The Powers and Pitfalls of Measurement for Improvement

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Measurement for Improvement Team, QID

Today's Presentation

▶ Framework for Improving Quality

▶ Measurement for Improvement – definition and vision

▶ 7 steps and associated pitfalls to effective measurement for improvement

▶ Recap!

▶ What next

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The Framework for Improving Quality

- ▶ Six Key Success Factors/Enablers/Drivers

- ▶ When combined together create the environment and acceleration for improvement

Baseline

Identify Measures

Regular recording of data

Implement change

Trends

Test

QIPs

Is a change an improvement?

Microsystems workshop 21st Feb 2017

Measurement for Improvement is the analysis and presentation of qualitative and quantitative data in a format that allows us to:
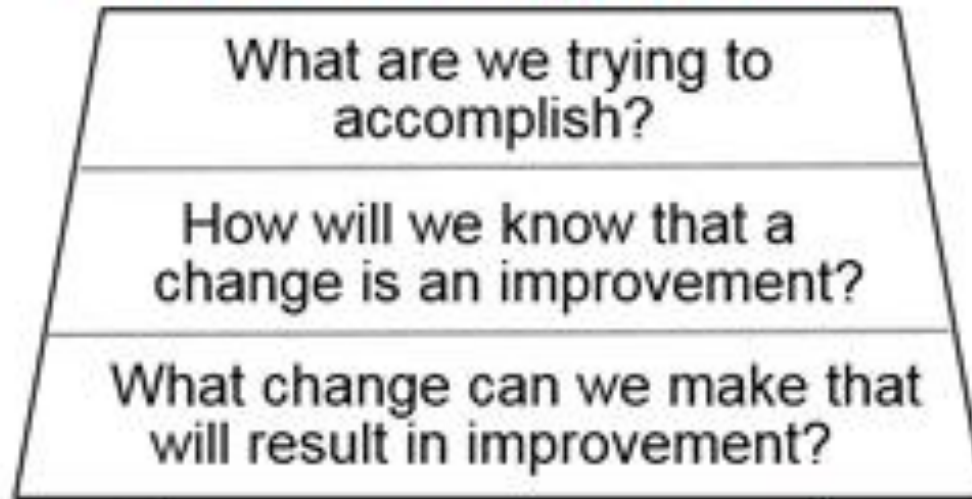
▶ Identify opportunities for improvement

And

▶ Demonstrate when a change has resulted in an improvement

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Our Vision for Measurement for Improvement:

"Quality of care is improved by the routine use of the right information, being measured in the right way to make better decisions"

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Act | Plan

Study | Do

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Not all change is an improvement

"All improvement will require change, but not all change will result in improvement"

G.Langley et al., The Improvement Guide, 1996

Measurement is not improvement but it is **necessary to answer if our change efforts have resulted in improvement** (this can be at specific project level or whole organisational level)

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Different Levels of Measurement for Improvement

1 ▶ PDSA cycle Level

2 ▶ Quality Improvement Project Level

3 ▶ System or Organisation Level

7 steps to effective Measurement for Improvement

1. **Is there an Opportunity to Improve?**
2. **Choose Measures**
3. **Plan Measurement**
4. **Collect Data**
5. **Analyse and Display data**
6. **Interpret and Present findings**
7. **Evaluate Measures**

