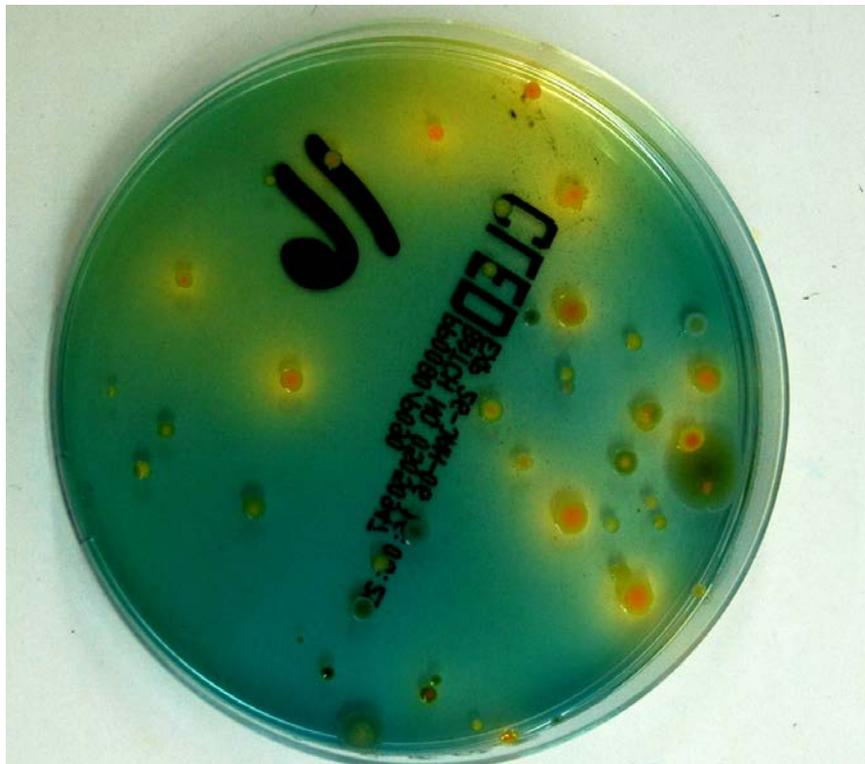




## Director of Infection Prevention and Control Annual Report 2016/17



## Contents

1	Executive Summary.....	3
2	Standards.....	4
3	Action Plan Review .....	4
4	Activity .....	5
5	Untoward Incidents / Risks.....	8
6	Future Developments.....	8
	Appendix 1.....	10
	Appendix 2.....	13
	Appendix 3.....	14
	Appendix 4.....	18
	Appendix 5.....	22

## 1 Executive Summary

South Central Ambulance Service, NHS Foundation Trust (SCAS) was formed in 2006, covering 4 counties and a population of 4 million residing in over 3,500 miles. It employs over 3,000 clinical and non-clinical staff and is supported by over 1,200 volunteers.

SCAS recognises the importance of infection prevention and control across all areas of emergency and urgent care (E&UC) and patient transport services (PTS) and control centres to improve cleanliness and prevent harm to the patients that are cared for in the pre-hospital environment.

SCAS has taken measures to ensure that our policies and processes adhere to the requirements and performance outlined by the following: -

- Hygiene Code 2008
- NHSLA Risk Management Scheme for Trusts
- Care Quality Commission (CQC) Healthcare Associated Infections (HCAI) registration
- Care Quality Commission, Fundamental Standards
- Department of Health Guidance for Ambulance Services
- Health and Social Care act 2008 (Regulated Activities) Regulations 2015
- Health and Safety Executive advisory committee on dangerous pathogens
- NICE guidelines
- EPIC 3

This report has been developed by the Infection Control Lead on behalf of the Director of Quality and Patient Care/DIPC to cover the main areas of work and the progress made over the last year to improve the working environment for staff and prevent harm to the patients in our care.

The Infection Control Lead is the first point of contact for all IPC issues and works with colleagues in E&UC operations, commercial services, the education department, estates, fleet, human resources, clinical coordination centres (CCC) and our occupational health provider to maximise feedback and ensure compliance with procedures relating to infection prevention and control (see appendix 2).

The Trust also receives support from the Infection Prevention and Control Nurse and the Microbiology Consultant at Portsmouth Hospital, a specialist team at the Queen Alexander Hospital working under a Service Level Agreement, the Infection Prevention Society and various Infection Control Groups throughout the SCAS footprint including local Public Health England Units.

Infection prevention and control is reported on at the Patient Safety Group (PSG) concentrating on patient safety and ensuring that the work and implications for all service areas of the Trust are informed and information disseminated. The PSG reports to the Trusts Quality and Safety committee. All infection prevention and control issues are reported through the Patient Safety Group that meets six times a year. This ensures that all aspects of infection control are reviewed by representatives of all services and that the risks are fully discussed, lessons learnt and actioned where required.

Links are also evident with the Operational Health, Safety and Risk Group, Human Resources, Fleet, Patient Safety, Health and Well Being forum and the Vehicle Equipment Review Group (appendix 2).

A Trust wide equipment lead and the Make Ready contract manager work closely with the Infection Control Lead to ensure that vehicles and clinical equipment is fit for purpose, regularly maintained and cleaned appropriately. This is monitored through the

Operational Health, Safety and Risk Committee to provide assurance and monitor any actions required.

Information sharing between SCAS and the Acute Trusts continues through regional committee meetings, such as, Thames Valley Infection Prevention Group, Bucks Infection Control Committee, the National Ambulance Service Infection Prevention and Control Group (NASIPCG) and the Oxfordshire Joint Infection Control Committee (OJICC). There are a number of Sepsis groups across the SCAS network and have direct input from the Infection Control Lead and/or the Trust Consultant Pre-Hospital Care Practitioner at these meetings. There are no other meeting groups for IPC across the Hampshire area of the Trust.

The Infection Control Lead attends all meetings of the NASIPCG who are commissioned by the Quality, Governance and Risk Directors (QGARD) and meet at quarterly intervals.

Trust PTS and E&UC staff who work with patient's everyday continue to contribute to the cleanliness of vehicles and equipment as these staff are responsible for the cleaning and decontamination of the vehicles and equipment post patient contact / journey.

## **2 Standards**

South Central Ambulance Service NHS Foundation Trust infection prevention and control is regulated by Infection Control committees from our Clinical Commissioning Groups, legislation, CQC, Department of Health and NHS England.

