NHS

Thames Valley & Wessex Critical Care Network

Annual Report 2020/21

Table of contents

Network Manager Summary
Kujan Paramanantham

2020/21 has been a year like no other for our Adult Critical Care Network and the Critical Care community as a whole. Whilst Covid-19 had brought us unprecedented challenges, it has highlighted exactly how amazing our critical care teams are. The "ask" of every person who has worked in, or alongside, our Critical Care Units over the year has been unparalleled and I have an enormous pride in every one of our Critical Care Units and everything they have managed to do. I have been humbled by the response of the staff working within our Units, and those supporting them, and the extraordinary lengths that everyone has gone to over the last year. A sincere thankyou to you all.

One of my main takeaways from the last year has been exactly how extraordinary our staff are, and how important it is to focus on staff wellbeing. Looking after our staff has to be a key priority for the Network going forward, alongside focusing on education, staff retention/recruitment.

Over the last year, as part of the covid response we have worked closely with NHS England & Improvement (NHSE&I) South East and have been active members of the NHS England South East Critical Care Cell, in helping to respond to the pandemic. Through this regional Critical Care Cell we have represented our Units and given our clinicians a voice within the region, acted as subject matter experts to senior managers, as well as being able to provide communications directly to critical care clinicians, which we hope has been of benefit. We have also fostered relationships with the Integrated Care Systems (ICS) within the South East/Network footprint (Hampshire and Isle of Wight ICS, Frimley ICS and Buckinghamshire, Oxfordshire and Berkshire West ICS).

The regional response to the pandemic has provided the Network with some challenges. With our geographical footprint not entirely being within the NHSE&I South East Region, the regional responsibility for five of our Units (Dorchester, Poole, Bournemouth, Salisbury and Milton Keynes) was within other regions. As such, for the pandemic response, these Units were managed by the South West and East of England regions, and we are grateful for the support of these regions and the South West and East of England ACC ODNs who both willingly had these Units effectively as part of their ODNs for the pandemic response. Similarly, the Kent, Surrey and Sussex ACC ODN took on the responsibility for St Richards due to the system approach that was utilised within the South East, and the Unit sitting within an ICS outside of our footprint. Again, we are thankful for their ODN for doing this. The regional NHSE&I footprints not aligning with our Network/patient pathway footprint, has caused challenges and questions remain for these Units on how they work across Networks, which we hope to work through with these units in the year ahead.

The pandemic has also highlighted the importance of Critical Care Transfers, and we were fortunate that NHSE&I were able to provide extra funds for us to appoint Wassim (Sim) Shamsuddin as our Network Transfer lead over the year. He did an amazing job, working closely with SCAS to set up our interim transfer service (which has received some amazing feedback for the service it has provided during wave 2) and also acting in an advisory role for transfers for the region, during wave 2.

Outside of the pandemic, it has been wonderful to see our team grow over the last year. Mary Meeks has been an active part of the Network for a long time, so it has been a pleasure to see her join our team to lead on the establishment of our Education course. We have also been joined by Lynette and Catherine in administrative/project support roles which is already showing great benefits for the team. Also, we have long recognised the importance of data so having Roxy join as a data analyst has been a huge boon for us. During wave 2, Roxy was instrumental in stepping up our daily covid reporting from wave 1 and working with the DoS data to provide a Network dashboard which I know has received a large amount of recognition and praise from colleagues within the Network.

I must also recognise the long-standing members of the team. Firstly, Gill has increased her hours and in doing so, has provided me with some much needed cover for the Network. She's been an active part of all discussions around transfer, education and staff wellbeing as well as being the critical care nursing voice in our regional meetings. Her contribution over the last year has been immense. And finally, Kathy Nolan has been truly exceptional over the last year balancing her clinical workload with her participation in regional meetings, including also providing regional Transfer advice during wave 2. After over a decade of amazing work with the Network, she has decided to stand down as Medical Lead, and it is with great personal sadness to see her go, as she has been truly exceptional as Network Lead during my time managing the Network. We of course wish her all the best going forwards and are grateful for her contribution to the Network over the years.

It is over two years since the last Network report and much of that time has been dominated by a pandemic which has made huge demands on the critical care community and the wider redeployed staff who have generously given their time and efforts to support us. Thank you, it is very much appreciated.

Our last network face to face meeting with the South East Regional NHSE/I was on 20th March 2020 and there was a sense of foreboding and anxiety based on the predictions of what was to happen. However, we got 'stuck in' and provided the care that was needed as best we could but not without consequences. I am very grateful to Gill and the Network wellbeing group for recognising the need, starting the conversations and providing advice and support which has been very well received.

In early March 2020, we started the TV& Wessex WhatsApp group which I hope provided you with relevant immediate information and supportive conversations. Thanks to Kujan and Roxy it was a valuable source of accurate and timely data seven days a week and allowed us to follow each unit's position and offer support as needed.

Wave 1 was dominated with regular meetings with SE NHSE/I identifying mainly issues around supply of equipment particularly ventilators, dialysis fluids and consumables, PPE and drug shortages.

We had been asked to double capacity and if possible double it again. This involved using theatres, theatre recovery, rapidly converted L3/L2 areas and wards. O2 supply became an issue and many units had to reorganise their footprint in an effort to preserve supply. We rapidly became experts on VIEs, and worked closely with our estate colleagues to calculate O2 supply and demand and juggled site allocation of patients accordingly. Contingency plans on when to transfer patients out were also made to ensure patient safety. Amidst this organised chaos, staffing was stretched to the limits and team nursing was developed. We are incredibly grateful to all the staff who worked tirelessly and with impressive professionalism under such challenging and difficult conditions. You should be very proud of what you have achieved.

Wave 2 was dominated by lack of capacity due to much higher patient numbers and an increased demand from non-Covid work with consequent increased pressure on staffing levels and nurse to patient ratios were greatly stretched.

The concept of mutual aid was introduced and much of the work during wave 2 involved co-ordinating patient transfers with the SE NHSE/I Critical Care Cell on a daily basis with input from the systems and the network medical and nurse leads. Thank you for your diligence in providing accurate data on a daily basis which was crucial in informing decisions around capacity and transfer.

Wave 2 also saw the interim ACC Transfer service come to fruition thanks to the commitment and expert leadership of Sim Shamsuddin and the support and commitment of Gill and Craig Heigold (SCAS) in organising training and implementing the service. The service has received excellent feedback and the next step is to establish a consultant led, equitable, specialist and sustainable service that meets the national service specification for transfers.

Moving forward, the focus is very much on addressing the lack of critical care capacity nationally and particularly in the South East region where the number of beds/100,000 of the population is significantly lower than other parts of the country. As you can appreciate, before any additional funding is made available there will be careful scrutiny of the current utilisation of beds and consideration of alternative provision such as enhanced care. It is often a more complex process than first envisaged and clearly the power is in the accuracy of the data. Thank you for your submissions to the national stocktake and with the Network's local intelligence and collaborative working with the Integrated Care Systems, I am reassured that we can manage capacity within our Network in an equitable manner.

I would like to congratulate Mary Meeks and Gill Leaver for successfully establishing the Network Critical Care Course and thanks to the commitment and support from the practice educators and all involved across the network in making this happen.

The network is the sum of many parts and one of the strengths of our network is the enthusiasm and effectiveness of the many subgroups. They have met (virtually) and continued to develop and move practice initiatives forward.

I would like to thank you all for your generous support and assistance over the years.

Thank you to the Network team and in particular to Kujan and Gill with whom I have had the pleasure and privilege of working with over the years and I am grateful for their support and valuable friendship.

Network Nurse Lead Summary
Gill Leaver

Two years have flown by since our last Annual Report, and what a time it has been. Covid 19 meant that our units had to manage the largest pandemic seen in our lifetime with admissions of the sickest patients soaring in a short timescale. It has been a horrendous time for everyone, but Critical Care has pulled out all the stops, and you have all been phenomenal. Everyone has adapted their ways of working and staff were drafted in from many other areas in the hospital.

We thank every one of you.

2020 certainly was the International Year of the Nurse and Midwife.

During 2019/2020/2021 we have continued to work closely with our neighbouring Networks across the South, although the boundaries are ever changing the "Improving Values Project" continued, until the pandemic hit, and our focus changed.