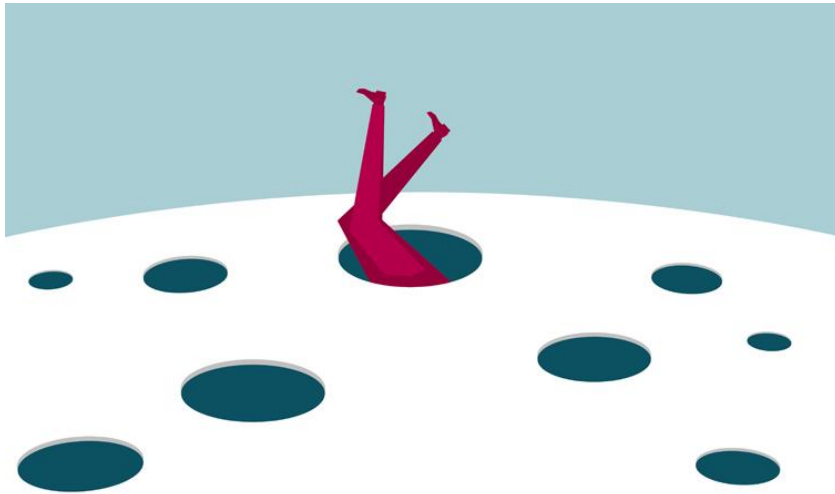Measurement for Improvement Team
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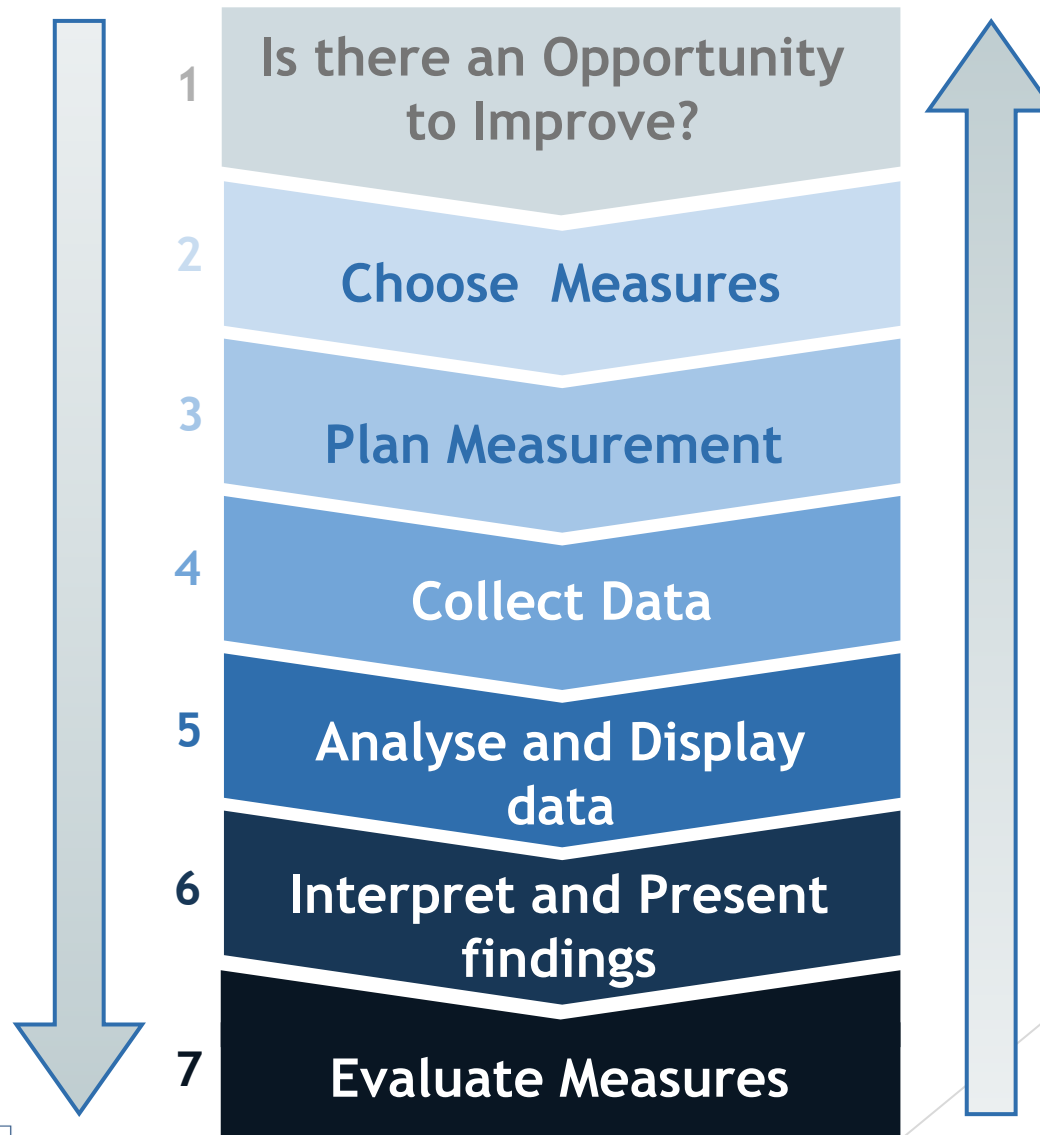
Pop Quiz

▶ Three calico cats (coloured Orange, Black and White) are left in the local animal shelter.

▶ What are the chances that all three are female?

(a)   one in eight

(b)   one in six

(c)   one in three

(d)   greater than 99 percent

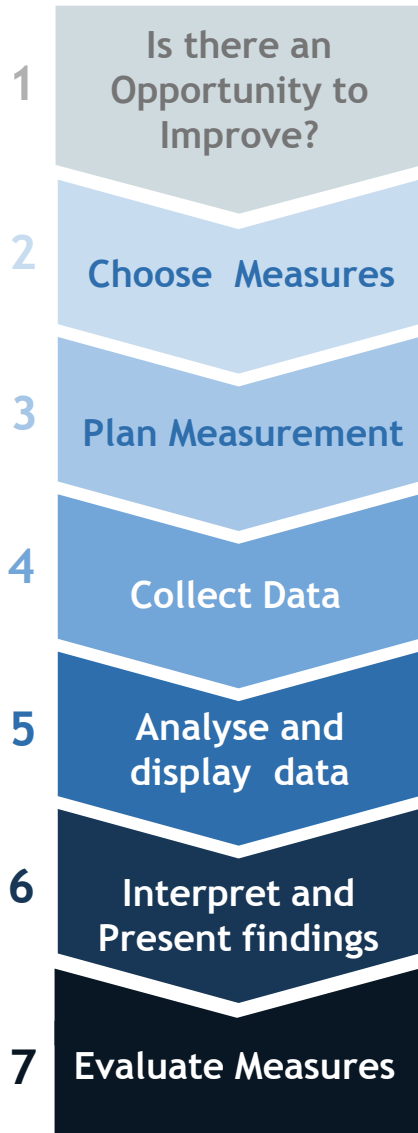# And the answer is…

(d)   >99%

Pitfall:
Not involving Subject Matter Experts (both data and clinical) from the start and throughout any improvement project

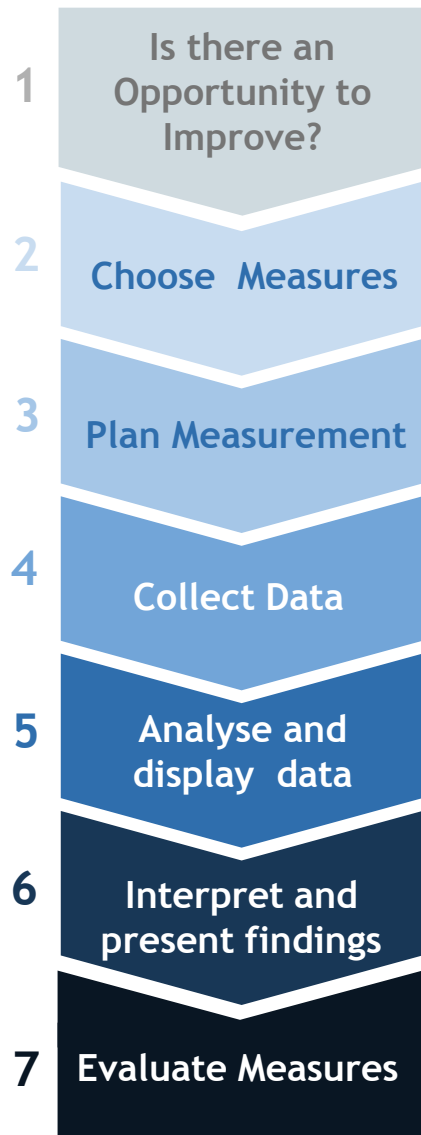|	
1	**Is there an Opportunity to Improve?**
2	**Choose Measures**
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4	**Collect Data**
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Is there an opportunity to improve?

