

SILVER LEVEL IQT

**A QUALITY IMPROVEMENT PROJECT ON
STANDARD OF RADIOGRAPHS AT ST DAVID'S
HOSPITAL**

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What is Quality?



“Degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”
(Institute of Medicine, 1990)



Why carry out quality improvement?

A number of reports have highlighted a lack of safety within healthcare services. This has led to poor patient experience and outcomes.

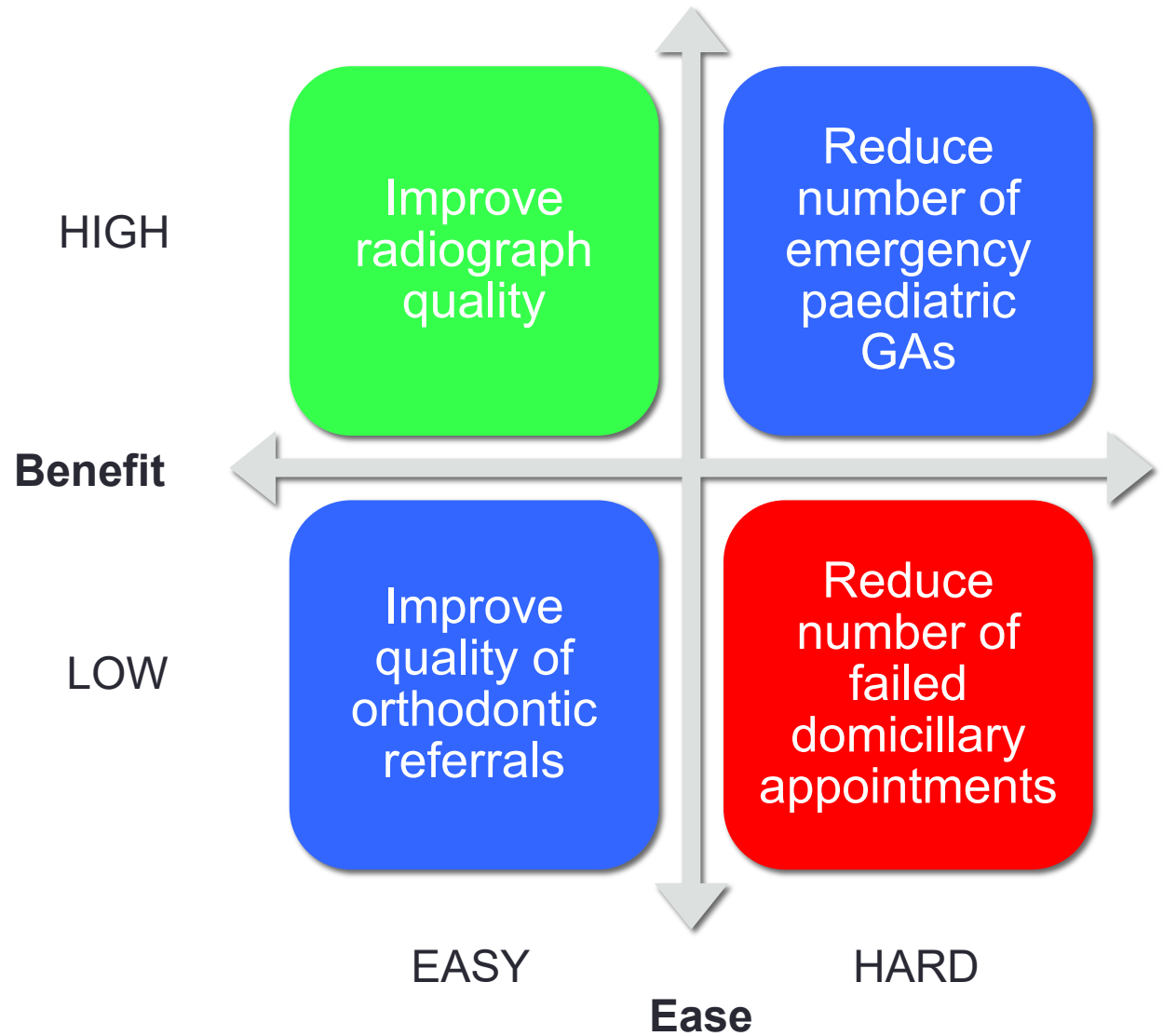
“Healthcare services are being challenged to respond to this, not by indiscriminate cuts, but by improving efficiency, driving up quality and reducing levels of harm”