We have continued to work closely with NHSE South East to support all our units with their ever-expanding bed base, new equipment, redeployed staff and transferring critically ill patients. Setting up a new Network Transfer Service which you can read about later, has been a great achievement and work continues with SCAS to ensure this service meets your needs and those of our patients.

We visited several units as part of our Peer Review programme, prior to the pandemic and plan to reinitiate the visits as soon as possible. The unit 360 proved to be a valuable way of understanding how stakeholders view the department. We had very honest and open discussions with the clinicians, and we value that. We held unit Teams calls during late April and May to enable us to represent your successes and concerns when we meet with NHSE SE. Many of our units are struggling with infrastructures which are no longer fit for purpose and many are understaffed, these issues have been further highlighted during the pandemic and we need to ensure we can future proof our service.

There have been 2 workforce events across the Network in 2019 organised by FICM, the reports are available online. CC3N have undertaken another Nursing Workforce Survey and many units are struggling to fill vacant posts. This has been exacerbated by Covid with most units aiming to increase bed capacity along with National guidance. All professions are looking at how the workforce will change over the coming years, and new roles are being developed.

With a combination of Network and National funding we have been able to support staff to undertake "Leading in a Pandemic" and "Professional Nurse Advocates" training. Both these courses aim to equip critical care nursing staff with skills to support each other during and after the pandemic.

We have set up a Network Wellbeing Group and have representation from all units in our Network. You are all doing some fantastic work supporting your staff and it is great to share those initiatives. We have had invited speakers to discuss research around staff wellbeing and tools available for you to use in practise. We are also working across the South East with NHSE&I to ensure staff wellbeing remains on the agenda.

Our sub-groups have all conquered the use of Teams which has allowed them to continue to share best practise, benchmarking, and support each other across the Network. Their work is highlighted below.

Stakeholders and Governance

'The Way Forward: Developing Operational Delivery Networks' (NHS Commissioning Board 2012) proposed Adult Critical Care Operational Delivery Networks (ODNs) be established nationally, with a remit for ODNs to ensure outcomes and quality standards are improved and evidence based networked patient pathways are agreed. The focus for ODNs will be supporting the activity of Provider Trusts in service delivery, improvement and delivery of a commissioned pathway, with a key focus on the quality and equity of access to service provision.

The Thames Valley & Wessex Adult Critical Care Operational Delivery Network (TV&W ACC ODN) is hosted by the University Hospital Southampton NHS Foundation Trust. As a host provider, they are responsible for employing the ODN team and supporting their roles. Oversight and governance of the ODN is provided by NHS England & Improvement, Specialised Commissioning South East Region.

The Network Team

The last year has seen many changes to the ODN team with several new starters joining Kujan, Kathy and Gill. The Thames Valley & Wessex Adult Critical Care ODN team consists of:

◊	Kujan Paramanantham: Network Manager
◊	Kathy Nolan: Network Medical Lead
◊	Gill Leaver: Network Lead Nurse
◊	Wassim Shamsuddin: Network Medical Lead for Transfers
◊	Mary Meeks: Network Education Project Lead
◊	Lynette Kinnaird: Network Education Administrator (shared with TV&W Neonatal ODN)
◊	Roxy Burns: Network Data Analyst (shared with Kent, Surrey & Sussex ACC ODN)
◊	Catherine Lawry: Network Project Support Officer (shared with TV&W Neonatal ODN)

Roxy joined the Network as the Data Analyst in May 2020 and focuses on improving data quality and using data to benefit services. Roxy's role is shared with the Kent, Surrey & Sussex ACC ODN. In June 2020 Mary joined the team as Education Project Lead working on providing a Network Collaborative 60 credit Adult Critical Care course. We welcomed Lynette as Network Education Administrator in January 2021, to support the education programmes and projects. Lynette's role is shared with the TV&W Neonatal Network. Wassim (Sim) joined the Network in July 2020 as the Medical Lead for the Network Transfer Service that was established in December 2020. Leonie Shepherd, Network Coordinator, left the ODN at the end of January 2021. Her role was filled by the newest member of the team, Catherine, who joined as Project Support Officer in March 2021. Catherine will support the ODNs projects, subgroups and Network communications and her role is shared with the TV&W Neonatal Network.

Critical Care Units

The Thames Valley and Wessex Adult Critical Care Operational Delivery Network covers a population between 5 and 6 million people across Thames Valley & Wessex, including Dorset and extending to Milton Keynes, West Sussex and Wiltshire. The Network consists of the following Critical Care Units from the following 12 Trusts in the table below.

Trust	Unit	Lvl 3 Equiv. Beds	Total Physical Beds
Buckinghamshire Healthcare NHS Trust	Bucks: Stoke Mandeville	10	11
	Bucks: Wycombe	4	6
Dorset County Hospital NHS Foundation Trust	Dorset County	6	12
Frimley Health NHS Foundation Trust-Wexham	Wexham Park	10	12
Hampshire Hospitals NHS Foundation Trust	HHFT: Basingstoke	12	18
	HHFT: Winchester	5.5	10
Isle of Wight NHS Trust	Isle of Wight	6	8
Milton Keynes University Hospital NHS Foundation Trust	Milton Keynes	7	10
Oxford University Hospitals NHS Foundation Trust	OUH - AICU	16	16
	OUH - Churchill	5	8
	OUH - CTCCU	9.5	21
	OUH - Neuro ICU	14	17
Portsmouth Hospitals NHS Trust	Portsmouth	19	24
Royal Berkshire NHS Foundation Trust	Reading	15	19
Salisbury NHS Foundation Trust	Salisbury	8	12
University Hospital Southampton NHS Foundation Trust	UHS - CICU	14	16
	UHS - GICU	21	25
	UHS - NICU	12	13
University Hospitals Dorset NHS Foundation Trust	UHD: Bournemouth	8	11
	UHD: Poole	8	12

Network Transfer Service

Having worked so closely with the Thames Valley & Wessex Adult Critical Care ODN, NHS England, and of course the Critical Care Units within the Network over the past seven months, it seems only right to use this opportunity to review what we have achieved and set out our plans for the future.

As many of you will know, the interim Adult Critical Care Transfer (ACCT) service went live just as the second peak of COVID-19 took hold across the region in December 2020 and although we are in the "business" of caring for and transferring patients, we recognise the special needs and requirements of critical care patients differ from our main service.

Our aim was clear, from the outset we (South Central Ambulance Service NHS Foundation Trust) strive to provide the right service with the right staff and the right equipment to compliment and support the continuation of care already delivered within the units during transfer of critically ill patients.

We recruited and trained a dedicated cohort of staff, worked with NHSE to procure equipment that met national specification and with the support of acute Trusts continue to provide ongoing training and opportunities for the team to be embedded within the Critical Care Units.

We have made huge advances with our recruitment of Doctors across the Thames Valley and have ambitious plans to extend this to the whole service in the months ahead, further complimenting the dedicated team of Paramedics and Emergency Care Assistants.

We have been involved with, and supported the adoption of a standardised transfer risk assessment form, changes to the Network Transfer Form and participated with the Network Transfer Group meetings, listening to feedback and making changes while promoting the service and offering joint training opportunities. As we move towards a new normal, and capacity transfers give way for speciality treatment, we have the experience and capability to step up and meet the needs of the Network in the future.

Having supported the safe transfer of over 350 patients we are proud to have received notification from NHSE that our interim contract is to be extended until April 2022, giving us the opportunity to continue to develop and build our offering even closer to the recently released national specification for Adult critical Care Transfer services. We continue to be dedicated to the safe transfer of critical care patients and have shown the ability and resilience to react to the ever-changing landscape. Over the next 6 months we hope to develop a governance oversight of the network so that reporting of incidents are streamlined and documented.

Finally, I would like to thank everyone who has facilitated and supported the team and the service during this unprecedented time. Without the patience, support and guidance of you and your teams, I am in no doubt that we would not be in the position we are now. We are here to support you and ask that you think of us first for any transfers that may be appropriate, if in doubt ask. We look forward to working alongside you into 2022.

