RCEM
Royal College of Emergency Medicine

INFECTION PREVENTION AND CONTROL

NATIONAL QUALITY IMPROVEMENT PROJECT

NATIONAL REPORT 2020/21

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Executive Summary

Overview

RCEM would like to thank every Emergency Department (ED) that participated in this Quality Improvement Project (QIP). Infection prevention and control (IPC) has always been a key element of high quality and safe care. The topic became even more relevant to our healthcare service because of the COVID-19 pandemic. For this reason, RCEM was pleased to introduce our first national QIP on infection prevention and control to support EDs in maintaining and improving high standards of patient care and organisational effectiveness. Over a period of 6-months this RCEM QIP has accumulated 17,500 individual cases from **154** emergency departments nationwide.

The purpose of the QIP was to improve patient safety and quality of care as well as, workspace safety, through sufficient measurement to track change but with a rigorous focus on action to improve. The standards were focused on both organisational policies and clinical care with a focus on infection prevention and control measures aimed at improving staff experience and outcomes through preventing occupationally acquired infections.

Throughout this report emergency services and departments had to adapt fast to respond to the pandemic and continue operational without jeopardising the safety of staff and patients.

Key Findings

The performance summary charts in the next section are a summary of the weekly performance against the 3 main standards between 3 October 2020 – 2 April 2021.

- COVID-19 symptoms screening had the highest national mean, with 65.65% of patients being screened on arrival. The screening of other infectious diseases had the lowest mean, with 38% of patients being screened.
- 20.45% of patients were not screened for COVID-19 Symptoms, Vulnerable Conditions or other infectious diseases.
- 37.1% of patients with an identified vulnerability were isolated in a side room. On average, patients were isolated in a side room within 18 minutes and 46 seconds from the time of arrival.
- 85.57% of patients potentially or confirmed as infectious were moved to an appropriate area. On average, patients were moved to an appropriate area within 46 minutes and 20 seconds from the time of arrival.

Conclusion

This report represents not just another large scale national clinical audit, but the delivery of a shared platform providing QI tools and real time data with which individual departments were able to use to progress towards improving patient care. This has enabled individual departments the opportunity to make progress towards achieving the national standards.

Towards the end of the data collection period, run Statistical Process Control (SPC) charts were indicating increased variation and some special cause variation, suggesting something was causing a change. Some of the sudden changes in the data could be due to COVID-19 reaching EDs or due to changes by local initiatives.

Key recommendations

Recommendations – patient level

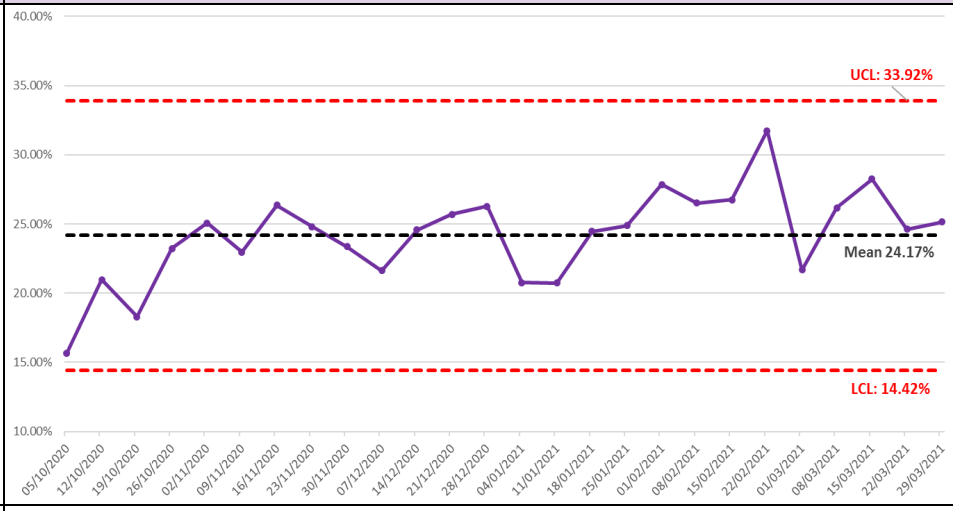
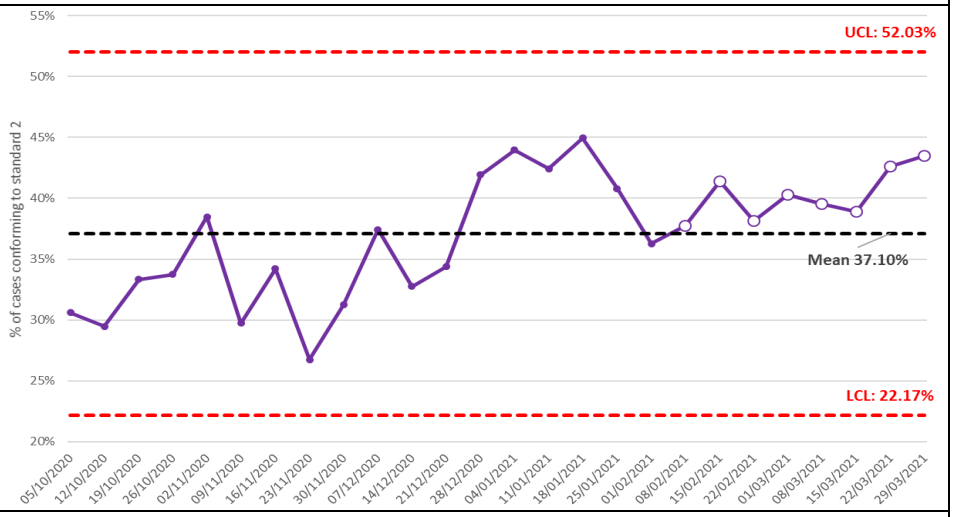
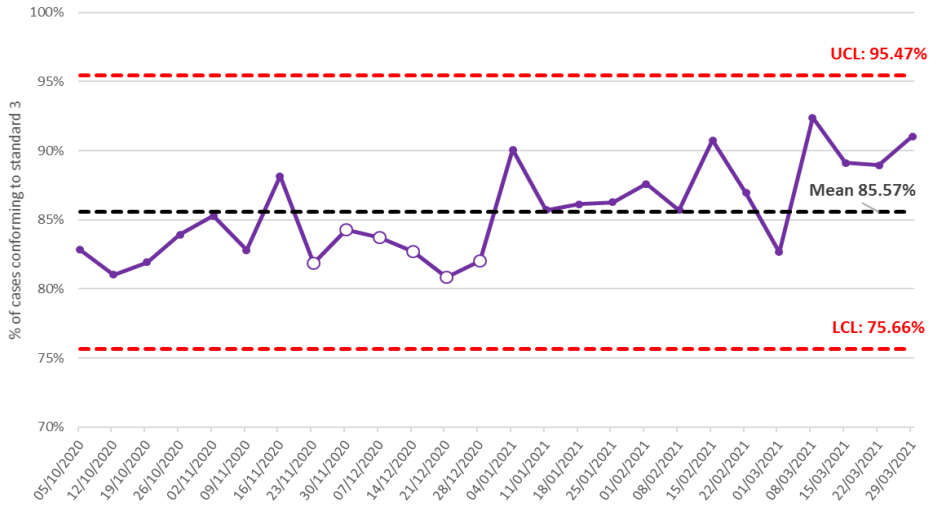
- Patient screening processes can be greatly improve- especially the screening for vulnerable conditions.
- Processes to isolate patients with identified vulnerability should be revised.
- Improvement efforts should consider reducing the time taken to isolate patients that are confirmed or, suspected to be infectious.
- Improvement efforts should also consider recordkeeping as an area that requires considerable improvement.

Recommendations – organisational level

- Sites that do not have processes to self-assess infection control, should start using the RCEM Infection Control to perform regular self-assessments

Performance Summary

The below graphs show the weekly performance against the 3 main standards. See the appendices for a guide to interpreting these charts.

Clinical standard	SPC chart of weekly performance per RCEM Standard
STANDARD 1: The SPC chart shows the percentage of cases for each specific week of the QIP of patients that have been screened on arrival for the symptoms of COVID-19 (and other infectious diseases which need isolation), as well as for those conditions considered to make them extremely vulnerable (and who will have been shielding themselves at home).	
STANDARD 2: The SPC chart shows the percentage of cases for each specific week of the QIP from patients with identified vulnerability that have been isolated in a side-room	
STANDARD 3: The SPC chart shows the percentage of cases for each specific week of the QIP from patients that have been isolated after being identified as potentially or confirmed to be infectious	

Organisation Standard	Results:
STANDARD 1: Evidence that an ED lead for infection prevention and control has been assigned and is taking an active role.	ED lead for infection prevention and control has been assigned and is taking an active role Yes (95%) No (5%)
STANDARD 2: Healthcare workers decontaminate their hands immediately before and after every episode of direct contact or care.	ED has processes in place to ensure decontamination after every direct contact Yes (98%) No (2%)
STANDARD 2 (a): Evidence of local arrangements to ensure that all healthcare workers receive training in hand decontamination.	Staff is trained in hand decontamination procedures Yes (97%) No (3%)
STANDARD 2 (b): Evidence of local arrangements to ensure that regular local hand hygiene observation audits are undertaken.	There is a process in place to ensure surveillance of hand washing policy compliance Yes (98%) No (2%)
STANDARD 3: The organisation has self-assessed against the RCEM Infection Control checklist (See appendix 12)	The organisation has self-assessed against the RCEM Infection Control Checklist Yes (64%) No (36%) *Average checklist score: 20/24*

Foreword

Dr Katherine Henderson, RCEM President

The Royal College of Emergency Medicine is pleased to highlight the core business of caring for the infection control of patients in Emergency Departments in this report. The data reported is a historical record of the week-to-week performance of crucial infection prevention and control tasks in UK EDs during a global pandemic. The data reveals key areas that can be improved but, also shows that even during a pandemic, UK EDs were able to sustain continuous periods of improvement as seen by the performance of screening for COVID-19 symptoms.

The College is dedicated to improving the quality of care in our Emergency Departments through these important audits, undertaking all obligations to ensure the best measures of patient safety are obtained. This year, for the first time, the RCEM has also collected important ethnicity data to assess health inequalities relating to patient ethnicity in order to support departments in providing high quality care to all.

In addition to the clinical team, RCEM recommends sharing the report with the clinical audit and/or quality improvement department, departmental governance meeting, ED Clinical Lead, Head of Nursing and Medical Director as a minimum. Without having visibility of the data and recommendations we cannot expect to see improvements in practice.

Now that EDs have a picture of the national weekly performance over six-months on key measures, RCEM encourages that both clinical team and audit department work together to review the effectiveness of PDSA cycles already completed and design further cycles to improve performance. Engaging staff in the process of action planning and PDSA cycles will lead to more effective implementation and sustainable improvements. The RCEM portal will remain online so that departments can continue to track their performance and evaluate the effects of further PDSA cycles.

The RCEM Quality Assurance and Improvement Committee are committed to continually evaluating the QIPs and improving them to best support you and improve patient care. We are aware that there are improvements we can make to strengthen local QI support, provide clearer data visualisation, and better communications. We welcome your feedback, ideas, and experiences to help us.

Dr Katherine Henderson, RCEM President

Dr Simon Smith, Chair of Quality in Emergency Care Committee

Dr Dale Kirkwood Co- Chair of Quality Assurance & Improvement Subcommittee

Dr Fiona Burton
Co- Chair of Quality Assurance & Improvement Subcommittee

Introduction

Background

The COVID-19 pandemic brought a new challenge and prompted changes to the delivery of emergency care. With this in mind, the RCEM introduced the Infection Prevention and Control (IPC) topic in 2020 to support EDs in maintaining and improving high standards of patient care and organisational effectiveness in the face of an unprecedented challenge. The purpose of the QIP was to improve patient safety and quality of care as well as, workspace safety through sufficient measurement to track change but with a rigorous focus on action to improve.

Problem description

Infection control has always been a key element of high quality and safe care. This became even more relevant for the healthcare service during the COVID-19 pandemic. Emergency Departments are required to keep patients and staff safe and limit nosocomial infection during the endemic period of COVID-19 but while this is currently a priority issue related to COVID-19, the same responsibility to protect patients and staff from any infection in an ED is the same.
While there are complex changes occurring, there were some well-established principles from previous infectious disease outbreaks that could be adopted to keep patients and staff safe.

Rationale

The Quality Improvement Project (QIP) aimed to track the current performance in EDs against clinical standards in individual departments and nationally on a real time basis over a 6 month period. The aim was for departments to be able to identify where standards were not being reached so they could do improvement work and monitor change in real time.

The project focused on:

- The initial screening of patients for symptoms of COVID-19 and of other infectious diseases that require isolation, as well as, for conditions considered to make them extremely vulnerable.
- Organisational policies focused on infection control and safety
- The management of patients with identified vulnerabilities and, patients confirmed or suspected to have infectious diseases.

National Drivers

- The RCEM Emergency Department Infection Prevention and Control (IPC) during the Coronavirus Pandemic guideline.
- NICE (2014) Quality standard [QS61] Infection prevention and control.