▶ If you are going to practice measurement for improvement, you need to know that there is an opportunity for improvement

▶ In some cases, data is available which suggests there is a need to improve

▶ In others, Subject Matter Experts have a hunch there is a problem or have an idea for improvement
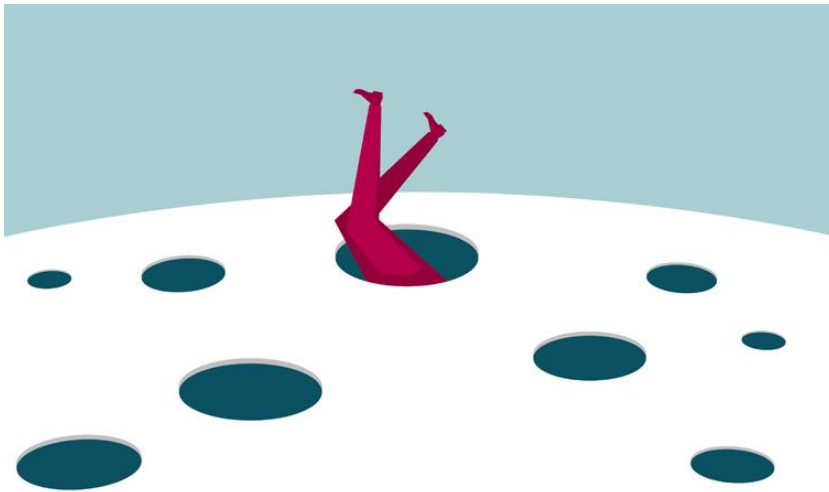
Pitfall: Trying to improve something that doesn't need to be improved or which you have no control over improving

|		
1	Is there an Opportunity to Improve?	
2	Choose Measures	
3	Plan Measurement	
4	Collect Data	
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6	Interpret and present findings	
7	Evaluate Measures	

Choose Measures

▶ Measure the Vital Few!

▶ Ensure the measures you choose are measuring what you intend and that the data will answer your question

- ▶ PDSA level – did change result in improvement

- ▶ Project level – did you achieve your aim

- ▶ Organisational level – understand how your system performing

  - ▶ Taking action when appropriate and not over-reacting to random variation in the data

Tool: Prioritising Measures of Quality of Care Checklist
https://www.hse.ie/eng/about/Who/qualityandpatientsafety/Measuringand
Learning/InformationandAnalysisTeam/prioritisation_checklist.pdf

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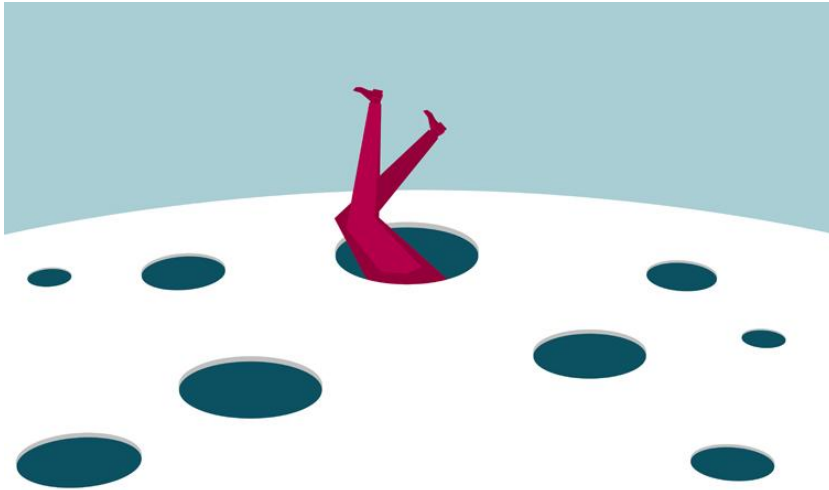
Pitfall: Choosing measures that don't specifically answer what you want to know, i.e. if you're achieving your aim

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Pop Quiz 2

What questioning technique will produce the answers you want?
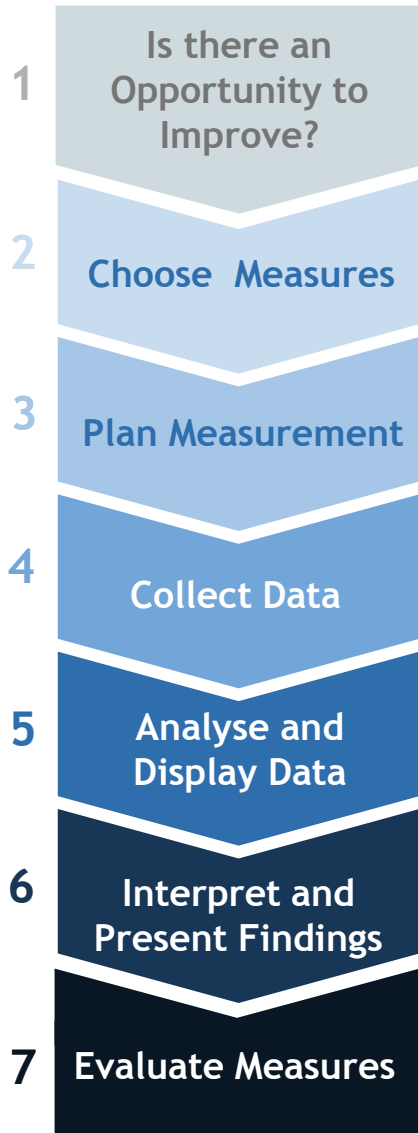
https://www.youtube.com/watch?v=G0ZZJXw4MTA