◊ **Transfer**

The transfer group has continued to be active throughout the year, despite the pandemic challenges, and has welcomed the new transfer service which commenced in December 2020. The group has continued to share case studies, finalised and completed a generic transfer training workbook for all to use with transfer training, and developed a standardised risk assessment form.

Transfer training in all Trusts has continued to run but has been adapted in some hospitals by including online sessions and teaching. Plans for the upcoming year include reviewing the ICS equipment list for transfer kit and to continue with an ongoing gap analysis review of the ICS transfer guidelines recommendations.

◊ **Rehabilitation**

In late 2019 the rehab sub-group completed both a gap analysis of NICE CG83 (Rehab after critical illness), and a benchmarking survey on provision of rehab services. This work highlighted a region-wide gap in the provision of recovery services after ICU, particularly during the ward and post-hospital phase. As a group we decided to try to address one of these gaps by implementing a region-wide QI project around provision of information/ rehabilitation manuals after ICU step down. However, this was in early 2020… and then COVID stopped play!

As a region we have a very active WhatsApp group which was a welcome source of support around the unknown territory of rehabilitating COVID ICU patients amongst other topics. In addition we are using the FutureNHS platform to share resources and business cases, and we have held quarterly virtual regional meetings, which again have been more of a wellbeing support and sharing of knowledge and advice.

Our plan as a group moving forward is to work as a region towards a large scale business case for the provision of rehabilitation following critical illness. We are linking with the ICS National Rehabilitation Collaborative, to achieve this long term goal.

◊ **Practice Educators**

The Practice Education Group has been extremely active throughout 20/21 despite having to postpone many formal meetings. Online collaboration has continued throughout the year by distributing hard copies of The Nightingale ICU Quick Reference Handbook, disseminating eLearning education resources from the Royal College of Nursing, Future Learn and Health Education England's (HEE) portal E-Learning for Life (e-LfH), whilst maintaining face to face support for all staff's educational needs. These programmes, developed predominantly for those redeployed into Intensive Care, now provide credible resources to underpin any Trust's foundation programme for new substantive staff.

The Practice Educators have been required to flex their roles. Some have had to return to full time clinical practice, support or run staff wellbeing hubs or run redeployment training. However, the focus on education is needed now more than ever before. In March the government announced £10m to support the introduction of a new nationally recognised critical care qualification for nurses. For many of us this development is not a new concept but attached funding is an extremely positive and long overdue initiative. HEE is working with the Critical Care Nurses Alliance to formalise this work, but fundamentally it is a continuum of the Critical Care National Network Nurse Lead Forum (CC3N) work in ICU competency development over the last 6 years.

The Practice Education Group has now returned to regular meetings welcoming new educators to the group and supporting those undertaking further carer development completing PGCert Ed and other qualification to enhance their skills to support their units and Intensive Care nursing as a whole. The HEE funded Professional Nurse Advocate (PNA) Training Programme will focus on the four functions of the Advocating for Education and Quality and Improvement (A-Equip) Model. The role ties in with the supportive work the Critical Care Nurses are considering since the PNA training will provide them with the necessary skills to facilitate restorative supervision to their colleagues and teams within Critical Care Services and beyond. The PNA's once trained will provide restorative clinical supervision; advocacy and support quality improvement activities, education and leadership for all critical care nurses.

We know that education will be essential to how our Intensive Care units move forward and prosper over the next year. The group remains committed to the development of all staff whether they are permanent or transient and look forward to the challenges ahead.

◊ Staff Wellbeing

During the course of the year, there has been a lot of emphasis on staff wellbeing. We recognise that our Units have been doing some amazing work to support their staff and as such the Network has started to hold monthly Staff Wellbeing meetings. These meetings have given our Unit wellbeing leads an opportunity to share those initiatives and hear and learn from each other. We have also been fortunate to have speakers attend these meetings to discuss research around staff wellbeing and tools available for our units to use. Going into 2021/22, the wellbeing group will continue to share learning and ensure that staff wellbeing remains high on our Networks agenda.

◊ **Outreach**

Over the past year the pandemic has had varying effects on individual CCOT teams within the Network, seeing some take on new roles and responsibilities while others suspend activity to allow staff to deploy into ICU. It was decided early on that work on network data set would be suspended and the group continued to meet regularly over Microsoft teams. The meetings encompassed sharing of ideas to manage the situations we now found ourselves in. Sharing of COVID protocols and policy for CCOT practice was particularly helpful as this enabled practical support for specific situations. We also used the meeting time to provide Wellbeing support for CCOT in a safe place where we could meet to discuss the particular challenges faced by CCOT. These sessions were well attended and feedback has been positive. The group are now picking up where we left off with minimum data set work and hope to have some useful results out soon. We will also be looking at standardising competencies and advanced practice roles for CCOT teams.

◊ **Other subgroups: Pharmacy/ Follow Up/ Clinical Psychology**

With the limited resources of the Network team and ICU staff availability during the pandemic, we had conflicting priorities for some of our subgroups (or planned subgroups) which impacted their progression over the year.

The Pharmacy leads held a meeting in between wave 1 and wave 2 to share best practice and allow an opportunity to reflect on learning from wave 1. It is hoped that further pharmacy meetings will be re-established in 2021/22.

Similarly our newly established Follow-Up subgroup held their first meeting in September, where Unit follow up leads had a chance to share best practice and hear from Dr Carl Waldmann on the Life After Critical Illness position statement. Unfortunately wave 2 and changes to ODN personnel has delayed future meetings which plan to be re-established in 2021/22

Finally, the pandemic has shone a spotlight on the importance of having clinical psychologists embedded as part of our critical care multi-disciplinary teams. As a Network we have been keen to promote their value and share best practice on how Units have managed to get business cases for clinical psychologists approved. This includes working with the Intensive Care Society as a pilot network to promote their material and share their business case model. We hope to establish a clinical psychology subgroup in 2021/22 to provide peer support for clinical psychologists within the network.

◊ **South Central Organ Donation Services Team**

The team would like to say a big thank you to you all who have continued to make referrals over the last year and also to the unit staff who have continued to support organ donation as part of end of life care. In doing so, you have helped to ensure that life saving transplants have continued despite the challenges of the pandemic.

It is no surprise that the number of organ donors over the last twelve months was reduced but incredibly between 1st April 2020 – 31st March 2021, organ donation was discussed with 167 families in the South Central region which resulted in 94 donors and 279 organs retrieved for transplant. We look forward to working with you over the coming year.

Patient and Staff stories

Our website enables us to share a selection of stories from patients highlighting their experiences and their journey through our units. We are fortunate enough to have had two patients, Richard and Danielle, who kindly shared their stories with us. More recently we extended this coverage to include staff stories with the Family Liaison team at Basingstoke sharing their experiences of connecting families virtually throughout the Covid-19 pandemic. We're keen to hear from any patients and members of staff if they have a story that they would like to share.
https://southodns.nhs.uk/patient-stories/

Collaboration with University of Southampton

For the last five years, the Adult Critical Care ODN has collaborated with the CORMSIS (Centre for Operational Research, Management Sciences and Information Systems) department at the University of Southampton by supporting MSc students through a summer project. In 2020 we had a student (Sara) who received a distinction for her project on Reviewing the Variability and Impact on Physiotherapy treatment given to Critical Care patients in the South of England. The project was presented to the Rehab sub group and highlighted the differences in Physiotherapy treatment in each unit. As well as comparing various elements of treatment to overall ICU length of stay.
The outputs from this project was shared with rehab leads as part of the standardised mobilisation project, which was setup as part of previous years Improving Value work.

The Network is currently developing project ideas for the next cohort of CORMSIS student projects.

Data Summary

Thames Valley and Wessex saw a peak of 234 Covid positive and suspected patients in the first wave of Covid in mid-April 2020. This rose to 360 Covid positive or suspected patients in the second wave (late January 2021) and was over 460 patients on a single day when including Covid Negative patients. This put significant pressure on Units with bed availability, equipment and staffing numbers being a top priority.