Infection control training has been developed to meet the standards required under all due legislation and guidance and is delivered at corporate induction, through face to face team training days by the Infection Control Lead and via e-learning through the electronic staff records platform. The Infection Control lead has trained the education teams in the presentation of the subject matter and as such is supported by the Education Department of the Trust to help deliver this training. Do you Quality Assure this training?

Incidents are monitored through the PSG where infection prevention and control incidents, such as needle stick injuries and possible infection concerns are all discussed, monitored and learning identified. This is tracked through the infection prevention and control standard item in the meeting minutes and evidenced through the Datix reporting system.

Information and changes to policy and care are documented and tracked through the PSG and monitored by the Quality and Safety Committee. Regular updates and exception reports are also presented to the Trust Board.

The Director of Quality and Patient Care/DIPC is a member of the Quality, Governance and Risk Directors national group which monitors the NASIPCG sub group.

## **3 Action Plan Review**

The Trust has in post, a full time Infection Control Lead (ICL) to manage day to day Infection control queries and concerns, carry out audits and follow up on action plans. The role also has a training element to educate new staff in IPC practices during their Corporate Induction, train the trainers and organise and participate in the Trusts infection control road-shows. The Trust adopts a clinical information month of which April 2016 was designated Infection Prevention and Control month of which weekly articles around IPC were published in the Trust 'Staff Matters' internal media releases. The IPC Lead

has qualifications in infection prevention and control and a level 4 City and Guilds qualification in teaching (PTTLS).

A detailed programme of work is outlined in the action plan provided as Appendix 1. This has taken into account the changes to the Trust Infection Prevention Control and Decontamination Policy and also the changes needed to address compliance with the CQC, Hygiene Code, Health and Social Care Act and EPIC 3.

#### 4 Activity

Significant infection prevention and control items presented to the 2016-17 Board meetings are shown in the following table.

Meeting Date	Key Issues Reported
April 2016	Flu vaccine ordered for 2016/17 season
April 2016	Introduction of washable keyboard for ePR tablet
April 2016	Opening of new PTS resource centre at Basingstoke. (SHIP Contract)
May 2016	Completion of refurbishment of Reading PTS building to achieve IPC standards
May 2016	CQC visit to SCAS for official rating.
October 2016	Flu Vaccination project commenced. Target 10% above 2015/16 baseline
January 2017	Review of EU directive 2010/32/EU on safer sharps to ensure compliance with new products now available (EVRG) removal of 12g cannula from packing list.
March 2017	IPC audit figures for staff (patient facing) observations, including hand hygiene.
February 2017	Final figures submitted for Flu Vaccination to ImmForm 54.26%.

#### Health Care Associated Infection (HCAI) Rates

Periods of direct patient contact in E&UC services and the Patient Transport Service are usually short (normally less than one hour), therefore it is difficult to produce information on HCAI outcomes specific to ambulance services. However the Trust takes infection control extremely seriously and has in place strict measures for cleaning vehicles to maintain the cleanliness for the benefit of patients and staff. The IC Lead produces reports for commissioning groups detailing the measures the Trust takes to reduce the risk of HCAs to service users.

There were no incidences of gastrointestinal disease or other illness affecting three or more staff at any given time on a singular resource centre and there were no informed or identified incidences of HCAI that were reportable to the NPSA during 2017/17

#### Key Clinical Improvements

Service and practice improvements have been made during 2016/17. These are outlined below:

- The Infection Control lead has utilised alternative duty staff to assist with auditing and hand hygiene road shows.
- The Infection Control Lead has attended team days delivering on subjects such as auditing, hand hygiene and ANTT and is a routine programme of teaching.
- The Trust uses live online auditing for infection prevention and control for station and buildings cleanliness, staff IPC observations and vehicle cleanliness in order to improve upon current audit reporting and provide greater assurance. These are segregated into PTS and E&UC audits for staff observations and vehicles cleanliness.
- The Trust audits of E&UC and PTS patient facing staff includes observation of the following standards;
  - Bare Below Elbows (PTS and E&UC) with the exception of wrist watches\* and remain in line with DH Guidelines on Uniform and Workwear.
  - Disposal of sharps (E&UC only)
  - Hand Hygiene (when) (all staff)
  - Disposal of waste materials (PTS and E&UC)
  - Hand Hygiene (6 steps) (all staff)
  - Use of gloves (PTS and E&UC)
  - Aseptic Non Touch Technique (ANTT) (E&UC only)
  - Aseptic cannula insertion technique (paramedics and ambulance nurses)
  - Cleaning of equipment post patient use (PTS and E&UC)
  - Change of linen (PTS and E&UC)

\*N.B Wrist watches must be of a washable material with no links and should be removed to perform hand hygiene

- The Trust has dedicated individual IPC teaching programmes delivered at Corporate Induction for administrative staff, PTS, E&UC and CCC staff cohorts.
- The Trusts audit activity has increased for buildings and vehicles. Only 39% and 38% of E&U/C and PTS staff respectively were captured for observation auditing (see appendix 3).
- Audit activity, non-compliant standards producing action plans, action plan completion and any trends have been identified are reported through the Patient Safety and Health and Safety groups (see appendix 3).
- The Trust embarked on a cleaning programme in April and May 2016 that included deep clean of carpets at all sites, replacements of older items of clinical and general waste bins and cleaning of garage areas.

### Training Activities

Specifically tailored induction training packages have been designed for the various departments and are delivered by the Infection Control Lead and the education department. The training is linked to Health Education England and national standards and complies with the requirements of the CQC Fundamental Standards and the Health and Social Care Act guidelines.

SCAS uses an E learning (electronic learning) platform which gives staff access to online learning modules covering a variety of topics which include infection prevention and control and hand hygiene. Mandatory training on these subjects can now be

delivered through this process and is complimented with face to face educational delivery at team training days.

### Make Ready

SCAS has embedded the use of 'Make Ready' services throughout the Trust which help us to consistently meet the required standards of cleanliness and infection prevention. The contractual service requires all E&U/C vehicles cleaned and made ready once every 24 hours as well as 12 weekly deep cleaning schedules. PTS vehicles are contracted to be deep cleaned once every 6 weeks. Contractually, essential equipment and consumables are checked prior to every shift to ensure that they are working correctly and available in sufficient numbers on all resources.

