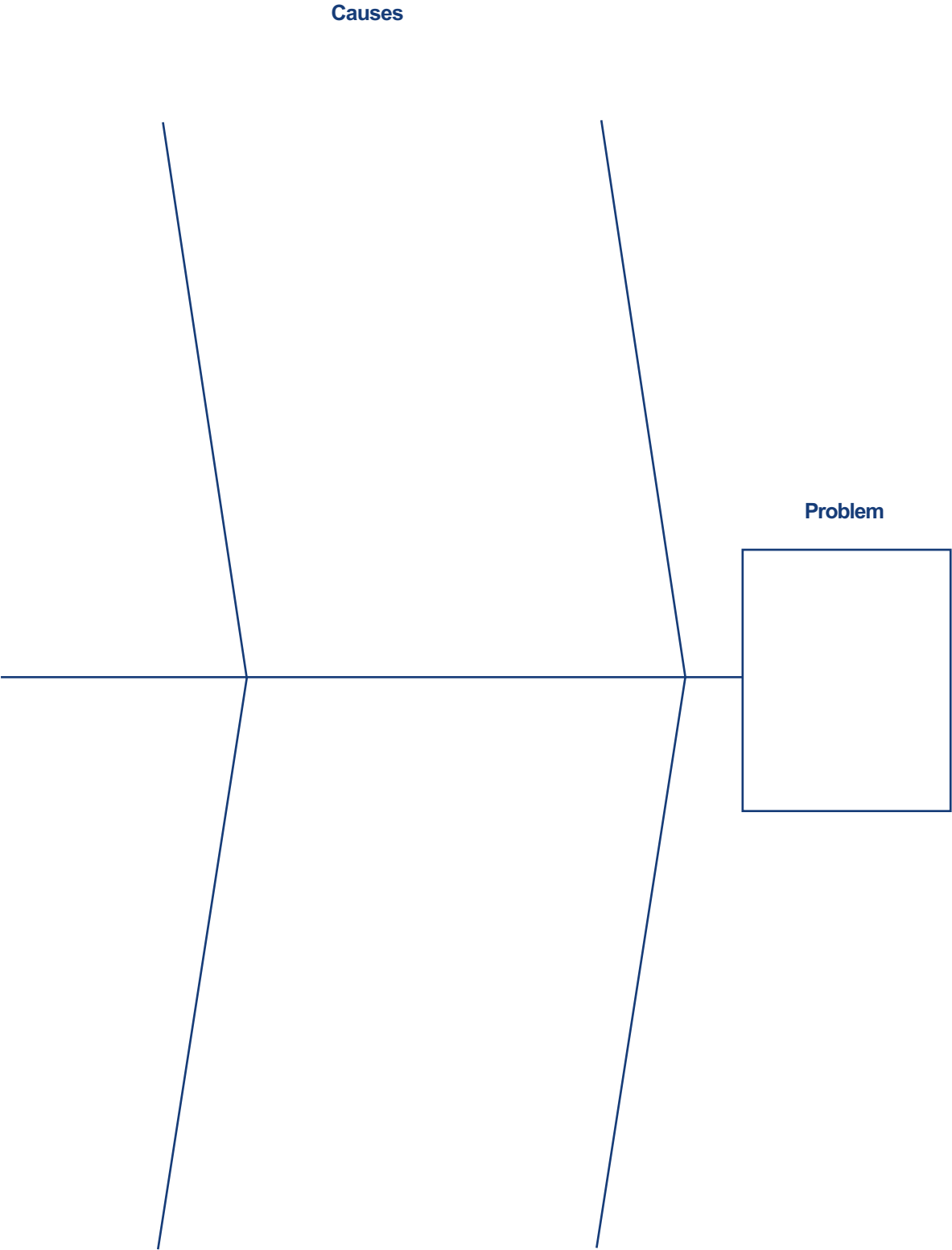
Causes

Problem

Asking why five times

Another tool you can use to analyse a problem is asking why five times. The term is defined in the box.

