London Ambulance Service
NHS Trust

Clinical strategy

2016/17 – 2022/23 (*2019 refresh*)

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1 Foreword by Dr Fenella Wrigley, Chief Medical Officer

In 2016 we launched our clinical strategy and I am hugely proud of everything that we have achieved since then. The two CQC inspections that we have undergone in the past few years have both recognised the outstanding patient care that we deliver on a consistent basis and this is no less than is deserved thanks to the skill and dedication of all of our staff right across the organisation.

Whilst the NHS and the sector in which we operate has changed significantly since we launched our clinical strategy, this is most evident within the integrated care delivery. Our ambitions and role within 111/IUC has expanded and our success in bidding for and winning the North East and South East London services has made us the single largest provider within London.

Another major development for our organisation is the central role we now play within the wider urgent and emergency care sector. Whilst previously we were more reactionary to the changes happening around us, we are now key influencers in those changes. We are working hand in hand with our system partners to implement the new NHS Long Term Plan, ensuring that pre-hospital care is appropriately considered to deliver the greatest benefits for patients. This includes our work on developing specialist pathways such as trauma, cardiac, paediatrics and asthma, ensuring that patients receive the right care, in the right place at the right time.

Our unique role as a pan-London NHS provider organisation and an emergency service means that major incidents have a particularly large impact upon us and the atrocities of 2017 overtly demonstrated that. Our whole organisation's response to those major incidents and the way in which all our staff responded at the time and then supported each other in the aftermath has been humbling and only enhanced the pride that I have for working for this organisation. I have been personally involved in many of the reviews over the past couple of years and we will ensure that we implement all of the relevant learning and recommendations that have arisen from them.

Looking forward to the next 5 years we will continue working to improve outcomes and experience for all of our patients, as well as further develop our clinicians by providing learning opportunities that better reflect our patient population. Patient safety underpins every clinical development and innovation and through evidence based decision making we need to continue to adopt new ideas in order to deliver our clinical goals - this involves tolerating and managing any risks. This clinical strategy outlines a large number of initiatives that will help us to do just that and I am looking forward to providing the clinical leadership for the organisation over the coming years to see those changes delivered. I personally have a few key areas that I will ensure we are focussed on:

- We have contact with around 4 million patients each year and we must do more to promote wellbeing and help prevent people falling ill in the first place. Our public health and prevention initiatives will become increasingly important over the course of this clinical strategy
- We have a significant opportunity to integrate our Integrated Urgent Care and 999 services which is described in detail in this document. A fully integrated service, where our staff see themselves as part of one collaborative multi-disciplinary team, will provide a better level of care for every patient no matter which number they phone. An integrated service will also be a more efficient service, allowing us to re-invest to further improve the quality of service we are able to provide.
- As outlined in this clinical strategy, there is more we can do to continue to improve outcomes for our most critically ill and injured patients. I want to make sure that we are at the forefront of innovating to improve the way in which we care for these patients. We should be continually looking at what we do and challenge ourselves to continually improve the care we provide.
- I want to ensure that we invest in and continue to support our clinical tutors. Our clinical education team provide high quality training, despite having outgrown their current facilities which do not support delivery of different learning modalities. I want to make sure that our

tutors have the right infrastructure to deliver their world class training and support them to be able to continue their clinical practice and share their experience with frontline clinicians on a regular basis.

- There is no doubt a key enabler for us over the next five years is embracing the opportunities digital technology can provide to better assess and manage our patients. This includes embracing the use of telemedicine, roll out of electronic patient care records, and increasing our interoperability with other health organisations to share notes and clinical information. This is an area that organisationally we are currently lagging behind in some areas compared to some other health providers but one where all our strategies are aligned in recognising it as a key priority.

It is an incredibly exciting time to be a part of the London Ambulance Service and this refreshed clinical strategy outlines how we will continue to improve what we do so that we are ready to respond in the most appropriate way to anyone when they need us the most. The outstanding care that we provide, and the improvements that we are planning, are only possible thanks to our staff who directly deliver that care and our staff who support the delivery of that care.

Fenella Wrigley
Chief Medical Officer
September 2019


NHS
London Ambulance Service
NHS Trust
Our vision
Building a world-class ambulance service for a world-class city
London's primary integrator of access to urgent and emergency care
on scene • on phone • online
Our purpose
We exist to:
Provide outstanding care for all of our patients
Be a first class employer, valuing and developing the skills, diversity and quality of life of our people
Provide the best possible value for the tax paying public, who pay for what we do
Partner with the wider NHS and public sector to optimise healthcare and emergency services provision across London
Our values & behaviours
Respectful
Caring for our patients and each other with compassion and empathy
Championing equality and diversity
Acting fairly
Professional
Acting with honesty and integrity
Aspiring to clinical, technical and managerial excellence
Leading by example
Being accountable and outcomes orientated
Innovative
Thinking creatively
Driving value and sustainable change
Harnessing technology and new ways of working
Taking courageous decisions
Collaborative
Listening and learning from each other
Working with partners
Being open and transparent
Building trust

2 Executive Summary

The London Ambulance Service NHS Trust (LAS) is the busiest ambulance service in the UK and one of the busiest in the world. This clinical strategy sets out the ways in which we will continually strive to deliver world class care to all of our patients, ensuring that their individual needs are met in the best way to improve outcomes and their patient experience through the whole of the urgent and emergency care system.

Since the launch of our clinical strategy in 2016 we have launched our new organisational strategy, the NHS Long Term Plan has been published and the way in which deliver urgent and emergency care services has changed. We are therefore now refreshing the clinical strategy to outline the improvements we are seeking to make over the coming years to improve the outcomes we achieve for our patients.

Integrated Care

We want to become the primary integrator of access to the urgent and emergency care sector. This means that we want to provide and fully integrate 111/Integrated Urgent Care (IUC) services and 999 services across London. We currently run 40% of London's 111/IUC service provision and we can demonstrate that we deliver a far lower proportion of 111 calls that lead to an ambulance being dispatched or the patient being advised to go to hospital themselves.

Our overarching priorities within integrated care are:

- **Expanding our IUC provision** across London
- **Interoperability**; Implementing the right systems, processes and technology to enable our 111/IUC and 999 services to work together to provide the right response in the right place to every patient
- Increasing the capacity and capabilities within our integrated care functions to **increase 'consult and complete'**, without the need for dispatching an ambulance or making an onwards referral

In order to achieve these priorities, we are working towards the implementation of our Integrated Clinical Assessment & Triage (iCAT) service. This service will join up our 111/IUC and 999 services to ensure a more efficient service and seamless patient experience. Patients will, no matter whether they call 999 or 111, receive the most appropriate response for their needs whether that is an ambulance response, advice over the phone from a variety of specialist clinicians or a direct booking into wider system services such as out of hours GP appointments.

We will make best use of available technology to provide an expanded range of ways for patients to get in touch with us, better assessment capabilities including using videos and the integration of artificial intelligence as well as enhancing the working life of our staff by offering flexible and remote working opportunities.

Urgent Care

For people with urgent needs, our aim is to provide a responsive service delivering care as close to home as possible, avoiding unnecessary conveyances to emergency departments and ensuring patients are referred into the most appropriate service for their needs. Our overarching priorities within urgent care are:

- Evaluating and, where identified as the right system intervention, embedding our pioneer services across London
- Providing more learning and education for crews to enhance clinical assessment skills and confidence in treating urgent care patients
- Working with system partners to ensure a consistent range of appropriate care pathways are available, reducing the need for emergency department conveyances
- Providing our staff with the right equipment and medicines for them to provide the right care to patients first time
- Providing advice to patients through public health messaging to prevent re-contacts and people getting ill in the first place

Within urgent care, the key areas of focus and improvement priorities are:

Frailty and elderly fallers	• We will expand the specialist response available for elderly fallers and enhance the ability of all of our staff to provide the right treatment first time • We will work with commissioners and system partners to ensure the right pathways and community services are available for us to refer into • We will seek to prevent patients we attend from falling again
Mental health	• We will Roll out our mental health pioneer service, initially in South East London and then pan-London, in partnership with the mental health trusts • We will work with NHS and emergency service partners to ensure that patient with mental health needs get the right response for their needs first time • We will improve the mental health learning & education available for our staff • We will improve how we use patient, staff and stakeholder input into service design and improvements
Urgent care advanced paramedic practitioners	• We will continue to expand the APP-UC programme, ensuring it is as efficient and effective as possible • We will increase the skills, knowledge and range of treatment options available to our APP-UCs to provide the best patient care with fewer onwards referrals or conveyances
Public health	• We will promote public health and preventative messaging at point of patient contact (face to face) • We will educate the public through prevention initiatives and campaigns • We will work with system partners to reduce health inequalities and ensure our available pathways meet local needs • We will identify opportunities for non-clinical pathways and signposting

Emergency Care

Continuing to improve the clinical care and outcomes for patients with life threatening conditions remains a core priority for the ambulance service. For these patients where definitive care may only be possible in hospital, appropriate treatment on scene and early conveyance is key to improving clinical outcomes. Our overarching priorities within urgent care are:

- Providing learning and education opportunities for all our 111/IUC and 999 contact handlers and clinicians on emergency care to maintain skills and confidence
- More quickly and accurately identifying when patients are seriously ill or injured
- Providing the right treatment on scene and then quickly and safely conveying patients to the most appropriate hospital or specialist centre for their condition
- Learning from all possible opportunities to continually improve the care we provide to patients

- Working with system partners to ensure patients receive the right care for their needs, at the right place, as quickly as possible

Within emergency care, the key areas of focus and improvement priorities are:

Cardiac arrests	• We will treat patients suffering from cardiac arrest more quickly, delivering the right care at the right time including improving bystander CPR and public defibrillator use • We will improve training and support for our crews, including advanced paramedic practitioners • We will participate in and use high quality pre hospital care research to improve cardiac arrest outcomes and learn from best practice
Acute cardiac conditions	• We will improve pain assessment and management and transport patients more quickly to the appropriate place of care • We will provide crews with more regular training in identification and management of acute coronary syndromes and emergency arrhythmias • We will participate in and use research to improve outcomes from myocardial infarction and learn from best practice
Strokes	• We will improve early identification and ensure quicker initial treatment for patients suffering a stroke • We will ensure patients are taken as quickly as possible to the right place of care for their needs • We will improve public awareness of stroke and its symptoms
Sepsis	• We will provide training for all 999 & 111 contact handlers and clinicians to ensure they can provide best quality care • We will improve early identification of sepsis and the delivery of the appropriate treatment • We will participate in and use research to improve stroke outcomes and learn from incidents and best practice
Trauma	• We will provide appropriate training and education to our staff, ensuring that we are learning from incidents and excellence • We will ensure that we recognise the injuries that our patients have suffered and identify the correct pathway and place of care for their needs • We will ensure that patients who have suffered major trauma receive the right care for their needs by the clinicians with the most appropriate skills
Long term conditions	• We will ensure severe and life threatening emergencies for these long term conditions are identified quickly by call handlers and clinicians • We will review and, if appropriate, increase the range of treatment options for clinicians treating these patient groups • We will ensure that our crews are using CMC and other patient records that might be made available to them, to help identify the best treatment option for patients • We will provide, where appropriate, brief patient advice and education to help prevent deterioration and further emergencies in future
Vascular emergencies	• We will ensure that patients with vascular emergencies are treated quickly and we learn from how we deliver this care • We will work with our system partners to ensure that patients receive the best possible care for their needs

Stages of life

Whilst most illnesses and injuries can be seen in any patient of any age, we have identified some patient groups who, due to their stages of life, require certain specific consideration to be given to how we deliver care to them. For these patient groups, our key areas of focus and overarching priorities are:

Children and young people	• We will improve outcomes for the most critically unwell children and young people • We will improve the care that we provide for all children and young people through improving training for our staff, ensuring they have the right equipment to treat small children and working with other agencies to tackle knife crime in the capital • We will provide more specific paediatric training and education for our staff
Maternity	• We will continually review our maternity training to ensure that we are providing the right training in engaging and accessible ways • We will develop innovative service delivery models so we are always trying to identify ways in which we can improve the maternity care that we provide • We will work as part of the wider NHS maternity system to ensure that women are receiving the right care in the right place at the right time for their individual needs
End of life care	• We will make the final stages of life as comfortable, pain free and dignified for patients and their families as possible and reduce unnecessary resuscitation attempts and conveyances • We will improve pathways to support patients with a plan of care to receive their care at home or in a community setting (if that is their preference) to avoid conveyance to hospital.

Enablers for delivering the clinical strategy

We identify in this document a number of key factors that are vital in enabling us to achieve the vision we have outlined:

- A clear and structured career pathway for our registered and non-registered clinicians
- Providing our staff with the appropriate learning and education to ensure that we deliver world class care for our patients
- We will use the right technology to enable us to deliver world class care. This will include a new CAD (computer aided dispatch) system, implementing an electronic patient care record (ePCR) and moving to a single triage platform across all elements of our 111 and 999 service deliver to ensure efficiency and interoperability
- Innovating using existing and emerging technology to provide better care to patients and a more joined up urgent and emergency care sector
- Providing our staff with the right equipment and medicines for them to do their job, reliably, for each and every shift

The benefits this strategy will deliver

This strategy outlines a large number of improvements and activities that will take place by the end of 2023. Every priority area and individual initiative is designed to improve the care that we provide, the outcomes that our patients achieve and the experience that they have whilst under our care. This strategy will also seek to reduce the number of avoidable emergency department conveyances which will also support the wider urgent and emergency care sector by reducing the demands on their services.

3 Introduction and why we are refreshing our clinical strategy

Our original clinical strategy was launched in 2016. Much has already been delivered, but some of the opportunities and aspirations have changed since then. At a national level, patient needs and expectations continue to change, driving increasing demand for services. Ambulance services, like the rest of the NHS, have workforce challenges whilst at the same time, innovation is fostering new roles, equipment and ways of working to better support patients. At a Trust level, a range of strategic drivers have emerged. Taken together, our clinical strategy must reflect and respond to the changes we are seeing.

The UK's population is growing, and people are living longer. While this is to be celebrated, it is placing increasing pressure on health services, impacting the clinical and financial sustainability of care provided. As well as increasing demand[1], people's expectations of the NHS are changing. And at the same time, gaps are emerging in the workforce where additional staff and skills are required.

Opportunities are emerging from a changing system

The urgent and emergency care sector has changed a lot over the last few years, and the NHS long term plan outlines further and significant changes to the sector. The evolution of Sustainability and Transformation Partnerships (STPs) into Integrated Care Systems (ICSs) will provide both challenges and opportunities for the way in which we operate.

We are playing an increasingly pivotal role in the broader urgent and emergency care sector and our position as a provider of both 999 and 111/IUC services means that we need to refresh the way in which we provide this care in an integrated joined up way. This includes increasingly providing clinical assessment and treatment remotely.

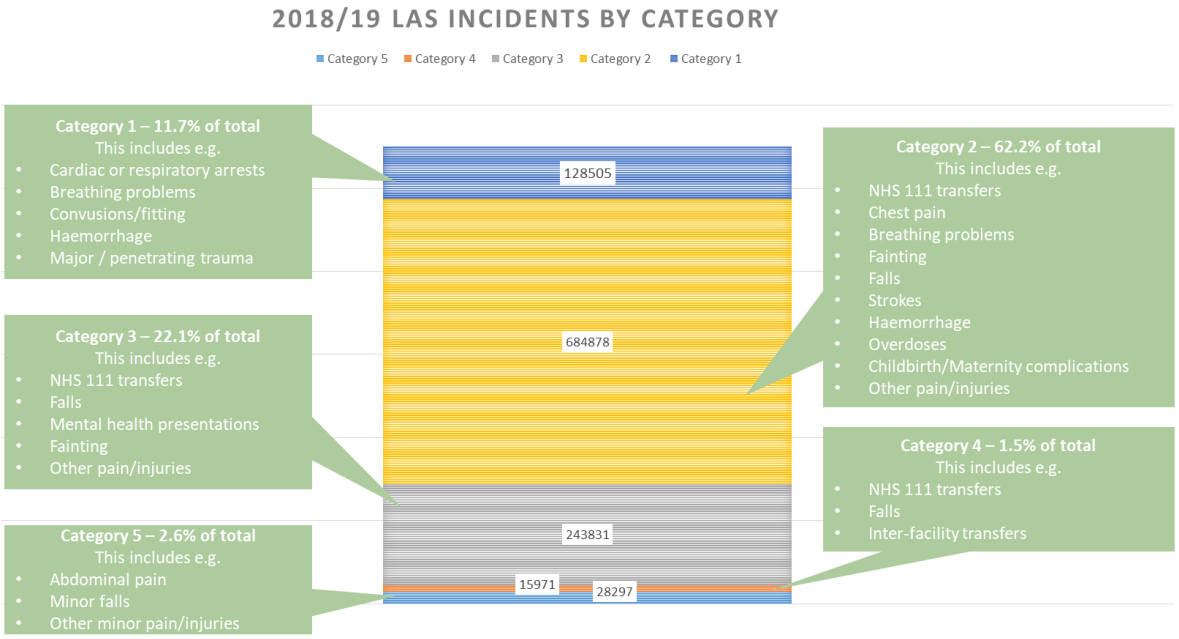
As detailed in the interim NHS people plan, we face challenges in recruiting the right numbers of paramedic. We therefore need to ensure that our clinical strategy maximises how we utilise a broad range of clinicians whilst providing a clear and structured career pathway for all of our registered and non-registered clinicians.