Adenosine Triphosphate (ATP) is a nucleoside that is required by all living matter in order to exist, including humans and bacteria. ATP testing measures concentrations of this nucleoside and the higher the level the greater the risk of bacterial growth. ATP testing has been carried out over 2016/17 of 50 of the E&UC fleet supporting the QGARD vehicle cleaning benchmarking project. The final paper is yet to be ratified by QGARD but clearly shows that although SCAS has one of the longest periods between deep cleans, we are the second highest performing Ambulance Trust for cleanliness in our front line vehicles.

### Audit

The Trust has audit templates for the monitoring of cleanliness at its premises that are completed at a local level and results reported and added to the action plan that is managed by the Clinical Directorate and the Estates department. These action plans are monitored through the Patient Safety Group.

Patient facing staff use observational audits which are completed by clinicians ensuring that the Trusts policies and procedures are adhered to in practice. This involves clinicians auditing each other's practice on such areas as the 5 moments and 6 steps to hand hygiene, laundry changing, observing aseptic technique (E&U/C only), and compliance with vehicle cleaning schedules. These audits are collated and summary results reported to the Patient Safety Group by the Infection Control Lead.

Audit performance figures for 2016/17 can be seen in appendix 3.

### Cleaning Services

E&UC Vehicle cleaning is undertaken on a daily, weekly and 12 weekly 'deep clean' basis by *Churchill Support Services* who provide our Make Ready service. PTS vehicles are deep cleaned under the Churchill contract every 6 weeks and supported with daily cleans by the PTS staff. All crews are responsible to ensure between patient cleans take place.

Stations, Resource Centres and corporate offices are cleaned under a single external contract. The Infection Control Lead reviews these contracts with the Trust estates department through 6 weekly meetings to ensure that the terms and conditions are consistent across all trust sites. Busy Bee Cleaning Services (BBCS) has the contract to supply all premises cleaning which commenced April 2015. All individual cleaners employed to work within SCAS by external contractors are trained in infection prevention and control measures and procedures by the contracted company.

The efficacy of station cleaning and vehicle cleaning is regularly audited by our Team Leaders and Clinical Mentors as detailed in the 'audit' section. Station cleanliness audit reports can be viewed by all Managers and Directors when required. A monthly client

satisfaction card is completed and returned to BBCS for them to monitor and correct any deficiencies reported through these feedback cards.

## **5 Untoward Incidents / Risks**

During the period 2016/17 no MRSA or clostridium difficile infections or other HCAIs have been reported to SCAS.

It is a requirement under the EU regulations (2010/32/EU) that all needle stick injuries are reported and investigated; as such each individual case is reviewed by the Infection Control Lead and an investigator, usually a Team Leader appointed. These incidents including sharps injuries are reported back to the PSG.

In 2016/17 there were 129 control of infection incidences reported via Datix compared to 141 in 2015/16

These break down to;

- 30 needle stick incidents were reported, an increase of 6 compared to 2015/16. 25 resulted in a needle stick injury
- 21 sharps incidents were reported, an increase of 3 compared to last year. 17 resulted in injury
- 78 potential exposures to pathogens/viruses/Bacteria/Parasites.

From these reported incidents some themes were identified such as where the safety device for the cannula had not been engaged prior to removal of the sharp causing needle stick injury and incorrect disposal / overstocking of razors. The NSI incidents were investigated and staff completed a reflective journal.

A memo was issued to staff to reduce the amount of razors stored in the clinical bags and a further memo on the correct disposal of the sharps.

Datix reports where staff encounter potential exposure to diarrhoea and vomiting or other bacterial / viral infections are reported by staff as a matter of evidencing their potential exposure.

## **6 Future Developments**

### Antibiotic Prescribing

Antibiotic resistance poses a significant risk to public health. Although early intervention of some antibiotics can be advantageous to patient outcome, especially when they are septic, there is evidence of over prescribing of broad spectrum antibiotics (NICE guidelines January 2015).

The majority of SCAS clinical staff do not currently prescribe antibiotics. Our Specialist Paramedics (SPs) previously known as Emergency Care Practitioners (ECPs) can dispense courses of antibiotics under detailed Patient Group Directions (PGD's), which are produced in line with national recommendations. This is monitored by the Trust's Pharmacy Manager.

Further information on antibiotic prescribing and antimicrobial stewardship can be found in the annual Medicines Management report.

## Sepsis

There are a variety of Deterioration and Sepsis Recognition Tools in use across ambulance services in the UK. These include:

**Deterioration:** National Early Warning Scores (NEWS) or individual non-scored physiological observations

**Sepsis:** NEWS, quick SOFA, SIRS, NICE / UKST guidance or bespoke recognition tools

The National sepsis survey revealed that 95% of acute trusts are using early warning scores (with NEWS the most popular by a large margin) to track and trigger deterioration and screen, diagnose and manage septic patients.

The Trust's Consultant Pre-Hospital Care Practitioner leads on Sepsis pathways and through careful deliberation has advised the utilisation of the National Early Warning Score adaptation. This has been added (beta version) to the electronic patient record tablet which can aid patient handover at emergency departments when sepsis is suspected. (See appendix 4).

The IC Lead and the Trust Consultant Pre-Hospital Care Practitioner attend various Sepsis groups on behalf of SCAS to inform of our commitment to pre-hospital care of sepsis patients.

## Vehicle Equipment

In March 2017 the equipment and vehicle working group agreed to purchase sterile field pack to be added to the vehicle inventories. The purchase of these packs have been agreed on the principle that they further reduce of risk to ANTT practices and are supportive of the antimicrobial resistance campaign and a further step towards reducing the risk of HCAs. Going forward an advisory memo will be released to educate E&U/C staff how and when to use this additional consumable.

After researching and gaining national opinion, it was agreed to remove the 12 gauge needle used for thoracentesis as this is not a safety device and rarely used.

## IPC Knowledge Improvement

The Infection Control Lead has held surgeries at some SCAS sites and continues to take IPC to the patient facing staff by ways of these IPC surgeries. The surgeries include hand hygiene road-shows, question and answer sessions, IPC related Datix reviews and IPC compliance.