Quality Improvement Made Simple

The Health Foundation, 2016

Identifying areas for QI

Ease Benefit Matrix



Person Centred Approach

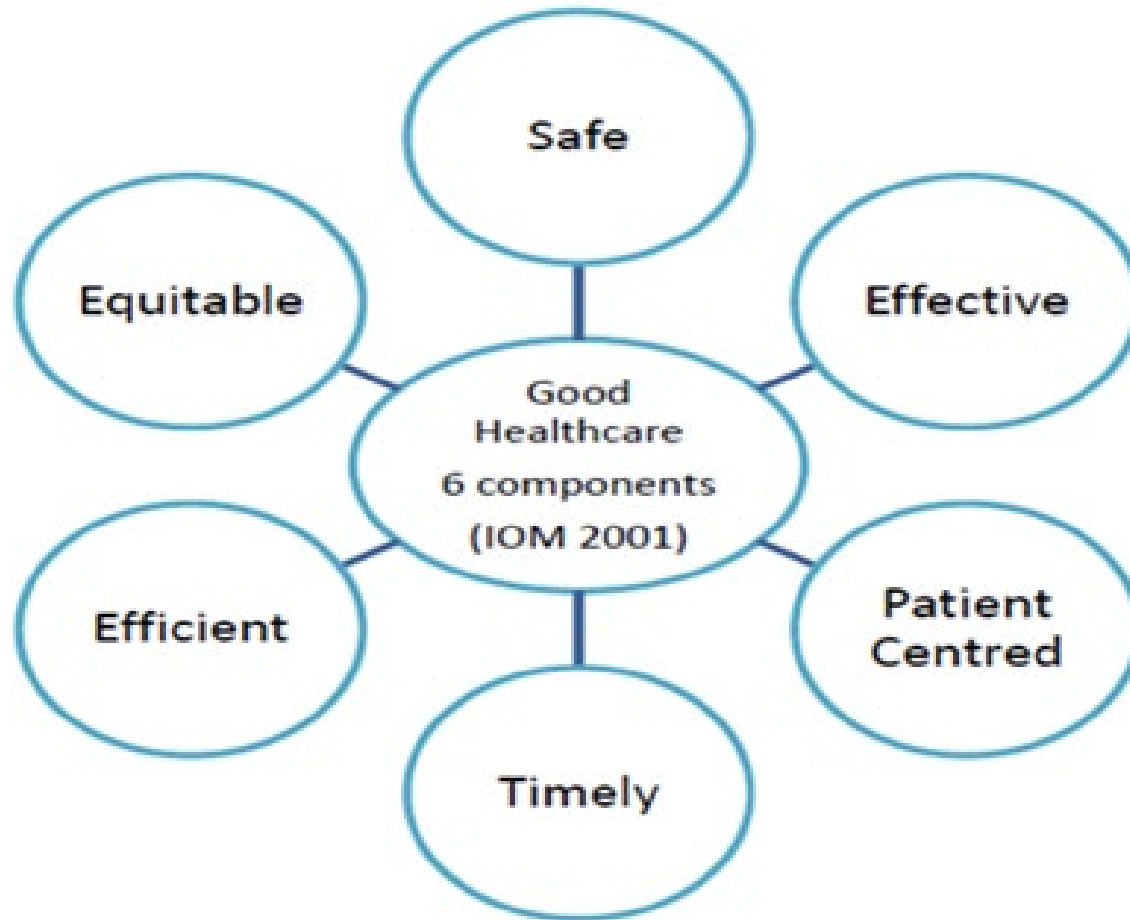
EXPERIENCE

INSIGHT



PERSPECTIVE

Principles of QI



Wessex Deanery,
NHS,



Does my project consider these principles??