Term	Meaning
Asking 'why' five times	A way to identify the true or **root cause** of a problem particularly **when a sequence of actions**, a process flow or a chain reaction **is involved**

How to do asking why five times
Only one potential cause-effect chain can be analysed at a time. If at the start you or members of your team can think of more than one potential cause of a problem, do asking why for each cause identified or switch to doing a fishbone diagram.
1. Write down the problem and the question 'Why?' five times in sequence.
2. Name what you think is contributing to the situation as described. Write down the one potential cause.
3. Consider the one potential cause that you wrote down and then name what you think is contributing to that one potential cause. Write down one explanation.
4. Consider the one explanation you wrote down and name what you think is contributing to the situation contained in the explanation. Continue until you have answered five times or you have reached the explanation which you think is the 'true' one.
5. Use your conclusion to develop an action plan to address the true cause of the problem.

Practise doing asking why five times

Choose one of the problems you identified earlier from either or both of the clinical audit findings on pages 28 to 30. Try using asking why five times to identify what might be causing the problem.

Asking why five times

Problem: ....

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Why? ....

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Why? ....

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Process mapping

The value of process mapping is to see the nature and timing of the steps that make up how work is done and see how the work process can be improved. The term is defined in the box and guidance follows.

Term	Meaning
Process map (flow chart)	A **picture** of a process that **shows in sequence every major step** in the process including decision points and loops in which steps may have to be repeated

How to do a process map

1. Decide what is to be process mapped and the level of detail needed for your purposes.

2. Use a flip chart or large piece of paper to draw the map. Alternatively, write steps on post-it notes and stick them on a flip chart or wall as you work.

3. Agree on the start point and the end point of the process.

4. Agree on the symbols to be used in the process map if you are doing a detailed map.

5. Describe the process. It may be desirable to list major activities quickly, then go back and draw a more detailed process map.

6. Note any areas of uncertainty in how the process works or areas where you need to verify or investigate what happens.

7. Identify where improvements in the process could be made.

8. Decide on actions to take to follow up on the process map.

Practise doing process mapping

Choose one of the problems you identified earlier from either or both of the clinical audit findings on pages 28 to 30. Try using a process map to clarify how the work process involved in the cilnical audit standards could be described in a process map.

Process map

Module 5 — Planning and taking the right actions to achieve improvement

Learning objectives

By the end of this module, you should know how to:

- identify the improvement(s) to be achieved and strategies for achieving improvement(s)

- plan action to achieve an improvement shown as needed by clinical audit findings.

How to figure out what's needed

Distinguish between an action needed to overcome the cause(s) of a problem and the improvement that should come about as a result of the action.

Term	Meaning
Action	What has to happen to eliminate or minimise the effect of the cause — a **process** that has to take place
Improvement	The expected or desired performance to be achieved and maintained — an **outcome** of the action process

The I–M–P–R–O–V–E–S model

Changing practice to achieve an improvement involves the following:

- having a logical and systematic process to achieve and maintain the desired change

- using the right strategy(ies) to achieve the desired change and carrying out the strategy(ies) effectively

- being consistent in following the process and the strategy(ies).

A model for achieving and maintaining improvement is in the box on the next page.

Stage	Meaning
IDENTIFY the specific needed improvement	Describe the **exact improvement** in patient care that is needed. Recognize that what is happening now may not work consistently to achieve desired benefits for patients.
MOULD opinion to favour the improvement	**Reach consensus** among key stakeholders **on** the desirability of **achieving the improvement**.
PREPARE for a new way	**Select a strategy** to achieve the improvement **and plan** carefully how the strategy will be implemented.
REDESIGN or design the new way	**Design the new way**, that is, **the change**, needed to achieve improvement, including redesigning any care process(es) involved.
OPERATE the new way	**Try out** the new way exactly as it has been designed or redesigned.
VERIFY that the new way works	**Measure the effects** of the new way — the change — to see if and how it is working, that is, if it is achieving the improvement.
ELIMINATE unwanted variation in the new way	**Identify any unacceptable variation** in the new way and how it is affecting the improvement and make adjustments accordingly.
STABILISE the new way	**Maintain** the new way and/or extend its implementation. **Monitor and take action** on any variations. **Feed back** achievement of the improvement to everyone concerned.