Specific objectives

The national objectives of the QIP are:

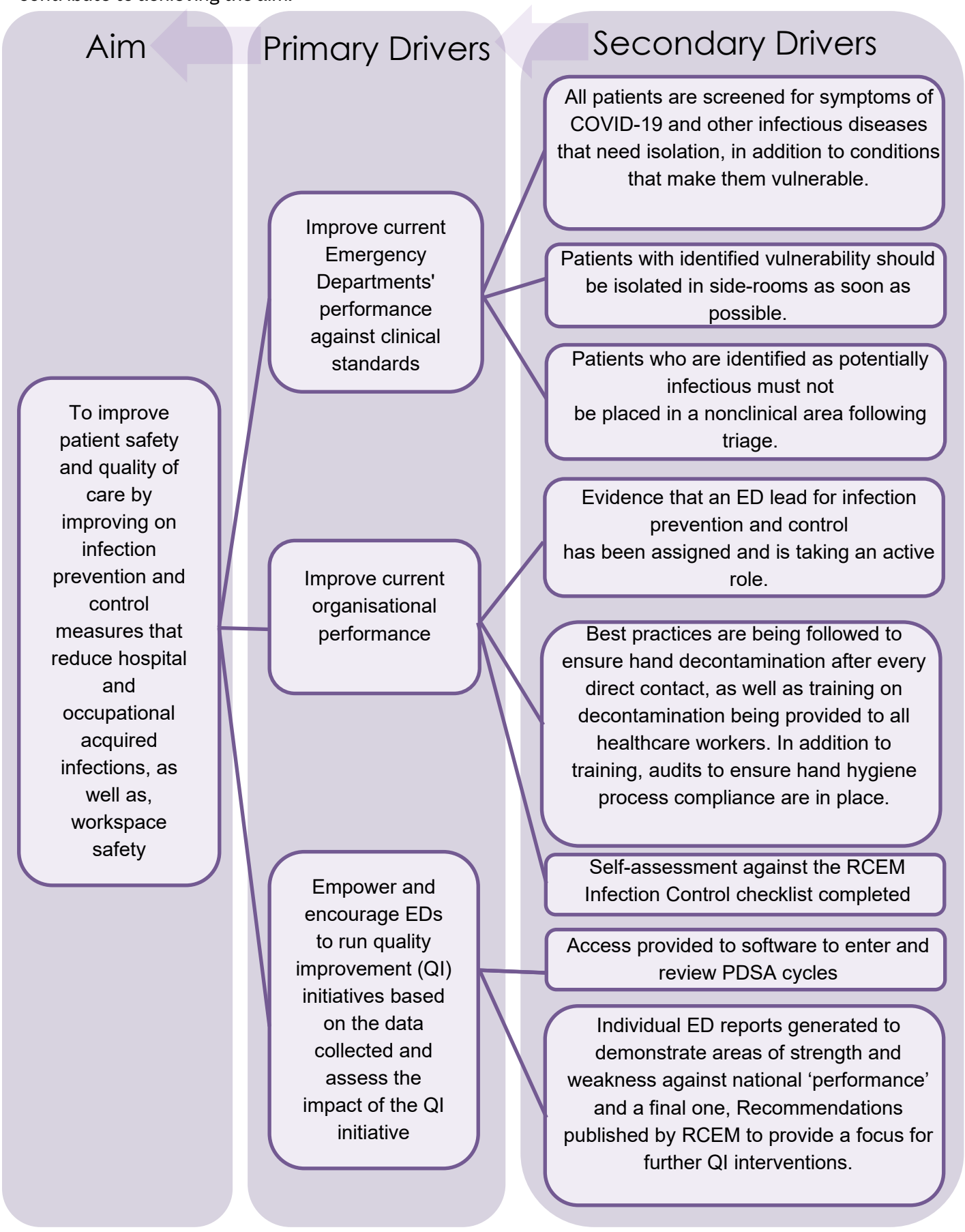
- To identify current performance in EDs against clinical standards
- Show EDs their performance in comparison with performance nationally and in the ED's country in order to facilitate quality improvement
- To empower and encourage EDs to run quality improvement (QI) initiatives based on the data collected and assess the impact of the QI initiative on their weekly performance data.

Local objectives:

- To improve screening for symptoms of COVID-19and other infectious diseases, and conditions making patients extremely vulnerable
- To improve isolation of vulnerable patients in a side-room
- To improve placement of potentially infectious patients following triage
- To ensure organisational systems in place to support good infection prevention and control

Driver diagram

This diagram outlines the aim of the National QIP and the primary and secondary drivers (factors) that will contribute to achieving the aim.



Case study

The problem:
The SARS-Cov-2 pandemic (commonly called COVID-19) is an on-going risk to the health of everyone in the world. Emergency Departments are one of the main entry points to any hospital for patients. Screening of patients as they enter an emergency department for symptoms of COVID-19 and other infectious diseases, as well as, conditions making patients extremely vulnerable is essential for the safety of clinically vulnerable patients. This was an issue that had to be addressed as there was no formal screening system at our hospital during the 2nd UK COVID-19 wave of infections, which occurred around the beginning of the RCEM IPC QIP. As there was no formal screening system, isolating vulnerable patients in a side room was a problem as well as placement of potentially infectious patients after triage, both also being identified as areas for improvement.

Who was going to do it?
The team tasked with carrying out the QI initiative was composed of 3 Consultants and an ACP.

How would we identify the patients concerned?
Patients were being identified as they arrived from an ambulance into the ambulance arrivals area of the Royal Derby Hospital's Emergency Department. Initially, information was being recorded using a paper questionnaire with tick boxes and spaces for handwriting to record the allocated bay or room of the patient. The paper form was later substituted by an electronic Excel data capture form that was set to autofill an Excel spreadsheet.

When was it going to be done?
From January 2021 to 2nd April 2021 to compare with retrospective data that was collected from the beginning of the RCEM QIP on the 5th of October 2020.

How was it going to be documented?
Initially, paper questionnaires were being used to capture data which was later manually entered onto an Excel spreadsheet. The initial PDSA cycle found that the paper forms were often missing or were not filled in. Triage nursing staff in the ambulance arrivals area fed back that they were overworked and exhausted, in addition to already having problems meeting the existing local standard of 15-minute turnaround time for newly arrived ambulance patients for all conditions.
In recognition of the nursing staff high workload and fatigue, an Excel data capture form was created to facilitate data collection and help improve data collection for this QIP, by automatically filling the Excel spreadsheet with the data entered on the form.

Who was going to implement it?
The Consultants and ACP member of the QIP team all spoke with the triage nurses to educate them about this QIP and encourage their participation, as well as to listen to their feedback. One of the Consultants did these tasks due to his seniority in the department and was joined by the Consultant that was the lead for the QIP. The ACP was also involved due to his paramedic background, which helped to build working relationship with the paramedics and the Pitstop staff.

"We started with teaching and raising awareness about the importance of infection control measures in general and particularly during the COVID pandemic. Then, after team discussions, we found that starting a paper or electronic form which is a tick-box structure would be the best way to facilitate the process in the

time-limited triage setting. We used the paper form due to difficulties with introducing an electronic form at that time with electronic systems change.

The main feedback was excellent, and the staff liked the idea of documenting what they are already doing most of to improve the patients' care. The main setback was the burnout and exhaustion from the continuous physical and mental pressures from the COVID and even staff seeing colleagues and relatives falling to COVID. Then, a data capture form with automatic completion of a linked spreadsheet idea that was introduced by one of the doctors gave a push to the project and made it easy for the staff and ourselves to collect the data and save them on any PC in the emergency department.

One of the important changes to practice was stressing the need for clinical isolation of patients with immunosuppressed conditions.

Despite the fluctuation in commitment to continue the documentation of infection risk factors due to multiple clinical and non-clinical factors the learning and attitude change amongst our team would still be valid and continue to improve our patients' care."

Evaluation

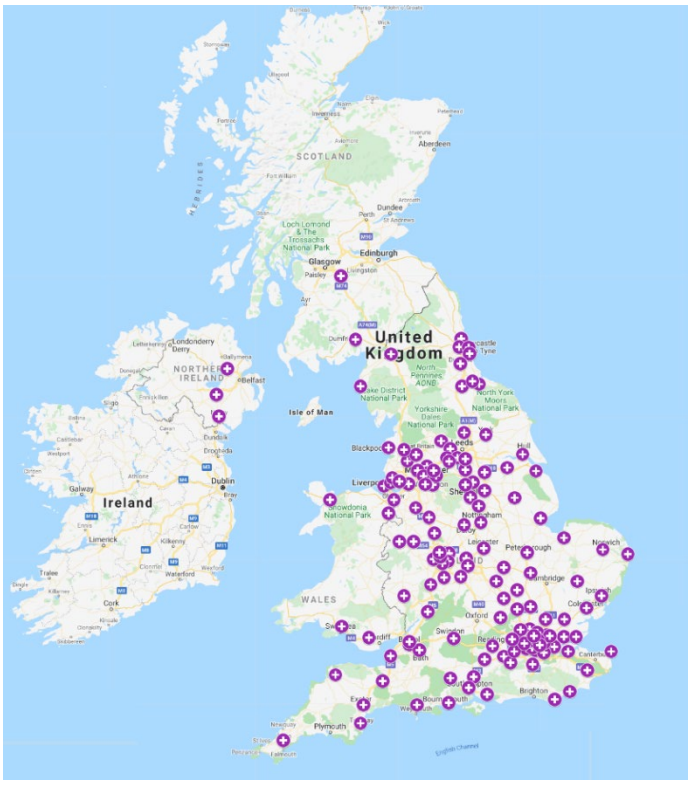
Performance was tracked via monthly Teams meetings with the members of this team and the RCEM standards were discussed at each meeting. The main barrier we found was establishing co-operation from the Emergency Department's ambulance arrivals (Pitstop) area nurses to collect the data needed for this QIP and having multiple PDSA cycles to come up with an easy way for them to collect this data without adding too much on their already heavy workload and existing time targets. The variable rates of data collection from month to month reflects the variable rates of knowledge of this QIP and co-operation of the Pitstop area nursing staff who were recognised to have burnout and hence drove the creation of the electronic data collection form to lessen their work burden.

Preliminary feedback from RCEM has found that from the first week of this QIP until the last week in December 2020, the SPC chart 'Infection Control Clinical – Standard 1 – Patient Screening on arrival breakdown – other infectious diseases' was consistently above the mean. Our team was waiting for the publication of the RCEM National Report for further information about how our hospital compared to other hospitals nationwide.

Methodology

The QIP methodology was promoted to encourage EDs to improve towards more consistent delivery of these standards using QIP methodology like Plan Do Study Act cycles and weekly data feedback to help clinicians examine the work they do day-to-day, benchmark against their peers, and to recognise excellence. Interventions were made at local level to improve care in the local context and contribute to the overall national results

Nationally, **17500** cases from **154** EDs were included in this audit. Click the map below to open an interactive map of participating EDs.



Country	Number of participating EDs	Number of cases*
National total	154	17500
England	145	16615
Scotland	2	283
Wales	4	412
Northern Ireland	3	190
Isle of Man /Channel Islands	0	0
*analysis includes complete cases only		

Intervention

All Type 1 EDs in the UK were invited to participate in August 2020. Data samples were submitted using an online data collection portal. The audit was included in the NHS England Quality Accounts list for 2020/2021.

Participants were asked to collect data from ED patient records on cases who presented to the ED between 5 October 2020 – 2 April 2021.

See Appendix 1 for the audit questions and the standards section of this report for the standards.

Recommended sampling

To maximise the benefit of the new run charts and features, RCEM recommended entering 5 consecutive cases per week. This enabled contributors to see their EDs performance on key measures, any changes week by week and visualise any shifts in the data following a quality intervention (PDSA cycle).

The sample of 5 cases per week was recommended based on the average 6-monthly attendance for a Type 1 ED (quarter 3 and quarter 4 A&E Attendances and Emergency Admissions 2020-21 data, NHS England and Improvement). The sample size calculation was based on a 95% confidence level and 8% margin of error, as a higher margin of error is acceptable for a QIP than a research study.

Expected patient numbers	Recommended sample size	Recommended data entry frequency
<5 a week	All patients	Weekly
>5 a week	5 patients	Weekly

Alternative sampling

In some cases, EDs found weekly data entry too onerous, departments were provided guidance on an alternative methodology of entering monthly data instead. The system recorded each patient's arrival date and automatically split the data into weekly arrivals, thereby preserving the benefit of seeing weekly variation.

Expected patient numbers	Alternative sample size	Alternative data entry frequency
<5 a week	All patients	Monthly
>5 a week	20 patients	Monthly

Study of the intervention

This audit has been encouraged towards QIP methodology by providing real-time feedback and introducing an integrated PDSA tool. Measurement of the data against the standards enabled change in practice, with resultant improvement tracked using weekly SPC charts. These are recommended by NHS England, along with other tools that can be found on your personalised dashboard on the RCEM's QIP portal.

Measures

As this was the first time this topic has been run as a continuous QIP for the main standards RCEM did not specify particular QI measures, but embedded the ability for individual departments to identify their own local outcome, process and balancing measures. The national level data provides a benchmark for the national picture so individual units who are below the mean figure can takes steps to improve.

The standards used were published by RCEM in November 2020:

ORGANISATIONAL STANDARDS	GRADE
1. Evidence that an ED lead for infection prevention and control has been assigned and is taking an active role.	D
2. Healthcare workers decontaminate their hands immediately before and after every episode of direct contact or care	F
a. Evidence of local arrangements to ensure that all healthcare workers receive training in hand decontamination.	F
b. Evidence of local arrangements to ensure that regular local hand hygiene observation audits are undertaken.	D
3. The organisation has self-assessed against the RCEM Infection Control checklist	A

CLINICAL STANDARDS	GRADE
1. All patients should be screened on arrival for the symptoms of COVID-19 (and other infectious diseases which need isolation), as well as for those conditions considered to make them extremely vulnerable (and who will have been shielding themselves at home).	F
2. Patients with identified vulnerability should be isolated in a side-room as soon as possible	D
3. Patients who are identified as potentially infectious must not be placed in a nonclinical area following triage.	D

Definitions

Standard	Term	Definition
Clinical Standard 1, 2	Vulnerability [2]	Clinically extremely vulnerable people may include the following people. Disease severity, history or treatment levels will also affect who is in the group. 1. Solid organ transplant recipients. 2. People with specific cancers: o people with cancer who are undergoing active chemotherapy o people with lung cancer who are undergoing radical radiotherapy o people with cancers of the blood or bone marrow such as leukaemia, lymphoma or myeloma who are at any stage of treatment o people having immunotherapy or other continuing antibody treatments for cancer o people having other targeted cancer treatments which can affect the immune system, such as protein kinase inhibitors or PARP inhibitors

		o people who have had bone marrow or stem cell transplants in the last 6 months, or who are still taking immunosuppression drugs 3. People with severe respiratory conditions including all cystic fibrosis, severe asthma and severe chronic obstructive pulmonary disease (COPD). 4. People with rare diseases that significantly increase the risk of infections (such as SCID, homozygous sickle cell). 5. People on immunosuppression therapies sufficient to significantly increase risk of infection. 6. Women who are pregnant with significant heart disease, congenital or acquired.
1	COVID-19 Symptoms [3]	• a high temperature • a new, continuous cough • a loss or change to your sense of smell or taste (Symptoms correct as of NHS guidance Sept 2020, but subject to change)
2	Side-room	The Side-room must have a door. A bay with curtain can also be considered for this standard if in a non-COVID-19/green area.
3	Non-clinical area [2]	E.g. waiting rooms, corridors.