South Central Ambulance Service   
NHS Foundation Trust

## **South Central Ambulance Service NHS Foundation Trust**

# **Infection, Prevention Control and Decontamination Improvement Plan 2017/18**

**SOUTH CENTRAL AMBULANCE NHS FOUNDATION TRUST**

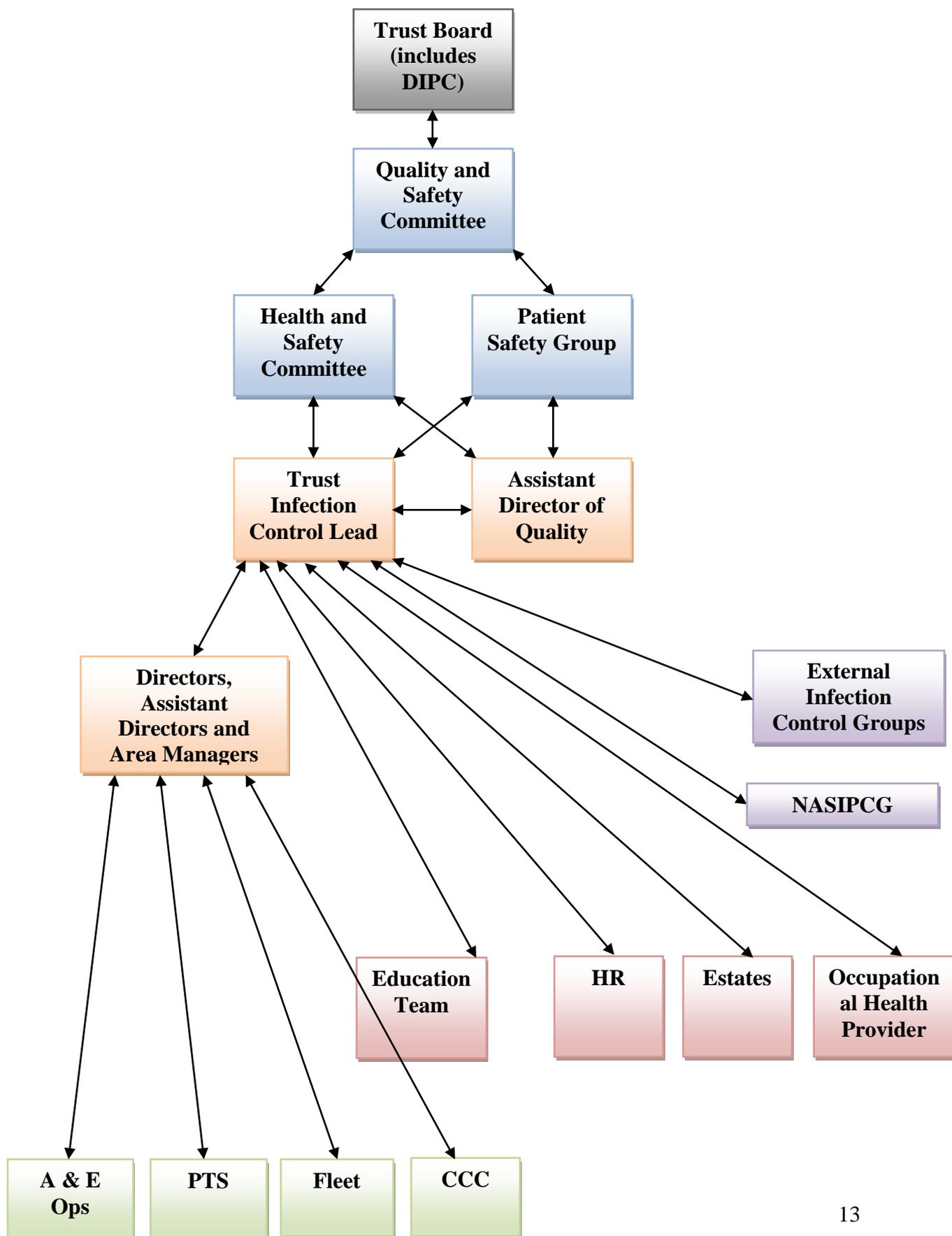
**CONTROL OF INFECTION IMPROVEMENT PLAN 2017/18 (and related workstreams)**

<b>Challenge</b>	<b>Standard</b>	<b>Action</b>	<b>Lead</b>	<b>Date</b>
CQC actions to ensure compliance	Participate in Infection Prevention Control Awareness campaign for <u>all</u> SCAS employees	Plan and deliver IPC themed stories and media releases and hand hygiene roadshows, to SCAS employees during May 2017	Infection Control Lead / Simon Holbrook	May 2017 <b>Completed</b>
SCAS Assurance IPC compliance for auditing processes and procedures.	Following review of auditing system, improve IPC audit tool to capture all rooms / areas in SCAS premises and segregate reporting for PTS, E/UC and other SCAS premises.	Improvements <ul style="list-style-type: none"> <li>• Improve audit tool by using station 'footprints' to show specific areas for auditing purposes.</li> <li>• More user friendly</li> <li>• Greater transparency.</li> </ul> Improvements to auditing systems to allow bespoke reports to be produced for individual CCGs.	IPC Lead / Assistant Director of Quality	<b>Upgrade will be released April 2017 - Completed</b>  <b>Fully functional by 30 / 6 / 17</b>
SCAS Assurance Timely auditing processes for contractual obligations	Timely audits for; Stations Vehicles Staff observations.	Auto reminders when each type of audit is due, nearly due and overdue.		<b>Upgrade will be released April 2017 - Completed</b>  <b>Fully functional by 30 / 6 / 17</b>
SCAS Assurance Health and Social care act for preventative vaccination	Plan for Flu vaccination, train Team Leaders and Clinical Mentors and / or alternative duty staff in vaccination procedure to enable greater capture of staff	Develop PGD and training package	Medicines and Research Manager	August 2017
SCAS Assurance Health and safety at work act for PPE and	Identify and train team of IPC Champions to take forward IPC at local levels.	<ul style="list-style-type: none"> <li>• Engage with DIPC, COO and Non-Emergency Directors for</li> <li>• Identification of staff</li> </ul>	Infection Control Lead	September 2016 Not achieved