In addition, the Carter report identified areas of potential efficiency improvements, including managing more patients in a way that avoids conveyance to hospital where safe and appropriate. Reducing the number of people who we take to hospital is key, not only to running an efficient and effective operating model, but also to providing the best patient experience whilst supporting the wider urgent and emergency care sector which is also facing significant and increasing demand on their services.

[1] As stated in *Operational productivity and performance in English NHS Ambulance Trusts: Unwarranted variations* (NHS Improvement), future demand for ambulance services is likely to increase by at least a further 38% over the next 10 years

Whilst our continuous quality assurance and training ensures that we provide high quality care to all of our patients, this strategy focusses on the most acutely ill or injured, the largest patient cohorts and the ones where there is greatest scope for improvement. The diagram below illustrates the categories of calls and the sorts of patient complaints that they include.

Figure 1: 2018/19 LAS incidents by category



The structure of this document seeks to illustrate our response to these categories broadly in the following way; emergency care will predominantly encompass patients in category 1 and 2 whilst urgent care will predominantly encompass categories 2-4. Whilst integrated care can cover all categories, it is largely focussed on ‘consulting and completing’ patients in category 4 and 5.

4 Our future clinical model

Responding to the changes we are seeing requires a refresh of our clinical response model. This determines how we will provide services in a way that harnesses opportunities while tackling current and emerging challenges. This section describes the key principles that must be reflected, informing the detailed design of future model to improve patient outcomes.

Our aim is to deliver outstanding clinical care. To achieve this, our future clinical response model must improve patient care, reflect national standards, performance objectives and regulatory requirements whilst remaining affordable within current NHS financial constraints.

In our organisational strategy we have set out four goals we aim to deliver over the next few years. These are shown in Figure 2 along with the current clinical context, and how the new model must reflect these to deliver success:

Figure 2: Refreshing our clinical response model to deliver our four goals

Goal	Context	How our clinical strategy will support this
To provide outstanding care for all our patients	• Performance against national standards is variable • Many people are conveyed to ED when they could be better treated remotely or on scene • People receive a consistent service offer irrespective of need	• Providing more responsive services to consistently achieve performance standards • Providing suitable alternatives to treat more lower acuity patients closer to home • Developing more tailored responses for specific patient groups
To be a first-class employer, valuing and developing the skills, diversity and quality of life of our people	• Staff morale is improving, but more work is needed to tackle issues and to reduce sickness absence • A broader skill mix is needed to improve clinical assessment and the delivery of hear and treat support, as well as to ensure clinicians can manage an extended range of needs on scene • A clear and structured career pathway is needed for all of our staff to feel like they are able to develop and progress in their career	• A supportive workplace which makes staff feel valued and enthused • Introducing and expanding the role of other professionals e.g. APPs, GPs, nurses, mental health practitioners in the workforce • Enhancing our clinical career pathway • Providing more inter-disciplinary education, training and support
To provide the best possible value for the tax-paying public, who	• Conveying people to hospital when not needed provides a poorer experience for the patient, is inefficient and costlier than delivering treatment remotely or on scene [2]	• Appropriate, proactive interventions to avoid clinically unnecessary conveyances where possible

[2] The NHS Improvement document, *Operational productivity and performance in English NHS Ambulance Trusts: Unwarranted variations* estimates that £300m could be freed up nationally and redirected towards patient care if ambulance conveyance rates were reduced to the levels seen using APPs

pay for what we do	• We make use of multiple sites distributed across London. Current estate is of varying size, type and fitness-for-purpose	• An operational model making the most appropriate and efficient clinical use of estate
To partner with the wider NHS and public sector to optimise healthcare and emergency services provision across London	• There is an opportunity to enhance our 999 emergency care by further integrating with our 111/IUC capabilities of utilising primary and community care • Interoperable EPCR are needed to support the delivery of more effective, efficient care	• Collaborating more closely with system partners to co-design improvements at place, neighbourhood and system levels • Joining up patient pathways across partners to provide more consistency and seamless patient care • Integrating 999 and NHS 111 call-handling and triage to improve decision-making and to better manage demand • Improving access to shared patient information to support clinical decision-making and management

Delivering this model

We recognise that to deliver this model, changes will be required in: the structure of the organisation and workforce; our culture and behaviours; workforce capabilities; and the infrastructure (estate, fleet, tools and technology) available to frontline teams to do the job. These are the building blocks at the heart of our future clinical response model and will impact every aspect of the way we will work in the future. The following sections go through our plans for each in turn, and in more detail – setting out our model blueprint model, and the enablers we will put in place.

Patient safety underpins every clinical development and innovation and through evidence based decision making we need to continue to adopt new ideas in order to deliver our clinical goals. However, to deliver this clinical strategy we will need to take some risks and manage them accordingly.

5 What we have achieved so far from our 2016-21 clinical strategy

Our clinical strategy was launched in 2016 and we have achieved a significant amount already, which is one of the key reasons why we are now refreshing it.

5.1 Integrated Care

Our involvement in 111/IUC provision has expanded significantly since we launched this clinical strategy in 2016. Integrated care has been our single biggest area of development over the last few years with some major achievements detailed below:

- Successful mobilisation both the North East and South East London services to the full IUC specification – the first in London
- We resolve more of our 111 calls without the need to dispatch an ambulance or advise the patient to make their own way to hospital, providing a better outcome for the patient
- We set up our e-prescribing functionality which allows us to send prescriptions electronically to any community pharmacy.
- We have been accredited as a GP Registrar training centre, which is the first one that exists as part of an IUC CAS
- We successfully implemented the Adastra™ system within the 999 clinical hub, enabling our CHUB clinicians to book into ACPs that were previously only available through 111
- We implemented the system to enable us to see frailty flags from GP records. This helps us identify potentially frail patients and tailor advice and assessments accordingly.

5.2 Urgent Care

- We established our Urgent Care Advanced Paramedic Practitioner programme which now has 30 advanced clinicians providing care to patients with a range of urgent care needs, providing the right care first time more often without the need for onward conveyance
- We have provided our clinical staff with instant access, through a handheld digital device, to Coordinate My Care and the bespoke ambulance directory of services
- We have been leading pan-London work on consistent access to urgent care and urgent treatment centres
- We have introduced mental health nurses, pharmacists, midwives and GPs to support face to face service delivery
- Designed as part of our 2018-23 organisational strategy, we have launched our Mental Health Pioneer Service pilot, dispatching a mental health nurse alongside a paramedic to patients experiencing a mental health crisis. This provides parity of care and reduces the number of mental health patients conveyed to hospital which is often not the best place to meet their needs
- We have also launched our Falls Pioneer Service pilot which dispatches a specialist falls paramedic to elderly fallers, improving the care they receive and reducing the number we take to Emergency Departments

5.3 Emergency Care

- We increased the number of public access defibrillators in London from c. 4,400 to 5,304
- We have worked with heart attack centres to improve pathways for patients suffering heart attacks or other coronary conditions
- Our Clinical Audit and Research team have led high quality research into cardiac care. We have also been a main contributor to national research investigating the use of adrenaline for cardiac arrests as well as research into stroke care
- We have increased the number of Advanced Paramedics in Critical Care who provide advanced care for our most seriously sick and injured patients including people who have had cardiac arrests or been involved in major trauma
- We have successfully reduced time on scene for penetrating trauma which gives patients the best chance of survival when conveyed directly to a major trauma centre
- We implemented the NEWS2 assessment tool to enable our crews to more effectively assess severity of illness

5.4 Stages of Life

- We have implemented the paediatric cardiac arrest checklist to support staff decision making when treating children suffering a cardiac arrest
- We appointed a senior clinician to oversee improvements in overall paediatric care
- We appointed a consultant midwife and established a maternity team to continue to deliver improvements in maternity care, including the introduction of a pre-hospital maternity screening tool to support clinician decision making in maternity cases
- We have established an End of Life Care team, implementing our EOLC pioneer service to improve staff confidence and the care and experience for patients at or approaching the end of their lives
- We have worked with London Coroners and paediatric leads across London to revise our guidance for the management of deceased children to ensure ongoing support for bereaved families

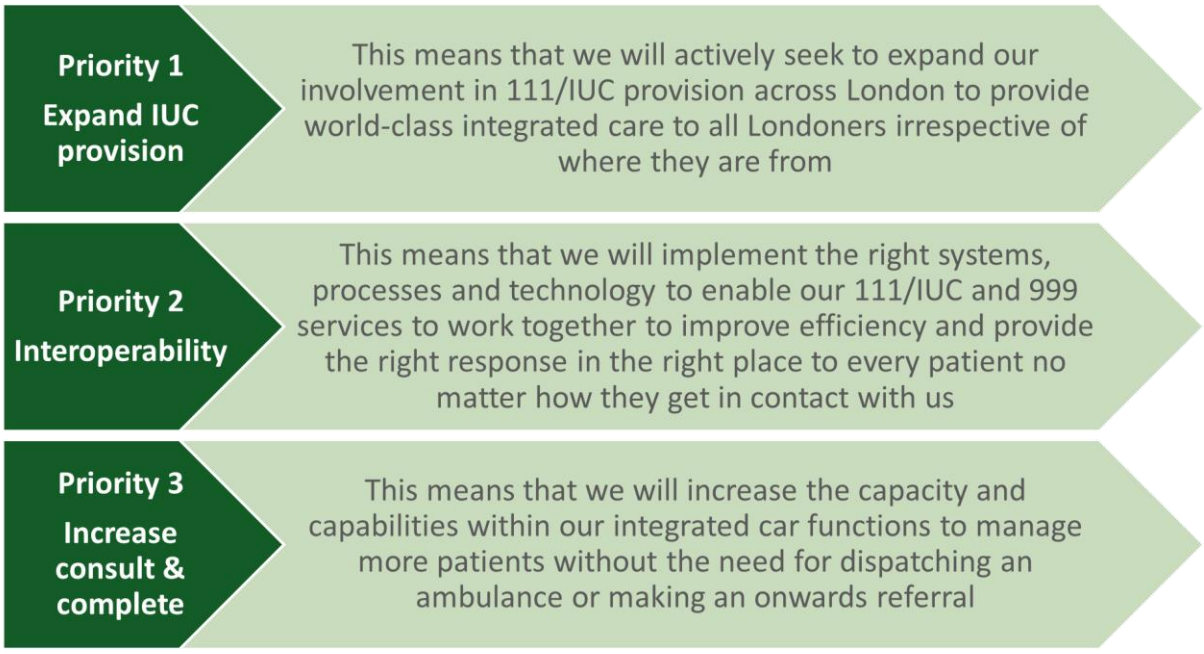
6 Integrated Care

Our strategic aim is to become the primary integrator of access to the urgent and emergency care sector. Our organisational strategy outlines our ambition in this area and as our service offer continues to expand within the urgent and emergency care sector, there is an opportunity to design and implement a more integrated, coordinated model for patient access and assessment. This new model would tackle fragmentation, give patients and clinicians a more joined up service, and improve efficiency.

The two key aspects of successfully integrating 111/IUC Clinical Assessment Services (CAS) and 999 services are becoming an IUC CAS provider across London and ensuring as much interoperability between the services as achievable.

Our overarching priorities within integrated care are:

Figure 3: Integrated care priorities



6.1 Our current 111/IUC service provision and performance

We currently run 40% of London's 111/IUC CAS service provision through our North East London and South East London services. The graphs below show that for some of the key metrics, our services perform very well compared to London's other providers.

Figure 4: 2018/19 % 111 calls leading to ambulance dispatch or ED attendance

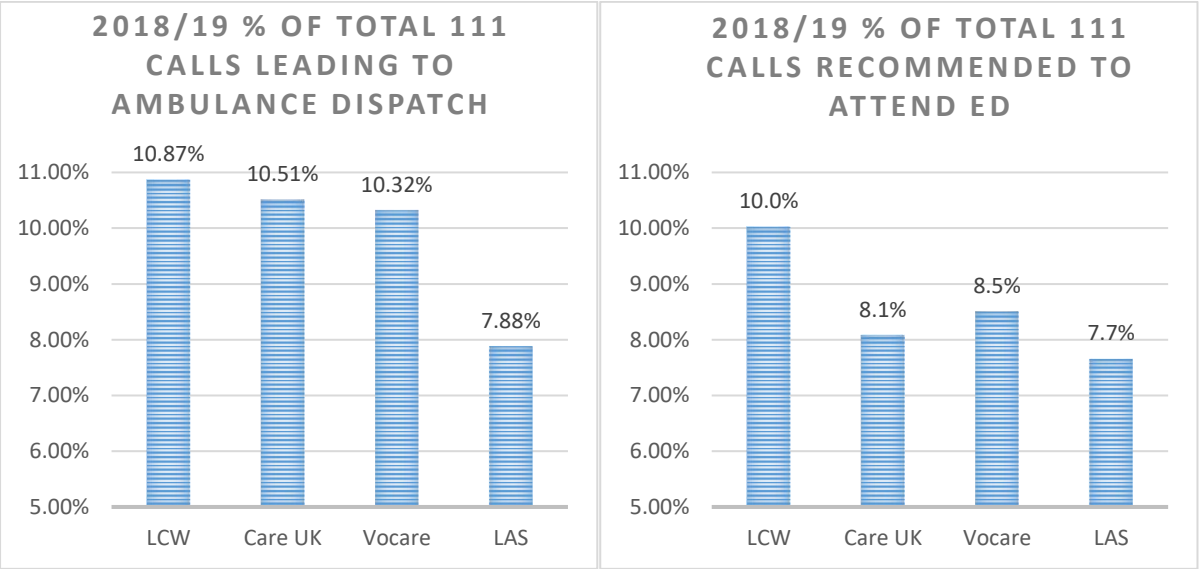


Figure 5: 2018/19 ambulance dispatch rate across London 111/IUC providers

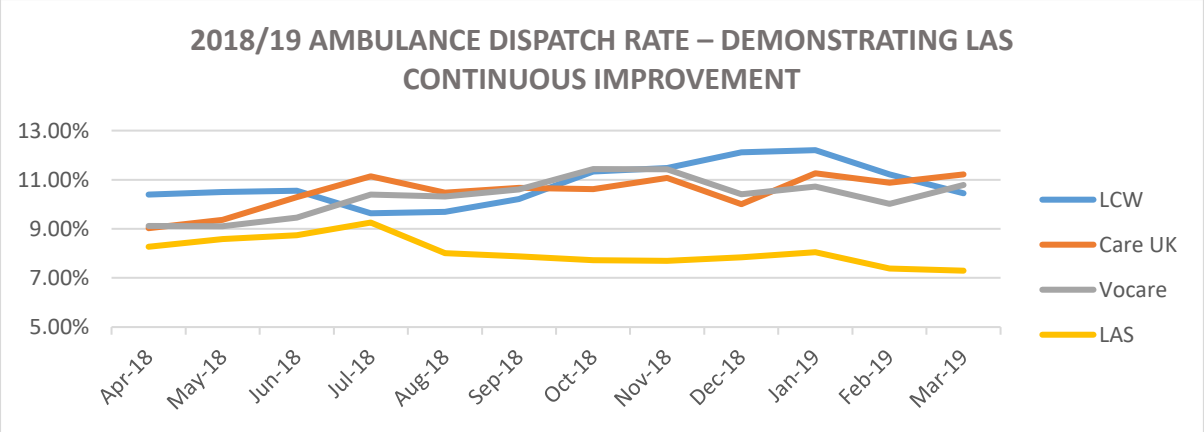


Figure 4 shows that across London, we have the lowest proportion of 111 calls that lead to an ambulance being dispatched. We also have the lowest proportion of patients who are advised to make their own way to an emergency department. This means that we are providing the right care for those patients more often without them requiring a referral or transfer to another part of the NHS system.

Figure 5 shows that not only are we performing well in these areas, but that our improvement initiatives have led to continued improvement throughout the year.

6.2 Our ambition within integrated care

We will provide an outstanding and joined up service for patients through:

- **Integrating the 999 and 111/IUC CAS systems to provide seamless care for patients regardless of access point** – making best use of clinical resources and care dispositions via 999 and 111, with seamless transfers between services (health advisory and clinical supervision) ensuring patients receive the care they need.
- **Making appropriate clinical decisions** - patients will be triaged and clinically assessed through a consistent model, making use of key data and decision-making tools to ensure that clinical risk is effectively managed, and guiding decisions about the right clinical support.
- **Making every patient contact matter by increasing the public health promotion and self-care guidance** - patients will receive the support they need, through clinically effective and robust 'hear and treat, 'see and treat' or 'see and refer' pathways. This includes providing advice about self-care, and supporting health promotion. We will continue to develop appropriate care pathways with partners providing linkages through the directory of service into the full range of primary, community and secondary care services and voluntary services where appropriate
- **Workforce Development** – identifying competency based roles to work provide care for patients accessing via 999 or 111 requiring assessment. Working across IUC providers to develop role & rotational opportunities to benefit clinicians' development, knowledge within the system and retain our skilled workforce.

What we will do – iCAT London

We have developed a model of integrated clinical assessment and triage – iCAT London – and we are working towards its implementation. Within this strategic theme, the first eighteen months of this clinical strategy have been focussed on successfully bidding for the contracts for and mobilising the 111 and IUC services for South East London and North East London. Our focus is now on developing and implementing our full iCAT model; an integrated urgent and emergency clinical assessment and decision-making hub, sitting behind – and joining up – 999 and NHS Integrated Urgent Care services. Once implemented it will be a 24/7 service offering specialist clinical advice, self-care support, and access to local emergency, urgent, community and social care services. Figure 6 and Figure 7 below demonstrate how our integrated approach will simplify the provision of IUC and 999 services, with a more efficient approach delivering better patient outcomes.