► Leading questions influence participant's responses and risk producing invalid data
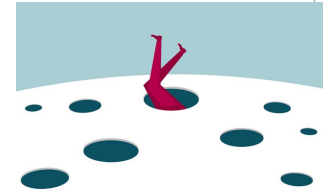
Top Tips:

► Use open questions– WHY?, HOW?, WHEN?

► Surveys are quantitative generally but adding open questions can collect qualitative information

► A small number of in-depth interviews may be more valuable than a large number of short surveys

► Video or audio recording interviews adds rigour

1	Is there an Opportunity to Improve?
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Plan Measurement

▶ This step is about defining very specifically **WHAT** you are measuring and describing the process of **HOW** to measure it

▶ Remember that not everything can be measured using numbers – don't overlook the opportunity that Qualitative measures provide

Measurement Plan Template (.xls)

Measurement Plan Template

A Measurement Plan is a tool that describes the rationale behind choosing a measure, the type of measure, the relevant definitions and how to collect and present the measure. In bringing all the relevant information together, it helps ensure that all members of a Quality Improvement Team have clarity on all aspects of measurement being carried out. Click here for more information from the NHS Scotland Quality Improvement Hub on using a Measurement plan.

Excel — Click here to link to download the Measurement Plan template in MS Excel.

Driver Diagram Templates

A Driver Diagram is a commonly used tool to plan Quality Improvement Projects. It allows users to identify the specific improvement activities (Primary and Secondary Drivers) that will help to achieve the Quality Improvement Project aim. Click here to access the NHS Scotland Quality Improvement Hub web page for more information on using Driver Diagrams. We have provided two Microsoft Word examples of Driver Diagrams below which may also be used as templates for other projects.

Word — Sample Driver Diagram: National Quality Profile: this example is taken from the National Quality Profile project.

Word — Sample Driver Diagram: improve your golf: this example is taken from a personal improvement project.

Do's and Don'ts of Measurement

There are a number of common problems that people encounter when describing aspects of measurement. This Powerpoint Presentation includes examples of some of the common mistakes people make inadvertently when dealing with measurement.
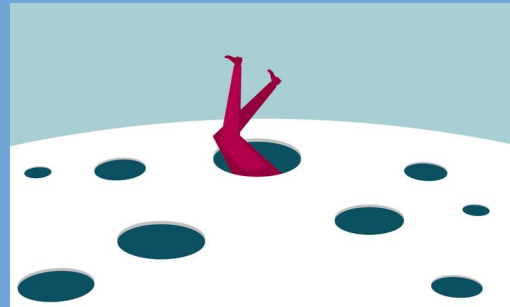
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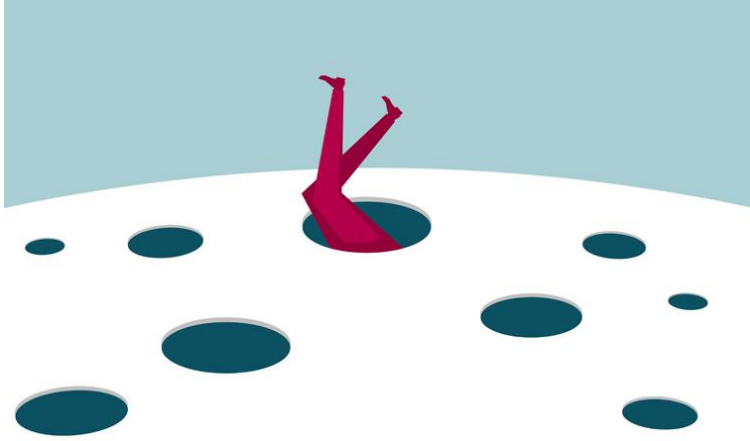
Pitfall: Badly (designed or collected) measures can at best be a waste of time, but at worst can be misleading and may lead to harm
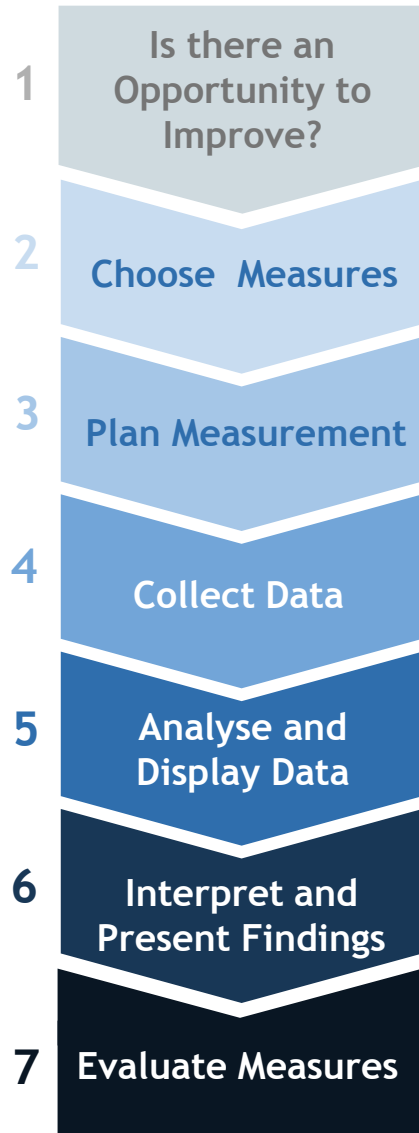
Collect Data

▶ The key message is consistency of data collection

▶ **Pitfall**: Assuming everyone will collect the data the same way

Top Tip: you should test your data collection plan and give time to collectors to discuss and check they know what to do - everyone needs to be familiar with the measurement plan

Baseline Information

▶ A baseline helps you to understand where you come from: how has your service performed up to now.