- SAFETY- reduction in repeat exposures
- TIMELY- reduces time wasted on repeat procedures
- EFFICIENT- reduces wastage of electricity and equipment decontamination
- EQUITABLE- this should effect all patients, regardless of personal characteristic
- PATIENT-CENTRED- prevents patients having to go through discomfort of procedure more than necessary
- EFFECTIVE- ???



Methodologies

PDSA

Model for
improvement

Lean/six
sigma

Root cause
analysis

Clinical audit

Technological
innovations



Role of Human Factors

Like all humans, healthcare professionals are fallible and will make errors irrespective of how experienced, committed and careful they are.

Reason, 1990

Must take into consideration a staff members:

Environmental factors

Organisational factors

Individual factors



Human
Factors
Methodology

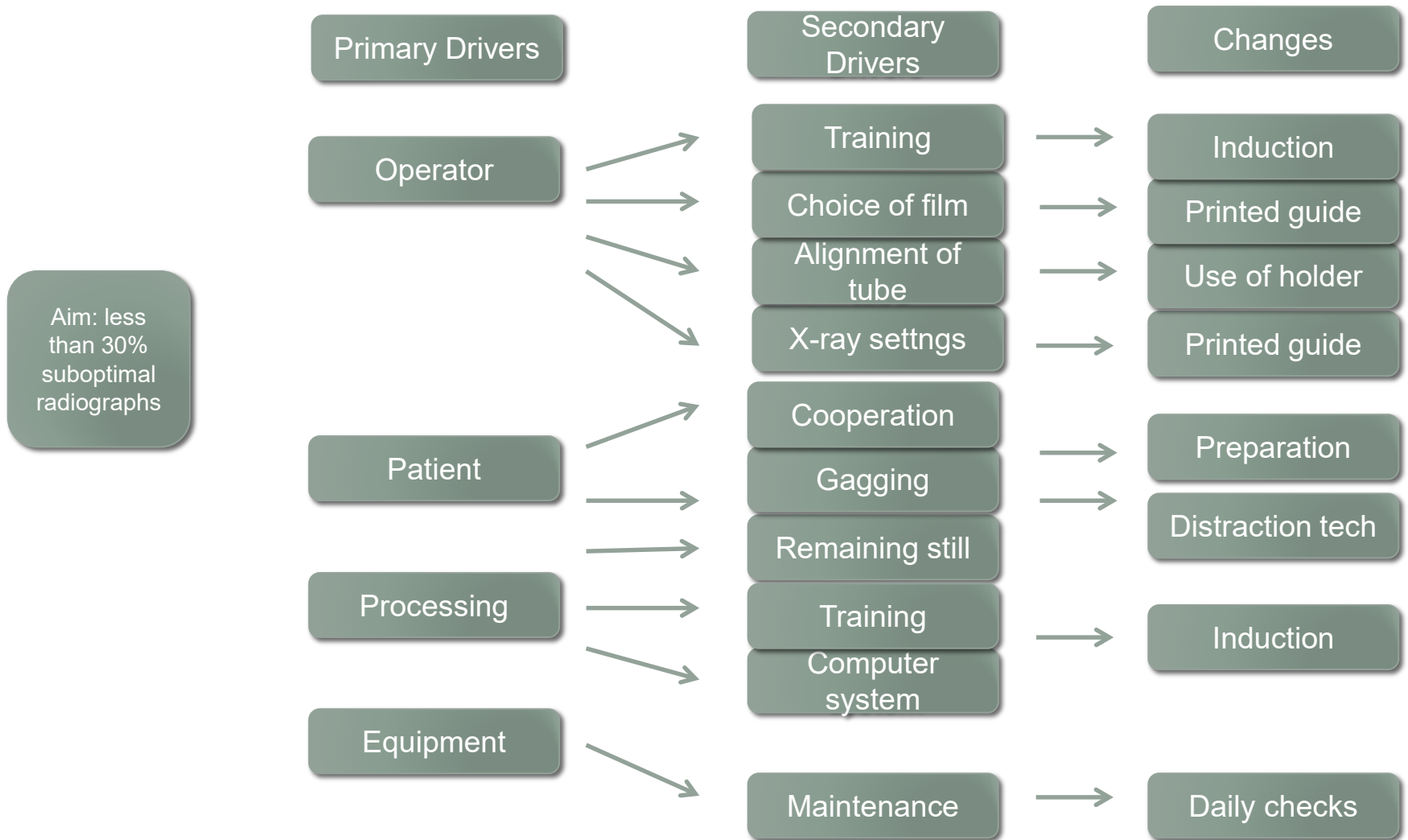
- QUALITY
- RELIABILITY
- TEAM WORKING



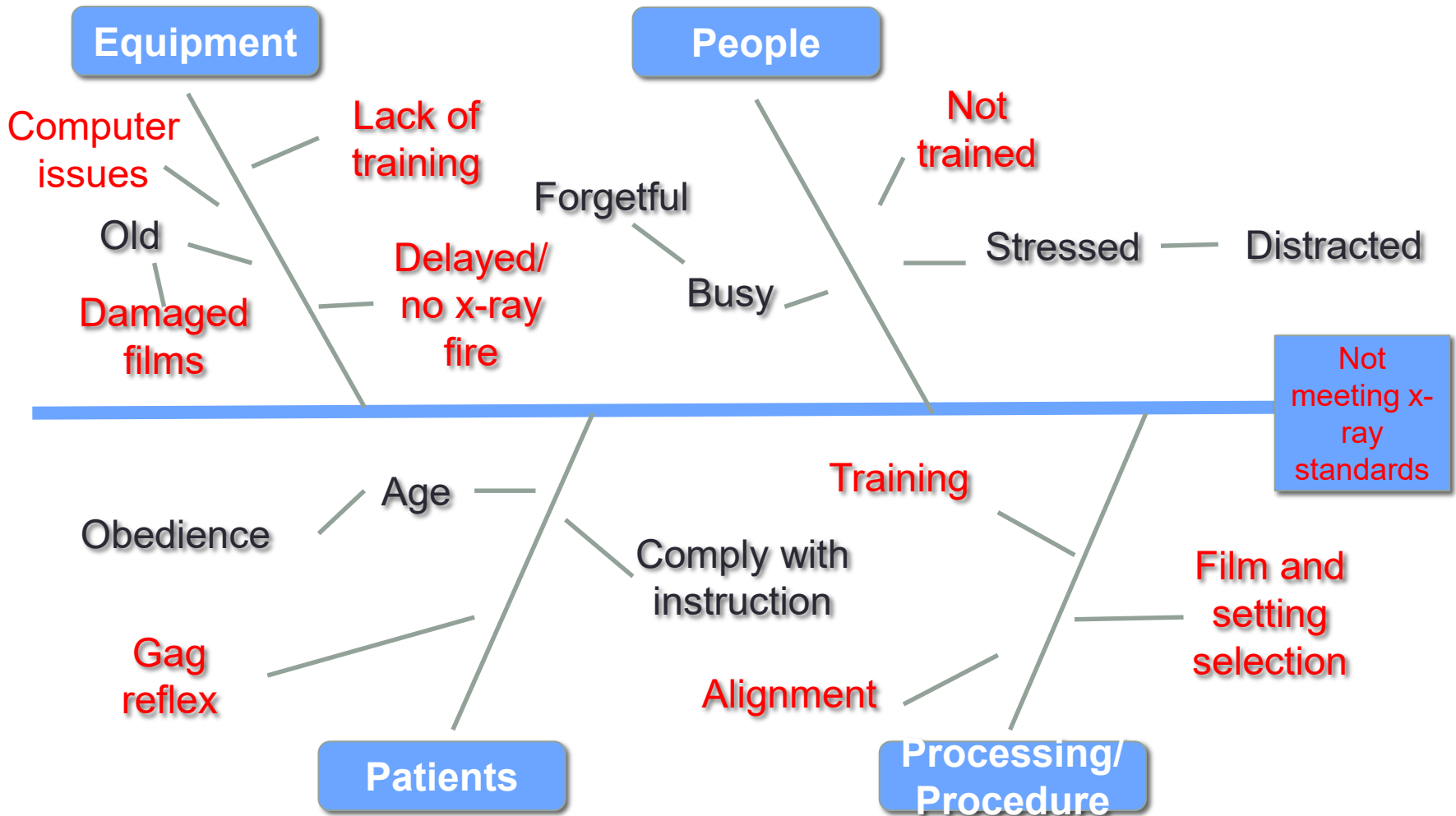
Human factors related to my project

- Tuesdays busiest clinic day
OTS session, stress, time pressure, patient pressure
- Both members of staff new to the radiography computer system and clinic
Lack of training- both thrown in assuming each other knows the answer