Understanding the different types of standards

Fundamental: need to be applied by all those who work and serve in the healthcare system. Behaviour at all levels and service provision need to be in accordance with at least these fundamental standards. No provider should provide any service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

Developmental: set requirements over and above the fundamental standards.

Aspirational: setting longer term goals.

Analysis

RCEM's plan for analysis are based on each standard for this QIP topic. A minimum data set must be met based on each standard to provide results and to show improvement or decline on your SPC charts. Further details can be found in the appendix 5.

Grade definition

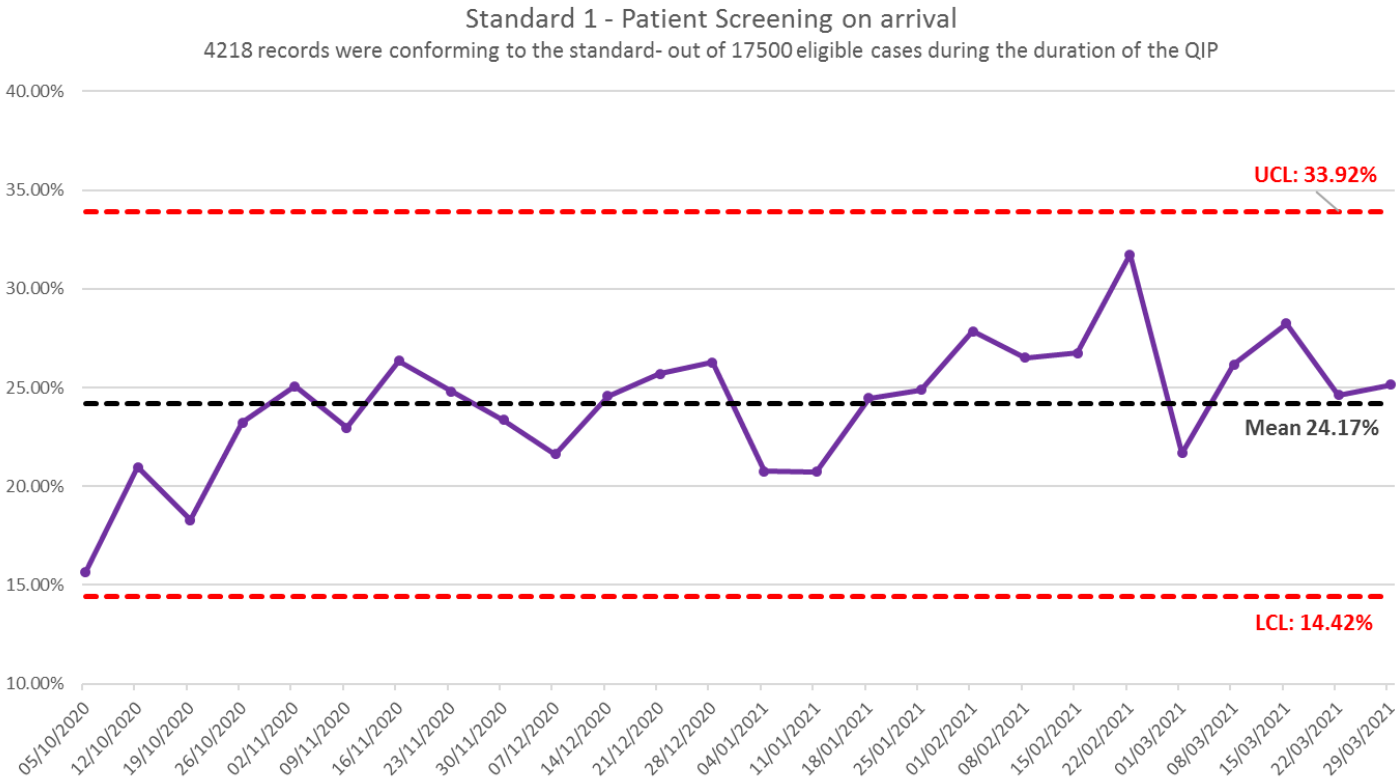
RCEM no longer sets a target percentage for standards, but rather encourages EDs to review real time performance with the aim of constantly improving care in line with the standards for all patients.

STANDARD 1 (Patient Screening)

What questions were used for this analysis?

Q4. Was the patient screened on arrival for: COVID-19 symptoms; Other infectious diseases; Vulnerable conditions

Meeting the standard: To meet this standard the patient had to be screened for symptoms of COVID-19, other infectious diseases which need isolation, and for conditions considered to make them extremely vulnerable. All three screenings had to be done on arrival.



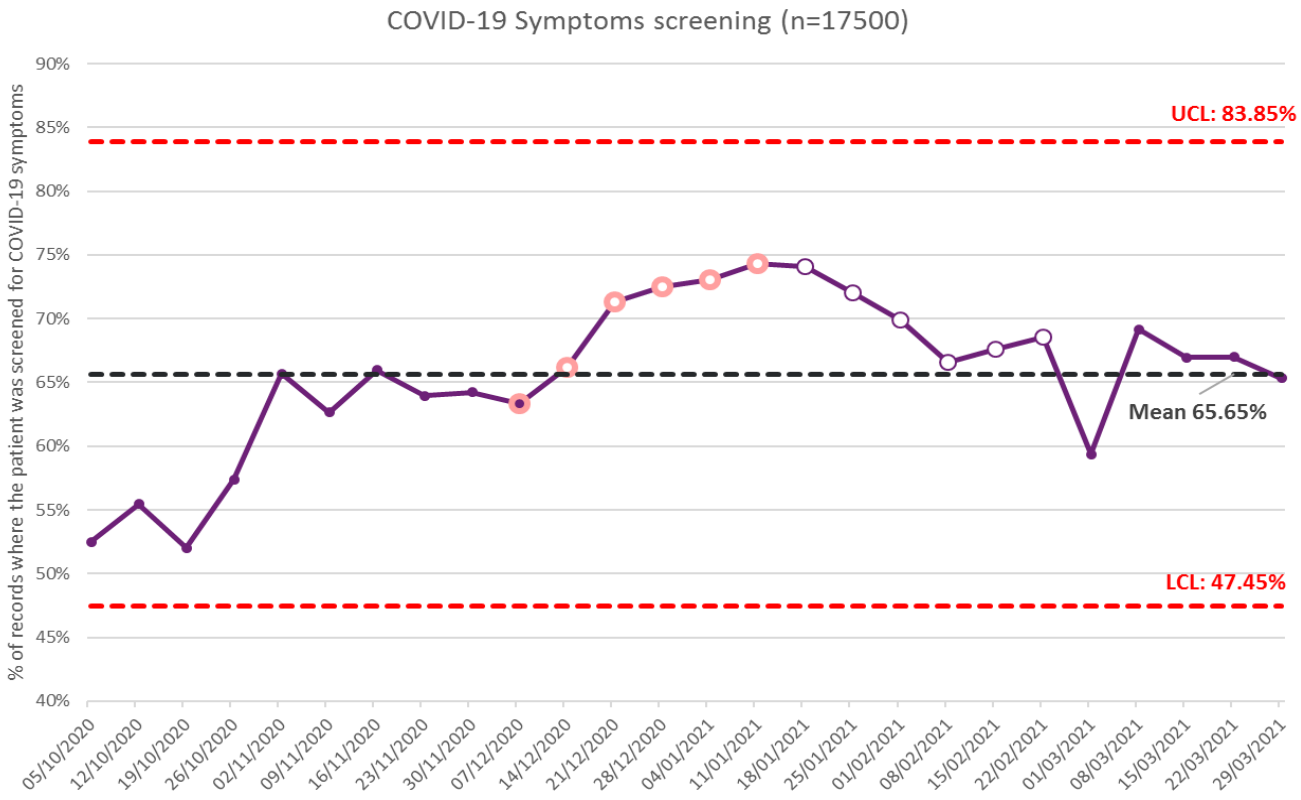
Sample: All patients (n=17500)

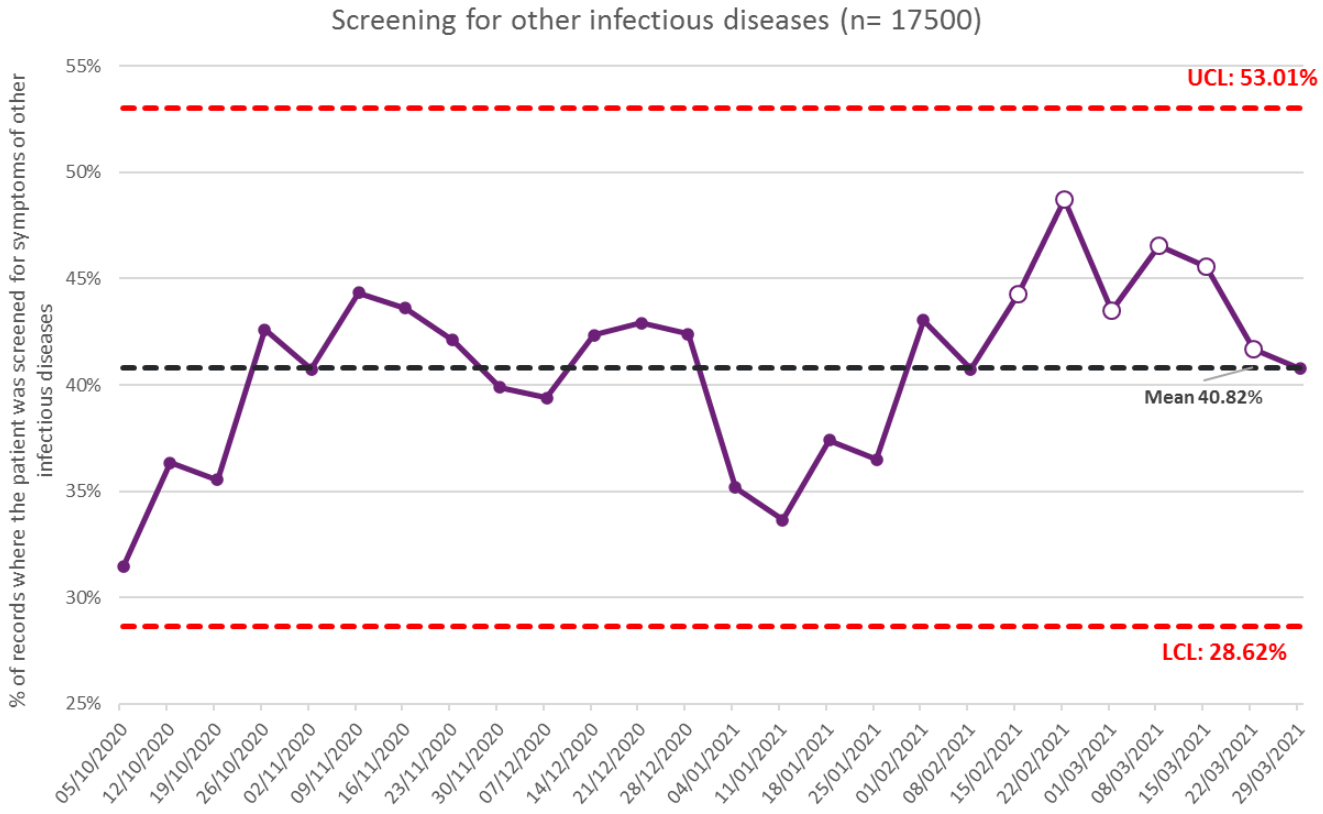
This chart shows patients who met the standard (see 'meeting the standard' above for the conditions required for a record to be considered as meeting Standard 1). From all the cases entered (17500), 24.1% of the records (4218) conformed to Standard 1.

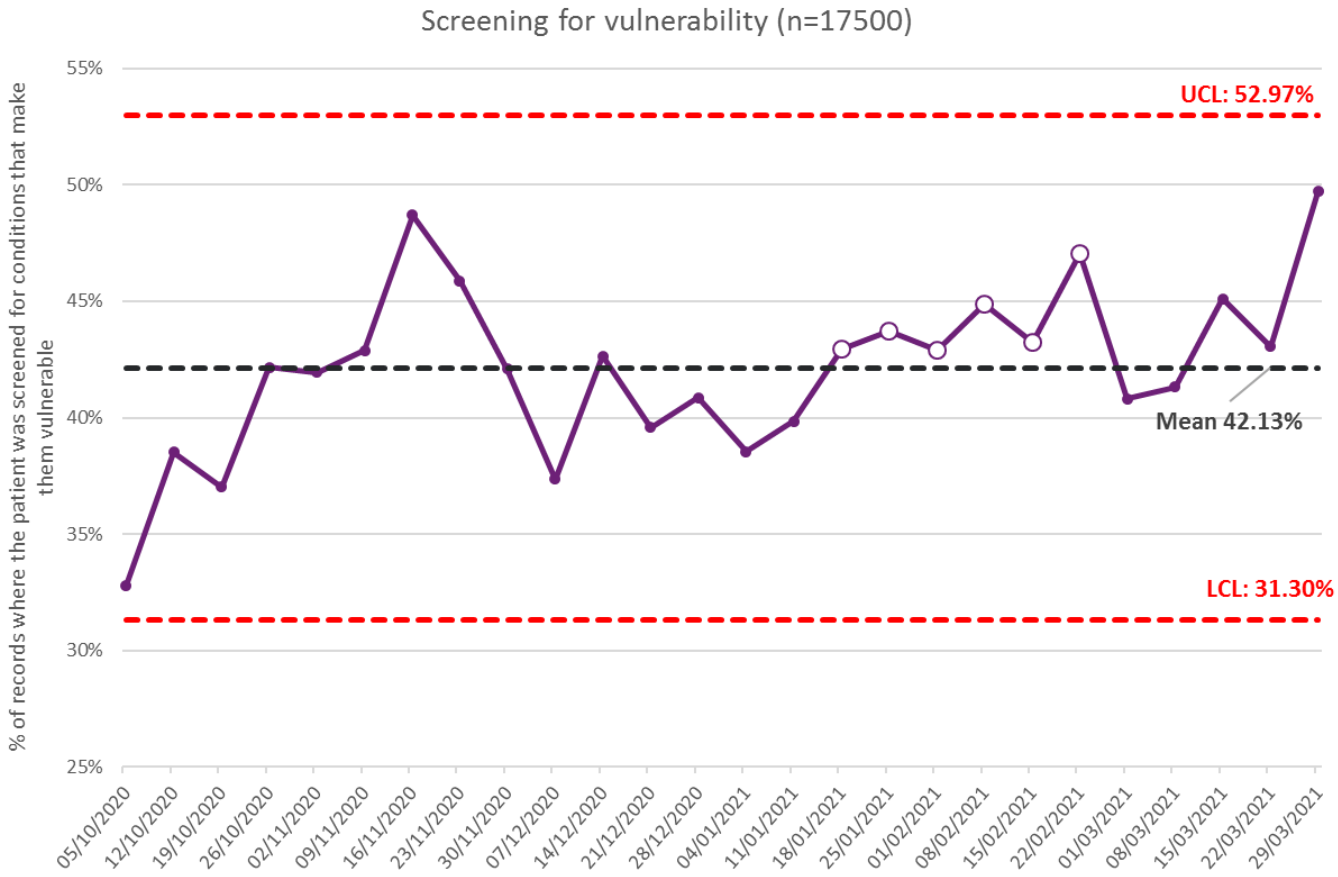
The chart shows that the process is stable but, with a considerable level of variation. The additional charts below show the performance of each type of screening and, considering that three different screenings had to be done for a case to meet Standard 1, the lowest performing type of screening have been a considerable contributing factor for many cases failing to meet standard 1. As shown in the charts below, the lowest performing screening type was for other infectious diseases (National mean of 40.82%). From all the cases submitted, it is also worth mentioning that 20.45% of the patients were not screened at all, which is another contributing factor many cases not meeting Standard 1. It is also worth remembering that not all departments were using paper documentation at this screening stage and this too may be a contributory factor to those 'not screened at all'.