Figure 6: current configuration of 111/IUC and 999 services

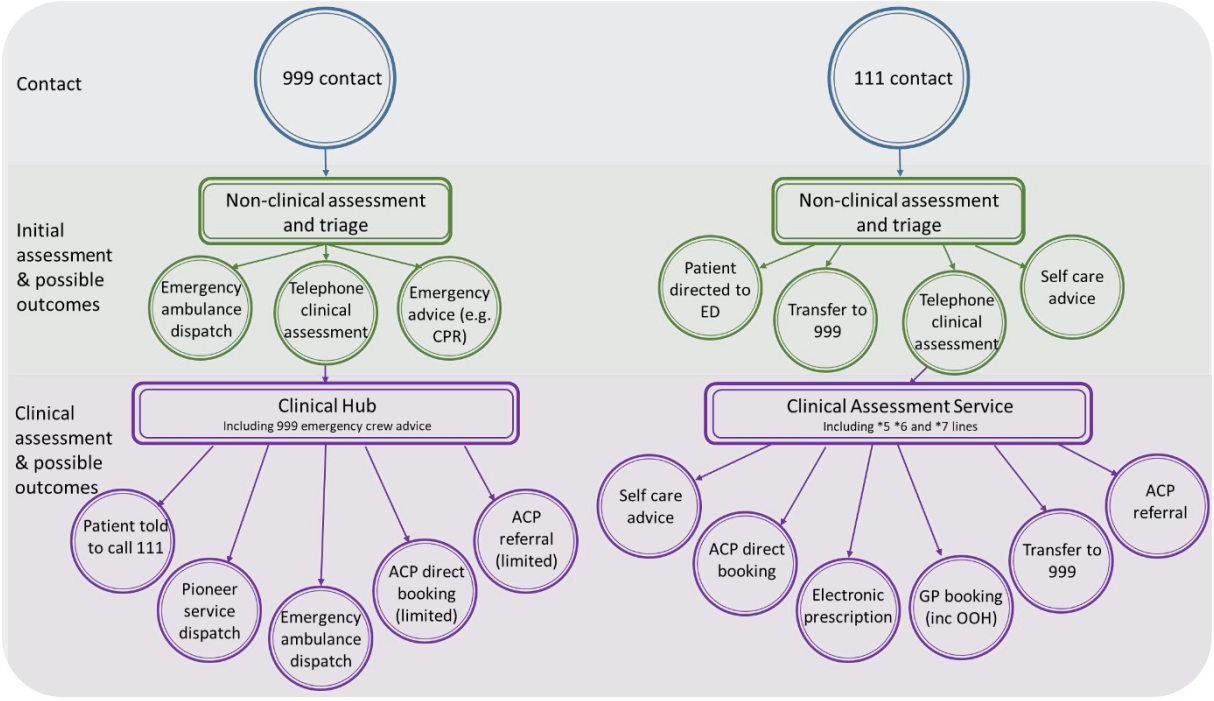
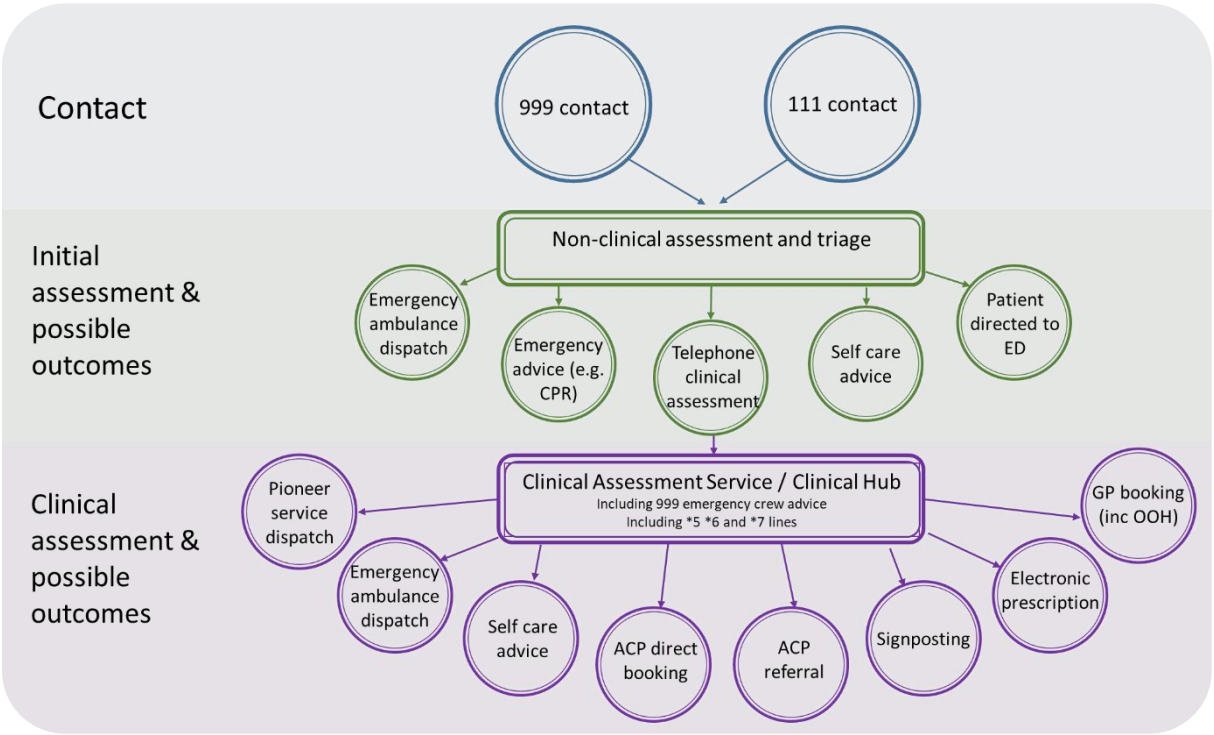


Figure 7: future configuration of integrated 111/IUC and 999 services



The functions and features of our future iCAT model:

Our ambition will be delivered through the following core features:

- **An expanded range of access channels** through a refreshed digital platform. Patients will be able to seek help and advice over the phone or, in the future using instant messaging and webchat, standard MMS messages, via mobile app, video and online portal.
- **A model of integrated urgent care (IUC)**, providing patients with easier access through a more diverse range of channels to urgent care advice and support, and a more coordinated response between providers. Patients will receive remote advice and support from an appropriate member of staff, where possible meeting their needs at that point. Should they need an onward referral, this will be coordinated including through direct booking into other services including a GP practice or an urgent treatment centre.
- **A clinical assessment service (CAS)** at the heart of integrated urgent care, providing advice to patients, call handlers and health professionals working in the community. To provide the scale and scope of advice available, iCAT will build on the existing IUC CAS and will offer an expanded range of clinical skills – including GPs, advanced practitioners, paramedics, nurses, pharmacists, dental nurses, mental health nurses, palliative care nurses, and secondary care clinicians.
- **A wider range of diagnostics** to support assessment and triage, for example tele-assessment including photos and videos. The iCAT provides a platform for future innovation including for example monitoring and responding to telehealthcare devices, as well as the integration of AI to improve diagnostic decisions.
- Making more appropriate use of an expanded and updated **directory of services** to identify and coordinate appropriate onward support for patients, and to provide the information people need to access support and to self-care.
- **Remote working** will allow clinicians to continue providing care London population and have quality of life and improved work/life balance to increase retention. Benefits to LAS and patients include rapid uplift of capacity during times of surge and escalation.
- Patient Flow developed for the IUC 111CAS to be made available for 999 Chub **allowing direct booking to wider system services** and direct access to GP and Pharmacy workforce to support consult and complete via 999.

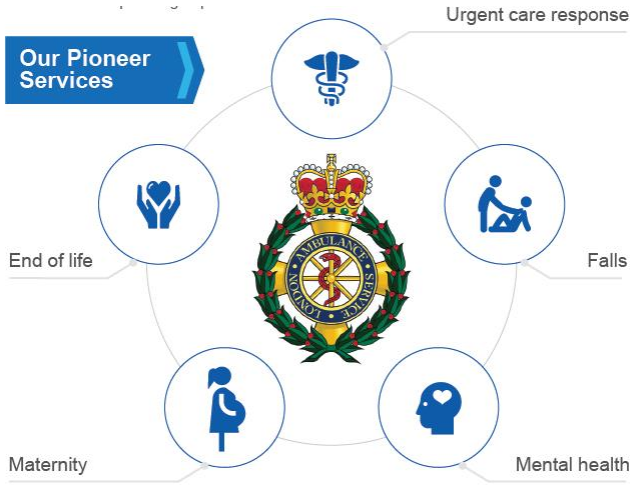
7 Urgent Care

For people with urgent needs, our aim is to provide a responsive service delivering care as close to home as possible, minimising disruption and inconvenience for patients, carers and families. In addition to on scene, support will be provided on phone and online.

As part of our 2018-2023 organisational strategy, we have launched our Pioneer Services, which identifies five urgent care patient cohorts where we think we can provide a differentiated response to improve patient care and ensure that the right care is being delivered as close to home as possible, avoiding Emergency Department conveyances where appropriate to do so. This is a key way in which we are looking to improve the care we provide to patients with urgent care needs

These Pioneer Services are:

Figure 8: Our Pioneer Services

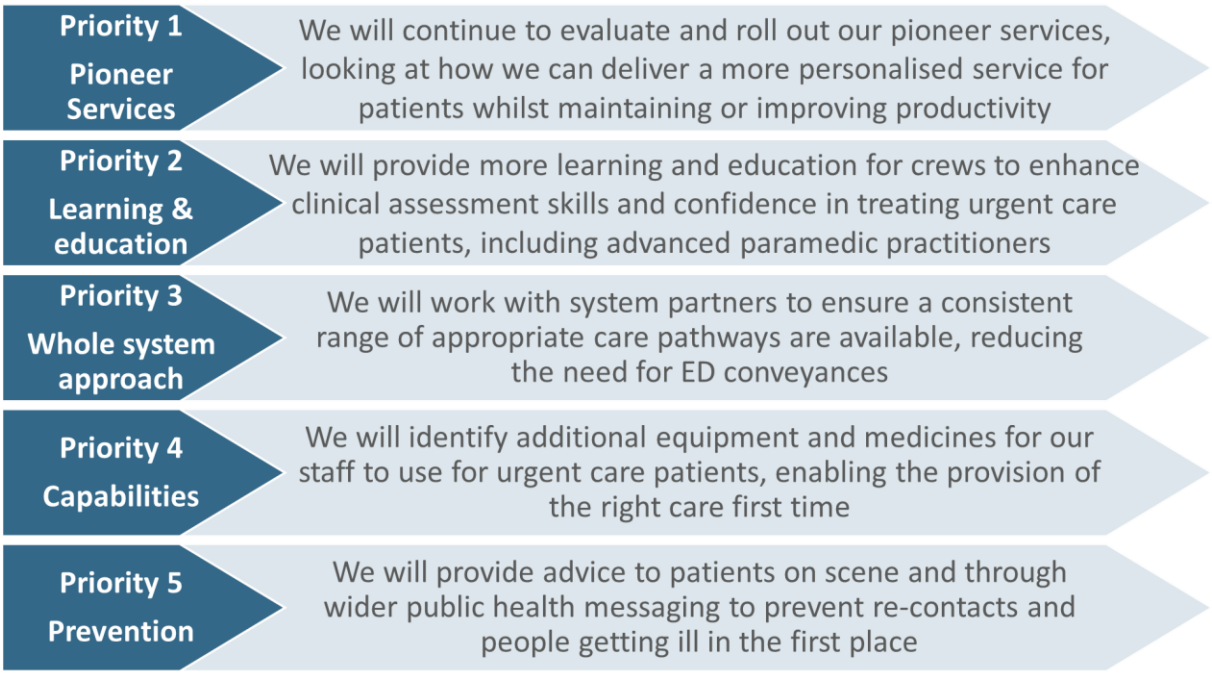


Each of these Pioneer Services is being developed to provide a bespoke service to their patient cohort, some of which include a new physical response to deliver a different kind of face to face care. Our pioneer services will see a broadening of our skill mix in order to provide the right care for those patient groups, for instance the deployment of a Registered Mental Health Nurse alongside a Paramedic for the Mental Health Service.

Where different service models are being proposed, these will be piloted and formally evaluated to make sure that we know what improvements they deliver to patient care and operational performance.

This section details a number of urgent care priority areas. It identifies what changes we have made over the last couple of years and the actions that we plan to take to improve care for these patient groups over the coming years. The recurring themes for urgent care form five key priority areas which are:

Figure 9: Urgent care priority areas



7.1 Frailty and elderly fallers

7.1.1 What we do

We are often called by patients, their family or carers, where a fall has occurred. We respond to 90,000 elderly fallers each year, accounting for around 8% of our total patients.

Our falls pioneer service is targeted at improving the care we provide for these patients and reducing the number unnecessarily conveyed to emergency departments. In March 2019 we launched the pilot for this pioneer service, utilising a specialist falls paramedic and NETS (non-emergency transport service) member of staff who received additional training in assessment and treatment of elderly patients. At the time of writing the pilot is ongoing, but the interim evaluation demonstrates that the pioneer service conveys c. 40% of patients to ED as opposed to 62% for the BAU response.

The data below shows that conveyance rates have been fairly static for elderly fallers over 2018/19, with an improvement in Q1 2019/20 which is when the pioneer service pilot went live.

Figure 10: ED conveyance rate for elderly fallers

7.1.2 How we are going to improve

Priority area 1: We will expand the specialist response available for elderly fallers and enhance the ability of all of our staff to provide the right treatment first time.

We will do this by:

- Concluding our falls pioneer service pilot and formal evaluation to identify benefits that a full roll out could deliver and what other lessons could be learned
- Identifying, as part of our new volunteering strategy, whether there could be an expanded role for volunteer responders in responding to elderly fallers

- Providing learning and education opportunities for all of our frontline crews to promote non-ED pathways where safe and encourage referrals to ACPs suitable for elderly fallers

Priority area 2: We will work with commissioners and system partners to ensure the right pathways and community services are available to respond to patients and for us to refer into when we respond to them

We will do this by:

- Working with STPs, commissioners and system partners to develop a system of appropriate pathways for fallers to be referred into, including community teams that can safely lift fallers from the floor
- Developing pathways and relationships with services that will allow our crews to safely leave patients in their own home rather than conveying them. This could include occupational therapists, falls prevention services, re-ablement services and befriending services.
- Working with the London Fire Brigade so that their staff can carry out falls prevention work when they are in people's homes

Priority area 3: We will seek to prevent patients we attend from falling again

We will do this by:

- Providing patients with immediate health promotion and falls prevention advice at the point of contact
- Delivering pro-active falls prevention interventions accessed via appropriate pathways which will provide multidisciplinary AHPs and nursing assessment to prevent further falls

7.1.3 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- Reduction in volume of falls calls
- Reduction in ED conveyance rates for elderly fallers
- Patients will have improved outcomes and improved ability to return to independent living through a reduction in the risks associated with response delays when an elderly person is on the floor e.g. sepsis and pressure ulcers.

7.2 Mental health

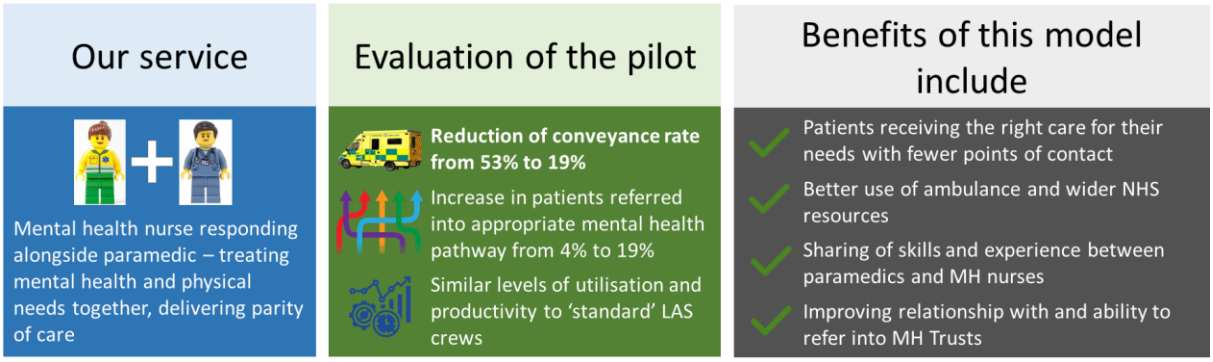
7.2.1 What we do

We are often the first point of care for patients experiencing a mental health crisis. In 2018/19 we received over 150,000 mental of these, equating to roughly 8.5% of our entire workload. As part of our 2018/19 strategy we designed a model of service delivery to respond to these patients in a different way in order to provide better care in a more efficient manner. Our pioneer service, which we launched the pilot for in November 2018, sees a paramedic respond alongside a registered mental health nurse and is transforming how we deliver mental health care

We are also working closely with the mental health trusts in London to develop a strategic partnership. This partnership is seeking to improve how we work together to provide the best, joined up care to mental health patients. Similarly we are working closely with the metropolitan police to ensure that the people with mental health needs who they come into contact with are treated in the most appropriate way for their needs.