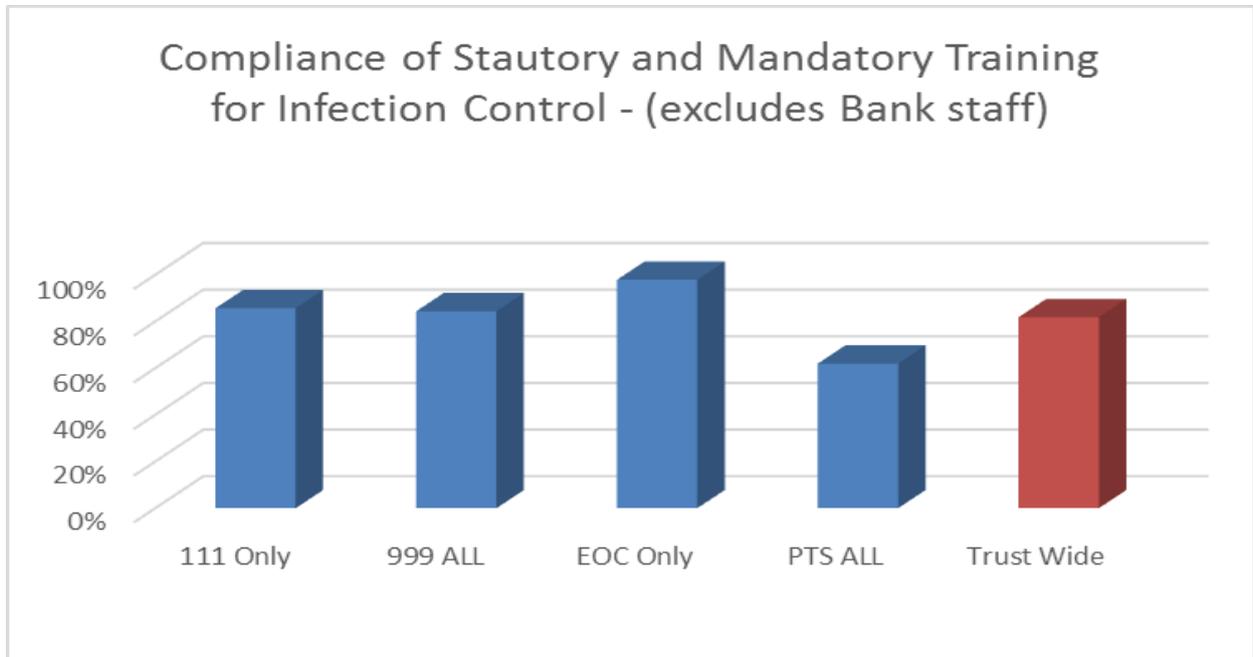
COSHH regulations		<ul style="list-style-type: none"> <li>• Release of staff for IPC training</li> <li>• Plan and deliver basic IPC course for IPC Champions.</li> </ul>		Partial agreement from Head of Ops. To carry over to July 2017 plan
HASC Criterion 2 Provide and maintain a clean and appropriate environment.	Use of UV light technology to support the 12 week deep clean	Gather all evidence from UV light technology trial in vehicles and Report to PSG Report on UV light technology with evidence to support carry forward for improved IPC in vehicles. Data collected from 12 months of trials.	IPC Lead / Contracts Manager	<del>August 2015</del> Not completed due to QGARD project on vehicle cleaning March 2017  <b>Not complete. Awaiting next step from QGARD project</b>
SCAS Assurance 24 hour specialist advice for IPC.	SLA with QA Hospital Portsmouth for specialist advice and microbiology	Review requirements and appoint provider.	IPC Lead	<b>June 2017</b>
SCAS Assurance to ensure compliance with all IPC needs	Surrey and West Sussex PTS contract	Ensure all PTS buildings / sites and vehicles are compliant with IPC policy and procedures	IPC Lead	<b>End June 17</b>

### Infection Prevention and Control Structures

The Trust Board and the Director of Infection Prevention and Control (DIPC) have overall responsibility for patient safety and that all infection prevention and control issues ensuring they are managed safely and appropriately.