When looking at the performance of each screening type, only the screening for COVID-19 symptoms had a noticeable period of improvement throughout December- This was also the highest performing screening type (National mean of 65.65%). All other screening types remained mostly unchanged- another noticeable period that is worth mentioning is for the 'No screening' category where performance was consistently below the mean from December to February.

Specific performance per screening type:






Screening for vulnerability (n=17500)
% of records where the patient was screened for conditions that make them vulnerable
55%
50%
45%
40%
35%
30%
25%
UCL: 52.97%
Mean 42.13%
LCL: 31.30%
05/10/2020
12/10/2020
19/10/2020
26/10/2020
02/11/2020
09/11/2020
16/11/2020
23/11/2020
30/11/2020
07/12/2020
14/12/2020
21/12/2020
28/12/2020
04/01/2021
11/01/2021
18/01/2021
25/01/2021
01/02/2021
08/02/2021
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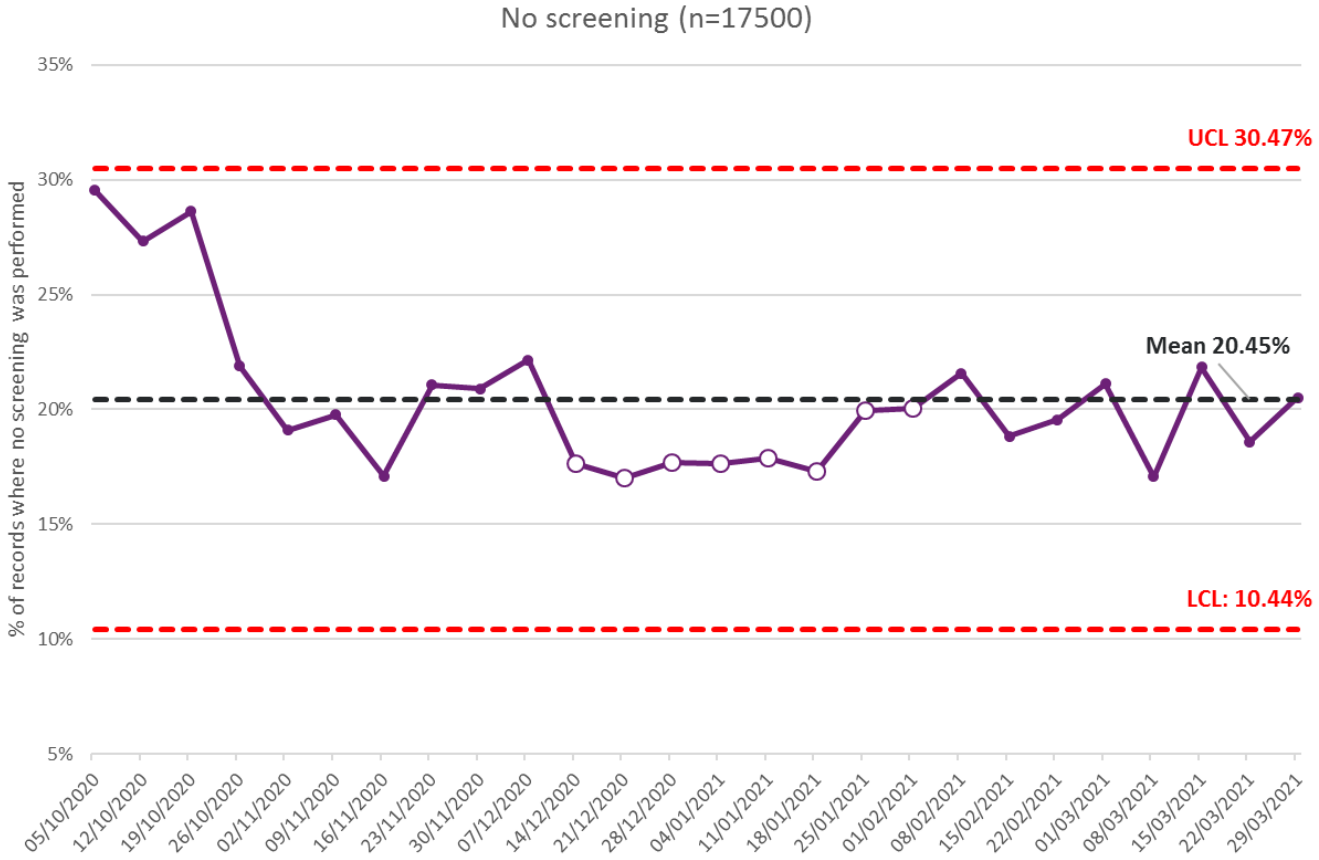
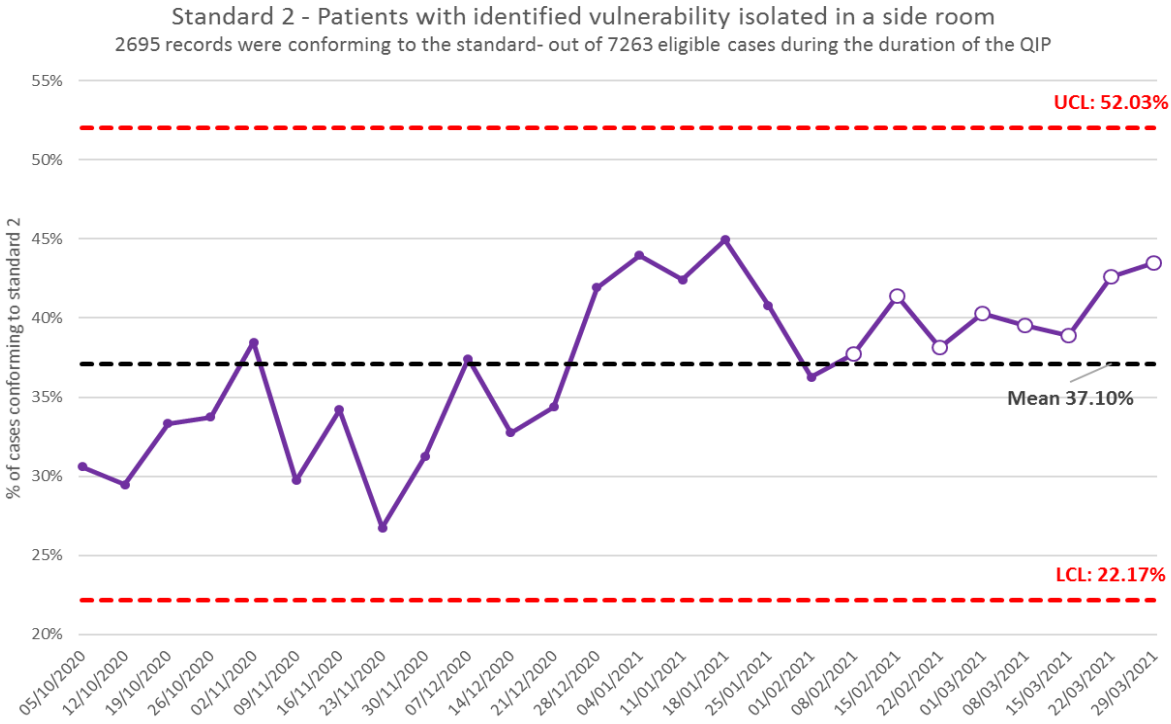
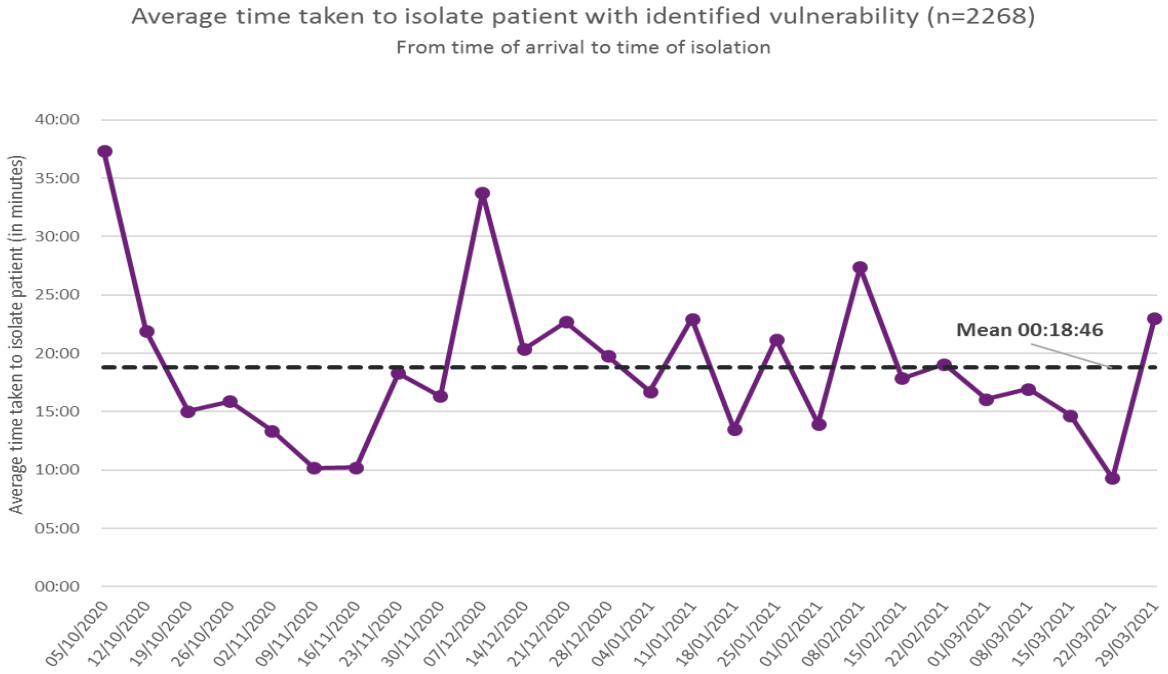
22/03/2021
29/03/2021


No screening (n=17500)
% of records where no screening was performed
35%
30%
25%
20%
15%
10%
5%
UCL 30.47%
Mean 20.45%
LCL: 10.44%
05/10/2020
12/10/2020
19/10/2020
26/10/2020
02/11/2020
09/11/2020
16/11/2020
23/11/2020
30/11/2020
07/12/2020
14/12/2020
21/12/2020
28/12/2020
04/01/2021
11/01/2021
18/01/2021
25/01/2021
01/02/2021
08/02/2021
15/02/2021
22/02/2021
01/03/2021
08/03/2021
15/03/2021
22/03/2021
29/03/2021

STANDARD 2 (Isolation of vunerable patients)

What questions were used for this analysis?
Q5 Patient with identified vulnerability was isolated in a side-room?
Meeting the standard: To meet this standard, the patient with identified vulnerability had to be isolated in a side-room.

