EXAMPLE PROJECT ON RADIOGRAPHY

2.1 What is the problem that we are trying to solve?
Poor quality radiographs within the practice

2.2 Why is this problem important?
Dental radiographic examinations represent one of the most frequently undertaken radiological investigations in the UK. A recent survey estimated that dentists were taking 19 million intra-oral radiographs each year and more than 2.9 million panoramic radiographs. The effective dose delivered to the patient is very small but the collective dose is significant because of the large number of radiographs that are taken.

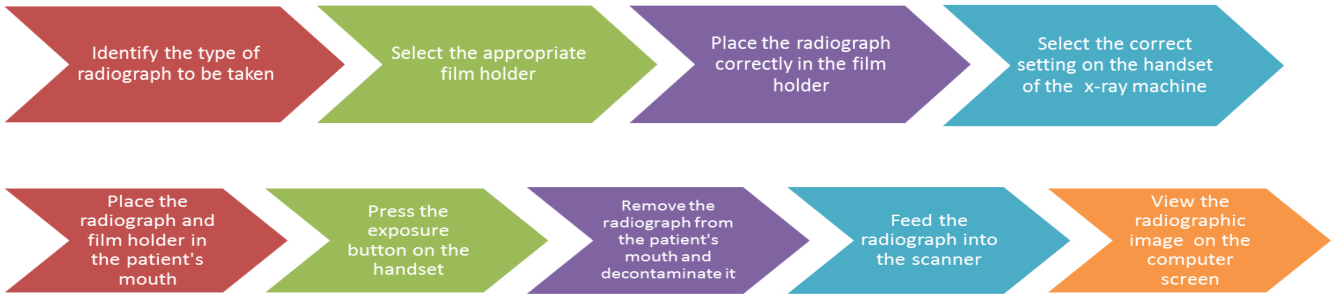
X-ray exposure involves risk to the patient. It is essential that any x-ray examination should show a net benefit to the patient, weighing the total diagnostic benefits it produces against the detriment that the exposure may cause. Therefore it is very important that the radiograph is of high quality to maximise the diagnostic yield.

2.3 What would happen if the problem was solved?
All radiographs taken in the practice would have a QA image rating of 1 and therefore would have a high diagnostic yield and benefit to the patient.

2.4 How would we measure that the implemented change will make an improvement to the quality of radiographs in the practice?

Record the QA image ratings of all the radiographs in the practice before the change is implemented and after the implementation of the change. The QA image ratings would be shown on a run chart.

2.5 How do you decide what change would resolve your problem?
Can you make a change to the process/ procedure in which the problem has been identified? Develop a process map of the steps involved in taking a dental radiograph within your practice.



Develop a method of collection of QA data within the practice

Subjective quality rating of radiographs

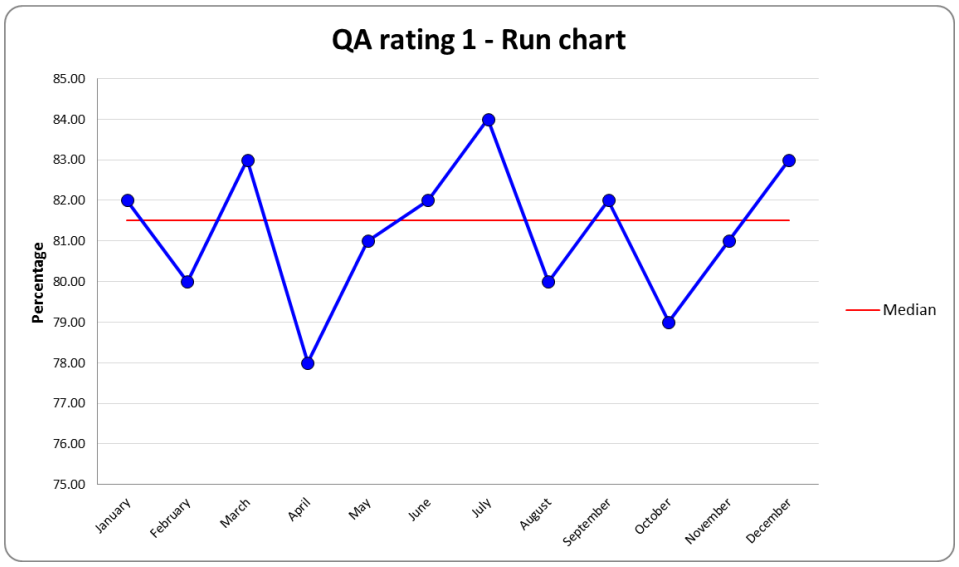
Rating	Quality	Basis
1	Excellent	No errors of patient preparation, exposure, positioning, processing or film handling
2	Diagnostically acceptable	Some errors of patient preparation, exposure, positioning, processing or film handling but which do not detract from the diagnostic yield of the radiograph
3	Unacceptable	Errors of patient preparation, exposure, positioning, processing or film handling which render the radiograph diagnostically unacceptable

It is important that if the radiograph is given a QA rating of 2 or 3, the reason for the error is recorded. The error codes for radiographs will inform the discussion of possible changes to implement to improve the quality of the radiographs in the practice.