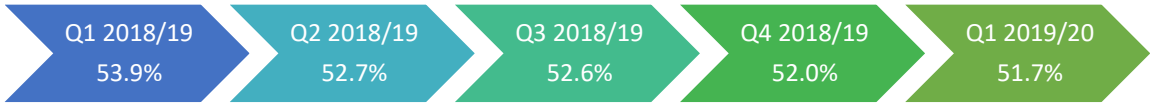
Improving our care to patients with mental health needs was identified in our 2018/23 strategy as a key organisational priority. The information below shows how the work we are doing, especially the pioneer service, is contributing to that improved care.

Figure 11: outcomes of our mental health pioneer service pilot



Through the impact of the pioneer service as outlined above, as well as the wider work we are doing to increase the confidence, knowledge and skills of our wider workforce, we have seen a continuous decrease in the percentage of patients with mental health needs who have been conveyed to emergency departments. This is a good indicator of those patients receiving the care they need at home rather than unnecessary and potentially upsetting conveyances.

Figure 12: ED conveyance rate for patients with mental health needs



7.2.2 How we are going to improve

Priority area 1: We will roll out our mental health pioneer service in partnership with the emerging Integrated Care Systems (ICS) and mental health trusts

We will do this by:

- Continuing to develop and strengthen our strategic partnerships with the ICSs and Mental Health Trusts in London to develop a collaborative model of service delivery through our pioneer service and to improve access to mental health records
- Developing appropriate governance arrangements, dispatch mechanisms, policies and procedures to ensure the expanded mental health pioneer service works as efficiently and effectively as possible

Priority area 2: We will work with NHS and emergency service partners to ensure that patient with mental health needs get the right response for their needs first time

We will do this by:

- Ensuring that we effectively triage our mental health patients so that those who can be safely managed over the phone are managed in this way and then 'warm transferred' to appropriate community and mental health services
- Continuing to work closely with the metropolitan police to create a co-located mental health hub for access by all emergency services should they need it by 2021
- Working with voluntary and charitable mental health organisations to provide better support for patients, including signposting and handover to ongoing care including Crisis Cafes

- Continuing to share best practice with UK ambulance trusts and to stay informed on new mental health initiatives and innovative pilots elsewhere in the country and internationally.

Priority area 3: We will improve the mental health learning & education available for our staff

We will do this by:

- Improving the learning and education that we provide for our staff in relation to the mental capacity act, to help staff feel more confident in this area and support their decision making
- Providing additional training for the appropriate management of patients with drug and alcohol dependencies
- Submitting funding bids to enable the Trust to employ a Mental Health tutor on a full time basis

Priority area 4: We will improve how we use patient, staff and stakeholder input into service design and improvements

We will do this by:

- Establishing a Mental Health Voices Partnership by the end of 2020, which will act as a forum for patients, carers, staff and key stakeholders to work collaboratively to understand patient experience

7.2.3 Anticipated outcomes

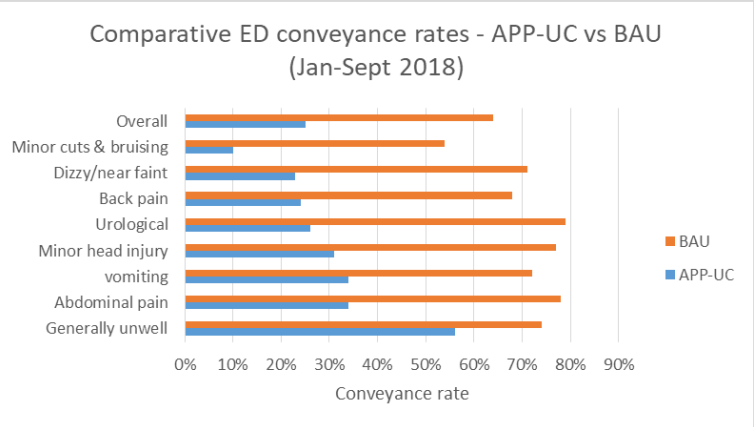
- More patients will receive the right care first time
- A reduction in emergency department conveyance rate for patients with mental health needs to 35%, assuming a full roll out of the pioneer service model across London 24/7
- An increase in the number of patients we directly refer into the relevant mental health trust or community service teams
- By making additional training available to our clinicians we expect to see an increase in levels of staff confidence with regards to their skills and knowledge

7.3 Other patients with urgent care needs – our urgent care advanced paramedic practitioner programme

7.3.1 What we do

Our urgent care advanced paramedic practitioner programme (APP-UC) was implemented as part of this clinical strategy. LAS is one of the leading ambulance trusts nationally in terms of progressing advanced practice for paramedics including the numbers of APP-UCs; with 30 across London, and scope of practice. APP-UC are experienced paramedics who undertake an MSc in Advanced Practice and are equipped with an enhanced scope of practice enabling them to treat more patients without onward conveyance or referral.

As part of a review of the impact of our APP-UC programme, a full statistical analysis was undertaken. The graph to the right shows the key findings that overall ED conveyance rates are significantly lower for APP-UCs compared with a like-for-like BAU response. The research also identified a number of common conditions where APP-UCs are particularly effective at treating patients without the need for onward



conveyance. We can also see that the conveyance difference varies significantly according to illness or injury. We can therefore seek to identify the optimal marginal gains of the APP-UC programme, and ensure we are dispatching them to the patients where they can offer the greatest benefit in comparison to if we sent a core-rostered crew.

In terms of overall contribution to trust-wide ED conveyance rate, using the data from our current urgent care APPs we can see that for every 10 APP-UCs we employ, we reduce our overall ED conveyance rate by 0.22%

7.3.2 How we are going to improve

Priority area 1: We will continue to expand the APP-UC programme, ensuring it is as efficient and effective as possible

We will do this by:

- Increasing the number of APP-UCs have from 30 in September 2019, to 70 by the end of 2022/23, ensuring that these staff provide clinical leadership to local teams as well as utilising their advanced skills to provide the best care possible for patients
- Refining dispatch model for APP-UCs to ensure we optimise utilisation and provide an efficient dispatch process, selecting the right patients for them to attend
- Promoting clinical audit and research within the APP-UC programme including developing a set of bespoke clinical performance indicators

Priority area 2: We will increase the skills, knowledge and range of treatment options available to our APP-UCs to provide the best patient care with fewer onwards referrals or conveyances

We will do this by:

- Expanding point of care testing, including some blood tests
- Expanding the range of antibiotics available for the APP-UCs to use
- Expanding the range of wound care that the APP-UCs are able to provide
- Piloting and, dependant on the success of the pilot, roll out independent prescribing for APP-UCs by the end of 2020/21

7.3.3 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- **Better patient care** as more patients will be able to be treated at home rather than needing an onwards referral – getting it right first time with fewer system hand-offs
- **Further reduction in ED conveyance** rates for our APP-UC cohort from a baseline of 29% to 20% by the end of 2023. This will, together with the increase in the number of APP-UCs, contribute to a further overall reduction in the Trust-wide ED conveyance rate of 1.54%
- More referrals are made to **appropriate care pathways** to ensure patients receive the right ongoing care for their needs
- **Better utilisation** rates for our APP-UCs

7.4 Public health – preventing people becoming unwell in the first place

7.4.1 What we do

The London Ambulance Service has demonstrated a continued commitment to early intervention and prevention through initiatives such as public awareness campaigns and educational programmes

aimed at a wide range of community groups. Whilst prevention and public health has not always been a core part of what we do as an ambulance service, as part of the wider health and social care system ambulance trusts have a responsibility within this area. In addition, we see around 1.2 million patients each year and have access to their homes in ways that other health professionals might not. We are therefore well placed to pick up on risk factors that might be less visible to other health professionals who they come into contact with.

We have recently appointed a dedicated lead who is responsible for overseeing public health and prevention and will drive forward our activities in this area.

Some of the key ways that we currently promote public health and prevention are:

- **Public Events**
- Prevention initiatives for **young people** on topics such as the effects of knife crime and alcohol.
- We deliver public education sessions to targeted **community groups** in order to address health inequalities and raise awareness on increased health risks associated with different ethnicities.
- Working with **partners**, using a multiagency approach to public health in delivering programmes such as 'Safe Drive Stay Alive' where we work alongside other emergency services, TfL and London borough councils.
- We ran a successful pilot with the **Royal Voluntary Society** whereby volunteers visited patients (elderly fallers who frequently call 999) and worked with them for 6-8 weeks to improve their physical function and wellbeing. This saw a reduction in 999 calls and visits to ED as well as patients feeling less lonely and more confident.
- We regularly promote **prevention messages via social media** such as drinking sensibly over New Years Eve and carrying water in hot weather. We have also run public awareness campaigns with posters on the Underground, as well as 'Act FAST' adverts on the side of ambulances to promote recognition of stroke symptoms.

We believe that there is significant scope to build on this work in a more strategic, targeted and effective way going forward.

7.4.2 How we will improve

Priority area 1: We will promote public health and preventative messaging at point of patient contact (face to face)

We will do this by:

- Completing the rollout of **the Make Every Contact Count** core skills refresher (CSR) training as part of an e-learning package for all clinical staff, promoting the concept of providing prevention and health advice for certain patients e.g. smoking cessation for COPD patients

Priority area 2: We will educate the public through prevention initiatives and campaigns

We will do this by:

- Developing a **public health strategy** which sets out our vision and plans for the various aspects of public health including prevention
- Reflecting our commitment to public health in the promotion of **workplace wellbeing** for our staff
- Developing a **communications plan** to embed public health messages in our social media calendar, e.g. National Awareness Days, Winter and Summer health messages, Ramadan fasting and partners' campaigns
- Using space within our conveying vehicles for posters showing public health information

Priority area 3: We will work with system partners to reduce health inequalities and ensure our available pathways meet local needs

We will do this by:

- Continuing to support **public health campaigns** led by health system partners and other emergency services, promoting prevention messages and healthy living, e.g. *Change 4 Life*
- Working closely with **stakeholders** and others in the health and social care system to be part of the ongoing conversations that influence the changing shape of public health in London
- Carrying out a **health needs assessment**; mapping London demographic data against our own data to identify health inequalities, illness hotspots and where preventative initiatives might have greater impact
- Exploring opportunities as part of our wider **volunteer scheme** for cadets to support wider prevention campaigns such as #EndLoneliness

Priority area 4: We will identify opportunities for non-clinical pathways and signposting

We will do this by:

- Continuing to explore the feasibility of establishing **non-clinical care pathways** such as a referral to Samaritans
- Understanding the role of the paramedic and ambulance services in **social prescribing** and identify opportunities where we can improve health outcomes. We will continue to explore the feasibility of establishing non-clinical care pathways, such as signposting to Samaritans or smoking cessation services, via the establishment of Community Support Pathways.
- Including public health in **technology and digital developments** within the Trust and identify opportunities for using iPads as part of non-clinical referrals / sign-posting patients

7.4.3 Anticipated outcomes

As outlined, this is an emerging area of our organisation and one where we do not have specific experience and understanding of expected outcomes. However, if done effectively, medium-long term benefits could include:

- Reduced demand on our services and on the wider NHS
- Reduced frequent callers

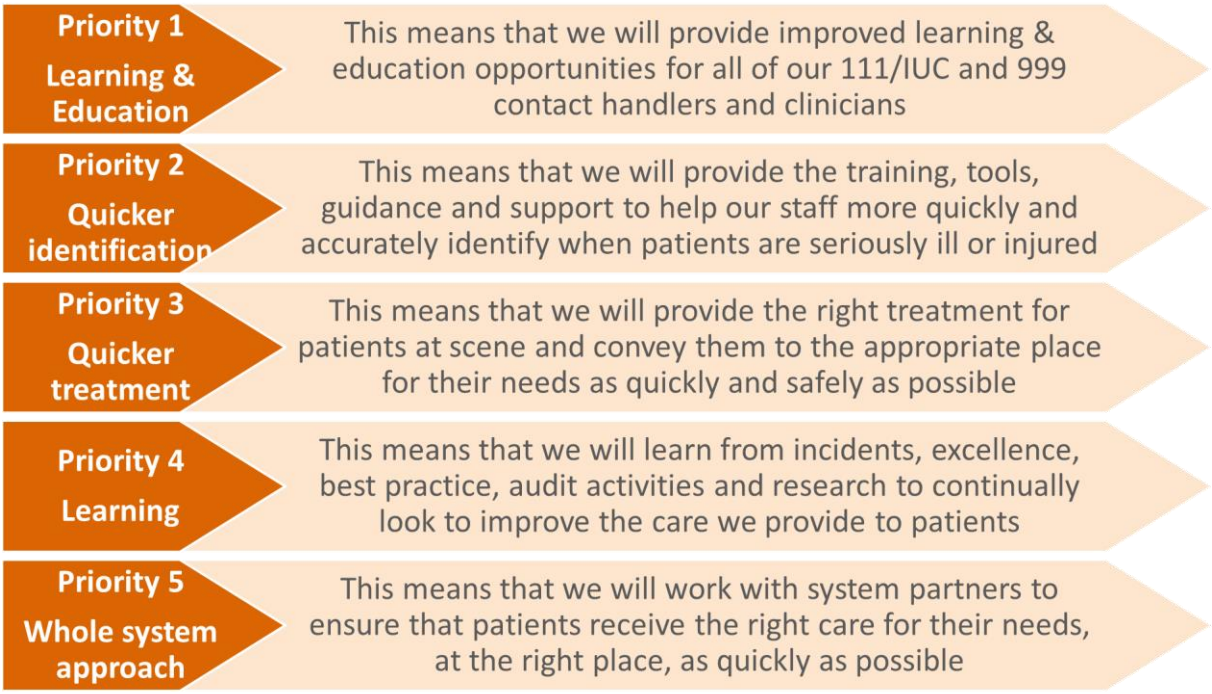
We will continue to look for further benefits as we develop our programme of work

8 Emergency Care

Continuing to improve the clinical care and outcomes for patients with life threatening conditions remains a core priority for the ambulance service. For these patients where definitive care may only be possible in hospital early conveyance from the scene is key to improving clinical outcomes. For these groups of patients guidance is provided to indicate the aspects of care which need to be delivered pre-conveyance and on route to the hospital.

This section details a number of emergency care priority areas. It identifies how we are performing, what best practice and innovation we have identified and what actions we are going to take to improve the care that we provide to these patient groups. Whilst there are a large number of actions, there are a number of recurring themes throughout this section which are our key priorities to improve over the course of this clinical strategy:

Figure 13: Emergency care priority areas



8.1 Out of hospital cardiac arrest

8.1.1 What we do

Our aim is to ensure patients who suffer an out of hospital cardiac arrest receive the right treatment by appropriately trained clinicians as quickly as possible. This is vital for their survival and long term clinical and quality of life outcomes. Since we launched our clinical strategy, some of our key achievements and improvements in indicators have been:

- Utstein return of spontaneous circulation (ROSC) sustained to hospital was the highest to date in 2018/19[3] at 62.6%, which was the highest rate in England (England average of 54.2%)
- Utstein[4] survival to discharge for 2018/19[5] was 33.3% which is 4th highest in the England but compares well to the England average of 30.1%
- Continued high quality training including 1,000 clinicians attending 'pop up CPR' sessions
- We introduced a paediatric cardiac arrest checklist for use by all clinicians (further details in 'paediatrics', section 8.2)
- Participation in a number of high quality national research projects including 'Paramedic 2' trial investigating the effectiveness of adrenaline in cardiac arrests and the 'ARREST' trial which seeks to establish the most appropriate centre of care for patients with ROSC who do not have evidence of STR elevation myocardial infarction on their ECG
- We have supported bystander CPR through high quality CPR instructions at call taking, with 65.3% of cardiac arrests receiving bystander CPR in 2017-18, which is our highest rate to date
- Increasing the number of public access defibrillators logged in our database to 5,304, supporting the metropolitan police to equip all their police cars with defibrillators and supporting the expansion of the GoodSam app

8.1.2 Our performance and best practice

Cardiac arrests are monitored through the Ambulance Quality Indicators, looking at Return of Spontaneous Circulation (ROSC) and survival.

Figure 14: ROSC and survival 2018/19 rates in England for the Utstein group

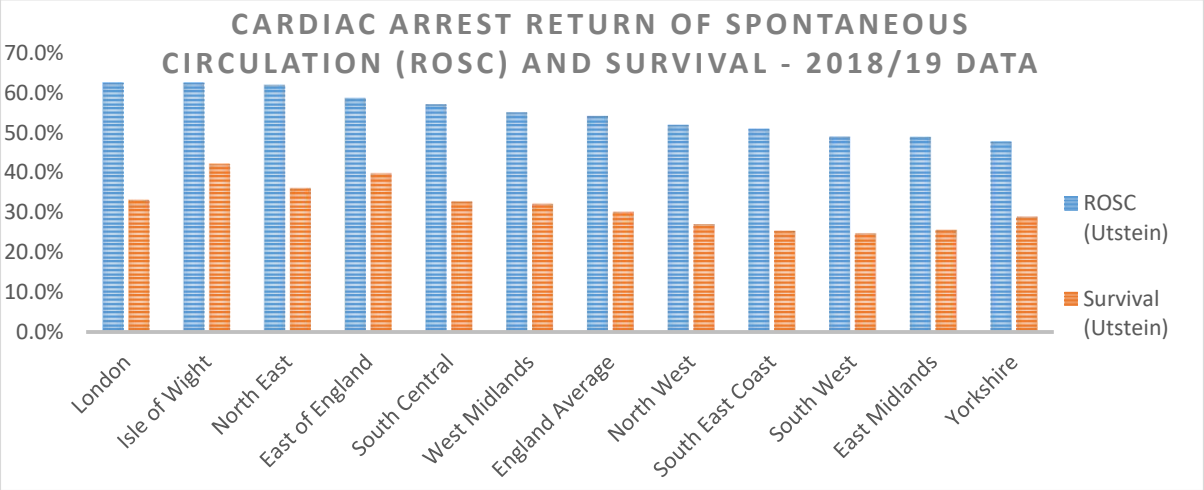


Figure 14, above, shows that we are the top performing ambulance service in England for ROSC (for the Utstein group), at 62.6% which compares favourably to the England average of 54.2%. Figure 15, below, shows that we have made year on year improvement in this indicator over the last few years at a faster rate than the UK average.