▶ Having a baseline allows you to begin to evaluate if changes have resulted in an improvement

▶ Without a baseline, it is more difficult to demonstrate if a change is an improvement at the beginning of a project

Pitfall: Delaying a project to get a baseline

▶ **<u>Don't delay</u>** the start of your project just so you can collect baseline data

Top Tip: Always check what data you have available - you may already have data that you can use as a baseline.

"Let's hold off making a decision until we have even more information we don't really need."

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Collect Data

▶ Make use of data collection systems that are already in place

  ▶ provided they collect the data you need

▶ What do you do if you have no data collection system?

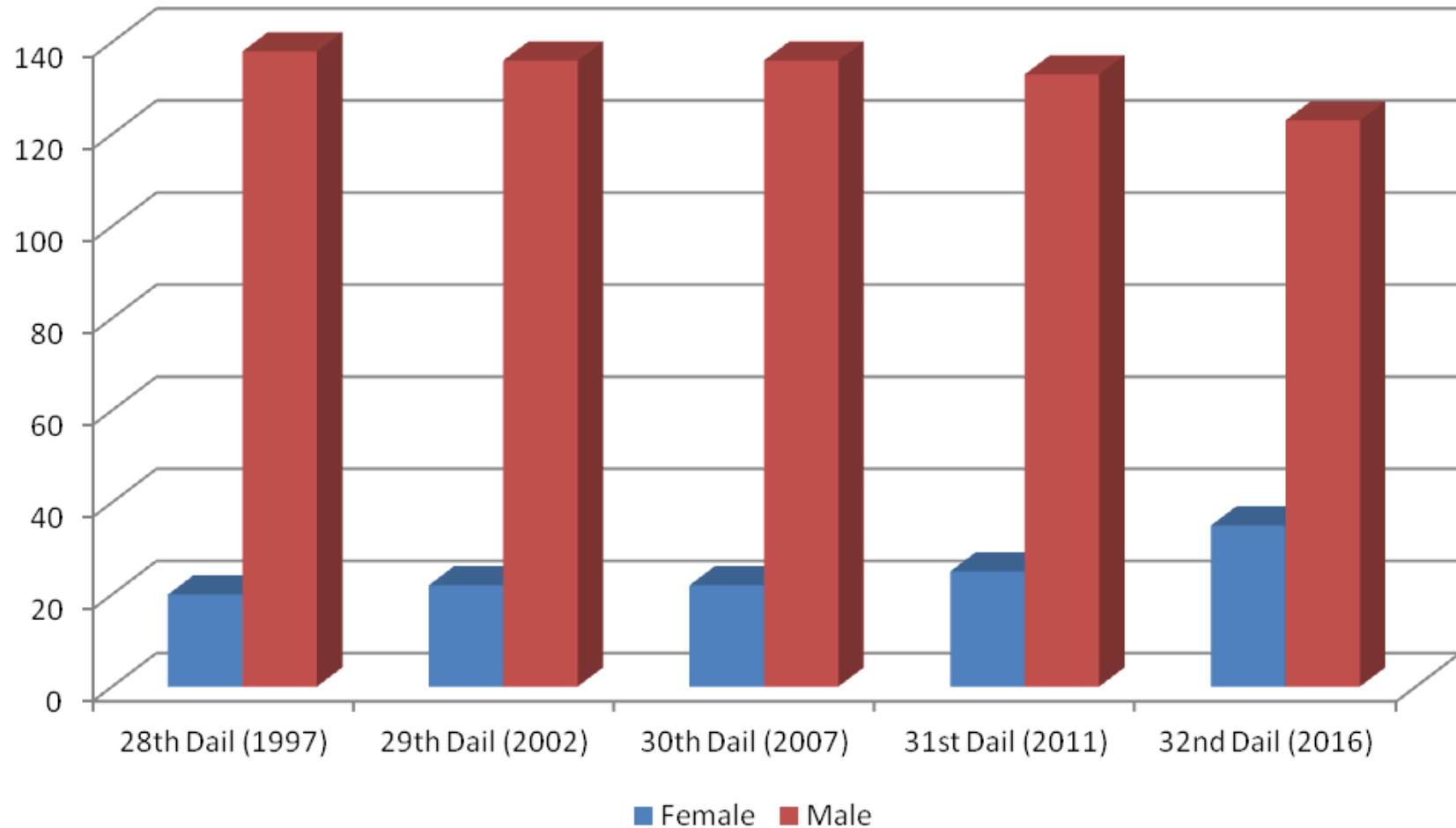 ▶ Sometimes it is as simple as Tick and Tally or a Safety Cross

	TALLY	FREQUENCY
Monday	|||||||||	8
Tuesday	|||||||||	9
Wednesday	|||||||||	17
Thursday	|||||||||	16
Friday	|||||||||	9
Saturday	|||||||||	19
Sunday	|||||||||	11

A story from Jennifer's life 'Down Under'

Pop Quiz 3

Q: How many Female TDs were elected to the 30th Dail (2007)?