Data Collection and Reporting

Very quickly into the pandemic and the rise of Covid 19 it became clear that there was a significant increase in the need for data and reporting. Not only for units and Trusts but for a number of organisations. It was and is important to recognise the impact the increase patient numbers was having on the Units within the Network.
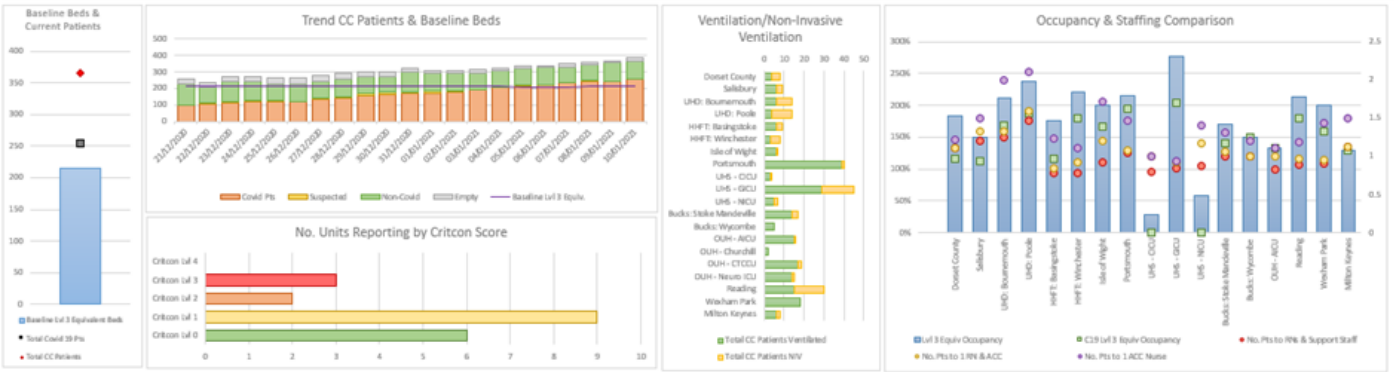
In wave 1, the Network was predominantly reliant on receiving information directly form Units on a daily basis. This was later supplemented with data available through the national covid sitrep data. In early November of 2020, the NHS Directory of Services (or DoS) system was adjusted to accommodate the recording of Covid 19 patients. There is a mandatory twice-daily recording requirement for units, which collects a large amount of unit level real-time information on bed numbers, staffing, equipment, patients etc.

Having this data available was very beneficial for the Network and enabled accurate reporting of the position and situation for each unit on daily basis. A Network level dashboard was created

towards the end of 2020 and was designed as an information tool for clinical and management teams to understand, not just their own position, but the situation of the units around them and within their Network. It reports on number of patients, bed availability, staffing, ventilation status, etc. and is continuing to be developed further to ensure its usefulness in times of lower Covid activity.

10/01/2021 — **Thames Valley & Wessex C19 Dashboard**

Baseline Beds & Current Patients

Trend CC Patients & Baseline Beds

Covid Pts | Suspected | Non-Covid | Empty | Baseline Lvl 3 Equiv.

No. Units Reporting by Critcon Score

Critcon Lvl 4
Critcon Lvl 3
Critcon Lvl 2
Critcon Lvl 1
Critcon Lvl 0

Ventilation/Non-Invasive Ventilation

Total CC Patients Ventilated | Total CC Patients NIV

Occupancy & Staffing Comparison

Lvl 3 Equiv Occupancy | C19 Lvl 3 Equiv Occupancy | No. Pts to RN & Support Staff | No. Pts to 1 RN & ACC | No. Pts to 1 ACC Nurse

Thames Valley & Wessex – Coloured dots and italics represent differences to yesterday's figures

| Region	Organisation	Total CC Patients		Total Confirmed C19		7 Day Trend - Total CC Pts	Total CC Patients	Total CC Patients NIV	Baseline Lvl 3 Equivalent Beds	Occupancy - Baseline Lvl 3 Equ. Beds	Empty & Available Lvl 3 Beds	Critcon	ACC Nurses	All RNs Ratio	All RNs & Support Staff	Meeting Ratios?	Updated Today?
South West	Dorset County	11	2	7	1		4	4	6	183%	0	1	1:1.2	1:1.1	1:1.1	Yes	Yes
	Salisbury	12	1	9	0		6	3	8	150%	6	1	1:1.5	1:1.3	1:1.2	No	Yes
	UHD: Bournemouth	20	1	16	1		6	8	10	211%	0	1	1:2	1:1.3	1:1.3	No	Yes
	UHD: Poole	19	5	15	4		4	10	8	238%	2	1	1:2.1	1:1.6	1:1.5	No	Yes
South East (HIOW)	HHFT: Basingstoke	21	1	14	1		6	3	12	175%	0	1	1:1.2	1:0.8	1:0.8	No	Yes
	HHFT: Winchester	11	-1	9	1		3	5	5	220%	0	1	1:1.1	1:0.9	1:0.8	No	Yes
	Isle of Wight	12	1	10	2		6	1	6	200%	0	1	1:1.7	1:1.2	1:0.9	No	Yes
	Portsmouth	41	-1	37	2		33	1	13	216%	0	3	1:1.5	1:1.1	1:1.1	No	Yes
	UHS - CICU	4	-1	0	0		3	1	14	23%	0	0	1:1	1:1	1:0.8	No	Yes
	UHS - GICU	58	3	43	3		29	16	21	276%	1	2	1:0.9	1:0.9	1:0.8	No	Yes
	UHS - NICU	7	-1	0	0		5	2	12	58%	0	0	1:1.4	1:1.2	1:0.9	No	Yes
South East (BOB)	Bucks: Stoke Mandeville	17	-1	14	1		14	3	10	170%	0	3	1:1.3	1:1.1	1:1	No	Yes
	Bucks: Wycombe	6	-1	6	-1		5	0	4	150%	0	1	1:1.2	1:1	1:1	No	Yes
	OUH - AICU	20	0	20	0		15	1	15	133%	2	0	1:1.1	1:1	1:0.8	No	Yes
	OUH - Churchill	5	0	2	1		2	0	7	71%	0	0	1:1.3	1:1.3	1:1	Yes	Yes
	OUH - CTCCU	22	0	1	0		17	2	14	157%	1	0	1:1.2	1:1.2	1:1	No	No
	OUH - Neuro ICU	18	2	0	0		14	1	13	138%	4	0	1:1.3	1:1.2	1:1.1	No	Yes
	Reading	32	0	27	0		15	15	15	213%	2	3	1:1.2	1:1	1:0.9	No	Yes
South East (BOB)	Wexham Park	20	0	16	0		18	0	10	200%	0	2	1:1.4	1:1	1:0.9	No	No
East of England	Milton Keynes	9	0	9	0		6	2	7	123%	1	1	1:1.5	1:1.1	1:1.1	No	No
	Wessex Total	209	11	160	15		106	52	103	193%	9		1:1.3	1:1.1	1:1		
	Thames Valley Total	149	0	95	1		106	24	95	157%	10		1:1.3	1:1	1:1		
	Thames Valley and Wessex Total	365	10	255	15		217	76	216	169%	19		1:1.3	1:1.1	1:1		

Network Dashboard Data

The Network produced a number of charts with the dashboard, to help highlight trends and variation.

The following chart shows Covid 19 positive patients in hospital and C19 positive cases in ICU (the hospital cases do not include the ICU patients). It clearly displays the 2 Covid waves and the sheer increase in patients particularly in the second wave.