In terms of cardiac arrest survival, whilst not the highest performing trust in the UK, we compare well against the England average (LAS 33.3% compared with England average of 30.1%). Similarly to

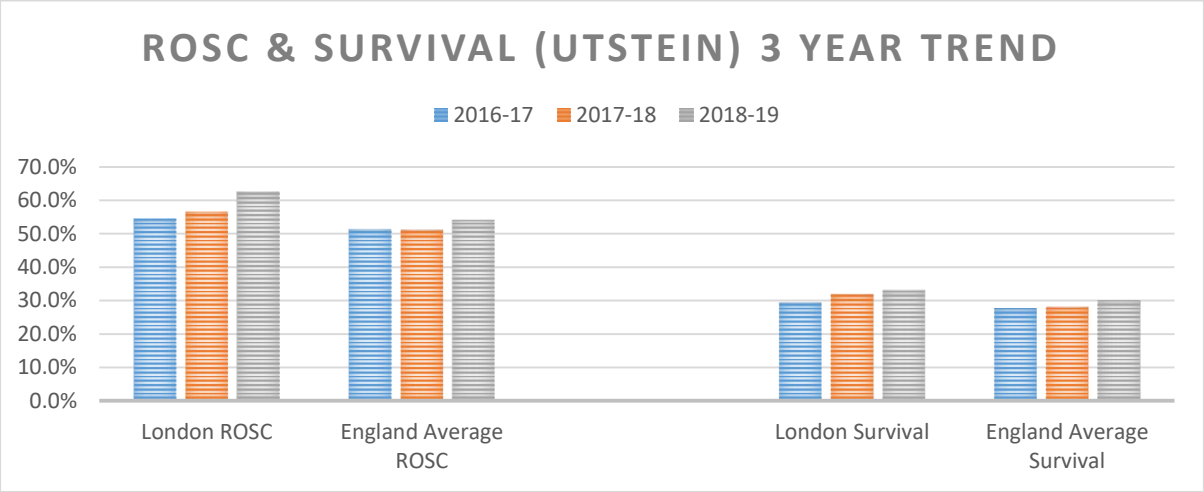
[3] 2018/19 provisional data – clinical strategy to be updated in December 2019 when final validated data becomes available

[4] Utstein represents patients whose cardiac arrest is presumed to be of cardiac cause, who were witnessed to collapse and the initial rhythm was shockable

[5] 2018/19 provisional data – clinical strategy to be updated in December 2019 when final validated data becomes available

ROSC, we can see that our improvement plans and the initiatives we have put in place have led to a year on year improvement in this metric.

Figure 15: ROSC and survival 3 year trend

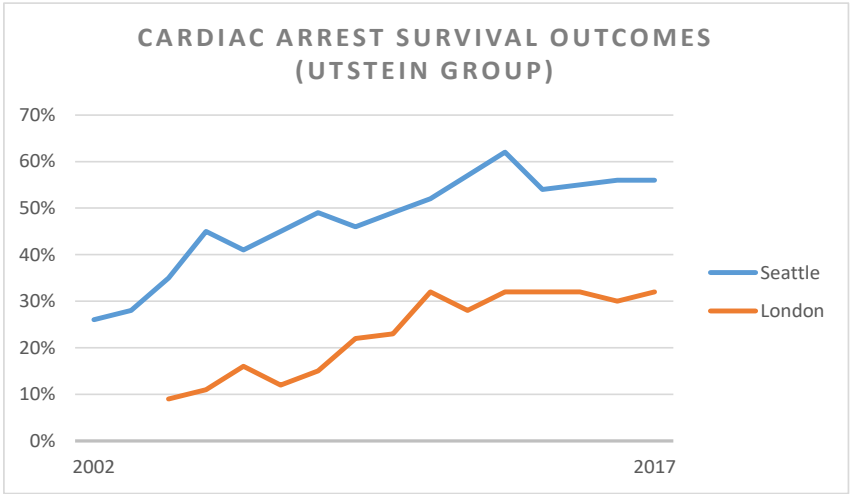


Whilst the UK data shows that we are performing well in relation to other UK ambulance services, there is still more that we can do, particularly to increase our survival from cardiac arrest rates. Seattle and King County, USA, has one of the highest Utstein survival rates in the world (56%) and overall survival of 21%. As the graph below shows, there is room for improvement in London and there are a number of lessons we have learned and incorporated within this clinical strategy based on the success that has been seen in Seattle & King County.

Seattle & King County Cardiac Arrest Case Study

Seattle and King County, USA, has one of the highest Utstein survival rates in the world at 56%. Our geography, demographics and operating models differ, but we can still see that there are is learning and innovation that we can look to in order to improve outcomes in London

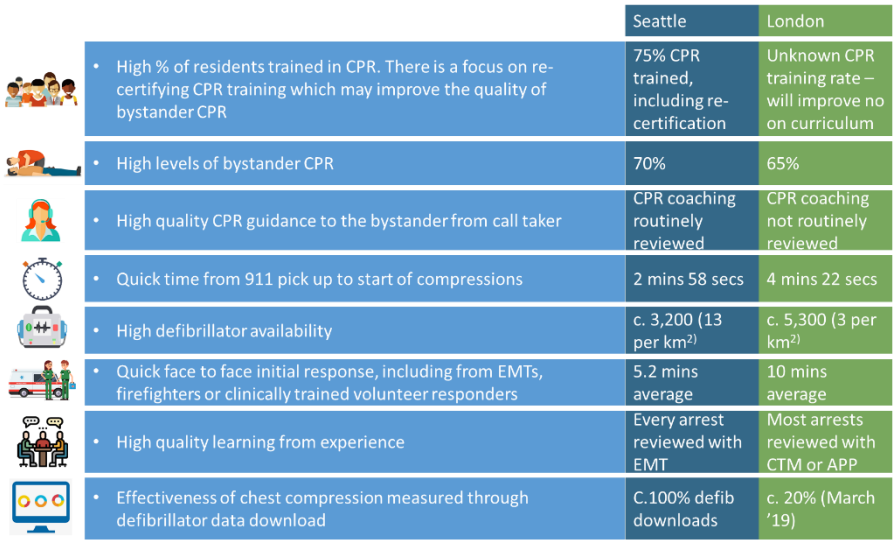
Figure 16: Cardiac arrest survival outcomes; London and Seattle comparison



Note – the LAS and Seattle data is not directly comparable, but demonstrates the gap and improvement that can be made

The key contributing factors, to them being able to achieve these survival rates and how they compare to London are detailed in the following diagram:

Figure 17: Key contributing factors to Seattle cardiac arrest survival rates



	Seattle	London
• High % of residents trained in CPR. There is a focus on re-certifying CPR training which may improve the quality of bystander CPR	75% CPR trained, including re-certification	Unknown CPR training rate – will improve no on curriculum
• High levels of bystander CPR	70%	65%
• High quality CPR guidance to the bystander from call taker	CPR coaching routinely reviewed	CPR coaching not routinely reviewed
• Quick time from 911 pick up to start of compressions	2 mins 58 secs	4 mins 22 secs
• High defibrillator availability	c. 3,200 (13 per km^{2})	c. 5,300 (3 per km^{2})
• Quick face to face initial response, including from EMTs, firefighters or clinically trained volunteer responders	5.2 mins average	10 mins average
• High quality learning from experience	Every arrest reviewed with EMT	Most arrests reviewed with CTM or APP
• Effectiveness of chest compression measured through defibrillator data download	C.100% defib downloads	c. 20% (March '19)

Whilst there are some demographic and socio-economic differences between Seattle and London, there is some learning from this case study that we are particularly keen to replicate in London and has been incorporated into this clinical strategy:

- Improving defibrillator data downloads, using it to feedback to staff and influencing the learning and education packages that are then developed around cardiac arrests
- Introducing more regular training and skills drills for both BLS and ALS
- Increasing the number of defibrillators across London
- Developing an additional tier of specialist ALS responders in the form of our APP-CC programme

8.1.3 How we are going to improve

We will develop a cardiac arrest strategy, incorporating the priority areas below, with the aim of improving survival to discharge.

Priority area 1: We will treat patients suffering from cardiac arrest more quickly, delivering the right care at the right time including improving bystander CPR and public defibrillator use

We will do this by:

- Improving early defibrillation rates through continuing to increase the provision of public access defibrillators (PADs), targeting areas of low coverage
- Increasing the likelihood of a trained responder attending a cardiac arrest with a defibrillator, by optimising the defibrillation auto-alerting system and the GoodSAM smartphone app
- Increasing the number of people who are trained in BLS and defibrillation, in particular to a level that meets the requirements for LAS defibrillation site accreditation and GoodSAM registration
- Replacing the Lifepak 15/1000 by the end of 2020/21, including enabling functionality to remotely download defibrillator data
- Auditing the effectiveness of call taker assisted CPR and identify whether improvements can be made in the speed that chest compressions are commenced
- Continuing to promote immediate dispatch of CTMs through the '97' model to provide senior clinical leadership at cardiac arrests, in particular those involving paediatric patients
- Ensuring all patients receive timely defibrillation after the arrival of LAS clinicians

- Increasing the number and effectiveness of volunteer first responders and Co responders including Community First Responders, Emergency Responders and Metropolitan Police Service
- Reviewing paediatric advanced life support equipment

Priority area 2: We will improve training and support for our crews, including advanced paramedic practitioners

We will do this by:

- Continuing to develop the skills of Advanced Paramedic Practitioners (Critical Care) to manage complex cardiac arrests, in particular formalising the use of cardiac ultrasound and the management of paediatric cardiac arrest
- Providing clinicians with regular simulation training based on findings from cardiac arrest download review and encourage and 'all VF survives' mind-set
- Supporting further development of a structured 'hot debrief' to discuss the care provided to the patient and support the staff involved
- Continuing to deliver Pop Up CPR sessions to frontline staff
- Reviewing download data and feedback to staff with areas for improvement and of good practice (feed themes back to Education and Standards for initial training and CSR)
- Introducing annual ALS competency assessment for all registered clinicians and assessment of airway management and BLS competencies for all clinicians for both adult and paediatric resuscitation
- Improving staff training in and awareness of DNA CPR orders through CMC to reduce the occurrences of inappropriate resuscitation

Priority area 3: We will participate in and use high quality pre hospital care research to improve cardiac arrest outcomes and learn from best practice

We will do this by:

- Improving the way that we review cardiac arrest care through data downloads and increase the percentage of defibrillator downloads from 20% in March 2019 to 30% by the end of 2020/21 and 75% by the end of 2020/21 enabled by new defibrillators
- Participating in further high quality pre-hospital care research to improve the care of people experiencing cardiac arrest, for example multi centre randomised controlled trials such as the ARREST trial to establish the most appropriate centre of care for patients with ROSC who do not have a STEMI on their 12 lead ECG
- Continuing to contribute data from all cardiac arrests to local and national databases
- Working with Barts Health NHS Trust and the London Air Ambulance on the 'Sub30' pilot study which will investigate the feasibility of implementing a pre-hospital advanced cardiac arrest team to establish 'ECMO' in out-of-hospital cardiac arrest patients

8.1.4 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- A further increase in ROSC and survival rates for both adults and paediatrics
- An increase in the number of static defibrillators in London from c. 5,300 to 7,500 by the end of 2022/23
- 75% of defibrillator downloads by the end of 2020/21, with learning shared on an individual and service wide level to enable greater learning from cardiac arrests

- Reduction in time taken from 999 call to commencement of chest compressions as directed by telephone CPR

8.2 Acute cardiac conditions

8.2.1 What we do

The LAS is committed to ensuring that patients suffering a heart attack (STEMI and non-STEMI) are recognised promptly and treated with all clinically appropriate elements of the evidence based care bundle whilst being transferred to the nearest Heart Attack Centre without delay. Currently the Trust delivers this care to a high standard with the exception of evidencing sufficiently that the pain relief element set out in the national care bundle is administered and recorded appropriately. The Trust also has a paramedic only arrhythmia pathway where a specific group of 'emergency arrhythmias' are conveyed to an Emergency Arrhythmia Centre 24-7

Since we launched our clinical strategy, some of our key achievements and improvements in indicators have been:

- The establishment of 24-7 pathways for STEMI
- We are the only Trust in the UK to convey patients to Emergency Arrhythmia Centres
- Monthly STEMI/cardiac care packs produced by CARU and separate fully comprehensive annual STEMI and cardiac arrest annual reports
- 12 lead ECG training delivered at local level across the Trust by the Medical Directorate

8.2.2 Our performance and best practice

One of the main ways in which we measure the care that we provide to patients suffering a heart attack is the Ambulance Quality Indicator assessing the delivery of a 'STEMI care bundle'; the components of care that should be provided to heart attack patients.

Figure 18: 2018-19 STEMI care bundle compliance[6]

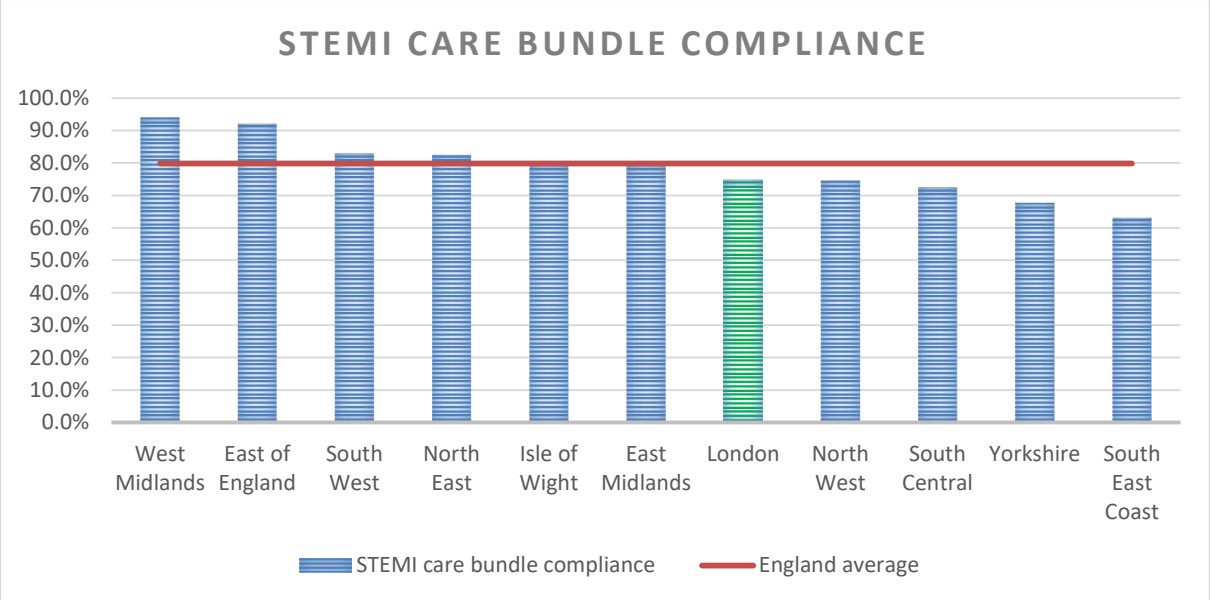


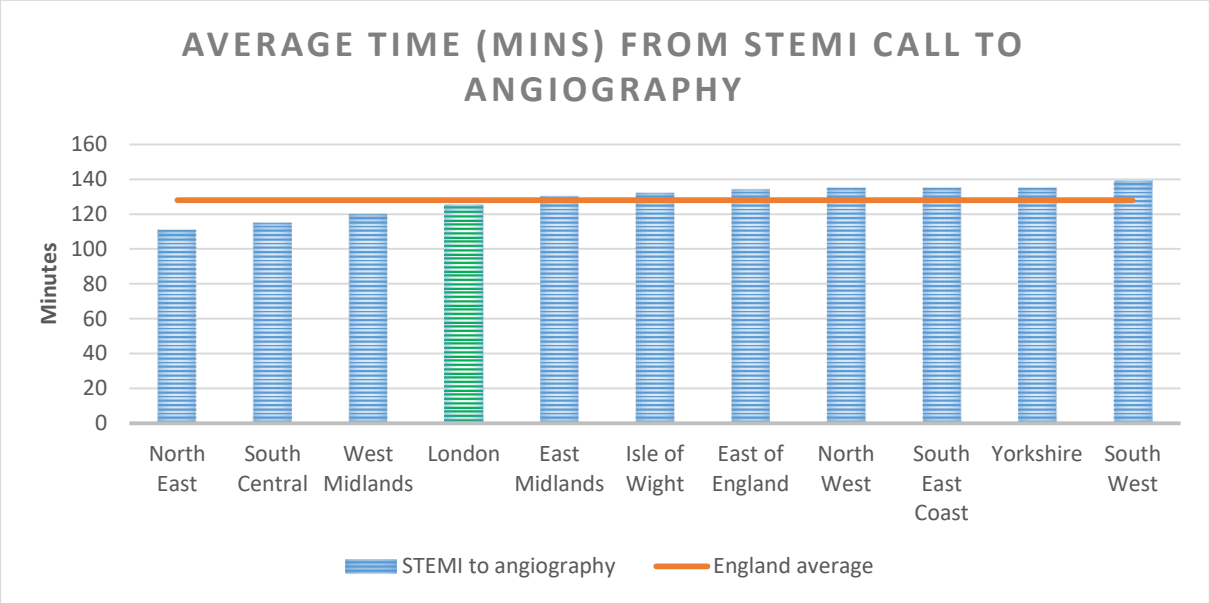
Figure 18 above shows that we are seventh in England in terms of our STEMI care bundle delivery compliance, which at 74.7% places us below the England average of 79.8% (provisional 2018/19 data). It is clear that a key part of our work going forward will be focussing on improving our care

[6] 2018/19 provisional data – clinical strategy to be updated in December 2019 when final validated data becomes available

delivery against this indicator. We are moving in the right direction though, as our performance against this indicator has improved from 71.5% in 2016-17 when we launched this clinical strategy. The implementation of an electronic patient care record, detailed later in this strategy, will help us improve in this area.