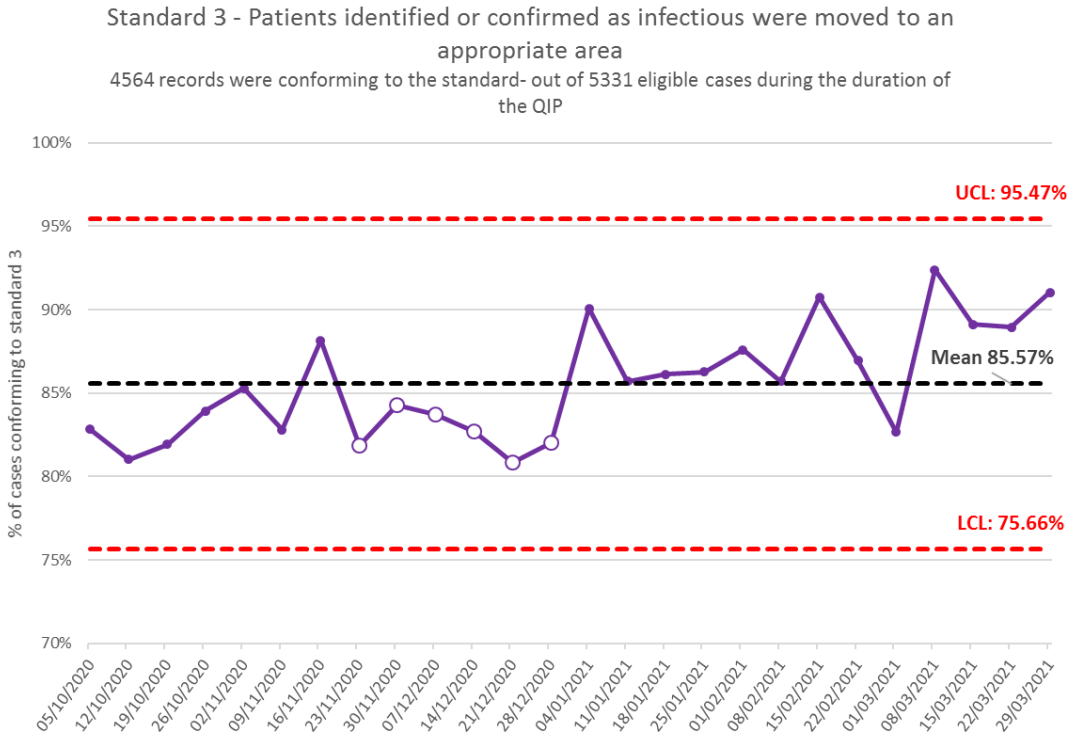


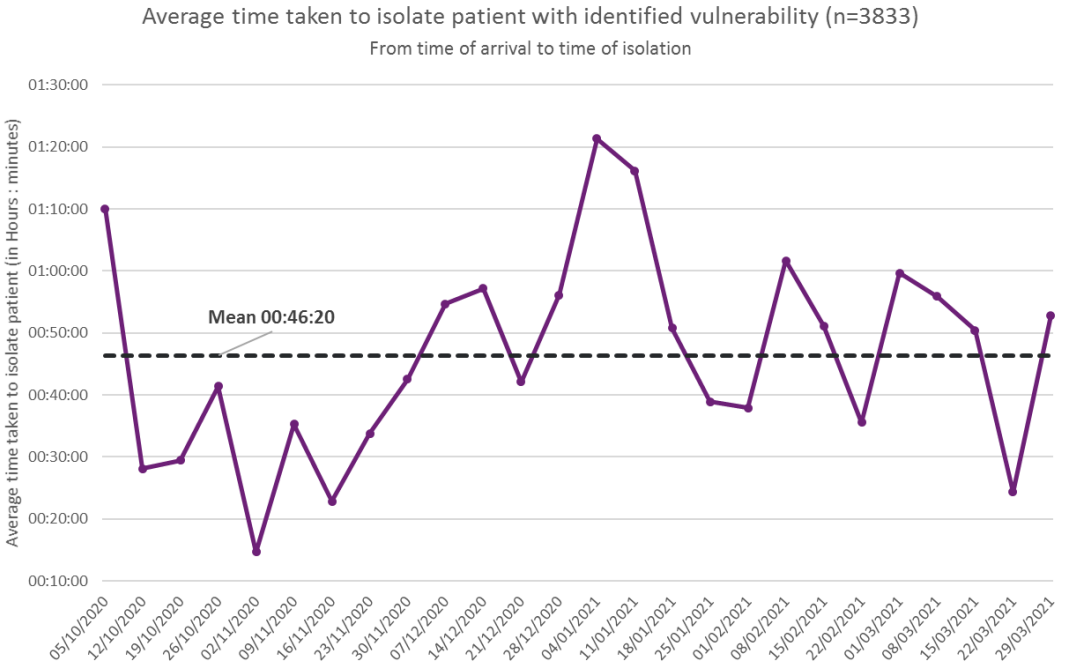


For the performance in Standard 2, about 37.10% of the eligible cases conformed to the criteria for this standard. For the cases conforming to standard*, the average time to isolate was just over 15 minutes. The process was stable but with considerable variation, performance was consistently above the mean from February until the end of the Study in April but, the Upper Control limit at 52% indicates that current system will not reach 100% conformation to the standard regardless of performance.
**Please note that only cases where the time of isolation was provided could be considered.*

STANDARD 3: (Isolation of confirmed or potentially infectious patients)

What questions were used for this analysis?
Q6 Was the patient identified as potentially or confirmed as infectious?
Q6.1 After the patient was identified as potentially or confirmed as infectious, were they moved to appropriate area?
Meeting the standard: To meet this standard, the patient that was identified as being potentially or confirmed as infectious, had to be moved to a non-clinical area.





For Standard 3, the Upper Control Limit at 95% is an indication that the system is currently capable of achieving very high levels of conformation to the standard. The time to isolate shows a great contrast compared to the time to isolate patients with identified vulnerability- The average in this case being over 45 minutes.

Organisation Audit

n= 64

STANDARD 1

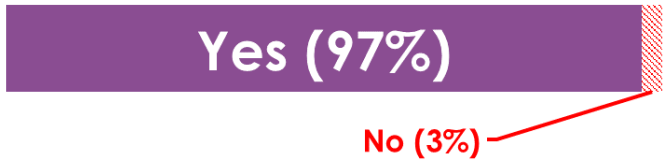
ED lead for infection prevention and control has been assigned and is taking an active role

STANDARD 2

ED has processes in place to ensure decontamination after every direct contact

STANDARD 2 (a)

Staff is trained in hand decontamination procedures

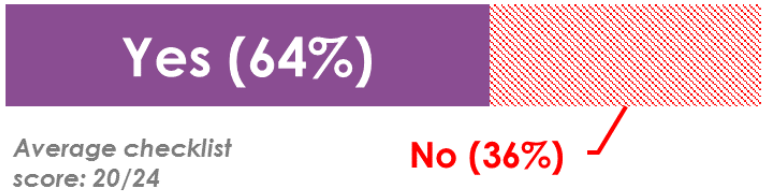


STANDARD 2 (b)

There is a process in place to ensure surveillance of hand washing policy compliance

STANDARD 3

The organisation has self-assessed against the RCEM Infection Control Checklist



Average checklist score: 20/24

Discussion

Summary

This audit has accumulated 17,500 individual cases from **154** EDs nationwide. The IPC QIP, as well as the other 2020/21 RCEM QIPs, have collected ethnicity data for the first time. Standard 3 shows the highest conformation to the standard per population with the percentage of individuals conforming to standard varying from 69.23% to 95.83%. For standard 1, the variation ranges between 8.3% conformation to 29.7%, for standard 2 the highest level of variation is observed where some populations had 10% conformation to standard and others had 51.2% conformation.
When considering all cases, the best performing standard is Standard 3; with the National Mean at 85.57% conformation to standard and 95% conformation within the control limits, this indicates that the system at a National level can achieve this standard. Whilst Standard 3 had the best performance, no noticeable period of improvement could be identified at a National Level. Standard 1 had the lowest National Mean (24.17%). When analysing the individual screening types that contribute to the conformation of this standard, the screening for other infectious diseases that require isolation had the lowest mean (40.82%), and it is closely followed by the screened for vulnerable conditions (42.13% of the cases submitted) this is likely to be a key factor for many cases not meeting Standard 1.

RCEM would like to extend thanks to all the individuals and EDs who participated in this clinical audit and QIP. By participating, you have made the first step to making sustainable changes in care – and a lot of you have made many more steps depending how extensively you made use of QI tools available.

The results of this QI project should be shared widely with staff who have a responsibility for looking after patients, especially the doctors and nurses directly involved in care provision. In addition to the clinical team, RCEM recommend sharing the report with the clinical audit and/or quality improvement department, departmental governance meeting, ED Clinical Lead, Head of Nursing and Medical Director as a minimum. Without having visibility of the data and recommendations we cannot expect to see improvements in practice.

Now that EDs have a six-month picture of their weekly performance on key measures RCEM encourages the clinical team and audit department to work together to review the effectiveness of PDSA cycles already completed, and design further cycles to improve performance which the data shows are required. Engaging staff in the process of action planning and PDSA cycles will lead to more effective implementation and sustainable improvements. The RCEM portal will remain live so that departments can continue to track their performance and evaluate the effects of further PDSA cycles.

For further QI advice and resources, please visit the RCEM Quality Improvement webpage

Limitations

No exclusion criteria was set in this QIP and, information such as patient age and gender was not collected. As a result, the current dataset cannot be used to analyse specific performance per age group or gender for each measure.

Conclusions

The 2020/21 RCEM Infection Prevention and Control QIP report offers a unique perspective into how UK EDs performed Infection Control related tasks during the COVID-19 pandemic.
The data in this report demonstrates that at the National level, there has been a noticeable period of improvement from early December 2020 until mid-January 2021 in the screening of patients for symptoms of COVID-19, showing that EDs were still able to carry out improvements during a pandemic. The report also shows that processes to isolate patients that were confirmed or suspected to be infectious had a national mean of 85% conformation to the RCEM standard, with 95% conformation being within the capabilities of the system. The organisational element of the QIP also shows that out of the sites that provided information in regard to their IPC policies, nearly all of the sites (>95%) have

policies in place that are conforming to the fundamental and developmental RCEM standards. The report also highlighted areas that could be the focus for future Quality Improvement initiatives. One such area is the screening process for, other infectious diseases that require isolation and, screening for vulnerable conditions, where each screening type achieved a national mean performance of less than 50%. The isolation of patients that have an identified vulnerability is also an area that could be of great interest for QI initiatives. The national mean performance for this standard was of 37% conformation to the RCEM standard, and results indicate that with the current system, the performance is not expected to exceed beyond 52% conformation. While the conformation to the standard was notably different from the standard involving the isolation of patients that are confirmed or suspected to be infectious (37% compared to 85%), the mean time taken to isolate patients that have an identified vulnerability was considerably lower than the meant time take to isolate patients that are confirmed as suspected to be infectious- 18:46 compared to 46:20 (mm:ss). In conclusion, the current report contains valuable data of the performance of UK EDs during a pandemic and, it highlights areas that had a good performance and were lessons can be learned, as well as areas that are in need of performance that should be the focus of future QI initiatives.

Recommendations – patient level

- Current results indicate that screening processes can be greatly improved. This is especially the case for screening for vulnerable conditions. The current control limits for the SPC charts indicate that a process redesign should be considered when planning improvement efforts.
- Processes to isolate patients with identified vulnerability should be revised and, a redesign should be considered in order to achieve higher conformation to the RCEM Standard.
- Whilst the performance for Standard 3 indicates that achieving 95% conformation to the standard is possible with the current system, improvement efforts should also consider reducing the time taken to isolate patients that are confirmed or, suspected to be infectious.
- The data collected during this QIP indicates that a number of records did not conform to Standard 2 or 3 because the patient movement was not recorded. This indicates that improvement efforts should also consider recordkeeping as an area that requires considerable improvement.

Recommendations – organisational level

- The results for the organisational audit demonstrate that the majority of the participating sites have the processes and policies in place that conform to the RCEM Standards but, one area that could be improved is the self-assessment against the RCEM Infection Control checklist. Sites that do not have processes to self-assess infection control, should start using the RCEM Infection Control to perform regular self-assessments.

Further Information

Thank you for taking part in this clinical audit and QIP. We hope that you find the process of participating and results helpful.

If you have any queries about the report, please e-mail audit@rcem.ac.uk.

Details of the RCEM clinical audit and national QIP Programme can be found under the Current Audits section of the RCEM website.

Feedback

We would like to know your views about this report and participating in this audit and QIP. Please let us know what you think by completing our feedback survey: https://www.surveymonkey.co.uk/r/QIP_202021

We will use your comments to help us improve our future topics and reports.

Useful Resources

- Site-specific report – available to download from the QIP portal (registered users only.
- Online dashboard charts – available from the QIP portal (registered users only). The dashboard remains open after the end of the national QIP project so you can keep monitoring local performance and doing PDSA cycles.
- Local data file – available from the QIP portal (registered users only).
- Guidance on understanding SPC charts
- RCEM Quality Improvement Guide - guidance on PDSA cycles and other quality improvement methods

Report authors and contributors

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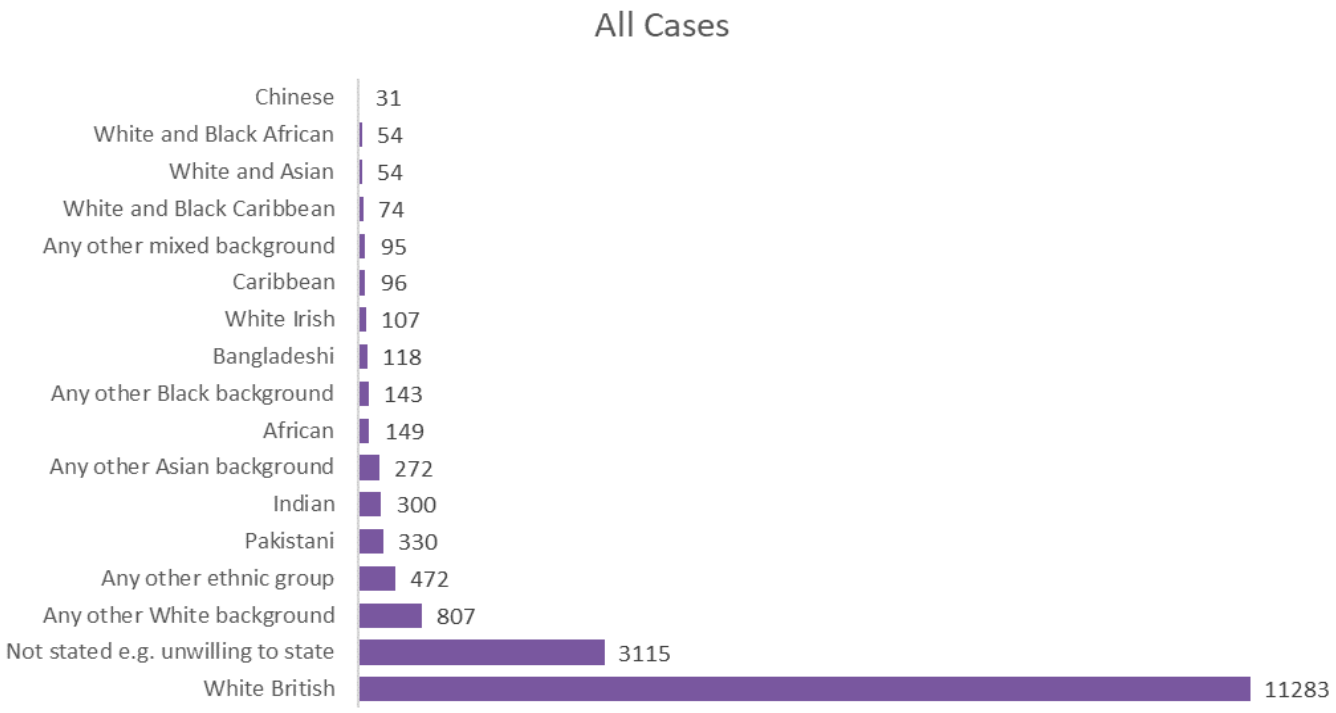
Appendices