A: 18   B: 19   C: 20   D: 22

► Lets take the example of a large hospital with an Emergency Department

► Management are concerned about the low compliance rate with a target:

  ► that no patient should wait more than 4 hours in the Emergency Department before being seen

► Management decide to introduce a Medical Assessment Unit

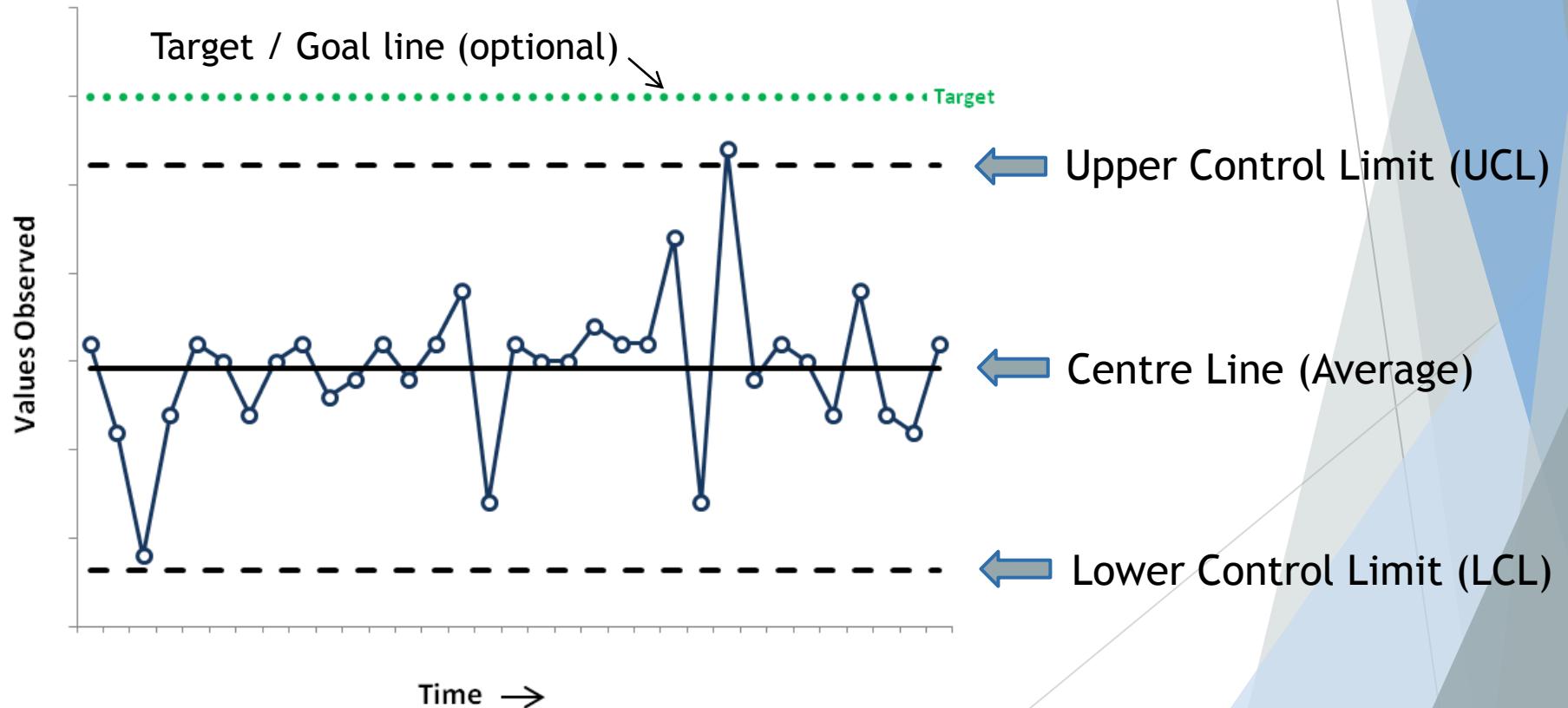► So staff gather data on % Compliance with the target from before and after the introduction of the MAU
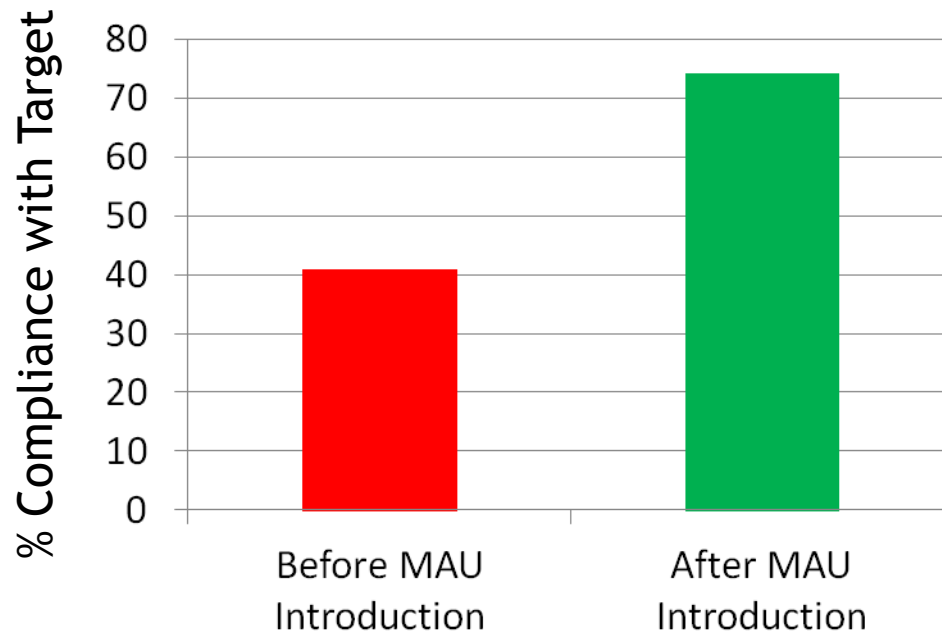
► They display the data using a Bar Chart

► Many claim the introduction of the MAU to be a resounding success

▶ But someone knows there is a better way to display the data...