We also measure the time it takes from receiving a STEMI call to the patient receiving angiography. Figure 19 below shows that our average time in 2018/19 of 125 minutes is slightly ahead of the England average of 128 minutes. There is however a relatively large gap between our performance and the best performing trusts (South Central at 115 minutes and North East at 111 minutes)

Figure 19: Average 'STEMI to hospital' time in England 2018-19



8.2.3 How we are going to improve

Priority area 1: We will improve pain assessment and management (part of the STEMI care bundle) and transport patients more quickly to the appropriate place of care

We will do this by:

- Improving pain assessment & management through training and support and evidenced through monthly STEMI cardiac care packs
- Reducing on-scene time for patients with STEMI , with swift conveyance to the nearest 24/7 Heart Attack Centre (HAC) centre
- Working with Heart Attack Centres to ensure timely handover for patients conveyed, including adopting a structured handover approach
- Working with London Cardiac Networks to continually review services and continue to improve timely access to specialist centres for our patients
- Working with Heart Attack Centres and national registries such as the myocardial ischemia national audit project (MINAP) to obtain information around patient diagnosis and outcome to aid learning for individual clinicians

Priority area 2: We will provide crews with more regular training in identification and management of acute coronary syndromes and emergency arrhythmias

We will do this by:

- Providing 'face to face' refresher training in identification and management of acute cardiac conditions for all operation staff with particular focus on learning from examples of good practice

Priority area 3: We will participate in and use research to improve outcomes from myocardial infarction and learn from best practice

We will do this by:

- Continuing to undertake audit to review cases and identify and learn from any 'missed' cases i.e. rare cases where STEMI or high Risk ACS patients are taken to an ED
- Using MINAP data to feedback on STEMI/non STEMI
- Improving and auditing the outcome for patients conveyed to specialist centres with other cardiac presentations e.g. cardiac arrhythmias to Emergency Arrhythmia Centres

8.2.4 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- STEMI care bundle compliance improved and time spent on scene reduced to improve patient outcomes
- Frequency of training provided to staff in ECG recognition increased, improving staff confidence and skills in ECG interpretation
- Work with Heart Attack Centres to share patient diagnosis and outcomes with staff for future learning
- Structured handover process between LAS clinician and HAC team improving staff experience and patient safety

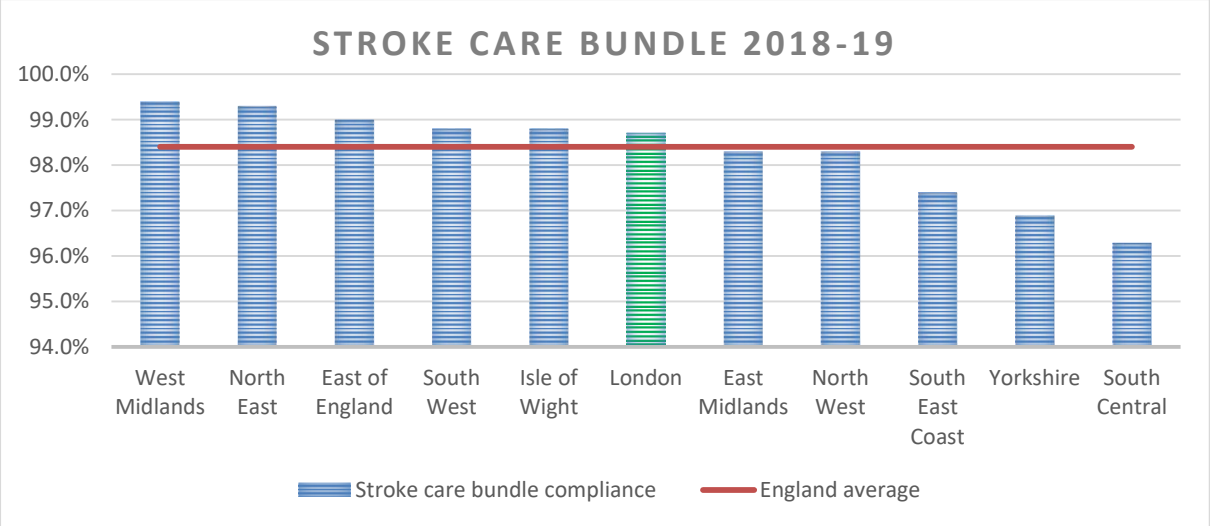
8.3 Strokes

8.3.1 What we do

London has a well-established Hyperacute Stroke Unit (HASU) network. Conveyance to the HASU is determined using an evidence based assessment and treatment with a stroke bundle.

8.3.2 Our performance and best practice

Figure 20: Stroke care bundle compliance 2018-19

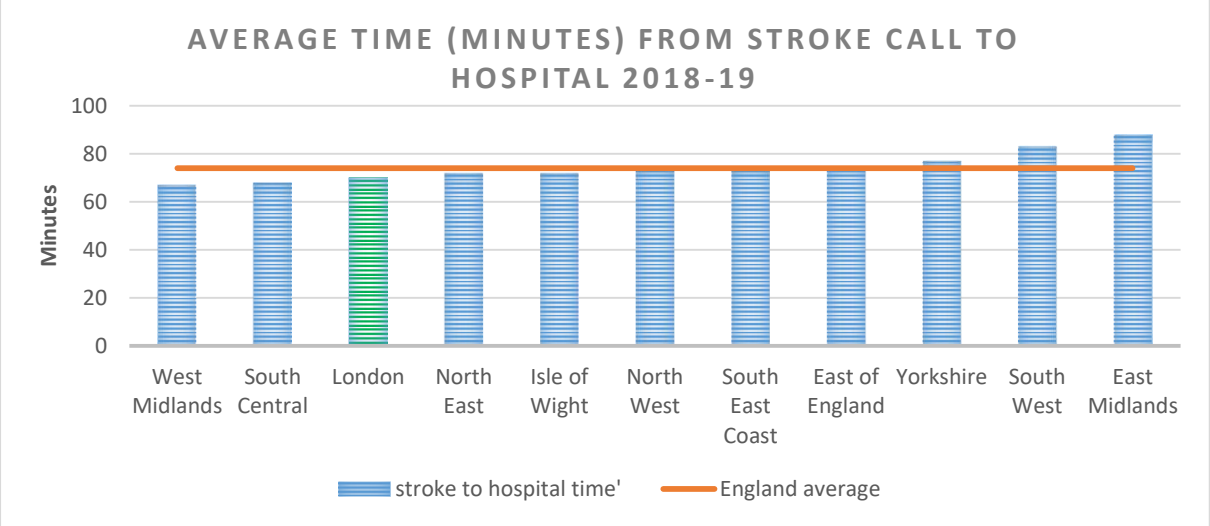


The AQI around stroke measures our effectiveness at delivering the stroke care bundle. In 2018-19 we had 98.7% (provisional data) compliance against this indicator which was just above the England average of 98.4%. Whilst this placed us sixth out of England ambulance services, a small increase of

0.7% would give us a compliance rate of 99.4%, equal with the best performing ambulance trust in 2018-19.

We also measure the time it takes from receiving a stroke call to arriving at hospital, the speed of which is crucial in improving outcomes for stroke patients. Figure 21 below shows that in 2018/19 our average 'stroke to hospital' time was 70 minutes. In London, partly helped by the short travelling distances to hospitals, we are performing above the England average (74 minutes) and within three minutes of the best performing (West Midlands at 67 minutes)

Figure 21: Average 'stroke to hospital' time in England 2018-19



8.3.3 How we are going to improve

Priority area 1: We will improve early identification and ensure quicker initial treatment for patients suffering a stroke

We will do this by:

- Implementing a training package for face to face clinicians for better recognition of subtle presentation of strokes, Transient Ischemic Attacks (TIA) and 'stroke mimics'
- Revising guidance to EOC & clinical staff on the recognition of stroke in children and subtle presentation of stroke in adults
- Exploring the use of video technology to be able to get expert advice from HASU to aid the identification of subtle presentations of stroke

Priority area 2: We will ensure patients are taken as quickly as possible to the right place of care for their needs

We will do this by:

- Providing guidance to clinicians about what aspects of care to undertake pre-conveyance and on route to minimise any delays on scene
- Working with the pan-London thrombectomy teams to ensure patients who need thrombectomy receive fast onward conveyance.

Priority area 3: We will improve public awareness of stroke and its symptoms

We will do this by:

- Supporting local and national initiatives aimed at increasing awareness of stroke across all age groups

8.4 Sepsis

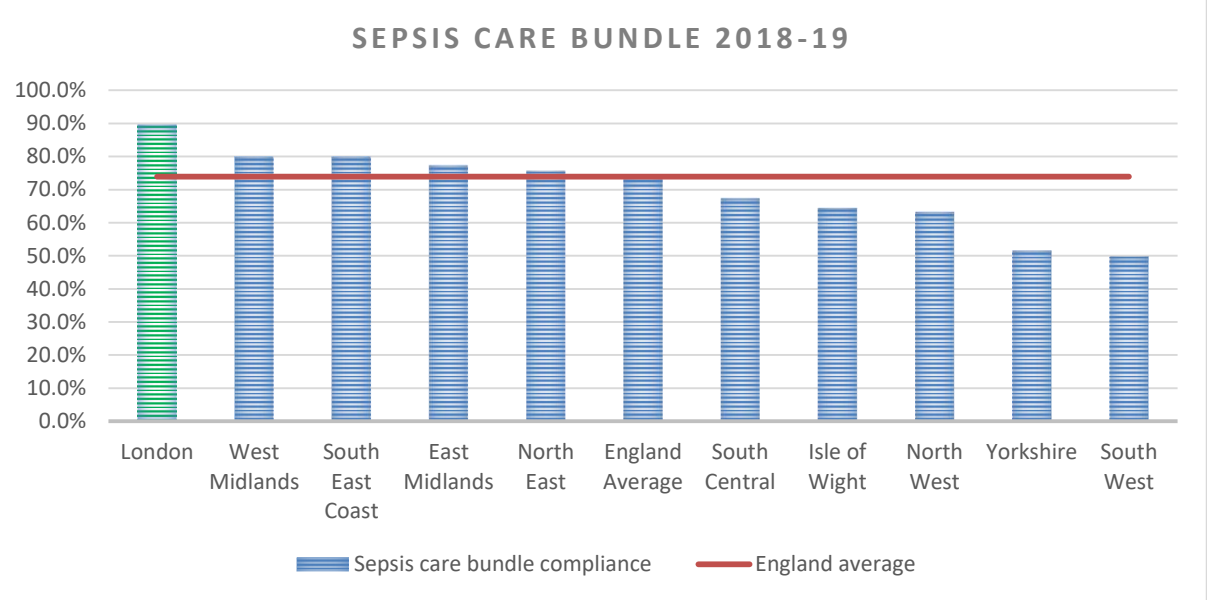
8.4.1 What we do

Sepsis is one of the leading causes of death in the developed world. Sepsis is a time critical condition which can lead to organ damage, multi-organ failure, septic shock and death. Early recognition of sepsis at 999 and 111 is essential to enable the ambulance service to initiate life-saving treatment and issue a pre-alert to the hospital emergency department.

8.4.2 Our performance and best practice

One of the key ways in which we measure and monitor the care to patients suffering with sepsis is through the LAS sepsis registry which was introduced in 2018/19. This registry monitors adult patients with a National Early Warning score of 7 and above. This is used to generate the sepsis care bundle compliance data as shown in the table below.

Figure 22: Sepsis care bundle compliance 2018-19[7]



We are performing particularly well in this area with a compliance rate of 89.5% which is almost 10% above the next best performing ambulance trusts (79.8% for West Midlands and South East Coast) and well above the England average of 73.9%

In addition to the sepsis care bundle, we have a LAS specific clinical performance indicator which was introduced in April 2016 and examines the management of adult sepsis patients. Our compliance to care is consistently over 95% and we are extending this CPI to paediatric patients for the first time this year.

8.4.3 How we are going to improve

Priority area 1: We will provide training for all 999 & 111 contact handlers and clinicians to ensure they can provide best quality care

We will do this by:

- Ensuring all 999 & 111 contact handlers are trained to recognise the signs of sepsis in all age groups as described over the phone and are adequately supported by clinicians where the signs are more subtle

[7] Provisional 2018/19 data until December 2019

- Ensuring all frontline clinicians are trained to recognise sepsis in all age groups and expedite conveyance to ED

Priority area 2: We will improve early identification of sepsis and the delivery of the appropriate treatment

We will do this by:

- Supporting national sepsis campaigns to raise public awareness
- Equipping the e-PCR with automated calculation of NEWS2 scores which will generate a sepsis alert, improving early identification of clinical sepsis
- Training and equipping advanced paramedics to administer antibiotics for mild / moderate infection to avoid conveyance to hospital where clinically safe to do so
- Continuing to revise the pre-hospital sepsis clinical assessment and treatment algorithms for children and adults

Priority area 3: We will participate in and use research to improve stroke outcomes and learn from incidents and best practice

We will do this by:

- Undertaking sepsis audit and AQI reporting
- Ensuring learning takes place from any cases

8.4.4 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- Earlier identifications of patients who have sepsis
- Quicker conveyance of patients

8.5 Trauma

8.5.1 What we do

Since 2010 London has had an integrated major trauma system, with major trauma centres supported by a collaborative network of trauma units. As this system has matured over the last decade it has become world leading with one study showing a decrease in crude mortality of over fifty percent since the inception of the trauma system[8]. The London Trauma system operates a primary bypass pathway for certain injured patients direct to the major trauma centre. We convey an average of 20 patients per day to a major trauma centre with over 84 percent of patients with an injury severity score of greater than 15 (one definition of major trauma) being conveyed directly to a major trauma centre compared with 16 percent in 2007.

Since its inception the major trauma system in London has seen both a marked increase in survival and significant improvements in quality of care. This is evidenced in the clinical literature with reports of ‘overall good care’ increasing from 48% (pre trauma system) to 69%. Early identification of these patients with potential major trauma and where appropriate direct transfer to Major Trauma Centres both play a vital role in improving survival and minimising long-term disability.

The patient age groups and the type of events causing significant traumatic injuries is changing nationally and in addition to this the type of trauma seen in London can differ from elsewhere in the UK. There is also an increase in major trauma population in the UK amongst the elderly.

[8] Annals of Surgery, The Impact of a Pan-regional Inclusive Trauma System on Quality of Care (https://www.c4ts.qmul.ac.uk/downloads/impact-of-pan-regional-inclusive-trauma-system-cole-ann-surg-2015.pdf)

There has been significant success in improving the mortality and morbidity of some groups of major trauma patients through enhanced skills and knowledge supported by early despatch of specialist resources e.g. London Air Ambulance or our critical care advanced paramedic practitioners.

8.5.2 How we are going to improve

Priority area 1: We will provide appropriate training and education to our staff, ensuring that we are learning from incidents and excellence

We will do this by:

- Refreshing the education for our staff around changes to trauma patients in the 21st century. This will include continuing to improve education around identification of head and spinal injuries in older patients, often following relatively low-mechanism falls
- We will continue to work with the provider of our triage software to ensure that major trauma in elderly patients is recognised. We will share incidents of under triage to develop knowledge and better identification of this patient group
- Enhancing MERIT (Medical Emergency Response Incident Team) training to improve emergency preparedness
- Ensuring crews understand the need for accurate triage of major trauma patient, to reduce the over-triage (outside of the trauma triage tool) rate from 100 patients per month to fewer than 80.