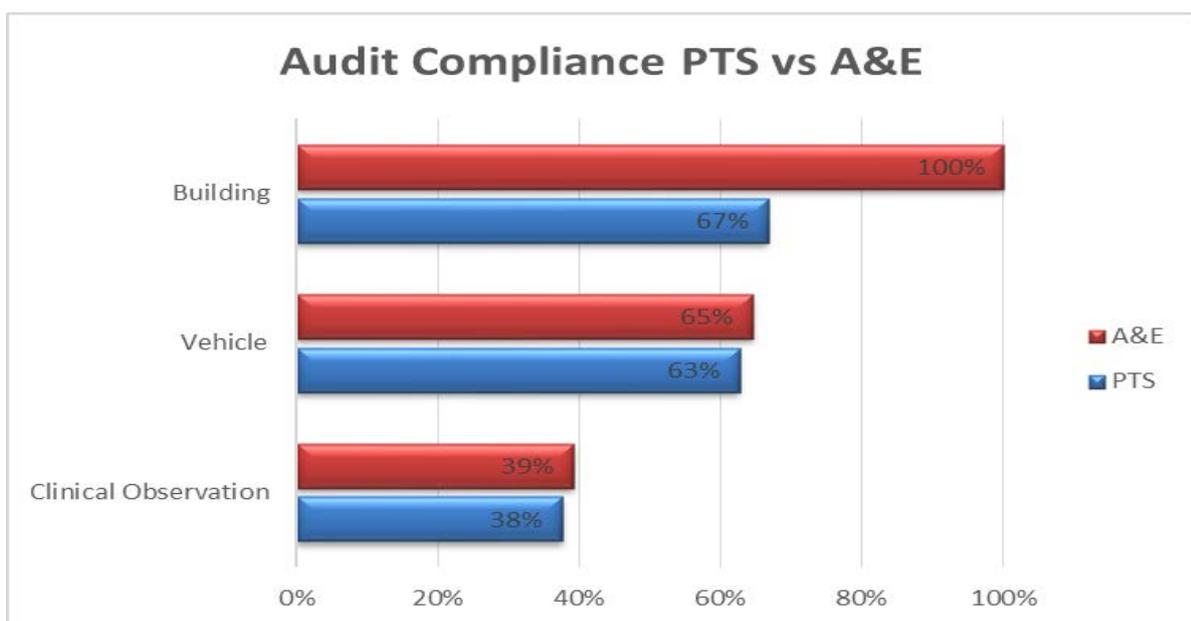


Infection Prevention Control Audits Results April 2016 – March 2017

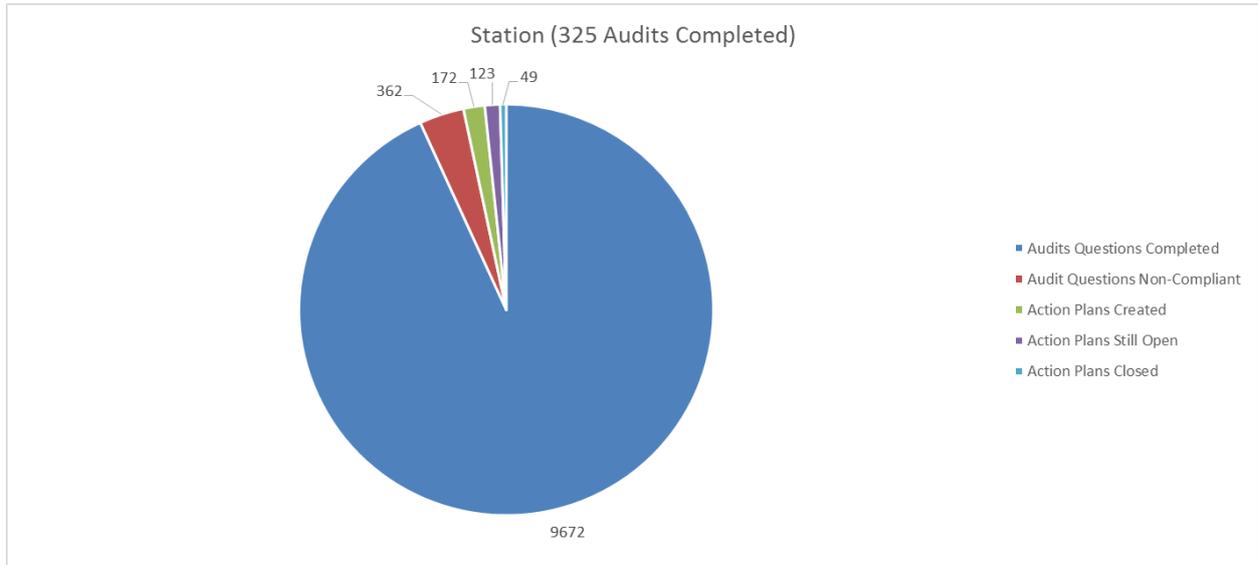


The above graph shows 82% of the organisation staff completed the IPC e-learning by 31<sup>st</sup> March 2017.

For PTS and E&UC services the end of year figures are 62% and 84% respectively. In addition to the e-learning, face to face delivery of hand hygiene has continued during 2016/17 and has been delivered by the Trust Infection Control Lead and alternative duty staff when available.

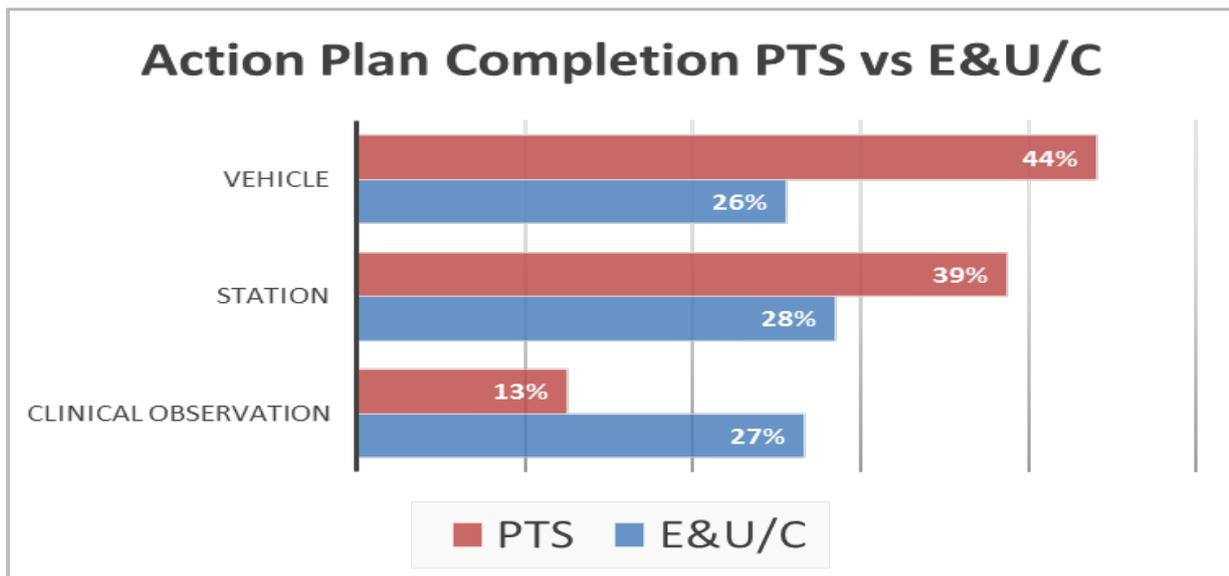


The audit activity between E&U/C and PTS is detailed above. PTS auditing has increased from January as all managers were re-trained in auditing processes. The low numbers of vehicle and staff audits has been reviewed and plans in place to increase the audit activity through the new AuditOnline system commencing April 2017 (see appendix 1; SCAS Assurance - IPC compliance for auditing processes and procedures).



As can be seen above, there were 325 station audits completed against a target of 353 (each resource centre and standby point every other month and admin / CCC twice yearly). From these audits 172 action plans were created of which 49 resolved and closed. For the majority of action plans that are not resolved, they have been superseded by more recent audits so the problem was resolved.

Below shows the action plan completion percentage for PTS against E&U/C.