CONFIRMED COVID 19: HOSPITAL VS ICU
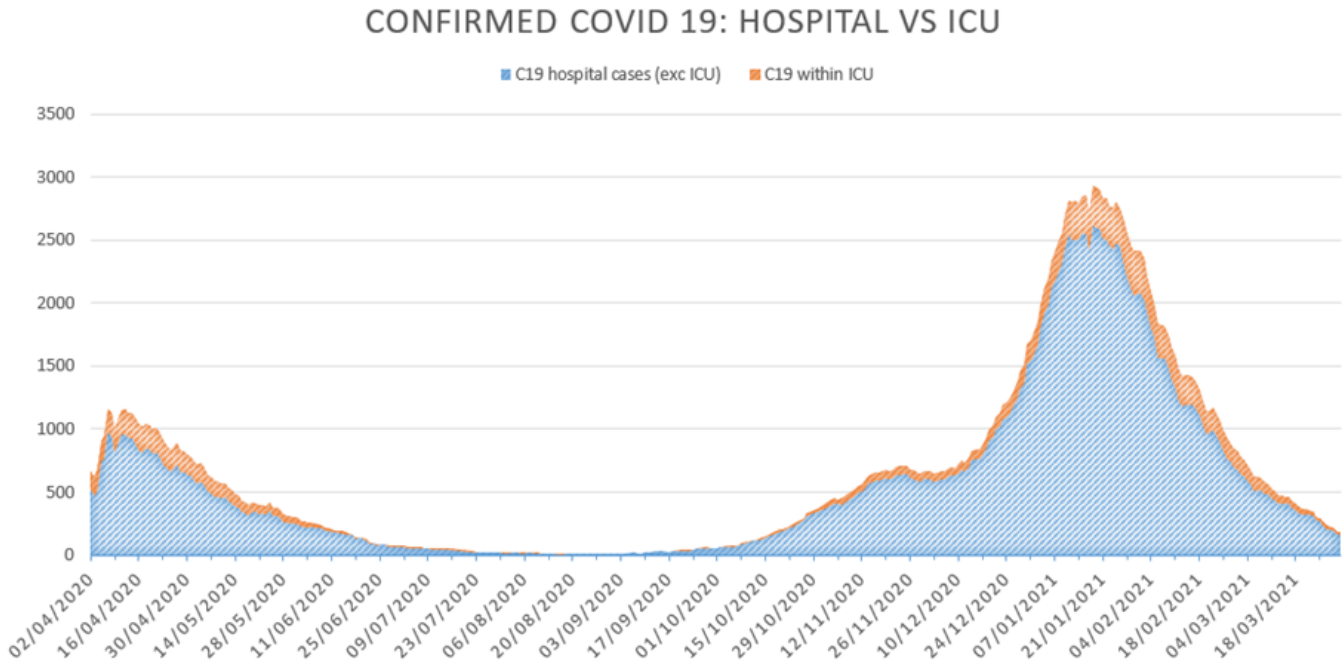
The following charts are taken directly from the Dashboard using DoS data. Please be aware that the DoS recording started after the first wave.

The below chart is a reflection of only the ICU position during the 2nd wave. The red line is Covid positive or suspected Covid patients with the green line being non-Covid patients. Interestingly, during the wave (2nd wave) of Covid admissions there is only a slight reduction in non-Covid patients. This is very significant in understanding the pressures that the units were under.

TOTAL ICU C19 CONFIRMED & SUSPECTS AND NON-COVID PATIENTS
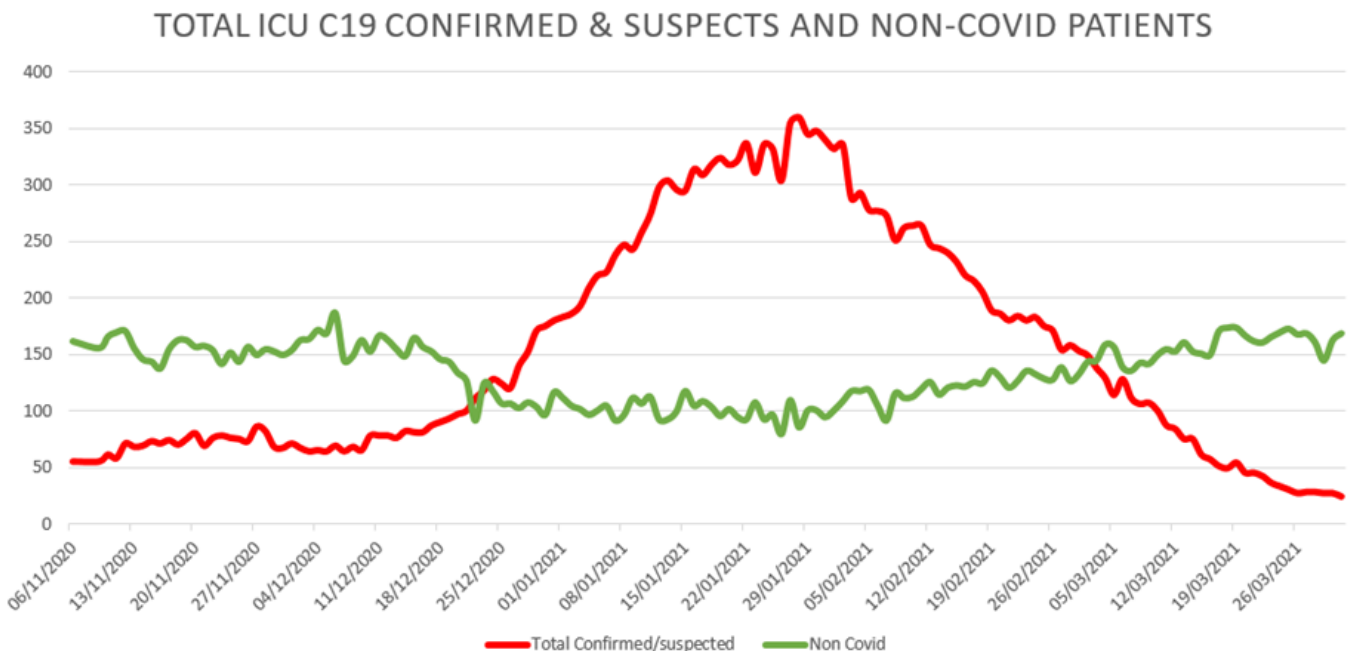
Ventilation support has a big impact on the staffing and bed availability need in Intensive Care. Using the DoS data, the below chart was created to show the split between Ventilated and Not Ventilated Covid positive or suspected patients that are admitted to the ICU. In Wave 2 there were significantly more patients overall however at the peak of the first wave 20% of ICU patients in Thames Valley and Wessex were not ventilated. In comparison at the peak of the second wave 37% of ICU patient were not ventilated.

VENTILATED AND NOT VENTILATED C19 PATIENTS
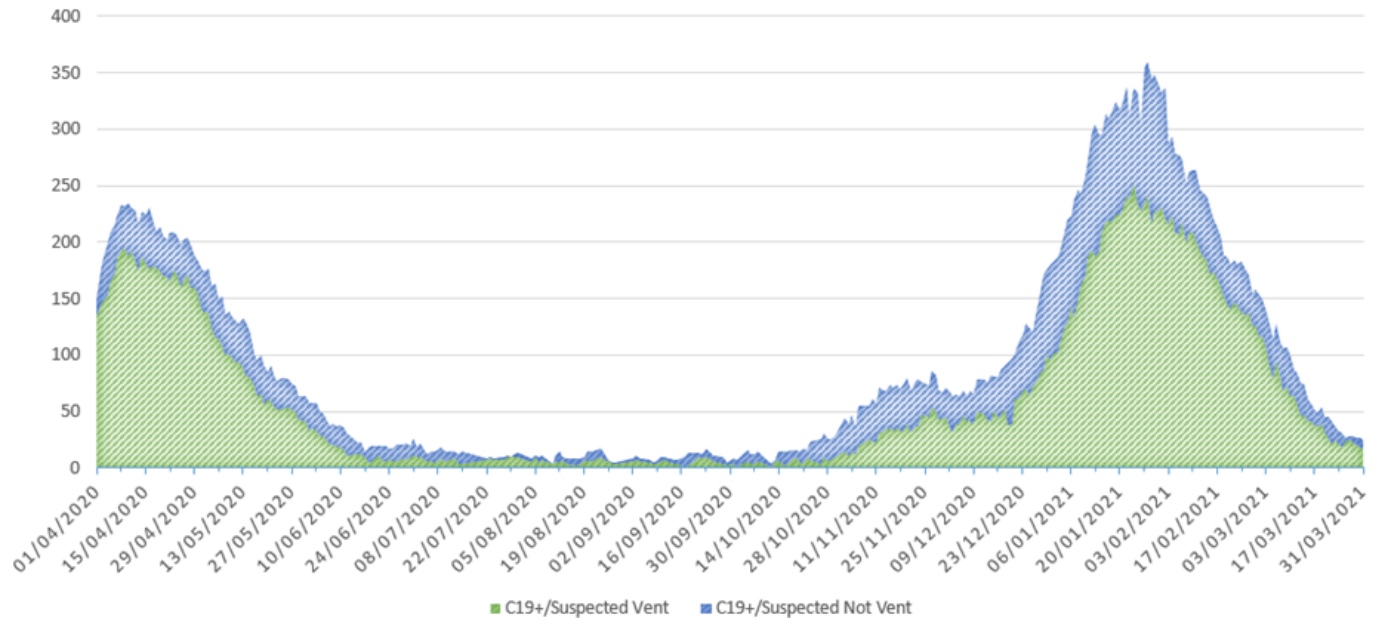
One of the main concerns during the Covid 19 Waves was Bed availability in critical care units. There are 2 main types of beds available in a critical care unit, level 2 (only suitable for certain types of ventilation) and level 3 (suitable for mechanical ventilation). The Network analysed bed availability based on level 3 equivalent (half of level 2 beds added to total level 3 beds) to try and adjust for different patients medical requirement. The chart below looks at the number of patients (both Covid and non-Covid) against this level 3 bed equivalency (black line).