Priority area 2: We will ensure that we recognise the injuries that our patients have suffered and identify the correct pathway and place of care for their needs

We will do this by:

- Reinforcing the importance of recognition and management of neck and back trauma in older people
- Using video technology in the 999 CHUB to help in the remote triage and assessment of trauma patients
- Supporting the national work to develop an evidence based triage tool which aims to identify the patient prehospital who needs to attend a major trauma centre
- Continuing to review clinical trauma resuscitation pathways & techniques where there is good evidence to support it

Priority area 3: We will ensure that patients who have suffered major trauma receive the right care for their needs by the clinicians with the most appropriate skills

We will do this by:

- Ensuring ambulance clinicians have the correct equipment to provide appropriate care on scene and on route to definitive care, looking at methods of haemorrhage control, splinting and ensuring we have methods of minimising temperature loss in the bleeding trauma patients
- Ensuring pain is assessed and managed effectively, we will consider the efficacy and applicability of novel inhaled analgesics. We will attempt to influence the legislation which restricts paramedics in what controlled pharmacological agents they can carry
- Reducing the time spent on scene, unless definitive interventions are being performed, for patients with penetrating trauma from 16 minutes we achieve currently, to 12 minutes. We will also reduce on scene time for blunt trauma from 34 minutes to 30 minutes.
- Being innovative in looking for ways to optimise the care of trauma patients. We will roll out antibiotics for open fractures to our critical care advanced paramedics and we will consider how we expand the use of sedatives and analgesics with this group of staff. We will review the evolving evidence for the use of TXA (Tranexamic acid) for patients who are bleeding. We will also scope the use of the HART team to provide enhanced clinical interventions in the ‘hot zone’ of an incident

- Continuing our work with London's Air Ambulance, targeting a physician-paramedic team to the most seriously injured patients.
- Continuing to work with the burns network to ensure patients with serious burns are transferred to a specialist unit as required

8.5.3 Anticipated outcomes and benefits

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- Compliance with the trauma triage tool, reducing over and under triage
- Patients suffering from major trauma will receive the right care, in the right place for their needs, first time, with fewer secondary transfers
- Patients will receive rapid pain relief on scene, with our staff having access to the appropriate range of analgesic options which are easy to administer
- Patients will receive treatment on scene and quickly be taken to hospital to receive further treatment, minimising any clinically unnecessary delays
- Patients will receive first aid interventions, such as wound packing and tourniquets, from the other emergency services and first aid providers if they are on scene before our clinicians arrive

8.6 Long term conditions

8.6.1 What we do

There are a number of long term conditions that many people live with across London. Mostly, patients manage their conditions without problems as part of their day to day lives and without needing unscheduled care. However, occasionally these manageable conditions can become emergencies requiring our assistance. Some of the common emergency calls related to long term conditions are for:

- Asthma
- Epilepsy
- Endocrine emergencies including diabetes

Whilst the treatment clearly differs for each of these long term conditions, there are a number of common actions that we need to take to maintain the high quality of care we provide for these patient groups.

8.6.2 Priority areas and specific actions

Asthma	Epilepsy	Endocrine emergencies
Every asthma attack has the potential to be life-threatening. 80 to 85 percent who die from asthma develop progressive symptoms anywhere from 12 hours to several weeks before death	For some people living with epilepsy, the risk of Sudden Unexpected Death in Epilepsy (SUDEP) – where death is not caused by injury or another known cause - is an important concern. Most, but not all, cases of SUDEP occur during or immediately after a seizure	Whilst diabetic emergencies are usually responsive to treatment and patients may be able to be discharged, there are some instances, for instance with patients with Addison's disease, which, if left untreated in can be fatal
Common priorities for long term condition related emergencies		
Ensure severe and life threatening emergencies for these long term conditions are identified quickly by call handlers		

Ensure that ambulance clinicians quickly identify severe and life threatening emergencies, and provide necessary treatment and convey the patient to the most appropriate treatment centre i.e. the emergency department

Review and, if appropriate, increase the range of treatment options for clinicians treating these patient groups

Ensure that our crews are using CMC and other patient records that might be made available to them, to help identify the best treatment option for patients. Crews should also encourage patients to create a CMC plan, in conjunction with their main healthcare provider i.e. GP, if they do not have one already and it would be appropriate to do so

Provide, where appropriate, brief patient advice and education to help prevent deterioration and further emergencies in future

8.7 Vascular emergencies

8.7.1 What we do

To improve outcomes patients with a vascular emergency (Ruptured AAA, ischaemic limb) need to be assessed, treated and conveyed to the most appropriate unit with the skill and expertise to manage the ongoing need of the patient

8.7.2 How we are going to improve

Priority area 1: We will ensure that patients with vascular emergencies are treated quickly and we learn from how we deliver this care

We will do this by:

- Reducing the time spent on scene for patients with a suspected vascular emergency
- Auditing our care and decision-making for patients with vascular emergencies

Priority area 2: We will work with our system partners to ensure that patients receive the best possible care for their needs

We will do this by:

- Working with the vascular networks to support reconfiguration of services for vascular patients
- Working with vascular centres to understand how best to recognise and triage patients with a possible leaking aneurysm, shortening the time to care
- Ensuring patients with known vascular conditions have a CMC record which is accessible by LAS clinicians and at the patients side

8.7.3 Anticipated outcomes

- Patients will receive the right treatment on scene and be conveyed to hospital more quickly, improving their chances of survival or good outcomes

9 Specific patient groups – ‘stages of life’

9.1 Children and Young People Paediatrics

9.1.1 What we do

We treat approximately 100,000 children and young people aged 0-18 each year. Whilst almost every condition, illness or injury included within this strategy can affect anyone at any age, there are certain considerations that are specific to children. The size of the child, their vulnerability and ability to describe what they are experiencing, the enhanced emotion that comes with treating potentially very young children and the potential different presentations of conditions within children all combine to mean that paediatric care requires certain priorities over and above those described previously within each section of this strategy.

Fortunately we more often than not get called to children, particularly very young children, for non-life threatening conditions. This means that most of our staff only rarely are called to treat critically unwell children. However, this leads to a challenge in maintaining their skill sets so that they are confident and able to treat critically unwell children should they be required to do so.

One area of increasing focus in London for young people is the growing prevalence of knife crime. Our immediate and most obvious role is to treat anyone who has been a victim of knife crime as quickly and effectively as possible and we outline in the major trauma sections how we are looking at new ways to stop bleeding to save more lives and improve outcomes. However, we also have a role in public education and prevention and our public education team is engaged in a widespread schools programme to educate young people about the dangers of carrying knives. This is outlined further in our patient and public engagement strategy.

One of the significant areas of development over the last couple of years is the work that has been undertaken to improve the treatment of paediatric cardiac arrests. In 2017 a review was undertaken by the APP critical care group of paediatric cardiac arrest patients in London between 2014 and 2017. The findings allowed a focused approach to identify areas of clinical care that required improvement, through education, updating the clinical resource dispatch model to ensure senior clinicians (APP-CC & Clinical Team Managers) attend all paediatric cardiac arrests to provide clinical support, and through updating the Trust clinical guidelines. It also saw the introduction of a paediatric cardiac arrest checklist to help our crews deliver effective treatment in what will always undoubtedly be a challenging and emotional situation.

We have increased awareness of paediatric sepsis by embedding the paediatric sepsis tool in our clinical training and practice across the trust. This assists our clinicians in the recognition subtle yet potentially life threatening illness and to make appropriate interventions. We have also introduced additional assessment skills and treatment options for our group of Advanced Paramedic Practitioner group.

We have introduced the *paediatric trauma tree decision making tool* to ensure that children suffering from significant injury are taken to specialist centres for trauma to receive the best treatment available in London. This may not necessarily be the nearest hospital, however the time saved by conveying to the specialist centre can significantly improve outcomes.

9.1.2 How we are going to improve

Priority area 1: We will improve outcomes for the most critically unwell children and young people

We will do this by:

- Improving chances of survival from paediatric cardiac arrests through embedding of the paediatric cardiac arrest checklist into practice and a unified training approach for our staff with a clear trust message on treatment of this patient group.
- Reducing avoidable child asthma deaths by working with Healthy London Partnerships Asthma networks and the 'Ask About Asthma' Campaign. We will also place an emphasis on our clinicians taking appropriate history and asking critical questions about how patients treat their own asthma in the future.
- Reviewing the medicines formulary for children and continuing to influence at a national level to ensure the best treatment options are available specifically for the termination of continuous seizures.
- Influencing at a national level to ensure that by the age of 16 all London's children will leave school with the skills to carry out effective CPR.
- Promoting the use of the Citizen Aid App (children's version) to all children in London to increase their knowledge of lifesaving healthcare prior to the arrival of the emergency services.
- Continuing to promote the availability and encourage the use of public access defibrillators where youngsters may be at risk of sudden cardiac arrest. Eg: sports grounds, schools and public spaces.

Priority area 2: We will improve the care that we provide for all children and young people

We will do this by:

- Auditing our assessment, care and decision-making for specific groups of paediatric patients as appropriate and in response to trends in incident reporting and research.
- Conducting a full review of all specialist paediatric equipment that our crews carry to ensure that they have the appropriate equipment should they need to use it.
- Working with the national review into paediatric conveyance to identify whether, through improving assessments, the confidence of our crews, and better referral pathway opportunities, we can reduce unnecessary emergency department conveyances for children age 1 and above.
- Supporting a multi-agency approach to knife crime prevention, seeking to find the most effective interventions to prevent knife violence by working with London's Violence Reduction unit.
- Work collaboratively with partners in London to promote children's understanding of healthy living and how they access healthcare.

Priority area 3: We will provide more specific paediatric training and education for our staff

We will do this by:

- Reviewing of all paediatric training that our staff receive to ensure that they are harmonised and aligned with best practice. We want to introduce the 'spotting the sick child' e-learning suite to ensure that all of our staff receive the same high quality consistent training by the end of 2021
- Ensuring that staff receive sufficient training to maintain skills in treating critically unwell children through the Core Skills Refresher programme.
- Developing and disseminating paediatric palliative and end of life care guidance to assist crews, families, and patients and embed the use of Coordinate My Care [CMC] in every day practice.

Whilst we look at all patient cohorts, as described through the majority of this strategy, by focussing on the specific actions outlined in this section, as well as by continuously looking for further improvement opportunities, we aim to improve the care we are able to provide to the children and young people living in London.

9.1.3 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- Improving outcomes for children and young people, particularly in paediatric cardiac arrest and asthma
- Improving the patient experience for children and young people

9.2 Maternity

9.2.1 What we do

We treat around 11,500 women a year for maternity related reasons. We were the first ambulance trust in the UK to recruit a consultant midwife with the focus on enhancing the safety and quality of the maternity care that we provide to women and their families. More recently we have recruited three (2 WTE) practice leads for pre hospital maternity care. This investment in maternity expertise has led to a significant improvement in the quality, quantity and consistency of training and support that we are able to provide for our staff and our intention over the course of this strategy is to maintain the high quality of maternity care that we provide.

We have also introduced a number of tools to make it easier for staff to provide high quality care to women. We introduced a pre-hospital maternity screening tool, which other ambulance services have now adopted, which provides crews with a decision support tool to rely on in what can be a challenging and sometimes chaotic environment. We have also introduced a pre-hospital communications card which helps standalone maternity units and community midwives to quickly get the right ambulance response for the needs of the woman they are with.

9.2.2 How we are going to improve

Priority area 1: We will continually review our maternity training to ensure that we are providing the right training in engaging and accessible ways

We will do this by:

- Continually reviewing and update our maternity training programme to respond to identified needs and lessons learned, for example like the specific breech birth training that was rolled out in 2018/19
- Expanding our multidisciplinary maternity training approach, offering training for our frontline clinicians and EOC staff alongside midwives from maternity unit
- Formally launching our ‘Map my Matenity’ tool on MiDoS. This iPad interface allows crews to access a directory of all London maternity units making sure that our patients have ongoing treatment in the most appropriate and safest place of care, as quickly as possible.

Priority area 2: We will develop innovative service delivery models so we are always trying to identify ways in which we can improve the maternity care that we provide

We will do this by:

- Producing a compelling business case, backed with data from test shifts, to secure funding to have midwives in the control room 24/7

- Developing innovative ways of supporting and engaging LAS staff and our allied partners in maternity issues with the launch of a London wide 'Maternatour'. This is a bi-annual event showing visible leadership and raising the profile of maternity
- Introducing innovative tools, such as the 'Birthing Barometer' to enable staff to provide maternity feedback, this allows continual evaluation of the maternity training programme ensuring that it is responsive to staff needs.

Priority area 3: We will work as part of the wider NHS maternity system to ensure that women are receiving the right care in the right place at the right time for their individual needs

We will do this by:

- Working with Local Maternity System (LMS) partners to improve the appropriate care pathways that are available for our staff to access, especially for early pregnancy
- Continuing our involvement in regional and national forums, contributing to the writing and updating of national and local guidelines, ensuring that there is an emphasis on the importance of considering pre-hospital maternity care
- Seeking to secure funding for and establish a permanent 'maternity voices partnership' to formalise staff, patient and partner input into all maternity service design
- Working with maternity units who are implementing electronic notes to ensure that our crews are able to access them through their iPads when treating women

9.2.3 Anticipated outcomes

As a result of the actions described above, over the course of this clinical strategy we would expect to see the following outcomes:

- Improvement in staff confidence when treating women for pregnancy related issues or concerns
- Reduction in complaints from families due to enhanced standard of maternity care
- Improved communication and working relations with our local maternity providers
- Improved outcomes and safer maternity care for women and their babies.

9.3 End of life care

9.3.1 What we do

We are often called to patients in the last stages of their life, when their symptoms have become unmanageable; for example, following a sudden crisis, deterioration or worsening of symptoms, requiring emergency pharmacological support such as pain relief.

We respond to around 6,000 palliative and end of life care patients each year. Whilst this accounts for only a small proportion of our total calls it is imperative that we get the care right for people and their families at this final stage.

Since we launched our clinical strategy we have been successful in applying for two years of funding through Macmillan for a dedicated end of life care team. This team is, through our end of life care pioneer service, dedicated to improving the skills, knowledge and confidence of our staff in treating this patient group. The work that the EOLC team is undertaking is directly in response to the staff engagement we undertook as part of our organisational strategy development where they told us they want more support to feel more confident in treating EOLC patients. Some of the key initiatives that we have undertaken in this area are:

- Running a pan-London end of life care conference to promote sharing of best practice

- Staff education and training opportunities across all staff groups to improve confidence in delivery of care
- The use of Coordinate My Care to inform shared decision making on scene
- Continued engagement and collaborative working with London hospices/key stakeholders to develop increased support and advice on scene for palliative patients
- Development and publication of guidance for staff including Advance Care Planning

The staff feedback demonstrates the training delivered has increased staff confidence from 50% to 64%.

We continually look for innovative practice within the pre hospital end of life care setting that we can replicate within LAS. Some of the areas we have identified recently are:

- **'Project ECHO' (Extension of Community Healthcare Outcomes) training** undertaken in Yorkshire Ambulance Service. This training, supported by hospices, enabled far reaching teaching to be available to all staff, linking to specialist teams
- **A Palliative/EOLC audit** was undertaken in South West Ambulance Service, focussing on resources sent, cardiac response, decision making and medications. This audit allowed them to fully assess how effectively they were responding to patients at the end of their lives
- **Simulation training** was carried out in South Coast Ambulance Service using manikins and actors to improve education for staff

We will incorporate these areas of best practice within our actions for improvement below

9.3.2 How we are going to improve

Priority area 1: We will make the final stages of life as comfortable, pain free and dignified for patients and their families as possible and reduce unnecessary resuscitation attempts and conveyances

We will do this by:

- Improving the education and training around end of life care, ensuring that our clinicians have a clear understanding of trust policy and JRCALC guidelines, giving them confidence to make decisions in these circumstances.
- Enhancing the skills in managing difficult conversations, including exploring simulation training and through bespoke communication courses
- Working with Hospice UK to explore project ECHO training within LAS
- Undertaking a detailed audit of EOLC service provision and use any learning from that to inform future learning & education opportunities
- Ensuring that crews understand how and when to use prescribed anticipatory care medications.

Priority area 2: We will improve pathways to support patients with a plan of care to receive their care at home or in a community setting (if that is their preference) to avoid conveyance to hospital.

We will do this by:

- Improving integration with, and access to, 'Coordinate My Care', with a target of 75% for viewing figures (from July 2019 figure of 37%). Incidents with staff where CMC records have not been viewed will be investigated and learning shared
- Developing stronger links with hospices and developing end of life care pathways across London, working together to support patients to receive their care at home or in a community setting (if that is their preference), to avoid unnecessary conveyance to hospital.
- Working closely with other Ambulance Trusts to share best practice

- Leading on ‘staff wellbeing’ at AACE national meetings, e.g. supporting staff when EOLC affects them at work or in their home life.
- Engaging with patients, carers and stakeholders to understand their experience of EOLC provided by the LAS.

9.3.3 Anticipated outcomes

Increased access to CMC – this will benefit both staff and patients, with ambulance clinicians having early access to care plans to support decision making and ensure patients receive the right care in the right place.

Training – we expect to see improved confidence in skills and knowledge, demonstrated by staff following attendance at EOLC courses.

Reduction in unnecessary conveyance – the effective use of CMC will ensure that agreed care plans are followed and, where appropriate, patients receive their care at home or in a community setting, avoiding unnecessary conveyance to hospital.

Stakeholder engagement – developing stronger links with hospices and developing end of life care pathways will see an improvement in patient care. Through engaging with patients and carers, we will have a better understanding of patient experience, which will enhance the quality of care delivered.