Anatomy of an Statistical Process Control (SPC) Chart

Target / Goal line (optional) → · · · · · · · · · · · · · · Target

◁ Upper Control Limit (UCL)

Values Observed

◁ Centre Line (Average)

◁ Lower Control Limit (LCL)

Time →

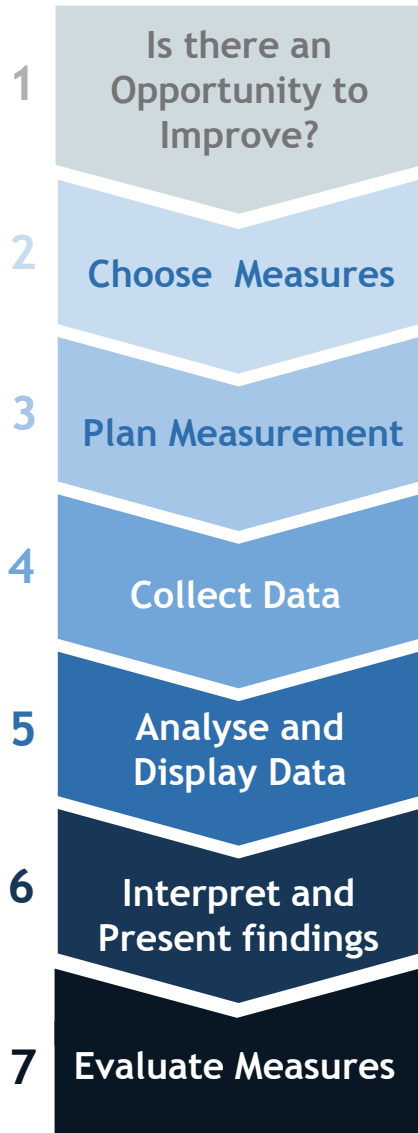# So what does the same data look like on an SPC Chart?

▶ Within a couple of weeks of introducing the MAU, two data **points above the Upper Control Limit** are observed (circled in red)

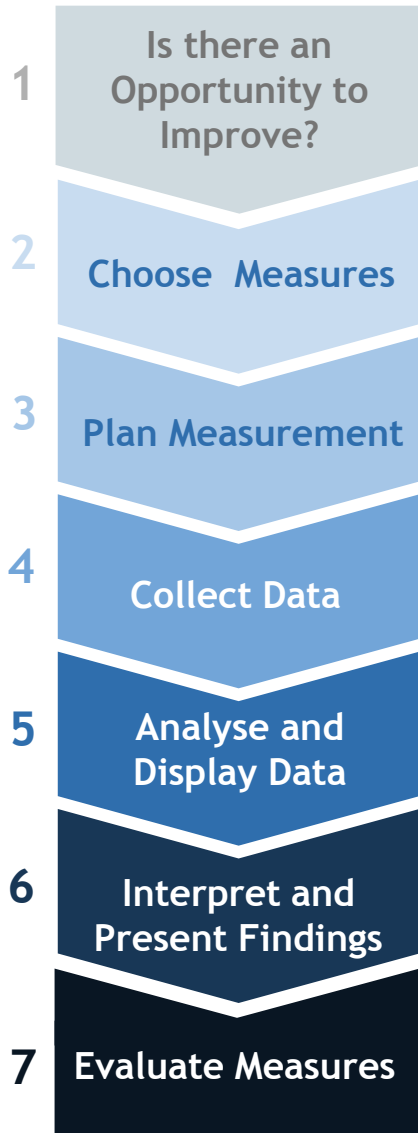▶ Following this, the data reverts back to a level similar to that before the introduction of the MAU
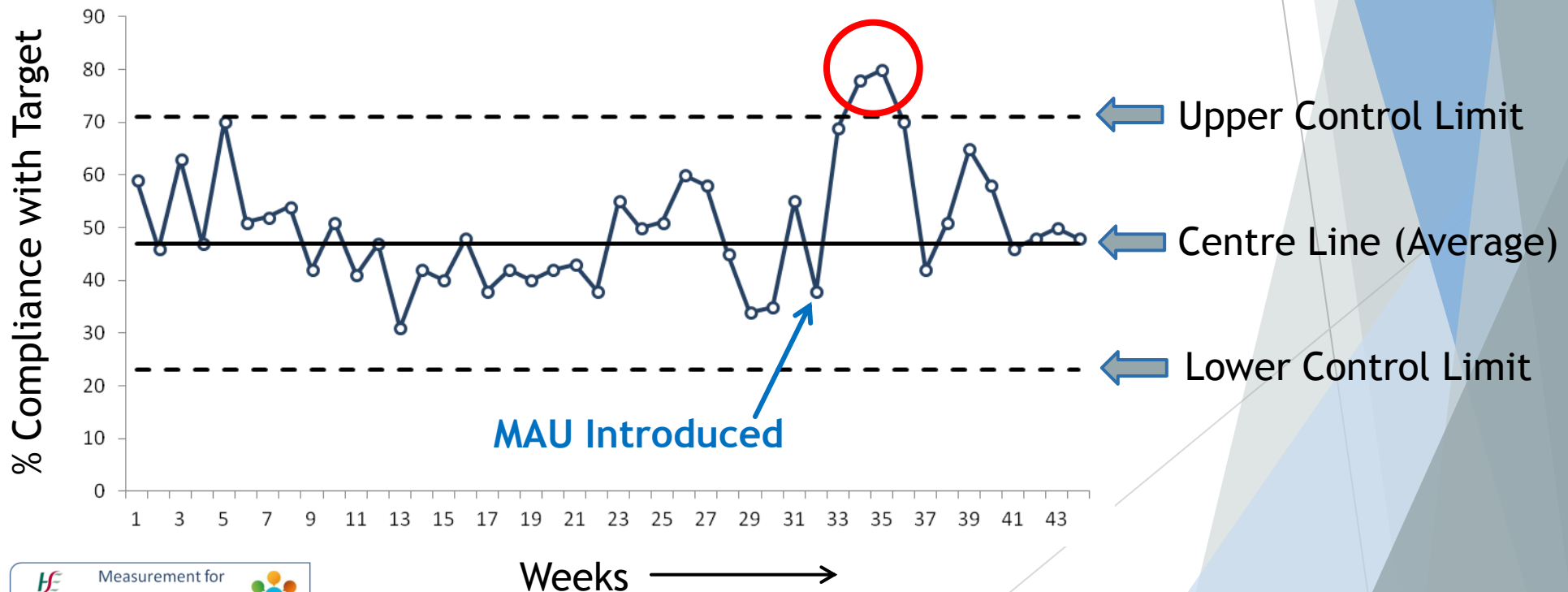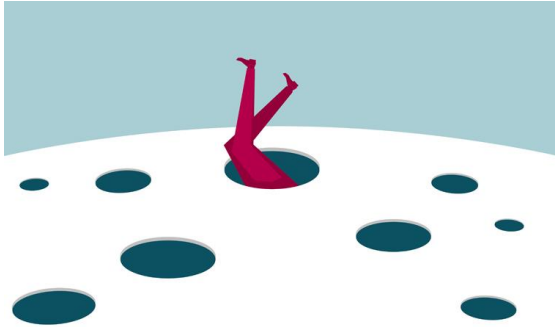
Pitfall