During the second wave of Covid 19 the number of patients rose above the available Level 3 equivalent baseline beds (almost double). All units were required to open surge beds to handle the increase in patient numbers however it is important to be aware that staffing resources were also required along with physical bed space.

TOTAL CONFIRMED/SUSPECTED C19 AND NON COVID PTS WITH LVL 3 EQUIVALENT BASELINE BEDS
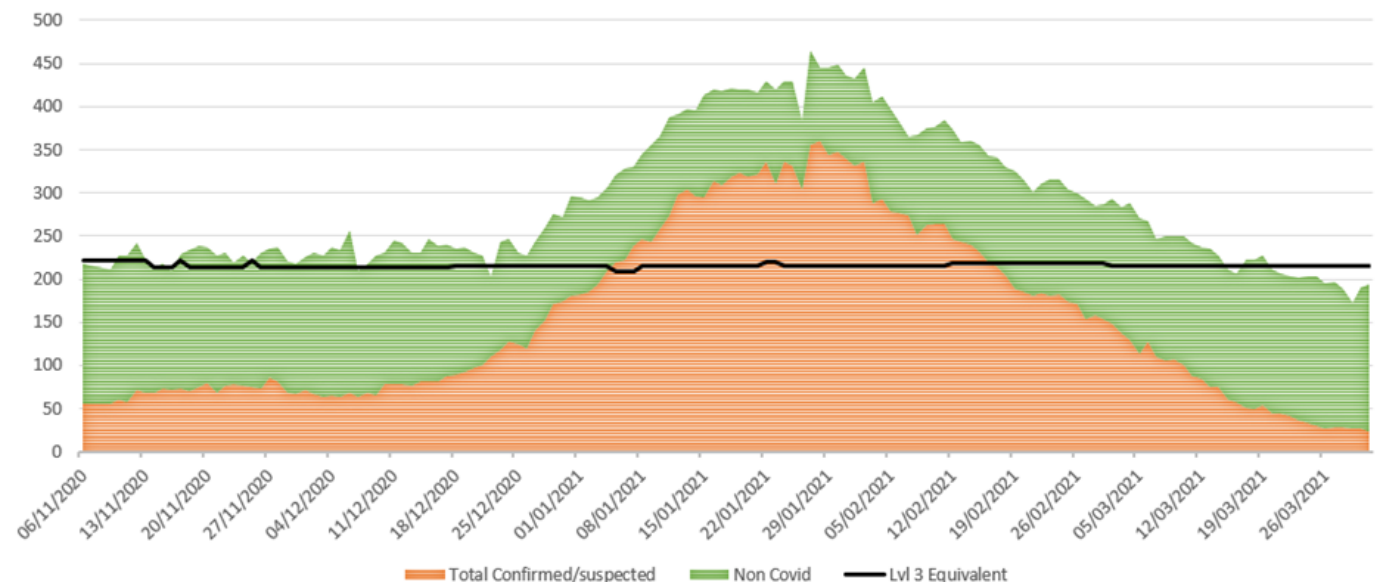
A CRITCON score is a single number score between 0 and 4, designed to be an easy to collect, report and interpret tool to understand ICU capacity stress. A score of 0 suggests the unit is at a comfortable capacity with adequate staffing. The higher the score the greater the pressure on the unit. CRITCON score is collected daily as part of the DoS data. The below graph shows each units breakdown by percentage of their reported CRITCON score. This is useful for showing the pressure each individual unit felt over the year. Although all units saw a rise in the number of ICU patients, some were under more pressure than others whether that be from the increase in patients or the lack of available staffing.

% CRITCON SCORE BY UNIT - APRIL 20 - MAR 21
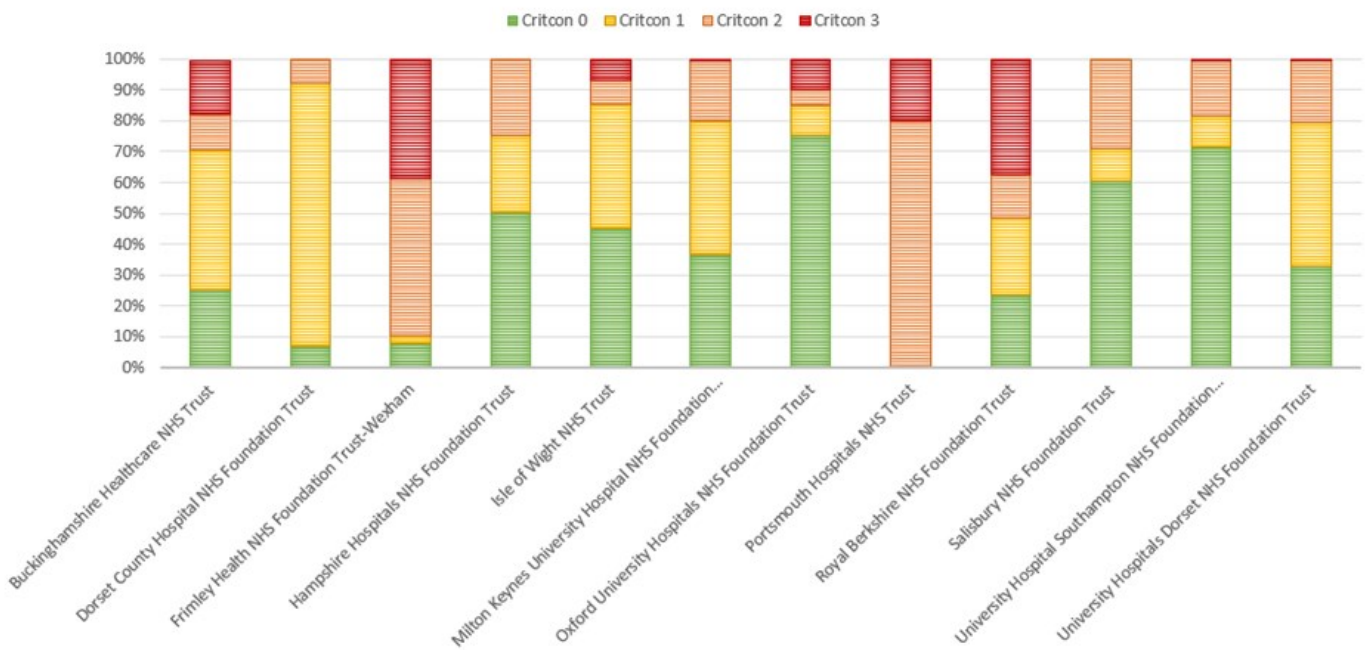
The Intensive Care National Audit and Research Centre (ICNARC) run the ICNARC Case Mix Programme (CMP) which 100% of all Adult General Critical Care Units participate in. However, due to COVID-19 pandemic, ICNARC ceased writing the standard CMP Network Quality Reports (NQRs). Their resources instead were focussed on providing regular reports of COVID-19 admissions to critical care. This included all units within the Thames Valley and Wessex region including Neuro and Cardiac specialist units.

These reports account for all patients who have been admitted to critical care with a confirmed diagnosis of Covid 19 and include admission information, demographic information, organ support and the patient's final outcome. The reports were released at different points of the year to cover the 2 main waves of Covid 19 that have occurred so far. This also provided the possibility of comparison information for each of the Covid 19 Waves.

The Network were provided with Unit Level data for each Covid wave in order to analyse the results as needed.