10 Enablers for delivering this clinical strategy

10.1 What we need from our People & Culture and Learning & Education strategies

At the heart of our organisational vision is the capability of our people to deliver outstanding care. Without our highly trained and motivated workforce we would not be able to meet the needs and expectations of the public. This section describes how we will ensure our staff have the right skills and support to develop professionally.

We will continue to improve the quality of care provided, patients' experiences, and the morale of our staff. To do this we will grow our workforce to have the capability and capacity to deliver future needs. This means providing registered and non-registered clinicians alike with the education and support to provide outstanding care.

Our people and culture strategy outlines the key overarching threads that run across all elements of the work that we do with and for our people:

- **Workforce planning**. We must build an organisation that provides a flexible and learning environment for our people throughout their careers. This will mean that we build and maintain expertise in strategic workforce planning, design flexible working blueprints
- **Inclusion**. Organisations that are committed to effectively embedding 'difference' demonstrate the ability to deliver better decisions, better performance and better outcomes, in our case for our patients. This work will sit at the very heart of transforming our culture and building a motivated workforce which delivers outstanding outcomes for our patients
- **Well Being**. In order to building a sustainable workforce we are committed to ensuring the support we give our people is the best that it can be. Increasingly this will mean greater focus on mental health as well as moving to a proactive approach to supporting well-being at work.

These overarching themes are crucial in ensuring we have an organisational culture that supports us to deliver world-class patient care.

We are currently reviewing our skill mix model and through this review will identify a clear career pathway which provides a potential route of progression for all of our clinical staff, including:

- Opportunities for EOC staff to undertake training to become front line clinicians (non-registered)
- A structured route for our non-registered clinicians to obtain registration and become paramedics
- Rotational opportunities for paramedics, which will provide staff with additional education as well as an academic module in advanced patient assessment. These paramedics will spend a year rotating through some of our key priority areas including the clinical hub, mental health pioneer response, falls/frailty and a low acuity response
- Opportunities for paramedics to progress into advanced paramedic practice, senior clinical management or clinical education

We will also proactively seek to identify and map out an organisation-wide career pathway, to demonstrate the potential career opportunities for all our staff in all job roles, so that every member of staff can aspire to progress to a more senior or different role if they want to.

Providing our staff with the necessary learning and education is fundamental in ensuring we deliver world class care for our patients. In July 2019 we launched a new trust-wide learning and education strategy which outlines our vision:

To support all of our people – clinical or corporate support – to deliver outstanding and compassionate patient care within the context of the supportive organisation framework

The priorities for learning and development and the ways in which we will achieve our objectives is outlined in detail in our separate learning and education strategy.

10.2 What we need from our Digital Strategy

We will use the right technology to enable us to deliver world-class care

There are four key areas of technological development that we are focussing on through this strategy that will directly impact on our ability to provide world class care:

- Replacing our Computer Aided Dispatch (CAD) system
- Implementing an electronic patient contact record (e-PCR)
- Reviewing our triage platform
- Innovating using existing and emerging technology

These areas are all included in greater detail within our Digital strategy which was published in February 2019. The following sections outline our key ambition within each of the four areas identified, and the key clinical benefits that we will see because of those changes.

10.2.1 Computer aided dispatch

We will implement a new CAD system, with full roll out to be completed by the end of 2020/21

Currently we rely on a wide variety of interconnected technical systems surrounding our core CAD system (CommandPoint), such as separate mapping and triage systems, to provide the overall capabilities needed. It is now the right time to refresh the systems we use. A new CAD will provide seamless access to patient data that is available in other NHS care settings and will enable us to be digitally interoperable with other care partners.

Replacing our CAD will not just be a technical refresh, but offer significant opportunities to enable us to deliver better and more personalised care for each patient. Crucially the new CAD will enable us to respond to each patient as an individual, rather than solely based on post code. This will enhance our ability to provide the right care for each individual patient and more effectively identify patients with specific requirements to our crews. We will be able to use this functionality, as well as allowing NHS number lookup, to improve the ability of our crews to start planning patient care before they even arrive on scene.

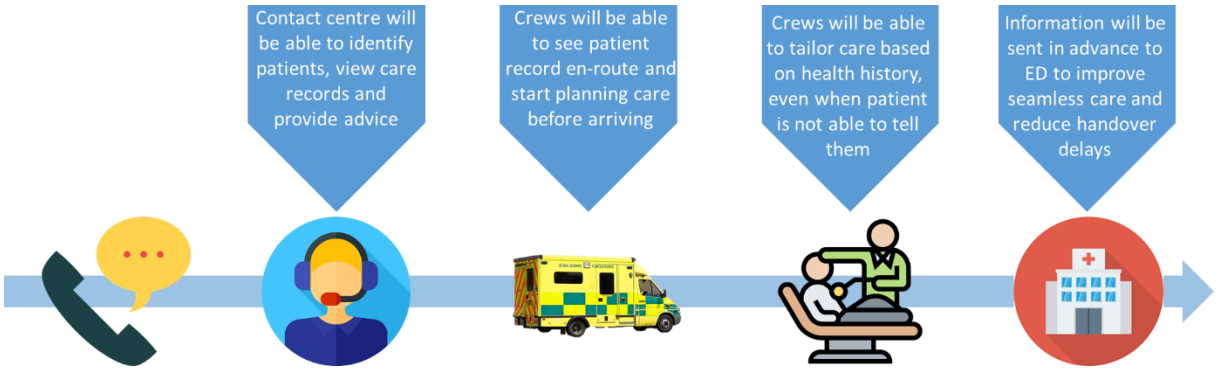
Replacing our CAD is the first step in providing more economical, more efficient, more patient-centric care.

10.2.2 Electronic patient care records (ePCR)

We will develop and implement an electronic patient care record, to go live by the end of Q2 2021/22, with further enhancements over the next few years

The introduction of an electronic patient care record will transform our ability to deliver the right care to each patient in the most efficient way possible. At a simple level, ePCR will eliminate the need for paper records, but more significantly will provide our crews with a far greater ability to assess and then determine the right course of treatment. EPCR will provide benefits for our patients and our organisation at every single point along the patient journey

Figure 23: ePCR impacts along the patient journey



The introduction of ePCR will also improve our ability to generate and use 'big data.' We will be able to collate information about each call, enriching the raw statistics with personal information and clinical details around the individual. For example, recording why we do or don't convey the patient would provide the input data to analyse whether alternative care pathways are in place and functioning.

Introducing a well-designed ePCR will be the single most transformative initiative to our ability to provide world-class seamless patient care, joined up with the rest of the NHS system that has happened in recent years.

10.2.3 Triage platform

We will review the triage platforms used across our organisation to ensure that all parts of our service are interoperable, efficient and able to provide the right care for each patient first time

The Trust currently uses three triage systems – NHS Pathways and Manchester Triage System (MTS) in 111 and the 999 clinical hub and Medical Priority Dispatch System (MPDS) in 999 call handling. Each system has its strengths however none can address all of the requirements of the service nor the opportunity to deliver a more tailored and sophisticated response.

Our strategic ambition is to be the primary integrator of access to urgent and emergency care across London. We believe that this will not only provide the best patient care, but also done in the most efficient way. In order to deliver on this ambition, one of the building blocks of our iCAT (Integrated Clinical Assessment & Triage) service is to have a single, or fully interoperable triage platform across our 111/IUC and 999 services.

10.2.4 Innovating using existing and emerging technology

Whilst the CAD, ePCR and triage are the three major elements to our technological developments, there are a number of innovations that we will seek to implement over the coming years in order to help us provide world class care to all of our patients:

- **Static body/ambulance cameras:** this will provide our staff with a greater level of safety and security than they currently have. By having access to these cameras we can ensure that staff are protected and where they have been threatened or assaulted, we can use the footage as evidence to push for stronger punishments for perpetrators
- **Video triage and live streaming**: We will investigate how we can use existing smartphone and live streaming technology to help us provide care. This might include staff broadcasting from scene to the Clinical hub for advice or to keep them updated about a situation. We are also investigating

whether we can utilise existing smartphone functions enabling us to access, with permission, the cameras on the phones of the people who call us.

- **Remote access to NHS data**: We have piloted a nationally ground-breaking scheme in Camden, working with NHSX, to provide our crews with access to summary care records without needing to use smartcards or multiple usernames and passwords. We will continue to work with NHSX to further improve this process and roll it out across London.

We will continue to look for technological innovations that will help us improve the care we provide to our patients.

10.3 Providing our staff with the right tools to do their job

Each and every day our highly qualified clinicians treat thousands of people across London and their training, skills and experience allow them to deliver world class care. This is, however, only made possible if they are given the right tools with which to do their job. Ensuring that our staff have the right medicines and equipment for each and every shift is a key responsibility for our organisation and is a crucial enabler for the provision of patient care.

10.3.1 Medicines

Our ability to provide medicines to our patients is crucial to saving lives, reducing pain and providing the right care for our patients and improving the overall patient experience alongside having a positive impact on the health economy. The two broad aspects of medicines management are:

- Safe and secure storage and management of our medicines
- Providing our clinicians with the necessary medicines and training to be able to provide world class evidence based care

We have made significant improvements over the past few years in both of these areas, especially in regards to safe and secure storage. A significant contributing factor to these improvements was the appointment of a Trust Pharmacist in December 2016 and, along with a Medication Safety Officer and further pharmaceutical expertise that we plan to bring into the organisation, we want to become the best practice example when it comes to pre-hospital pharmaceutical expertise and medicines management.

Improvements in safe and secure storage and management of our medicines	Improvements in providing our clinicians with the necessary medicines to provide care
• Implementation of ‘secure drug rooms’ at stations, providing assurance over security and a greater ability to investigate when things go wrong • Implementation of ‘multi-dose drug packs’ which brings together ‘loose’ drugs and ensures they are carried in secure and auditable ways • Design of a bespoke track and trace system which allows oversight of who has handled drug packs	• Improved reporting on medicines governance • Increased the range of medications within the Trust formulary for Advanced Paramedic Practitioners

We have a medicines management work plan which is updated annually and describes, in detail, the work which we are undertaking and the plans for how we will continue to improve how we use and safely store medicines.

We will make sure that, by implementing the right processes and using the right infrastructure and technology that our drugs are as safe and secure and trackable as they would be in any other setting. From that as a starting point we will then make sure that we provide the best possible care for our patients using the right medicines for their specific needs.

10.3.2 Equipment

We will continue to review the equipment available to frontline staff, ensuring they have the kit necessary to do the best possible job. We have already provided handheld devices so that all staff can access patient records. In the future, we will look to routinely embed other kit e.g. diagnostic tests for near patient testing to support more timely decision-making and care closer to home. We will also make more consistent use of asset tracking to minimise loss and non-availability of key clinical equipment, ensuring that our clinicians have the right equipment for each patient.

Two specific key areas of equipment development that we are progressing are:

- Advanced Life Support (ALS) bags – This programme is replacing the personal issue bags and will provide a more consistent and reliable distribution of ALS bags as they are packed, checked and sealed by the vehicle preparation teams on a daily basis. We have piloted this new process in North East London and will roll it out more widely this year. The key benefits if this are:
- Reduction of out of date consumables in bags, reducing risk to patients
- Bags will be reliably full and stocked with all ALS components for use when needed for patients
- Primary Response Bags – We have worked to review the content of the primary response bag and will roll out a new bag from September 2019. This bag will replace the oxygen barrel and old primary response bag. It can be used as a backpack which will be easier and safer for our staff

We also continually review any equipment related issues highlighted to us by staff and seek to resolve where possible, ensuring that our staff always have the right equipment available to do their jobs.

11 How we will assure clinical quality

We continually work to improve the quality of the service we deliver to all of our patients across London. Our Quality Strategy is the plan through which we focus on the quality of our clinical care and how we continuously improve our services. It ensures that quality drives the overall direction of our work and that the patient is at the centre of everything we do.

Our quality strategy outlines five goals, aligned to the CQC inspection framework. This section details the overarching quality goals, under which sits a number of specific targets. These can be found in our Quality Strategy.

The goals and targets outlined in our quality strategy, together with the clinical improvements outlined in this clinical strategy are the key ways in which we ensure we deliver world class care to Londoners.

12 Affordability assessment (high level)

This section outlines, for each of the areas identified within this strategy, what the key areas of investment needed will be and what level of that investment will be required. This section only includes where new investment will be required and therefore does not include a number of initiatives that are already included in our BAU budgets, including:

- Training that will occur in the existing CSR days (an additional 4th CSR day is included below)
- Initiatives that require communications and engagement with staff, such as the 'embedding' of changes
- Partnership working to improve pathways or referral options

In addition, it does not include the areas of investment required that are included in the 'enablers' section that are specifically referenced to another already existing enabling strategy. This includes the significant investment that will be required for the Digital enablers. Whilst this section outlines the necessary additional investment, we will explore opportunities for external funding that we might have not exploited previously. We will proactively explore these external sources in the first instance before requesting additional internal investment.

The figures included in this section will be further refined or identified through detailed planning.

Integrated care

These costs will be scoped through the iCAT strategic programme

Urgent Care

Strategy area	Investment required	Included in a different enabling strategy	Additional level of investment required from clinical strategy
Frailty	Set up volunteer responder service for elderly fallers	Volunteering	None – included in volunteering strategy (yet to be costed)
Frailty	Purchase of specialist lifting chairs (Raizer)	No	One off capital: c. £35,000 for full falls pioneer roll out
Mental Health	Governance and other process arrangements for Pan-London roll out of pioneer service. MH nurses funded through MH Trusts	No	Recurrent revenue c. £85,000 p.a.
Mental Health	Full-time MH tutor	No	Recurrent revenue c. £70,000 p.a.
APP-UC	Expansion of APP-UC programme inc. conversion of current establishment and additional 3 x APP-UC managers	No	Recurrent revenue c £300,000 p.a.

APP-UC	Equipment, vehicles and training for APP-UCs (vehicles, Raizer chairs etc)	No	One off capital c. £1,640,000
APP-UC	Expanding treatment options and training costs for APP-UC	No	tbc
Career pathway	Roll out rotational paramedic model which will impact various urgent care areas including pioneer services	No	Recurrent revenue c £100,000 p.a.

Emergency Care

Strategy area	Investment required	Included in a different enabling strategy	Additional level of investment required from clinical strategy
Cardiac Arrests	Increasing number of defibrillators	Volunteering	tbc – we accredit but do not pay for many defibrillators
Cardiac Arrests	Introduction of portable ECG	No	One off capital c. £890,000
Cardiac Arrests	Replace Lifepak 15/1000	No	One off capital £18m
Cardiac Arrests	Introduce annual ALS & BLS competency assessments	No	tbc
Trauma	Use video technology for remote triage and assessment	Digital	None – included in Digital strategy

Stages of life

Strategy area	Investment required	Included in a different enabling strategy	Additional level of investment required from clinical strategy
Maternity	Pilot for 24/7 presence midwives in the clinical hub for 8 months providing hear & treat and crew advice	No	One off revenue– c. £220,000 (would then require recurrent funding if rolled out beyond pilot)
End of life care	Continued funding of EoLC team following end of Macmillan funding (Aug 2019)	No	Recurrent revenue c. £250,000 p.a.

Other

Strategy area	Investment required	Included in a different enabling strategy	Additional level of investment required from clinical strategy
Training and development	Trust wide 4th CSR day	No	Recurrent 1,302,164 p.a.

Medicines	Continued enhancements of medicines management to meet regulatory requirements including: • Secure drug rooms • Primary response bags • Multidose packs • Kit prep 2 • Advanced life support bags	No	One off capital • £1,355,000 • £696,000 • £551,000 • £100,000 • £368,000 Total - £3,070,000

13 Acronyms and abbreviations

ACS	Acute Coronary Syndrome
APP-CC	Advance Paramedic Practitioner for Critical Care
APP-UC	Advance Paramedic Practitioner for Urgent Care
ALS	Advanced life support
AQI	Ambulance Quality Indicator
ARP	Ambulance Response Programme
ACP	Appropriate Care Pathway
AI	Artificial Intelligence
BLS	Basic life support
BAU	Business as Usual
CAS	Clinical Assessment Service
CPR	Cardiopulmonary Resuscitation
CQC	Care Quality Commission
COPD	Chronic Obstructive Pulmonary Disease
CAS	Clinical Assessment Service
CHUB	Clinical Hub
CTM	Clinical Team Manager
CAD	Computer Aided Dispatch
CMC	Coordinate My Care
CSR	Core Skills Refresher
ECG	Electrocardiogram
EPCR	Electronic Patient Care Record
ED	Emergency Department
EOLC	End of Life Care
HCP	Health Care Professionals
HAC	Heart Attack Centre
HASU	Hyperacute Stroke Unit
iCAT	Integrated Clinical Assessment & Triage Service
IUC	Integrated Urgent Care Service
IoT	Internet of Things
CARU	LAS Clinical Audit and Research Unit
EOC	LAS Emergency Operations Centre
LMS	Local Maternity System
LAS	London Ambulance Service NHS Trust
MTS	Manchester Triage System
MERIT	Medical Emergency Response Incident Team
MPDS	Medical Priority Dispatch System
MH	Mental Health
MPS	Metropolitan Police Service
MPS	Metropolitan Police Service
MINAP	Myocardial Ischemia National Audit Project
NHSE	NHS England
NETS	Non-Emergency Transport Service
ROSC	Return of Spontaneous Circulation
STEMI	ST-Elevation Myocardial Infarction
SUDEP	Sudden Unexpected Death in Epilepsy
VF	Ventricular Fibrillation