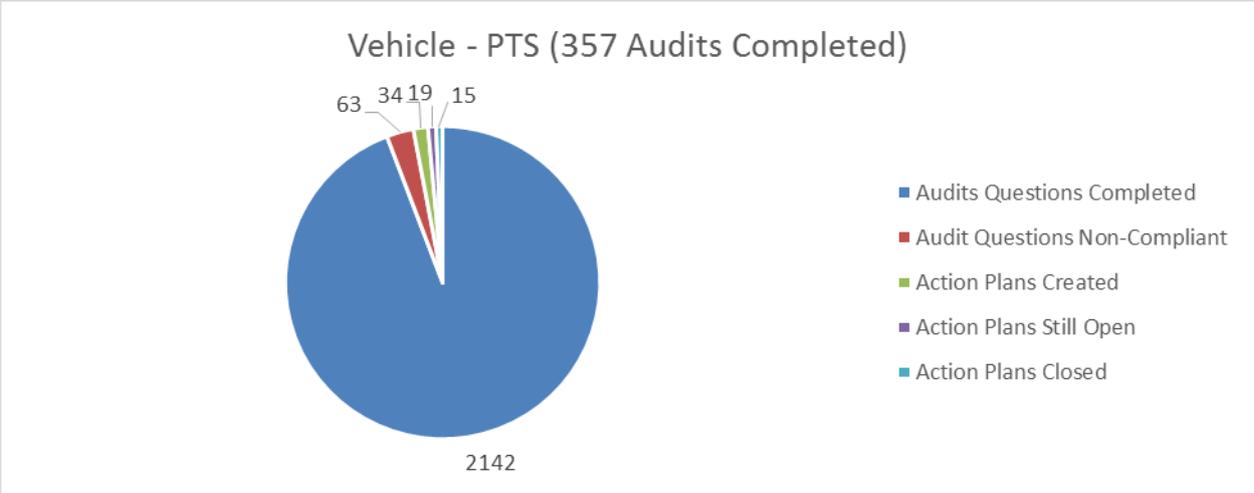
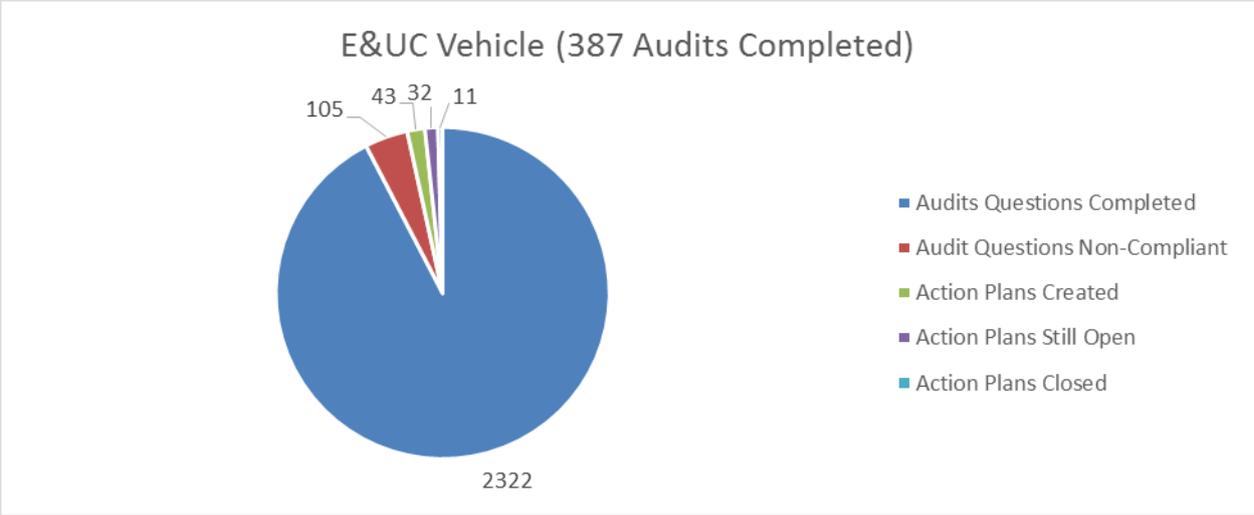
E&UC Clinical Observation (744 Audits Completed)



PTS Clinical Observation (169 Audits Completed)



The above charts show audit activity for both E&U/C and PTS respectively. The target is for 90% of all patient facing staff who should be audited once annually. Clearly there are improvements required in this area as the chart depicts 39% activity for E&U/C and 38% for PTS. Audit activity increased for PTS following retraining in January 2017 (See appendix 1; SCAS Assurance - IPC compliance for auditing processes and procedures).



The target for vehicle audits is all patient carrying vehicles to be audited once every 6 months against the standards set out. The percentage of audit activity was 65% for E&U/C and 63% against PTS. Again increased audit activity for PTS from January 2017 was apparent due to retraining of the PTS TLs and managers (See appendix 1; SCAS Assurance - IPC compliance for auditing processes and procedures).



# NASMeD

## FRONT SHEET

To be submitted for all agenda items and presentations (except verbal updates)

Date of meeting	Paper author
16 <sup>th</sup> March 2017	<b>Mark Ainsworth-Smith</b> , Consultant Pre-Hospital Care Practitioner, South Central Ambulance Service NHS Foundation Trust for NAUECG <b>Matt Inada-Kim</b> , Consultant Acute Physician, National Clinical Advisor Sepsis

Title of paper:	A standardised Deterioration and Sepsis recognition tool for all UK ambulance services
-----------------	--

### SUMMARY

There are a variety of Deterioration and Sepsis Recognition Tools in use across ambulance services in the UK. The separation of these conditions is counterintuitive and potentially dangerous. These include:

**Deterioration:** National Early Warning Scores (NEWS<sup>1</sup>) or individual non-scored physiological observations

**Sepsis:** NEWS<sup>1</sup>, quick SOFA<sup>2</sup>, SIRS<sup>3</sup>, NICE / UKST guidance<sup>4</sup> or bespoke recognition tools

The National sepsis survey<sup>5</sup> revealed that 95% of acute trusts are using early warning scores (with NEWS the most popular by a large margin) to track and trigger deterioration and screen, diagnose and manage septic patients. A key recommendation was that NEWS should be implemented in all healthcare settings and across all interfaces of care.

Sir Bruce Keogh<sup>6</sup> (National Medical Director) and Ms Celia Ingham-Clark<sup>7</sup> (Medical Director for Clinical Effectiveness and Chair of the Cross system Sepsis Programme board, NHSE) have been spearheading the work to align NEWS and Sepsis.

The recommendation to NASMED is that one standardised sepsis recognition tool is introduced for use across all UK ambulance services that is based on NEWS and therefore synergises with the systems of detecting physiological deterioration in all care settings. The benefits of this would include:

- A standardised tool which could be incorporated into UK-wide Clinical Practice Guidelines
- A standardised training package for use across all ambulance services
- Comparable measures and data collection for all ambulance services
- Improved patient safety
- Improved cohesion of the patient pathway from the community to hospital
- An ability to trend the physiological observations in acutely unwell patients and potentially predict levels of care, early senior review and mortality risk
- A decision-making aid to assist paramedics risk assess patients in see and treat situations
- A scoring system that may allow call handlers to more effectively triage ambulance disposal to those assessed pre hospital patients that have highest physiological risk

Whilst NICE guidance has been published (July 2016), this has proved too complicated to be used in

ambulance services, in primary care and across residential / care homes. The recommendation is for ambulance services to move to the NEWS2 scoring system, which will be implemented in April 2017. Validation of NEWS scoring has shown that there is a direct correlation between high NEWS scores and high mortality. Ambulance services are all facing increasing competing priorities, and it essential that patients who present with sepsis are recognised early, and transported to hospital as quickly as possible. The national Sepsis CQUIN treatment recommendation states that antibiotics should be administered within one hour of the diagnosis being made<sup>7</sup>.