► Two data points (the before and after approach) are not enough to identify a trend – avoid falling into this trap

► Ideally use a Statistical Process Control Chart - it allows you to both look at change over time and to understand the variation that lives in the data

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Analyse and Display Data

▶ There are lots of ways to analyse and present data- it is important to remember to consider carefully which method of display you choose

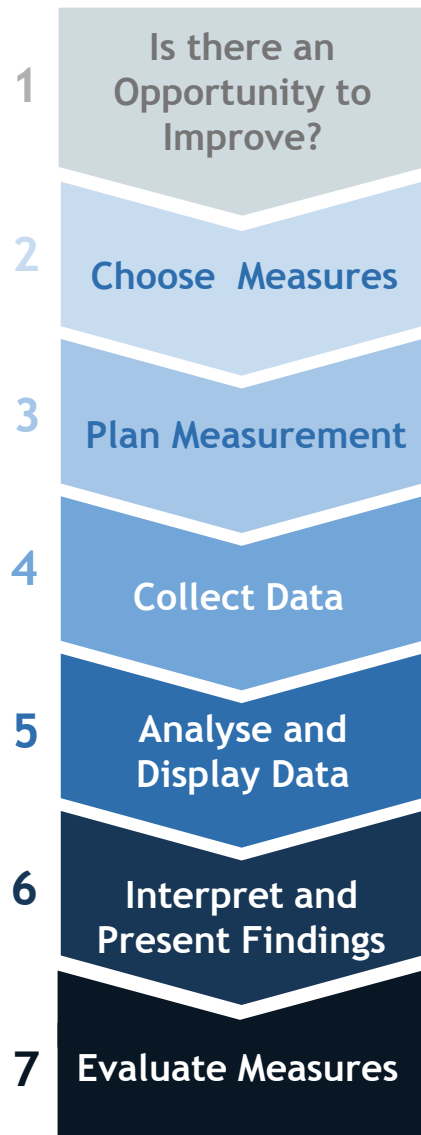▶ Use the right tool for the right job, and use it in the right way…

1	Is there an Opportunity to Improve?
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Interpret and Present Data

▶ It is not enough to have good data, analysed and displayed appropriately!

▶ It has to get to the right audience

▶ They have to be ready to receive it

"Information is a source of learning. But unless it is organised, processed, and available to the right people in a format for decision making, it is a burden, not a benefit"

William Pollard
(1828-1893)

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Evaluate Measures

▶ There are 2 aspects here

  ▶ Is the measure robust and does it consistently measure what it was designed to measure?

  ▶ Is the measure necessary? Is there still an opportunity to improve?

Pitfall: not doing this step!
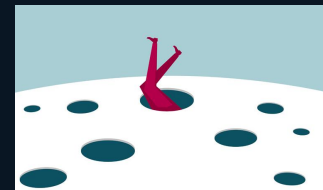
Top Tip: don't keep adding new measures to a system without evaluating which ones are no longer required

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Recap: The Power of (good) Measurement for Improvement

▶ To confirm you have a problem. Data to back up a hunch

▶ To know if your changes have resulted in improvement

▶ To differentiate chance/normal/random variation in data from changes that are non random

▶ To avoid over reacting to random variation and support appropriate and timely reaction to real changes

What Next

▶ Follow up sessions on specific aspects of Measurement for Improvement

▶ Join our network by emailing **QID-MIT@hse.ie**

▶ Email us with queries and requests for support

▶ Follow us on Twitter: **@QIMeasurement**

▶ Check out our webpage:

https://www.hse.ie/eng/about/Who/QID/MeasurementQuality/measurementimprovement/

Thanks!

▶ To you all for listening

▶ To the Measurement for Improvement Team

　　▶ Grainne Cosgrove, Gemma Moore and Joseph Reeves

▶ All those who have given us feedback on our workshops and other training and tools

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