Appendix 1: QIP questions

Organisational		
Q1	Is there a local lead for infection prevention and control in the ED? *NB this position is not the same as a Trust-level lead.*	• Yes/No
Q2	Are staff trained in hand decontamination procedures?	• Yes/No
Q3	Does your ED have processes in place to ensure decontamination after every direct contact?	• Yes/No
Q4	Are there processes in place to ensure surveillance of hand washing policy compliance?	• Yes/No
Q5	The organisation has self-assessed against the RCEM Infection Control checklist?	• Yes/No • (Optional question if Yes) how many points in the checklist was the answer Yes?
Clinical		
Q1	Reference (No identifiable data)	
Q2	Date and time of arrival or triage – whichever is earlier	dd/mm/yyyy HH:MM
Q3	Ethnic category	• White British • White Irish • Any other White background • White and Black Caribbean • White and Black African • White and Asian • Any other mixed background • Indian • Pakistani • Bangladeshi • Any other Asian background • Caribbean • African • Any other Black background • Chinese • Any other ethnic group • Not stated e.g. unwilling to state
Q4	Was the patient screened on arrival for (tick all that apply):	[ ] COVID-19 symptoms [ ] Other infectious diseases [ ] Vulnerable conditions
Q5	Patient with identified vulnerability was isolated in a side-room? *If the patient had no identified vulnerability select 'No vulnerability identified'.*	Yes dd/mm/yyyy HH:MM (*optional*) No Not recorded No vulnerability identified
Q6	Was the patient identified as potentially or confirmed as infectious?	Yes No
Q6.1	IF Q6 = Yes After the patient was identified as potentially or confirmed as infectious, were they moved to appropriate area?	Yes dd/mm/yyyy HH:MM (*optional*) No Not recorded

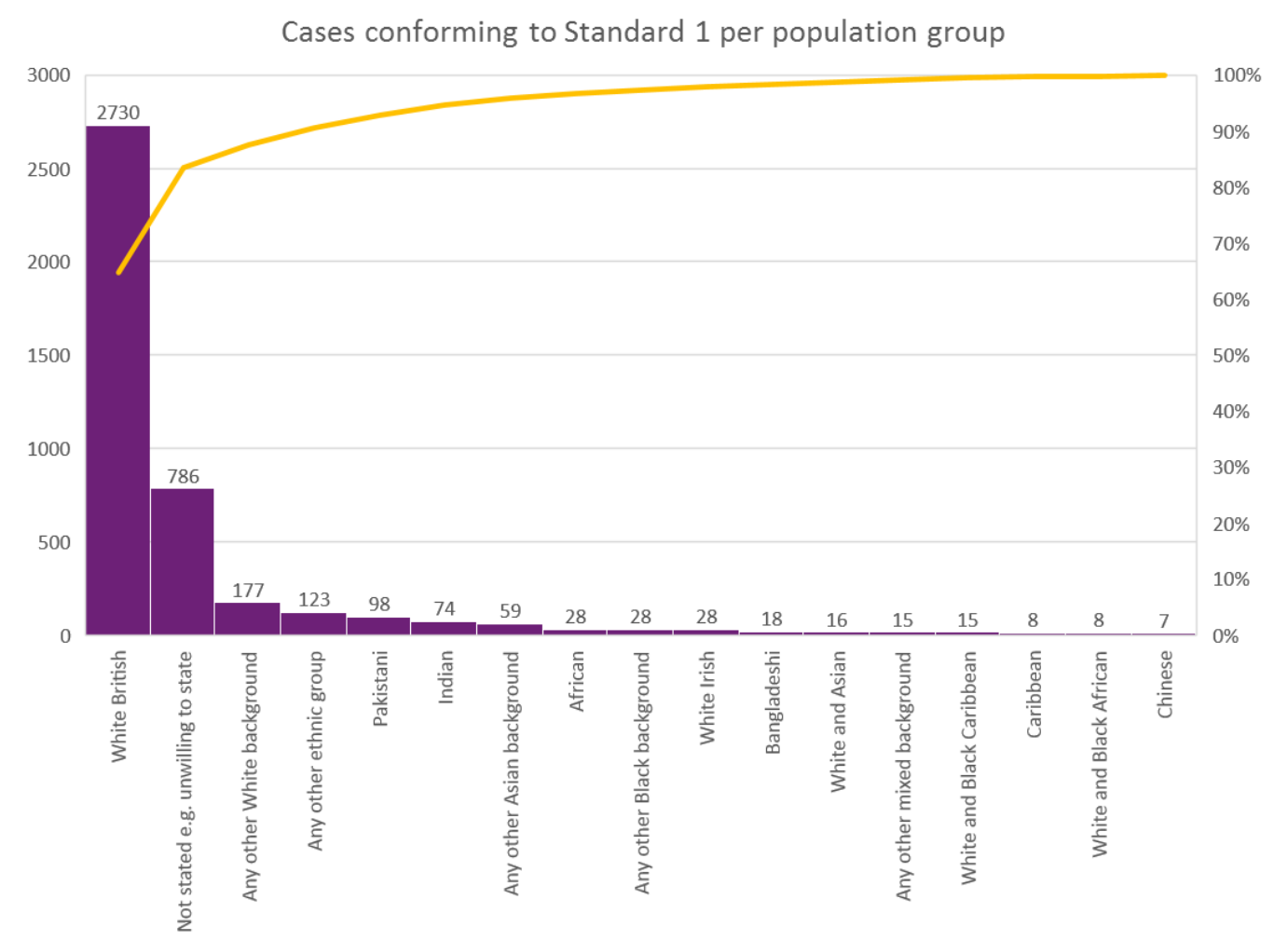
Appendix 2: Ethnicity Data Results

RESULTS – Ethnicity Data from records submitted



ETHNICITY	NUMBER	PERCENTAGE
Chinese	31	0.18%
White and Asian	54	0.31%
White and Black African	54	0.31%
White and Black Caribbean	74	0.42%
Any other mixed background	95	0.54%
Caribbean	96	0.55%
White Irish	107	0.61%
Bangladeshi	118	0.67%
Any other Black background	143	0.82%
African	149	0.85%
Any other Asian background	272	1.55%
Indian	300	1.71%
Pakistani	330	1.89%
Any other ethnic group	472	2.70%
Any other White background	807	4.61%
Not stated e.g. unwilling to state	3115	17.80%
White British	11283	64.47%

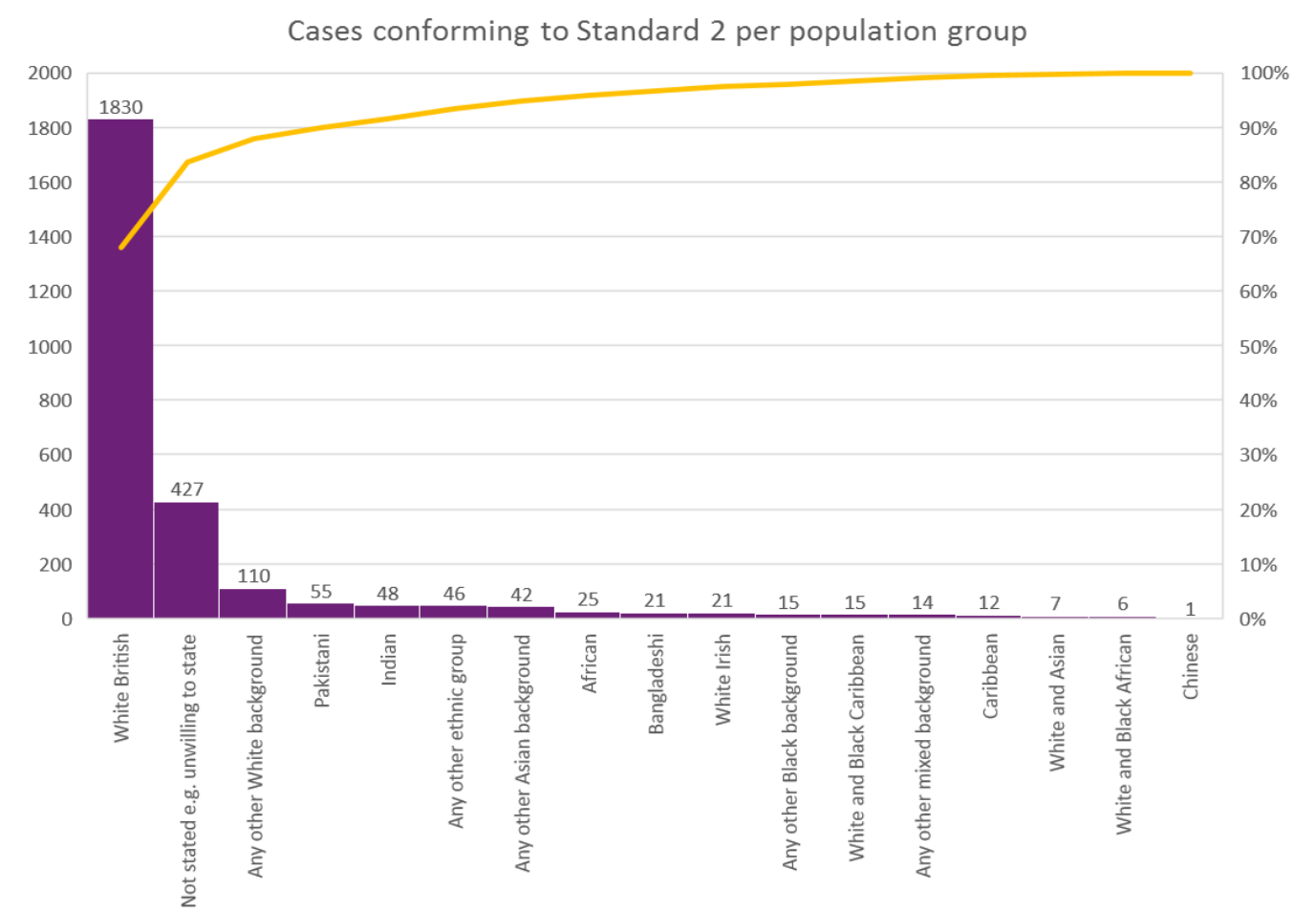
Standard 1 Performance



Population	Sample Size	Conforming to standard (% of specific population)	Not conforming to standard (% of specific population)
White British	11283	2730 (24.2%)	8553 (75.8%)
Not stated	3115	786 (25.2%)	2329 (74.8%)
Any other White background	807	177 (21.9%)	630 (78.1%)
Any other ethnic group	472	123 (26.1%)	349 (73.9%)
Pakistani	330	98 (29.7%)	232 (70.3%)
Indian	300	74 (24.7%)	226 (75.3%)
Any other Asian background	272	59 (21.7%)	213 (78.3%)
African	149	28 (18.8%)	121 (81.2%)
Any other Black background	143	28 (19.6%)	115 (80.4%)
Bangladeshi	118	18 (15.3%)	100 (84.7%)
White Irish	107	28 (26.2%)	79 (73.8%)
Caribbean	96	8 (8.3%)	88 (91.7%)
Any other mixed background	95	15 (15.8%)	80 (84.2%)
White and Black Caribbean	74	15 (20.3%)	59 (79.7%)
White and Asian	54	16 (29.6%)	38 (70.4%)
White and Black African	54	8 (14.8%)	46 (85.2%)
Chinese	31	7 (22.6%)	24 (77.4%)

Sample size is defined by record eligibility. For standard 1, all records were eligible.