Reporting Timelines

The ICNARC reports were published to incorporate the 2 main waves of Covid 19, the dates of which are below:

Wave 1: First Admission 03/03/2020 – Last Admission 28/08/2020
Wave 2: First Admission 15/09/2020 – Last Admission 31/03/2021

Admission Information

The following data is analysis on patients admitted to a critical care unit with a Covid 19 diagnosis. Understandably there were some important differences between the two Covid 19 waves. There were significantly more admissions in Wave 2 compared to Wave 1 with an increase of 163% putting pressure on critical care units across the Network, peaking at 360 Covid patients in critical care beds in late January (Wave 2). With this in mind, 72% of patients were discharged from Critical Care in Wave 1 with 62% discharged in Wave 2. Across both waves of the 2481 patients, 1609 (64.9%) were discharged.

Demographic Information

Below is a look at some of the available Demographic information or characteristics of patients admitted to a critical care until with confirmed Covid 19 that is available from the data supplied by ICNARC.

Demographics	Patients with confirmed COVID-19 and 24h data [admitted from 1 September 2020 to 31 March 2021]	
	Thames Valley and Wessex Operational Delivery Network (N=1713)	**All critical care units (N=25,259)**
Age at admission (years) [N=1712]		
Mean (SD)	58.9 (13.3)	59.3 (13.2)
Median (IQR)	60 (51, 68)	60 (51, 69)
Sex, n (%) [N=1712]		
Female	566 (33.1)	8633 (34.2)
Male	1146 (66.9)	16608 (65.8)
Currently or recently pregnant, n (% of females aged 16-49) [N=152]		
Currently pregnant	13 (8.6)	156 (7.0)
Recently pregnant (within 6 weeks)	5 (3.3)	145 (6.5)
Not known to be pregnant	134 (88.2)	1923 (86.5)
Ethnicity, n (%) [N=1587]		
White	1228 (77.4)	17281 (72.1)
Mixed	36 (2.3)	353 (1.5)
Asian	214 (13.5)	3832 (16.0)
Black	36 (2.3)	1270 (5.3)
Other	73 (4.6)	1235 (5.2)
Index of Multiple Deprivation (IMD) quintile *, n (%) [N=1695]		
1 (least deprived)	403 (23.8)	3079 (12.3)
2	344 (20.3)	3834 (15.3)
3	359 (21.2)	4659 (18.6)
4	380 (22.4)	6047 (24.2)
5 (most deprived)	209 (12.3)	7374 (29.5)
Body mass index *, n (%) [N=1664]		
<18.5	12 (0.7)	173 (0.7)
18.5-<25	330 (19.8)	4578 (19.5)
25-<30	445 (26.7)	7290 (31.0)
30-<40	663 (39.8)	8707 (37.0)
≥40	214 (12.9)	2767 (11.8)

The data across all the critical care units in the country suggest that men are more likely to be admitted to Critical Care with Covid 19 symptoms (34% women compared to 65% men). The data coming from ICNARC suggests that the situation for Thames Valley and Wessex does not deviate from this although there is slightly more men admitted but this is very minor. However there are some units that vary from this.
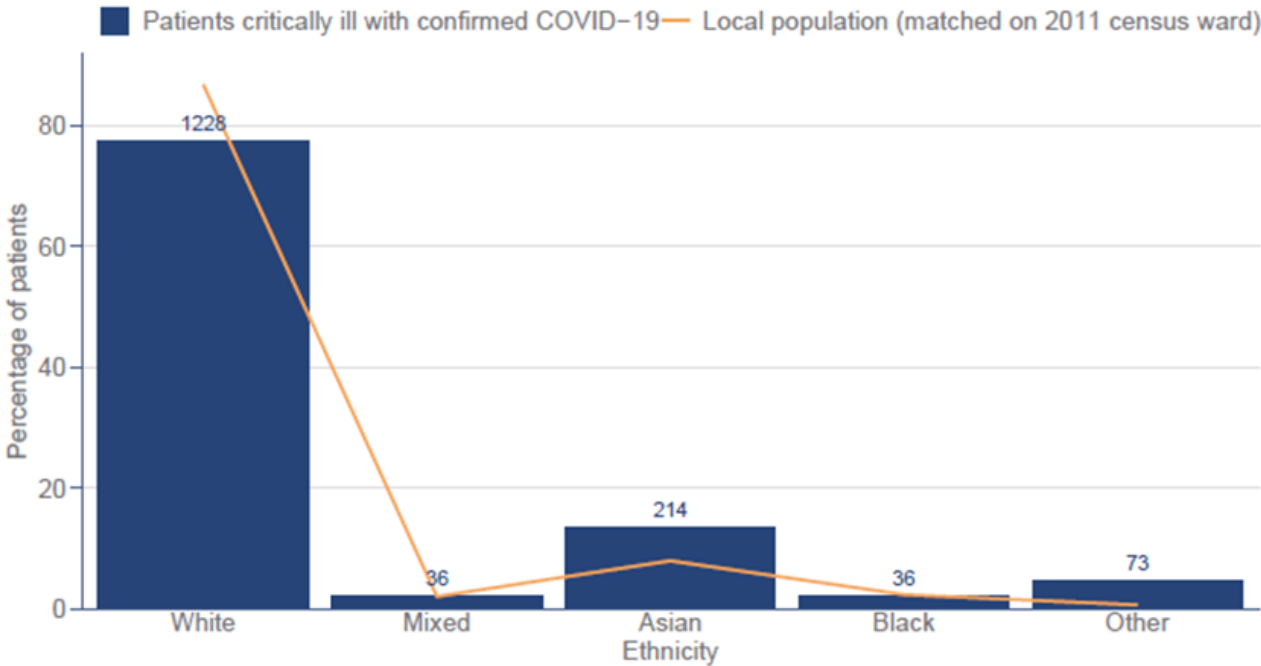
Of note in terms of Ethnicity, is the national average for admissions of white patients to critical care with confirmed Covid is 66% for the 1st wave and 72% for the 2nd Wave. In the first wave, Admissions of white patients was higher than this national average in all but one unit with two of the units reporting 100% of their admissions as white patients. Although in Wave 2 there seemed to be a slight drop in the admission percentages of Mixed Race, Asian, Black and Other Ethnicity patients this reduction was predominantly seen in the Wessex area. Thames Valley saw a 4% increase in Asian patients between Waves, particularly in Milton Keynes, Oxford and Wexham.
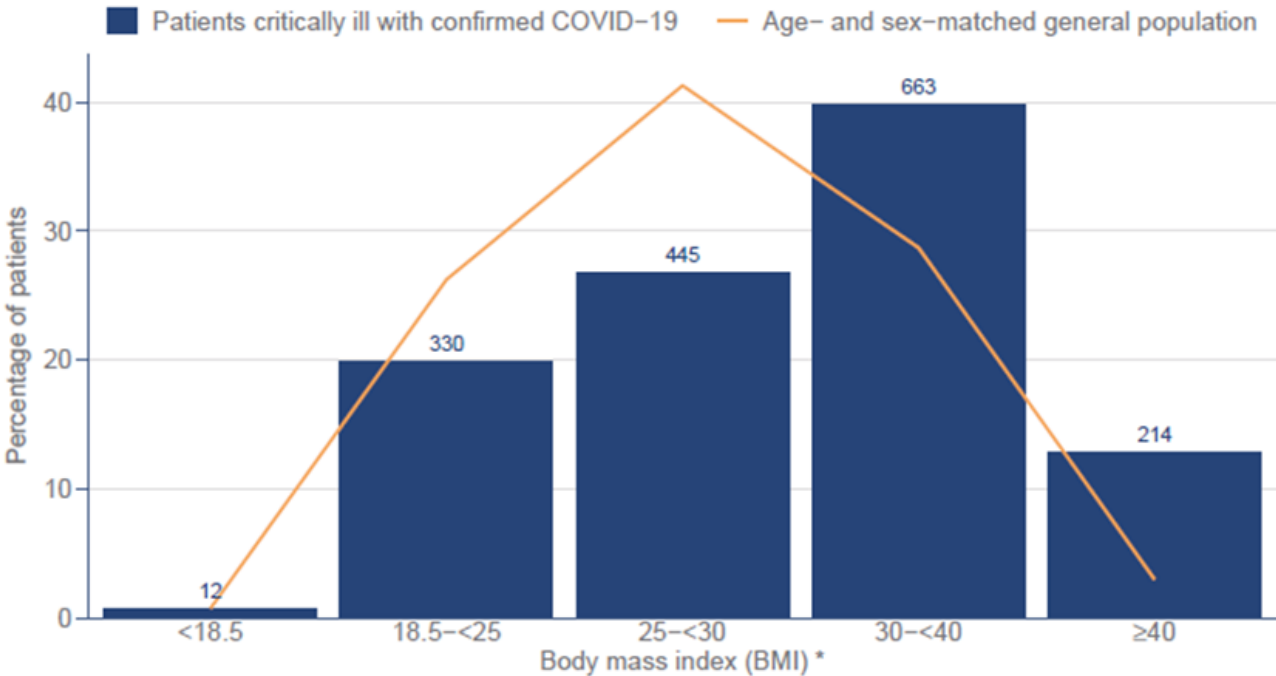
BMI was a popular topic throughout the Covid Pandemic. ICNARC break BMI down into specific categories to improve the quality of the analysis. There seemed to be a shift between Wave 1 and 2, with more patients being admitted with a higher BMI in the second wave. In the first wave, 40% of patients had a BMI over 30 across Thames Valley and Wessex with slightly more of those patients from Wessex. However in the second wave this increased to over 50% across the whole geography of the Network (with Wessex having a slightly higher percentage again).