How to identify an improvement

There are two parts of the first stage of an improvement process as described in the box.

Part	Meaning
Express the improvement clearly	The **exact outcome** to be achieved, preferably expressed in measurable terms, for example, the percentage of times that a desired or undesired event or situation will occur **if the intended change is successful**
Identify the types of changes needed	The **nature of what has to change** to achieve the improvement and who is involved

Types of changes are described in the box on the next page.

Term	Meaning
Attitude	**View or opinion** held by people involved, eg, staff, patients, service users, carers or others, about an improvement, a way of working or making any change
Value	A **basic belief** that shapes the way someone approaches a situation, for example, work or possible changes in a way of working
Behaviour	The overt **steps, tasks or actions** that someone carries out in doing work
Processes	The **way** the **work** itself **is usually organised** and carried out in an organisation
System	An **interdependent group of processes** with a common purpose

You can achieve some improvements by acting on only one type of change, eg, changing the way a process works. Other changes are more complex and may require changing attitudes and behaviours as well as redesigning the systems people follow.

How to mould opinion to favour an improvement

Identify the individual(s) and/or group(s) whose support for change is essential or important. Learn the views or opinions held by these individuals or groups. Proceed to preparing for change only when most of those involved support the idea of change.

You can use any of the techniques described in the box to identify and facilitate changing attitudes or opinions of people involved in a change.

Technique	Use
Focus group	Find out people's current attitudes about the improvement and the change that might be involved. Find out people's previous experiences related to the improvement and/or change, both positive and negative. Test possible strategies for changing people's attitudes and/or behaviours.
Force field analysis	Involve people in identifying and judging the strength of 'driving' forces and 'restraining' forces relating to the change. Help people to anticipate potential positive and negative effects of the change and to reach consensus on whether or not to proceed with change.
Opinion leader	Discuss the need to change and benefits of the improvement with healthcare professionals, in educational settings and individually (often referring to available research evidence). Provide feedback to healthcare professionals on actual practice patterns compared to the desired improvement.

Practise identifying an improvement and moulding opinion

Refer to the problems and causes identified for one or both of the clinical audits that follow. Decide how you would describe the improvement to be achieved and how you could mould opinion to favour achieving the improvement.

1.   Problem statements on clinical audit on observations

11% of patients **did not have** mental status, physical status and presence or absence of risk behaviours documented at least once every shift for the first 72 hours following admission.

15% of patients **did not have** the level of observation to be carried out in the first 72 hours following admission recorded in the patient care plan within 2 hours of admission.

26% of patients **did not have** mental status, physical status and presence or absence of risk behaviours documented at least once every shift for the first 72 hours following admission **and did not have** the level of observation to be carried out in the first 72 hours following admission recorded in the patient care plan within 2 hours of admission.

How would you describe the exact improvement you would want to achieve for one of the problems? Include the percentage of patients and the aspect of care that you want to happen (or not happen). ....

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Who might be the key stakeholders who have to favour achieving the improvement, that is, would have to be supportive of any changes in practice? ....

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How could you (or the group carrying out the clinical audit) influence the key stakeholders to favour achieving the improvement? What points could you make that favour the improvement and what approaches could you or the group use to influence the stakeholders? ....

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2. Problem statements on clinical audit on patient information

16.7% of patients **did not state** that s/he feels confident about managing the diabetes.

25.6% of patients **did not state** that the communication about diabetes has been the following:
(a) provided just before or just when it was needed **and**
(b) delivered in a non-judgemental way **and**
(c) interactive (two-way) **and**
(d) supportive and motivational.