Model for Improvement: 1. Driver Diagram



Model for Improvement: 2 Fishbone Diagram





Aim

To meet the gold standard of radiograph quality as set out by FGDP Radiography Guidelines.

Increase grade 1 radiographs to a minimum of 70% and reduce suboptimal (grade 2/3) radiographs to less than 30% by 2nd July 2019



Baseline radiograph quality data

12/03/19 – 23/04/19

42% all radiographs
suboptimal

26% grade 2

16% grade 3

Data Collection

Aim

30/04/19 – 02/07/19

Only 30% all radiographs
suboptimal quality

20% grade 2

10% grade 3



Stakeholders

Dental Core Trainee

Implementing change

Nicola Forrester

Trainer- agreed change

Mike Evans

Radiology Safety Supervisor, Dental, St David's

Patients

Target audience



Assessment of radiograph faults

- Four categories:
 1. Patient preparation/management
 2. Operator Error
 3. Processing Error
 4. Equipment error

In order to make the biggest difference an assessment of the most common type of radiograph faults had to be made.



Analysis of retrospective data

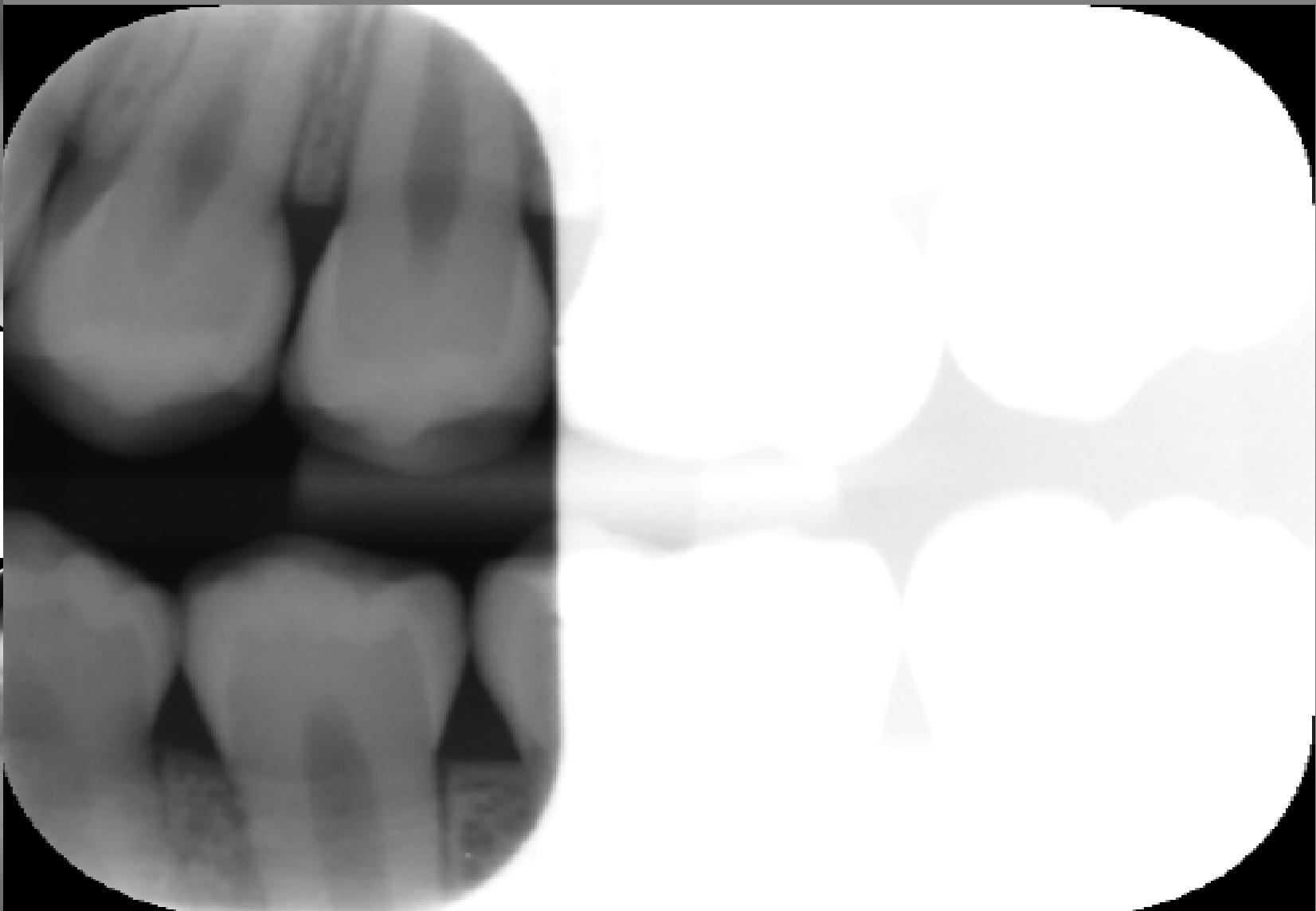
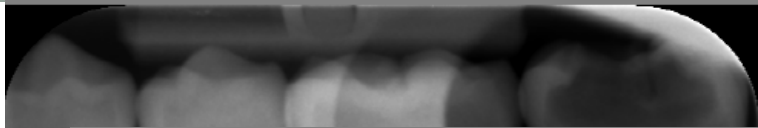
Of all grade 2 and grade 3 radiographs. **56%** were a result of the same type of fault.