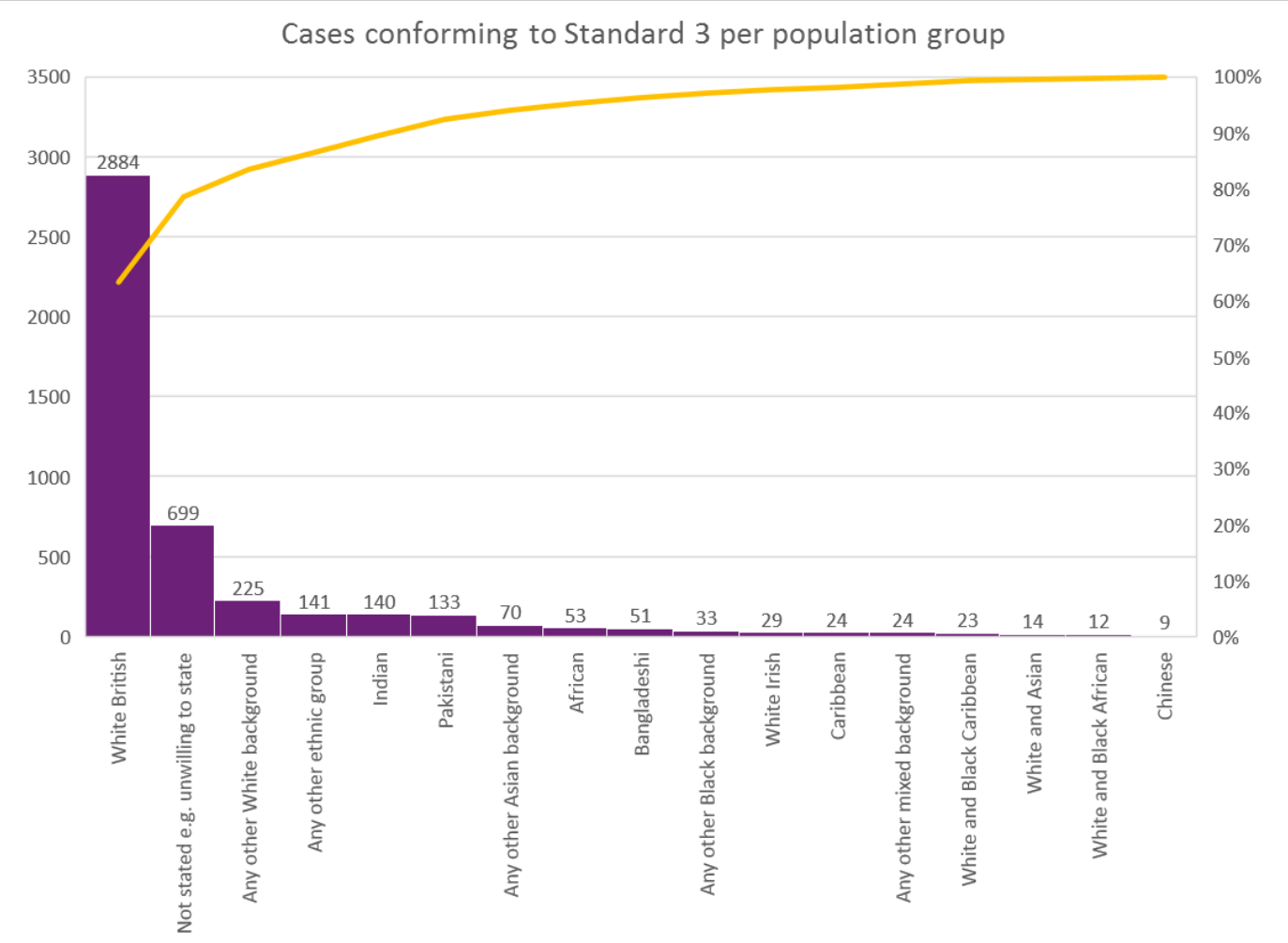
Standard 2 Performance



Population	Sample Size	Conforming to standard (% of specific population)	Not conforming to standard (% of specific population)
White British	4846	1830 (37.8%)	3016 (62.2%)
Not stated	1237	427 (34.5%)	810 (65.5%)
Any other White background	295	110 (37.3%)	185 (62.7%)
Any other ethnic group	161	46 (28.6%)	115 (71.4%)
Pakistani	131	55 (42.0%)	76 (58.0%)
Indian	143	48 (33.6%)	95 (66.4%)
Any other Asian background	117	42 (35.9%)	75 (64.1%)
African	52	25 (48.1%)	27 (51.9%)
Any other Black background	48	15 (31.3%)	33 (68.8%)
Bangladeshi	41	21 (51.2%)	20 (48.8%)
White Irish	46	21 (45.7%)	25 (54.3%)
Caribbean	29	12 (41.4%)	17 (58.6%)
Any other mixed background	36	14 (38.9%)	22 (61.1%)
White and Black Caribbean	32	15 (46.9%)	17 (53.1%)
White and Asian	17	7 (41.2%)	10 (58.8%)
White and Black African	22	6 (27.3%)	16 (72.7%)
Chinese	10	1 (10.0%)	9 (90.0%)

Sample size is defined by record eligibility. For standard 2, only patients with identified vulnerability were eligible.

Standard 3 Performance



Population	Sample Size	Conforming to standard (% of specific population)	Not conforming to standard (% of specific population)
White British	3383	2884 (85.2%)	499 (14.8%)
Not stated	832	699 (84.0%)	133 (16.0%)
Any other White background	254	225 (88.6%)	29 (11.4%)
Any other ethnic group	164	141 (86.0%)	23 (14.0%)
Pakistani	151	133 (88.1%)	18 (11.9%)
Indian	154	140 (90.9%)	14 (9.1%)
Any other Asian background	81	70 (86.4%)	11 (13.6%)
African	57	53 (93.0%)	4 (7.0%)
Any other Black background	41	33 (80.5%)	8 (19.5%)
Bangladeshi	56	51 (91.1%)	5 (8.9%)
White Irish	33	29 (87.9%)	4 (12.1%)
Caribbean	31	24 (77.4%)	7 (22.6%)
Any other mixed background	28	24 (85.7%)	4 (14.3%)
White and Black Caribbean	24	23 (95.8%)	1 (4.2%)
White and Asian	15	14 (93.3%)	1 (6.7%)
White and Black African	14	12 (85.7%)	2 (14.3%)
Chinese	13	9 (69.2%)	4 (30.8%)

Sample size is defined by record eligibility. For standard 3, only patients identified as potentially or confirmed as infectious were eligible.

Appendix 3: Participating Emergency Departments

England

Airedale General Hospital
Alexandra Hospital
Arrowe Park Hospital
Barnet Hospital
Barnsley Hospital
Basildon University Hospital
Basingstoke and North Hampshire Hospital
Bassetlaw Hospital
Bedford Hospital
Birmingham City Hospital
Blackpool Victoria Hospital
Bradford Royal Infirmary
Bristol Royal Infirmary
Broomfield Hospital
Calderdale Royal Hospital
Charing Cross Hospital
Chelsea and Westminster Hospital
Chesterfield Royal Hospital
Chorley and South Ribble Hospital
Colchester Hospital
Conquest Hospital
Countess of Chester Hospital
Croydon University Hospital
Cumberland Infirmary
Darent Valley Hospital
Darlington Memorial Hospital
Dewsbury and District Hospital
Diana, Princess of Wales Hospital
Doncaster Royal Infirmary
Dorset County Hospital
Ealing Hospital
East Surrey Hospital
Eastbourne District General Hospital
Fairfield General Hospital
Frimley Park Hospital
George Eliot hospital
Gloucestershire Royal Hospital
Good Hope Hospital
Great Western Hospital
Harrogate District Hospital
Heartlands Hospital
Hillingdon Hospital
Hinchingbrooke Hospital
Homerton University Hospital
Huddersfield Royal Infirmary
Hull Royal Infirmary
Ipswich Hospital
James Cook University Hospital
James Paget Hospital
Kettering General Hospital
King George Hospital
King's College Hospital (Denmark Hill)
King's Mill Hospital
Kingston Hospital
Leicester Royal Infirmary
Leighton Hospital
Lincoln County Hospital
Lister Hospital
Luton & Dunstable University Hospital
Manchester Royal Infirmary
Medway Maritime Hospital
Milton Keynes University Hospital
Musgrove Park Hospital
Newham University Hospital
Norfolk and Norwich University Hospital
North Devon District Hospital
North Manchester General Hospital
North Middlesex University Hospital
Northampton General Hospital
Northumbria Specialist Emergency Care Hospital
Northwick Park Hospital
Peterborough City Hospital
Pilgrim Hospital
Pinderfields Hospital
Princess Alexandra Hospital
Princess Royal University Hospital (PRUH)
Queen Alexandra Hospital
Queen Elizabeth Hospital (University Hospitals Birmingham NHSFT)
Queen Elizabeth Hospital (Woolwich)
Queen Elizabeth The Queen Mother Hospital
Queen's Hospital (RBH)
Queen's Medical Centre
Rotherham District General Hospital
Royal Berkshire Hospital
Royal Blackburn Teaching Hospital
Royal Bolton Hospital
Royal Bournemouth Hospital
Royal Cornwall Hospital
Royal Derby Hospital
Royal Devon and Exeter (Wonford) Hospital
Royal Hampshire County Hospital
Royal Liverpool Hospital
Royal Preston Hospital
Royal Shrewsbury Hospital
Royal Stoke University Hospital
Royal Surrey County Hospital
Royal United Hospital
Royal Victoria Infirmary
Russells Hall Hospital
Salford Royal
Salisbury District Hospital
Sandwell General Hospital
Scunthorpe General Hospital
Sheffield Children’s Hospital
South Tyneside District Hospital
Southampton General Hospital
Southend University Hospital
Southmead Hospital
Southport General Infirmary
St George’s Hospital (Tooting)
St Mary's Hospital (Imperial College Healthcare NHST)

St Peter's Hospital
St Thomas' Hospital
Stepping Hill Hospital
Stoke Mandeville Hospital
Sunderland Royal Hospital
Tameside General Hospital
The County Hospital (University Hospitals of North Midlands NHS Trust)
The County Hospital (Wye valley NHS Trust)
The Princess Royal Hospital (Shrewsbury and Telford NHST)
The Queen Elizabeth Hospital (King's Lynn)
The Royal Free Hospital
The Royal London Hospital
The Royal Oldham Hospital
Torbay Hospital
University Hospital Aintree
University Hospital Coventry - UH Coventry and Warwickshire NHST
University Hospital Lewisham
University Hospital of North Durham
University Hospital of North Tees
Walsall Manor Hospital
Warrington Hospital
Warwick Hospital
Watford General Hospital
West Cumberland Hospital
West Middlesex University Hospital
West Suffolk Hospital
Weston General Hospital
Wexham Park Hospital
Whiston Hospital
Whittington Hospital
William Harvey Hospital
Worcestershire Royal Hospital
Wythenshawe Hospital
York Hospital

Northern Ireland

Antrim Area Hospital
Craigavon Area Hospital
Daisy Hill Hospital

Scotland

Dumfries and Galloway Royal Infirmary
Wishaw General Hospital

Wales

Morriston Hospital
Royal Glamorgan Hospital
Wrexham Maelor Hospital
Ysbyty Gwynedd

Appendix 4: Definitions

Term	Definition
Vulnerability [2]	Clinically extremely vulnerable people may include the following people. Disease severity, history or treatment levels will also affect who is in the group. 1. Solid organ transplant recipients. 2. People with specific cancers: **o** people with cancer who are undergoing active chemotherapy **o** people with lung cancer who are undergoing radical radiotherapy **o** people with cancers of the blood or bone marrow such as leukaemia, lymphoma or myeloma who are at any stage of treatment **o** people having immunotherapy or other continuing antibody treatments for cancer **o** people having other targeted cancer treatments which can affect the immune system, such as protein kinase inhibitors or PARP inhibitors **o** people who have had bone marrow or stem cell transplants in the last 6 months, or who are still taking immunosuppression drugs 3. People with severe respiratory conditions including all cystic fibrosis, severe asthma and severe chronic obstructive pulmonary (COPD). 4. People with rare diseases that significantly increase the risk of infections (such as SCID, homozygous sickle cell). 5. People on immunosuppression therapies sufficient to significantly increase risk of infection. 6. Women who are pregnant with significant heart disease, congenital or acquired.
COVID-19 Symptoms [3]	• a high temperature • a new, continuous cough • a loss or change to your sense of smell or taste (Symptoms correct as of NHS guidance Sept 2020, but subject to change)
Side-room	The Side-room must have a door. A bay with curtain can also be considered for this standard if in a non-COVID-19/green area.
Non-clinical area [2]	E.g. waiting rooms, corridors.

Appendix 5: Calculations

This section explains how the RCEM team will be analysing your data. You are welcome to use this analysis plan to conduct local analysis if you wish. Analysis sample tells you which records will be included or excluded from the analysis. The analysis plan tells you how the RCEM team plan to graph the data and which records will meet or fail the standards.

Organisation standards

STANDARD	Relevant questions	Analysis plan – conditions for the standard to be met
Organisational standard 1	Q1 (Organisational data)	Q1 = Yes (Met) Q1 = No (Not met)
Organisational standard 2	Q3 (Organisational data)	Q3 = Yes (Met) Q3 = No (Not met)
Organisational standard 2a	Q2 (Organisational data)	Q2 = Yes (Met) Q2 = No (Not met)
Organisational standard 2b	Q4 (Organisational data)	Q4 = Yes (Met) Q4 = No (Not met)
Organisational standard 3	Q5 (Organisational data)	Q5 = Yes (Met) Q5 = No (Not met)

Clinical Standards

STANDARD	Relevant questions	Analysis sample	Analysis plan – conditions for the standard to be met
Standard 1	Q4	All patients	**Chart:** SPC **Title:** Standard 1 – Patient Screening on arrival **Analysis:** Met: Q1 (All options selected) **Additional Chart:** SPC Chart with lines for each option in Q1, including records where no option was selected
Standard 2	Q5	All patients with identified vulnerability	**Chart:** SPC **Title:** Standard 2 – Patients with identified vulnerability isolated in a side room **Analysis:** Met: Q5 = Yes **Additional Chart:** SPC of ΔT(Q5-Q2)
Standard 3	Q6 Q6.2	Q6 = Yes	**Chart:** SPC **Title:** Standard 3 – Patients identified as potentially or confirmed as infectious were moved to an appropriate area **Analysis:** Met: Q6.2 = Yes **Additional Chart:** SPC of ΔT(Q6.2-Q2)

Appendix 6: Understanding your results

Statistical process control (SPC) charts

The charts in this report and your new online dashboard can tell you a lot about how your ED is performing over time and compared to other EDs. If you're not used to seeing data in this way it can take a little time to get used to. This section of the report will help you understand the charts and interpret your own data.

The main type of chart is known as a **Statistical Process Control (SPC) chart** and plots your data every week so you can see whether you are improving, if the situation is deteriorating, whether your system is likely to be capable to meet the standard, and also whether the process is reliable or variable.

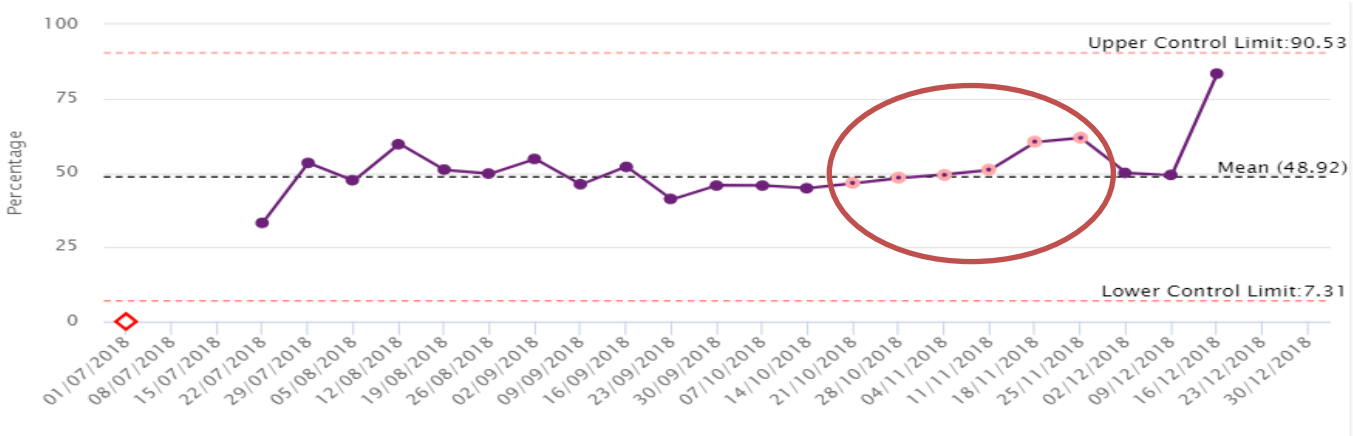
As well as seeing your actual data plotted each week you will see a black dotted average line, this is the **mean** percentage of patients. The SPC chart will point out if your data has a run of points above (or below) the mean by changing the dots to white. If your data is consistently improving (or deteriorating) the dots will turn red so the trend is easy to spot. If a positive run or trend of data happens when you're trying a PDSA/change intervention this is a good sign that the intervention is working.