31.1% of patients **did not state** that s/he feels confident about managing the diabetes **and did not state** that the communication had met the standards for communication.

How would you describe the exact improvement you would want to achieve for one of the problems? Include the percentage of patients and the aspect of care that you want to happen (or not happen). ....

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Who might be the key stakeholders who have to favour achieving the improvement, that is, would have to be supportive of any changes in practice? ....

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How could you (or the group carrying out the clinical audit) influence the key stakeholders to favour achieving the improvement? What points could you make that favour the improvement and what approaches could you or the group use to influence the stakeholders? ....

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How to prepare a strategy for change

Prepare for change by carrying out the following.

- Reaffirm or amend the desired improvement to reflect what you learned through moulding opinion of those involved

- Prepare a clear statement of the benefits of achieving the improvements to patients, staff or others and the main barriers or constraints that will have to be addressed.

- Investigate, if necessary, if any of the barriers or constraints are sufficiently serious to justify modifying or abandoning the attempt to achieve improvement.

- Reaffirm or amend who will need to be involved in the change process and how.

- Reaffirm or amend the type(s) of change involved, eg, attitudes, processes, etc.

Some possible strategies for achieving change are described in the box. Use as many strategies as possible.

Term	Meaning
Feedback	Providing **information** to those involved in an aspect of care **on** their **current performance** (sometimes in comparison to others)
Education	A variety of **interventions** including **educational** workshops, meetings, lectures, educational outreach visits or the distribution of educational materials
Clinical guideline	A **systematically developed statement to** assist healthcare professionals and patients **make decisions** about appropriate health care for specific circumstances
Consensus-building	Working directly with those involved to **reach agreement** on the practices or processes to be carried out
Reminder system	Any patient- or clinical encounter-specific information provided verbally, in writing, or by computer, to **prompt a clinician to recall** information or consider a specific process of care
Opinion leader or outreach visit	Using a credible individual to **influence colleagues** to change their practice; also to influence others in another service or organisation to change practice
Patient education, self-management or reminders	**Teaching patients directly**, individually or in a group, or using educational materials developed for patients. Self-management approaches are intended to enhance patients' ability to manage their conditions. Reminders are intended to encourage patients to keep appointments or follow other aspects of the self-management of their conditions.
Process or system redesign	**Changing** (usually substantially) **the way work is done** now through a process or system
Quality improvement	Using tools and techniques for **measuring** the **quality** of patient care, designing and **implementing interventions to achieve improvement and remeasuring** to evaluate achievement
Team building and/or team leadership	Helping individuals involved to **form an effective team** and use teamwork to achieve an intended change, which may include preparing one or more individuals to **lead** a team and/or the work on the intended change

How to redesign the way is provided

Planning redesign should include making the following decisions.

- **What** is the exact behaviour, process or system needed for the improvement?

- **Who** is involved in the behaviours, process or system and who is assuming responsibility for managing the change?

- **How** will the behaviour, process or system be redesigned or designed?

- **When** will the behaviour, process or system be redesigned or designed?

How to operate the new way

Consider carrying out a formal pilot test of a change process, following these steps.

- Define the specific objectives of the pilot.

- Define how achievement of the objectives of the pilot will be measured and evaluated.

- Develop and carry out the process for measuring the effects of the change.

- Devise and implement a detailed plan for operating the change on a pilot basis.

- Monitor carefully and continuously implementation of the detailed plan and make any adjustments needed to complete the pilot.

How to verify that the new way works and eliminate any unwanted variation

Measure performance during the pilot, including the following:

- Use the data generated by the measurement carried out during the pilot to evaluate the following: Is the change achieving the desired improvement and if not, is it known why it isn't? Is the change being implemented consistently and if not, is it known why it isn't? Is the change producing any unintended negative side effects and if so, can these be eliminated or reduced?

- Identify any variation that occurred during the pilot.