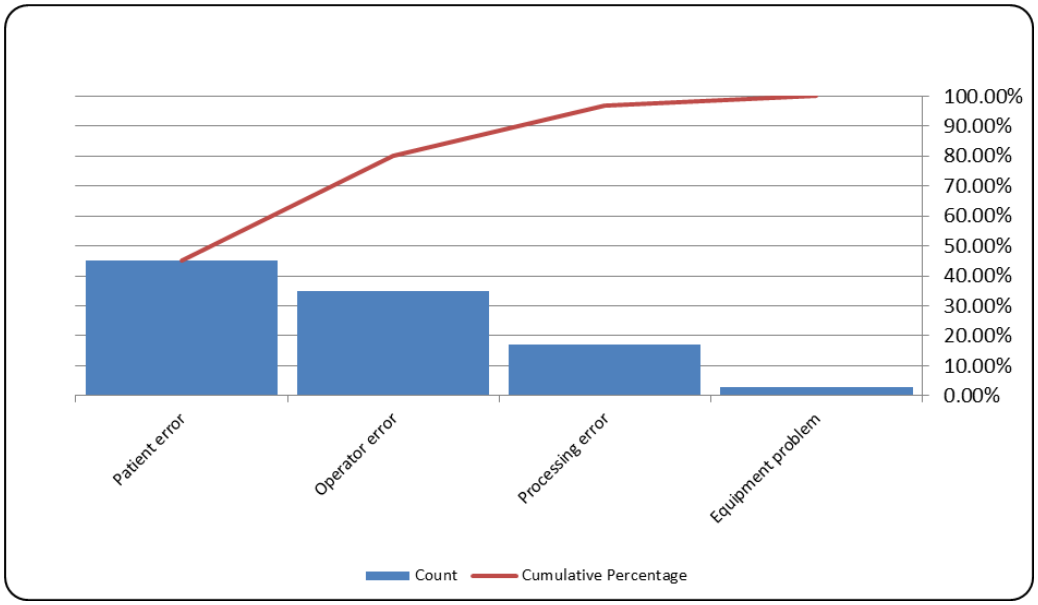
Data collection sheet for QA data and error codes

Date	Name of patient	QA rating	Error	code	QA rating	2 or 3
			Patient error	Operator error	Processing error	Equipment problems

Depending on the size of the practice and number of patients seen on a monthly/ weekly basis express the QA data in the form of a run chart.



The error code information can be expressed on a pareto chart to show the most common cause of a QA rating of 2 or 3



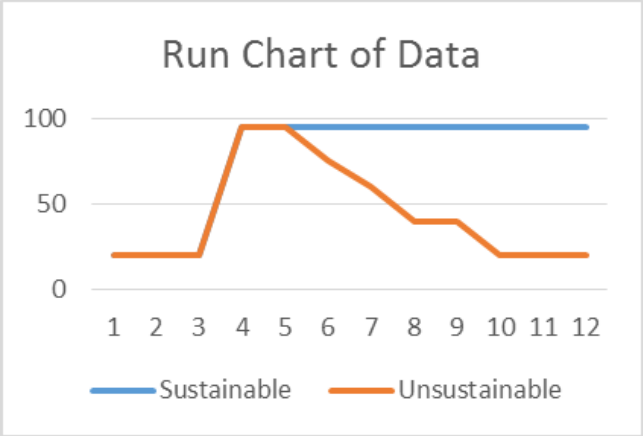
Implement change to improve the quality of the radiographs

Discussion at practice meeting, using the information from the process map, QA run charts and the error code pareto chart to develop a list of changes that could be implemented to improve the quality of the radiographs.

Using the PDSA model, implement the change and monitor the process and the outcome

Review the QA run charts to see if the implemented change has resulted in an improvement in the quality of the radiographs

It is also important that if the implemented change has resulted in a SUSTAINABLE improvement



The continuous data collection and representation of the information in the form of a run chart will clearly illustrated if the resultant change is sustainable or unsustainable.

The process of Quality Improvement facilitates, using the run charts, the continuous collection of data and therefore allows on-going monitoring of the QA of the radiographs in the practice.

Any further changes that are implemented to improve the quality of the radiographs should follow the PDSA model.


Act
Plan
Study
Do