EXPOSED TO LIGHT

Same clinician and nurse worked together every Tuesday

Nurse had previously worked in a different clinic with a different development set up.

Often a delay in being able to develop x-rays due to me setting up computer



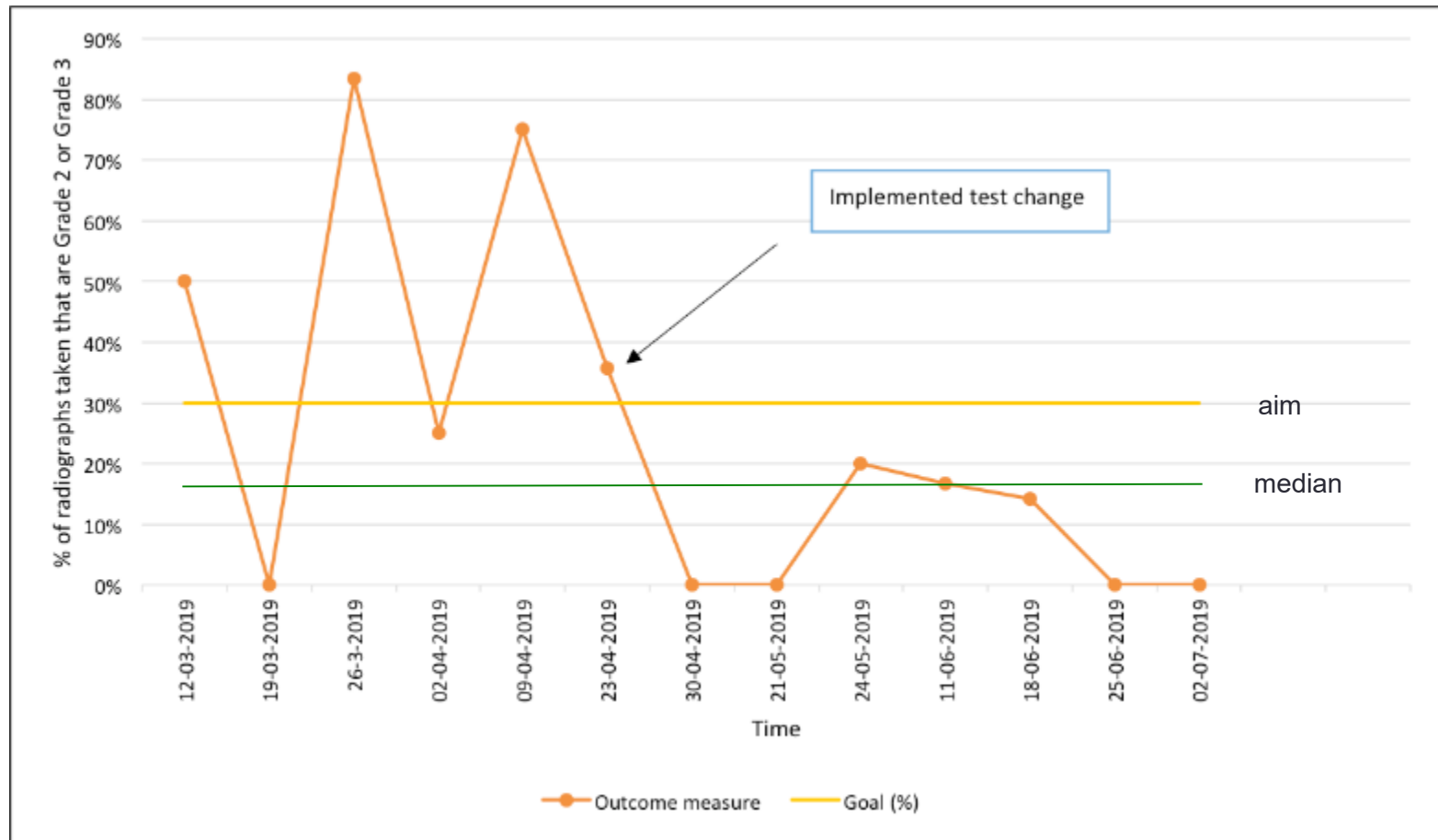


Implementing change

Change implemented 30th April 2019

Educational session on requesting radiographs electronically and correct processing procedure

Run Chart to show effect of implementing a change on the quality of dental radiographs at St David's Hospital





Results

Change in the process- only 7 points available post change

Trends- no trends

Post test of change: 9% of radiographs suboptimal

6% grade 2

3% grade 3

1 was a result of light exposure

SWOT Evaluation

STRENGTHS

- Improvement in radiograph quality
- Education of dental team on radiograph process
- Radiology lead made aware of low standard

WEAKNESSES

- Low number of data points
- Only carried out over one clinical session with one clinical team
- Human Factors not addressed

OPPORTUNITIES

- Implement up to date training in other hospitals/groups
- Improve initial training for new starters

THREATS

- Sustainability
- Human factors



Potential Spread

- Spread to other clinical teams
- Place checklist up in surgery and developing room
- Who is in charge of induction for new clinicians/nurses?



Future quality improvement

- Current project:
 - Regular staff changeover therefore regular training needed.
 - Focus on another cause of radiograph faults
- Future projects:
 1. Restorations provided on paediatric patients
 2. Waiting times for OTS patients
 3. DNA rates on MDU

Sustainability

TOTAL
62.9

Benefits

Credibility of evidence

Adaptability

Monitoring progress

Involvement and training

Behaviours

Senior leaders

Clinical leaders

Fits with goals and culture

Infrastructure

20.6

29.4

12.9



References

- Quality Improvement Made Simple, The Health Foundation, 2016
- Crossing the Quality Chasm: A New Healthcare System for the 21st Century, Institute of Medicine USA, 2001
- A Promise to learn- a commitment to act, Don Berwick, 2013
- A Guide to Quality Improvement Methods, Healthcare Quality Improvement Partnership, 2015
- Sustainability Model and Guide, NHS Institute for Innovation and Improvement, 2010