- Find the type of cause of any unwanted variation.

If an unwanted variation occurred during the pilot, act on the type of cause of the variation and make any adjustments needed to the new way. Implement the adjustments and continue to monitor implementation for unwanted variation and analyse any variation that occurs.

How to stabilise implementation of the new way

When unwanted variation has been identified and dealt with, implement the change throughout a service as it was originally intended and continuously measure the effects of the change. Key points about how to stabilise change are as follows.

- Ensure that the plan for implementing full-scale change is just as carefully and completely developed as it was for a pilot.

- Measure rapidly and continuously the effects of the change on achieving the desired improvement.

- Provide feedback for all those involved on how the change is going and the benefits of the change.

- Continue to make adjustments as needed to continue to eliminate unwanted variation and to maintain the improvement over time.

Practise planning to achieve an improvement

Try out the I-M-P-R-O-V-E-S model to plan achieving an improvement for one of the clinical audits you have been working on.

The improvement ....

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The types of change involved

❏ **Attitude** ....

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❏ **Value** ....

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❏ **Behaviour** ....

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❏ **Process** ....

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❏ **System** ....

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How could you carry out the following?

Mould opinion ....
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Prepare a strategy for change ....
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Redesign current practice ....
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Verify that the new way works ....
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Eliminate unwanted variation ....
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Stabilise the new way ....
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Module 6 — Checking if improvement was achieved

Learning objectives

By the end of this module, you should know how to:

•   repeat data collection for a clinical audit

•   follow up on the findings of repeat measurement of the quality of care and take appropriate further action.

How to see if improvement has been achieved

Repeat data collection to assess the effectiveness of action – the Verify step in the I-M-P-R-O-V-E-S model. Key principles for repeating data collection in a clinical audit are in the box.

Principles for repeat data collection	Explanation
Successive measurements must be capable of being compared with the data collected earlier to demonstrate the effect of actions.	The before-after clinical audit standards and the data collection process must produce valid and reliable data if valid conclusions are to be drawn about improvement.
Data collection need not be repeated for all standards.	Some standards used initially may have shown that current practice is excellent. All the standards might not need to be repeated.
Reliability of the data being used for comparison purposes must be ensured.	You will have to pay careful attention to the cases selected, the data collection method, the clinical audit standards, the preparation of people collecting data, the consistency of directions for data collection and/or interpretation and the consistency of analysis of the data.
Repeat data collection should occur as changes are being implemented or as soon as possible after they are implemented.	Prompt repeat data collection gives you rapid feedback on the impact of changes and the opportunity to adjust the action plan if the data show that the change is not effective.
It may be desirable to test statistical significance.	You may wish to use statistical tests on the before-after findings to see if there is a statistically significant effect of the change.

How to plan repeat data collection

When you are planning repeat data collection following the implementation of any changes made as part of a clinical audit, consider all of the following questions.

- How many times should the repeat data collection take place, ie, is one round of repeat measurement likely to be enough or will it be desirable or essential to collect data several times?

- Is it essential or desirable to use all of the same clinical audit standards that were used for the initial data collection?

- Is it practical to use all the same clinical audit standards?

- If the audit design or data collection protocol is changed in any way, will the validity or reliability and comparability of the data collected be affected?

- Are there important aspects of patient care or service that should be measured on a periodic or a continuous basis?

Answering each of the questions involves making judgements based on the initial findings and the clinical significance of the audit standards used.

How to follow up on the findings of repeat data collection

Guidance for following up on the findings of repeat data collection for a clinical audit is in the box.