As well as the dotted mean line, you will see two other lines which are known as the **upper and lower control limits**. The control limits are automatically determined by how variable the data is. Around 99% of all the data will fall between the upper and lower control limits, so if a data point is outside these lines you should investigate why this has happened.

Interpreting your data

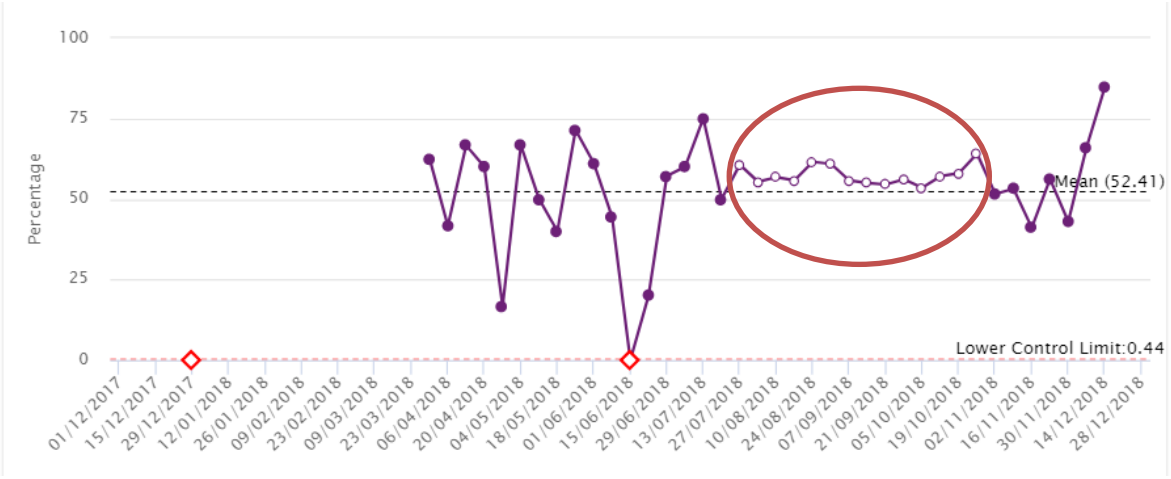
1. **Performance is improving (or deteriorating)**

A consistent run of data points going up or down with be highlighted with **red dots** so they are easy to spot. A run of data going up is a good sign that your service is making improvements that are really working. If the data is going down this may indicate that service is deteriorating for some reason – watch out for a lack of resources or deterioration as a result of a change somewhere else in the system.



2. **Performance is consistently above (or below) the mean**

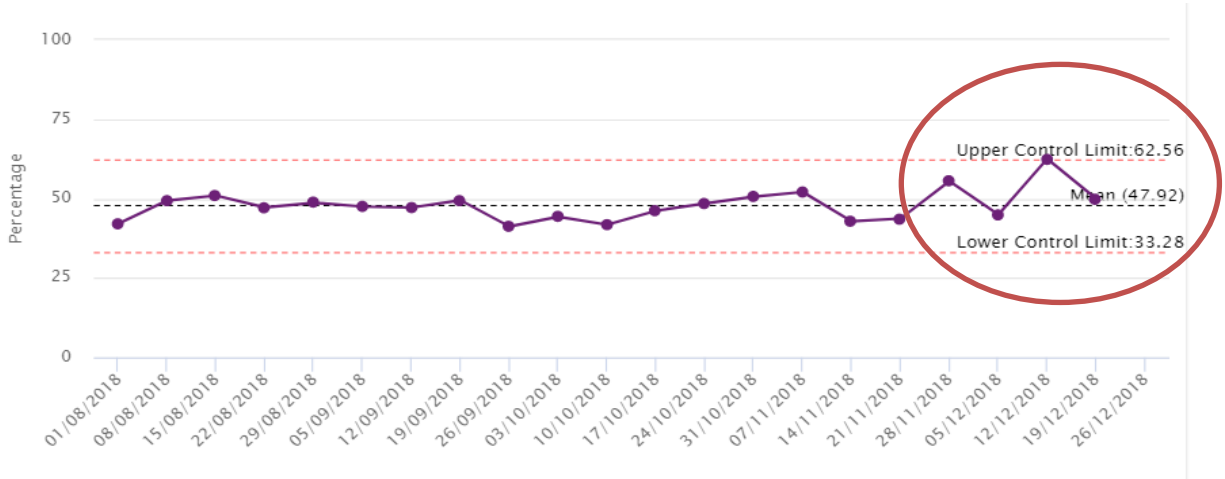
A consistent run of data that is above or below the mean will be highlighted with **white or blue dots** so they are easy to spot. If your data has been quite variable this is a good sign that the process is becoming more reliable.



3. Is your system likely to be capable of meeting the standard?

The **control limits** show where you can assume 99% of your data will be. If you find that the standard is outside your control limits, it is very unlikely that your system is set up to allow you to meet the standard. If you do achieve the standard, this will be an unusual occurrence and very unlikely to be sustained. If this is the case, it is recommended that you look at how the process can be redesigned to allow you to meet the standard.

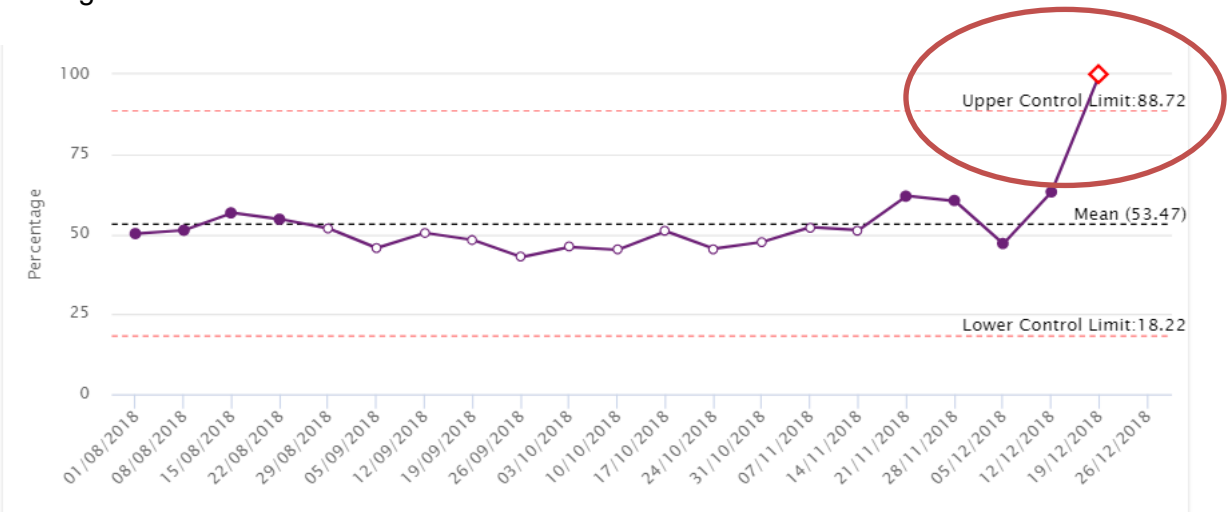
In the below example, the process is performing consistently at around 50%. The control limits show us that most of the time we would expect the process to be between 33% - 62%. If the standard for this process was 50%, then the process is well designed. If, however, the standard was 75% then the chart warns us that the system is not currently set up to allow the process to achieve the standard.



5. Something very unusual has happened!

The majority of your data should be inside the upper and lower control limits, these are automatically calculated by the system. If a single data point falls outside these limits then something very unusual has happened. This will be flagged up with a **red diamond** so you can spot it.

In some cases it may mean that the data has been entered incorrectly and should be checked for errors. It may also mean that something unexpected has had a huge impact on the service and should be investigated.



Appendix 7: Privacy policy, terms of website use and website acceptable use policy

Privacy policy

The Royal College of Emergency Medicine (RCEM) recognises the importance of protecting personal information and we are committed to safeguarding members, non-members and staff (known as "The User" in this document) privacy both on-line and off-line. We have instituted policies and security measures intended to ensure that personal information is handled in a safe and responsible manner. This Privacy statement is also published on the RCEM web site so that you can agree to the kind of information that is collected, handled and with whom this data is shared with.

RCEM strive to collect, use and disclose personal information in a manner consistent with UK and European law and under the General Data Protection Regulation (GDPR). This Privacy Policy states the principles that RCEM follows and by accessing or using the RCEM site you agree to the terms of this policy.

For further information, click ***here***.

Terms of website use

For further information, click ***here***.

Website acceptable use policy

For further information, click ***here***.

Appendix 8: References

1. NICE (2014) Quality standard [QS61] Infection prevention and control,
2. RCEM (2020) Emergency Department Infection Prevention and Control (IPC) during the Coronavirus Pandemic.
3. Available at: https://www.nhs.uk/conditions/coronavirus-COVID-19/symptoms/ [Accessed 25 September 2020].

Appendix 9: ECDS Search terms to support case identification

These codes will help you and your IT team to identify cases that may be eligible for the audit. This is not an exhaustive list and other search terms can be used. All potential patients should then be reviewed to check they meet the definitions & selection criteria before inclusion in the audit.

The ECDS codes below relate to CDS V6-2-2 Type 011 - Emergency Care Data Set (ECDS) Enhanced Technical Output Specification v3.0.

QIP question	ECDS data item name	ECDS national code	National code definition	Notes
Date and time of arrival or triage – whichever is earlier	EMERGENCY CARE ARRIVAL DATE EMERGENCY CARE ARRIVAL TIME	an10 CCYY-MM-DD an8 HH:MM:SS	Date Time	
Ethnic group	ETHNIC CATEGORY	A	White British	
		B	White Irish	
		C	Any other White background	
		D	White and Black Caribbean	
		E	White and Black African	
		F	White and Asian	
		G	Any other mixed background	
		H	Indian	
		J	Pakistani	
		K	Bangladeshi	
		L	Any other Asian background	
		M	Caribbean	
		N	African	
		P	Any other Black background	
		R	Chinese	
		S	Any other ethnic group	
		Z	Not stated e.g. unwilling to state	
		99	Not known e.g. unconscious	

Appendix 10: Template to submit your QI initiatives for publication on the RCEM website

If you would like to share details of your QI initiative or PDSA cycle with others, please complete this document and email it to audit@rcem.ac.uk.

Name: _____

Email address:_____

Hospital: _____

Trust: _____

Plan State the question you wanted to answer – what was your prediction about what would happen? What was your plan to test the change (who, what, when, where)? What data did you collect, how did you plan to collect it?	
Do How did you carry out the change? Did you come across any problems or unexpected observations? How did you collect and analyse the data?	
Study What did the analysis of your results show? How did it compare to your predictions? Summarise and reflect on what you learnt.	
Act Based on what you learnt, what did you adapt (modify and run in another test), adopt (test the change on a larger scale) or abandon?	

Did you prepare for another PDSA based on you learning?	
Reflection and learning What did you and the team learn from this QI initiative? What advice would you give to someone else in your position?	

Appendix 11: pilot methodology

A pilot of the audit was carried out prospectively from 20 May 2019 – 7 July 2019. This tested the standards, questions, quality of data collectable, as well as the functioning of the online portal and reporting templates.

Several improvements were made to the final project based on feedback from the pilot sites.

RCEM were grateful to contacts from the following Trusts for helping with the development of the audit and integrated QIP:

Sandwell and West Birmingham NHS Trust

Appendix 12: Checklist for Emergency Departments

Structure	Yes	No
Is there an area of the ED where potentially infectious cases can be cohorted ?		
Has the maximum occupancy of each clinical area been defined ?		
Has the maximum occupancy of each non-clinical area been defined ?		
Is there social distancing, ensuring patients do not wait less than 2 metres away from other patients, in the waiting room ?		
Are staff able to wash their hands in every area of the ED ?		
Are patients able to wash their hands in every area of the ED ?		
Are reception staff protected by screens ?		
Is it clear to staff where infectious patients are looked after ?		
Are there clear reminders for staff to use the correct level of PPE in clinical areas ?		
Are AGPs only performed in cubicles that do not allow spread by staff wearing appropriate PPE		
Is there adequate social distancing for staff having breaks ?		
Process		
Is one member of staff always in high level PPE available to provide AGPs on a seriously ill patient who arrives without warning ?		
Is the need for isolation for people with potentially infectious diseases routinely identified at triage ?		
Is the need for isolation for people who vulnerable to infectious diseases routinely identified at triage ?		
Is there an escalation process when maximum occupancy of an area is exceeded ?		
Are diagnostic samples from people with potentially infectious diseases handled so that laboratory staff are not exposed to avoidable risk ?		
Are imaging staff routinely made aware of whether a patient has a potentially infectious disease ?		
Are bed managers made aware early of the suspected status of a patient so that patients are admitted to the right sort of bed ?		
Education & Training		
Are there effective ways of sharing PPE guidance ?		
Are new staff trained in how to use PPE ?		
Are new staff trained in IPC ?		
Are staff regularly audited on IPC ?		
Is there a record of which staff are trained on IPC and PPE use ?		
Is there a record of which staff have been risk assessed which takes into account ethnicity ?		
Is there a record of which staff are self-testing and their compliance ?		
Is there a record of which staff have been vaccinated ?