| Patient subgroup | Patients with confirmed COVID-19 and outcome received [admitted from 1 September 2020 to 31 March 2021] | | All critical care units |
| | Thames Valley and Wessex Operational Delivery Network | | |
	Discharged alive from critical care n (%)	Died in critical care n (%)	Died in critical care (%)
Age at admission to critical care			
16-49	308 (85.6)	52 (14.4)	(18.5)
50-69	593 (62.2)	361 (37.8)	(39.4)
70+	169 (45.4)	203 (54.6)	(54.9)
Sex			
Female	394 (70.5)	165 (29.5)	(34.3)
Male	677 (60.0)	452 (40.0)	(40.7)
BMI			
<25	181 (53.6)	157 (46.4)	(42.2)
25-<30	271 (61.6)	169 (38.4)	(41.7)
≥30	598 (69.4)	264 (30.6)	(34.6)
Assistance required with daily activities			
No	992 (63.9)	561 (36.1)	(37.3)
Yes	77 (57.9)	56 (42.1)	(47.1)
Any very severe comorbidities *			
No	1015 (64.0)	572 (36.0)	(37.2)
Yes	54 (54.5)	45 (45.5)	(53.0)
Any respiratory support *			
Basic only	550 (85.3)	95 (14.7)	(17.6)
Advanced	493 (48.6)	521 (51.4)	(56.2)
Any renal support *	95 (33.0)	193 (67.0)	(69.6)

Medical Information

The following section of data focuses on some of the clinical elements around care given to critical care patients during the two 2 waves of Covid.

Medical history	Patients with confirmed COVID-19 and 24h data [admitted from 1 September 2020 to 31 March 2021]	
	Thames Valley and Wessex Operational Delivery Network (N=1713)	All critical care units (N=25,259)
Dependency prior to admission to acute hospital, n (%) [N=1710]		
Able to live without assistance in daily activities	1576 (92.2)	21854 (87.9)
Some assistance with daily activities	131 (7.7)	2944 (11.8)
Total assistance with all daily activities	3 (0.2)	75 (0.3)
Very severe comorbidities *, n (%) [N=1710]		
Cardiovascular	3 (0.2)	179 (0.7)
Respiratory	3 (0.2)	243 (1.0)
Renal	22 (1.3)	409 (1.6)
Liver	9 (0.5)	161 (0.6)
Metastatic disease	6 (0.4)	165 (0.7)
Haematological malignancy	20 (1.2)	411 (1.7)
Immunocompromise	58 (3.4)	885 (3.6)
Prior hospital length of stay [N=1711]		
Mean (SD)	3.3 (5.9)	3.2 (7.9)
Median (IQR)	1 (0, 4)	1 (0, 4)
CPR within previous 24h, n (%) [N=1713]		
In the community	12 (0.7)	162 (0.6)
In hospital	13 (0.8)	263 (1.0)
Indicator of acute severity		
Invasively ventilated within first 24h *, n (%) [N=1707]	648 (38.0)	7594 (30.5)
APACHE II Score [N=1709]		
Mean (SD)	14.5 (4.7)	14.5 (5.2)
Median (IQR)	14 (11, 17)	14 (11, 17)
PaO_2 /FiO_2 ratio † (kPa), median (IQR) [N=1629]	13.3 (10.0, 18.0)	13.1 (9.6, 18.4)
PaO_2 /FiO_2 ratio †, n (%) [N=1629]		
< 13.3 kPa (< 100 mmHg)	811 (49.8)	11835 (51.3)
13.3-26.6 kPa (100-200 mmHg)	672 (41.3)	8808 (38.2)
≥ 26.7 kPa (≥ 200 mmHg)	146 (9.0)	2437 (10.6)
FiO_2 †, median (IQR) [N=1629]	0.60 (0.45, 0.75)	0.60 (0.45, 0.80)

For all Critical Care units across the country, the Mean average APACHE score dropped slightly from 15 to 14 between wave 1 and wave 2. The same can be said with the Network data on the APACHE score which seemed to be a direct mirror of the national picture.

| Critical care outcome | Patients with confirmed COVID-19 and outcome received [admitted from 1 September 2020 to 31 March 2021] | |
	Thames Valley and Wessex Operational Delivery Network (N=1713)	All critical care unit (N=25,259)
Outcome at end of critical care, n (%) [N=1713]		
Discharged	1072 (62.6)	15375 (60.9)
Died	617 (36.0)	9630 (38.1)
Still receiving critical care	24 (1.4)	254 (1.0)
Duration of critical care	**(N=1689)**	**(N=25,005)**
Duration of critical care (days) †, median (IQR) [N=1682]		
Survivors	8 (4, 19)	7 (4, 16)
Non-survivors	12 (6, 20)	12 (6, 19)
Organ support (Critical Care Minimum Dataset) *	**(N=1689)**	**(N=24901)**
Receipt of organ support, at any point, n (%) [N=1689]		
Advanced respiratory support	1014 (60.0)	13739 (55.2)
Basic respiratory support	1306 (77.3)	20425 (81.9)
Advanced cardiovascular support	444 (26.3)	5731 (23.0)
Basic cardiovascular support	1593 (94.3)	23187 (93.2)
Renal support	288 (17.1)	4097 (16.5)
Liver support	10 (0.6)	207 (0.8)
Neurological support	113 (6.7)	1710 (6.9)
Duration of organ support (calendar days), median (IQR) [N=1689]		
Advanced respiratory support	13 (7, 23)	12 (6, 23)
Total (advanced + basic) respiratory support	10 (5, 20)	9 (5, 18)
Advanced cardiovascular support	3 (2, 7)	3 (1, 5)
Total (advanced + basic) cardiovascular support	10 (5, 19)	9 (5, 18)
Renal support	6 (3, 13)	6 (3, 13)

The length of time (or duration) of Survivors and non survivors varies greatly between units and will depend on the care needs of the patient themselves. As a generalisation, Thames Valley's duration of stay was longer than that of Wessex, which was more in line with the nation average of all the critical care units. Wycombe had a particularly long average length of stay for Surviving patients compared to other units.

There were significantly less total patients in Wave 1 compared to Wave 2 but a higher percentage of these patients received all of the Organ Support listed in the charts with the exception of Basic Respiratory Support (for Wessex only). This could possibly suggest a number of different conclusions, that either Patients admitted to ICU in Wave 1 were more unwell and required more invasive support or perhaps the way that Patients were managed between the waves changed.

The Wave 1 data also shows very little difference between Wessex and Thames Valley in most of the Organ support categories. However Wave 2 is a different picture, with Basic Respiratory support being more likely in Wave 2 patients in Wessex. Advance respiratory support and Advance Cardio Support were more likely in Thames Valley in Wave 2.

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