The NCEPOD report: Just say Sepsis found that the majority of septic patients arrive in hospital via an ambulance<sup>14</sup>, and although in most cases paramedics were recording all the parameters of NEWS, they were not recorded as an aggregate score that matched those used in hospitals.

Vital signs recorded	GP (n=129)	%	Paramedic (n=163)	%
Temperature	34	26.4	146	89.6
Blood pressure	32	24.8	157	96.3
Heart Rate	40	31.0	163	100
Respiratory Rate	8	6.2	159	97.5
AVPU	8	6.2	144	88.3

The report recommends that, “an early warning score, such as the National Early Warning Score (NEWS) should be used in both primary care and secondary care for patients where sepsis is suspected. This will aid the recognition of the severity of sepsis and can be used to prioritise urgency of care.”<sup>14</sup>

The operational definition for sepsis that will be determined in April is likely to be based around an aggregate NEWS score of 5 or more with symptoms or signs of infection, and it would seem sensible to implement NEWS across all ambulance trusts in anticipation of this.

#### National Early Warning Score (NEWS)\*

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

\*The NEWS initiative flowed from the Royal College of Physicians' NEWS Development and Implementation Group (NEWSDIG) report, and was jointly developed and funded in collaboration with the Royal College of Physicians, Royal College of Nursing, National Outreach Forum and NHS Training for Innovation.

Please see next page for explanatory text about this chart.

© Royal College of Physicians 2012



The principle with NEWS is that an aggregate score is recorded, and then tracked through the patient pathway.

The aggregate score has been shown to be extremely predictive of outcomes of patients with and without infection in pre hospital<sup>8</sup> and hospital settings<sup>9,10,11</sup>.

There is little benefit to supplementing aggregate weighted scoring systems with additional extreme value triggers. Analysis of a large data set found that escalating single parameters with a NEWS score of 3

would increase workload by 40% compared to using a trigger of an aggregate NEWS of 5 or more, but would only increase detection of adverse outcomes by 3%<sup>12</sup>

The introduction of NEWS across all ambulance services will dovetail with other work streams to introduce NEWS across primary care and residential care homes. This will ensure that there is consistency across the entire pre-hospital arena that can be used in the booking process for deciding the urgency and skill level of attending ambulance crews transporting these patients to hospital. It will also ensure common language with acute Trusts so that ambulance pre-alerts can be responded to appropriately and consistently on arrival with measurable Clinical Performance Indicators across all ambulance services.

## Recommendations and/or actions required

There are a variety of sepsis recognition tools used across the UK ambulance services.

**The recommendation is**

- i) for all ambulance services to use a UK-wide sepsis screening tool based around NEWS2<sup>13</sup> and**
- ii) to incorporate this within the JRCALC guideline for sepsis management.**

### References:

1. Royal College of Physicians. National Early Warning Score (NEWS): Standardising the assessment of acute illness severity in the NHS. Report of a working party. London: RCP, 2012
2. Singer M, Deutschman CS, Seymour CW, et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA. 2016 Feb 23;315(8):801-10. doi: 10.1001/jama.2016.0287.
3. Kaukonen KM, Bailey M, Pilcher D, et al. Systemic inflammatory response syndrome criteria in defining severe sepsis. N Engl J Med. 2015 Apr 23;372(17):1629-38. doi: 10.1056/NEJMoa1415236
4. NICE CG 51
5. Inada-Kim M, Mackenzie P, Nstebu E, et al. The National Patient Safety Collaborative Sepsis Cluster Guidance Survey. 2017. The AHSN Network.
6. Letter to all Acute trusts 2016
7. Letter to all Acute trusts 2016, Sepsis CQUIN 2016-2019
8. Corfield AR, Lees F, Zealley I, et al. Utility of a single early warning score in patients with sepsis in the emergency department. Emerg Med J. 2014 Jun;31(6):482-7. doi: 10.1136/emered-2012-202186.
9. Churpek MM, Snyder A, Han X, et al. qSOFA, SIRS, and Early Warning Scores for Detecting Clinical Deterioration in Infected Patients Outside the ICU. Am J Respir Crit Care Med. 2016 Sep 20.
10. Prytherch DR, Smith GB, Schmidt PE, et al. ViEWS-Towards a national early warning score for detecting adult inpatient deterioration. Resuscitation. 2010 Aug;81(8):932-7. doi: 10.1016/j.resuscitation.2010.04.014.

11. Smith GB, Prytherch DR, Jarvis S, et al. A Comparison of the Ability of the Physiologic Components of Medical Emergency Team Criteria and the U.K. National Early Warning Score to Discriminate Patients at Risk of a Range of Adverse Clinical Outcomes. *Crit Care Med.* 2016 Dec;44(12):2171-2181
12. Jarvis, S., Kovacs, C., Briggs, J., Meredith, P., Schmidt, P.E., Featherstone, P.I., Prytherch, D.R. and Smith, G.B., 2015. Aggregate National Early Warning Score (NEWS) values are more important than high scores for a single vital signs parameter for discriminating the risk of adverse outcomes. *Resuscitation*, 87, 75-80
13. Williams B, Welch J et al; NEWS2- National Early Warning Scores Development Group (NEWSDIG)
14. NCEPOD report: Just Say Sepsis! (2015)



## Infection Control Statement

The Trust Board of South Central Ambulance Service NHS Foundation Trust is committed to compliance with the Hygiene Code 2006 and as amended to prevent and control Health Care Associated Infections (HCAI). The Code is presented under three headings which form the basic Code and the Trust has pledged to undertake these duties by:

1. Management, organisation and the environment;
  - Protect patients, staff and others from HCAI
  - Put in place appropriate management systems to prevent and control infections
  - Assess the risks of acquiring an HCAI in the pre-hospital environment and take action to reduce or control these risks
  - Provide a clean and appropriate environment
  - Provide information on HCAI to patients and the public
  - Provide information when a patient moves from the care of one healthcare body to another
  - Co-operate at all times with other health care professionals
  - Provide facilities to prevent or minimise the spread of HCAI
  - Acquire micro-biology and laboratory support
  
2. Clinical care protocols;
  - Have in place appropriate evidence based core policies and protocols that are monitored and maintained to provide clear guidance on the prevention and control of HCAI in the Ambulance Service
  
3. Health care workers;
  - Ensure so far as is reasonably practicable that ambulance staff are free of and protected from exposure to communicable infections
  - Access to relevant occupational health services is provided to all staff
  - Ensure that all staff are educated in the prevention and control of HCAI