> **How to follow up on findings of repeat data collection for a clinical audit**
>
> 1. Compare the previous findings of the clinical audit with those of repeat measurement.
>   - **If** there is **improved** compliance with the audit standards, **decide if** the degree of improvement is **acceptable**.
>   - **If** the degree of improvement is **acceptable**, **share the findings** with everyone involved, take any needed actions to ensure that the 'new way' becomes the 'usual way', and decide if and when data collection will take place again to **ensure** the **gains** are being **maintained**.
>   - **If** there is **no improvement or** the degree of improvement is **not acceptable**:
>   – **Identify** the **problem(s)** revealed by the repeat data collection **and** the **cause(s)** of the problem(s), which may include that the action to bring about improvement has not been done or has not been carried out as planned.
>   – **Develop** a **plan** to address the cause(s) of the problem(s) revealed by the repeat data collection, including to remeasure again after further action is carried out.
>
> 2. **Document** all the work carried out for the clinical audit.
>
> 3. **Assess** the **effectiveness of the clinical audit**, particularly what you have learned about carrying out the clinical audit process.

Practise planning for repeat data collection

For one or both of the clinical audit situations in your book, decide how you would repeat data collection. Consider when you would collect data again, if you would collect all the data collected the first time, and how you would interpret the findings of the repeat data collection.

1. **Recording of observations for patients newly admitted to a mental health facility**

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. For the first 72 hours after admission, at least once every shift, a summary of the following about the patient is documented: (a) mental status **and** (b) physical status **and** (c) presence or absence of any risk behaviours	100% of shifts for (a) – (c)	None	See the patient record. 'Mental status' means, for example, orientation, mood, attitude. 'Physical status' means, for example, speech, movement. 'Risk behaviour' means, for example, suicide attempt, self-harm or attack on others or ideas about harming self or others.
2. Within 2 hours after admission, the patient's care plan states the level of observation to be carried out for the first 72 hours following admission	100% of patients	None	See the patient's record. 'Level of observation' means General Observation, Intermittent Observation, Within Eyesight Observation and Within Arms Length Observation.

Findings from data collection and case review

Standard	From data collection Met Criterion n	From data collection Met Exception n	From review Passed Review n	Cases to which the standard applied	Percentage compliance with standard	Cases not meeting the standard or passing review
1	168	0	10	200	89%	22
2	156	0	14	200	85%	30
All	142	0	6	200	74%	52

Action has been implemented to address the causes of the problems identified.

For purposes of making decisions about repeat data collection, assume that the last stages of the action were completed 3 weeks ago.

When would you plan to repeat data collection for the audit? ....
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Would you collect all the data collected the first time or make any changes in the plan for data collection? ....
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How you would plan to interpret the findings of the repeat data collection? ....
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2.   **Communicating with patients about their condition and treatment for type 2 diabetes**

Clinical audit standards

Criterion	% compliance desired	Known exceptions	Definitions and instructions for data collection
1. The patient states that s/he feels confident about managing the diabetes	100% of patients	None	See the responses to a patient survey questionnaire. Examples of confidence and managing diabetes are in the questions. The patient indicates 'agree' or 'strongly agree' on a 5–point scale where the other choices are 'neither agree nor disagree', 'disagree' and 'strongly disagree'.
2. The patient states that the communication about diabetes has been the following: (a) provided just before or just when it was needed and (b) delivered in a non-judge-mental way and (c) interactive (two-way) and (d) supportive and motivational	100% of patients for (a) – (d)	None	Same as above. Examples of non-judgemental, interactive, supportive and motivational are in the questions.

Findings from data collection and review of neutral or negative ratings

Standard	From data collection Met Criterion n	Met Exception n	From review Passed Review n	Cases to which the standard applied	Percentage compliance with standard	Cases not meeting the standard or being acceptable
1	70	0	5	90	83.3%	15
2	59	0	8	90	74.4%	23
All	52	0	10	90	68.9%	28

Action has been implemented to address the causes of the problems identified.

For purposes of making decisions about repeat data collection, assume it has taken some time to develop and produce a learning package for staff to use with patients and that the last stages of implementing action were completed last week.

When would you plan to repeat data collection for the audit? ....

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Would you collect all the data collected the first time or make any changes in the plan for data collection? ....

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How you would plan to interpret the findings of the repeat data collection? ....

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