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Editorial

Consolidating medical ambulatory care services in the COVID-19 era

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The current COVID-19 era poses challenges for reorganization of care, redistribution, and rationing of services.[1,2] We present the reconfiguration of our Medical Ambulatory Care (MAC) Service.

Northumbria Healthcare NHS Foundation Trust, in the North East of England, has a catchment population of approximately 600,000 over a large geographical area (parts of the Scottish Borders in the north and Cumbria in the west). Care is organized across four main hospitals: Three base sites and one acute care center. The latter was a flagship hospital, has 210 beds, and was part of NHS England's New Models of Care program.[3,4] A wing for ambulatory care was purpose built for June 2019.[5]

The wing comprises MAC, Surgical Assessment Unit (SAU), and Emergency Gynae Clinic. Whole unit attendance is approximately 100 daily at weekdays and 70 at weekends. Attendances for MAC average 55 and 40, respectively.

The previous MAC service provision is described: Referrals were accepted from primary and secondary care (oncology, hematology, and high-risk discharge follow-ups), ambulance services and "streamed" from accident, and emergency (A and E). "Streaming" involves quick triage to ascertain National Early Warning Score of less than 5 and ambulatory nature of presenting problem to "stream" directly to MAC. There is also a day clinic with planned patients that run parallel to the above-unplanned work.

MAC is open 8 am–10 pm daily with nine rotating consultants. The consultant shift is 9 am–7 pm with a recent introduction of a split shift on Mondays. One acute medicine registrar works 8 am–4 pm and a registrar from the general medical pool 2 pm–10 pm. This shift is partially replicated at weekends. Medical trainees from core medicine training, internal medicine training, and acute care common stem schemes work shift patter to ensure a minimum daily staffing of four trainees. Five–six nurse practitioners complement the workforce and work between surgery and medicine.

Cases seen include deep vein thrombosis, anemia, pulmonary embolisms, atrial fibrillation, skin and soft-tissue infections, thunderclap headaches, severe hypertension, low-risk gastrointestinal bleeds, pneumonia, pleural effusions, pneumothoraces, malignant ascites, abnormal blood results, low-risk cardiac sounding chest pain, electrolyte abnormalities, or deranged liver function test results requiring further investigation but not requiring monitoring, gastroenteritis – requiring minimal intravenous rehydration before discharge, oncology referrals for potential neutropenic sepsis, diabetic patients with hypo/perglycemia, stable anaphylaxis after adrenaline, non-stroke acute neurology (with a visiting neurologist every Friday), patients with suspected underlying infections but no clear source and not meeting sepsis criteria, first seizure or epileptics who are postictal and requiring a period of recovery and high-risk discharge follow-ups. This list is not exhaustive.

MAC has reduced avoidable admissions, pressures on A and E, delayed discharges. It has improved patient flow and reduced costs with pathways such as ambulatory pneumothorax[6] and malignant ascites management[7] and has overall good patient satisfaction. The data pertaining to the foregoing are internal and have not been externally published yet.

Current Service Provision

This is best described by concentrating on the following sections.

Staffing

One consultant with respiratory accreditation was moved to a full-time respiratory slot. Cancellation of elective activity allowed one of the rheumatologists to join and provides extra

cover. Consultant cover is still 7 days a week, 9 am–7 pm. The split shift has been canceled.

The scheduled day for administrative duties for junior doctors has been converted into a 1–10 pm shift to provide four junior doctors in the afternoon when attendance often spikes.

Registrar staffing has increased: One registrar's job plan has changed to solely provide cover on MAC along with an acute medical registrar working daily 4 weeks out of five. This has resulted in two registrars working from 8 am to 4 pm; the evening shift is still covered by a general medical registrar.

Such a working pattern is so far, manageable: It has increased resilience and allows for annual leave to be taken.

The SAU has moved off the unit, with the corresponding loss of some nurse practitioner shifts, but the presence of more doctors has mitigated this. Attendances have also reduced. Local data show that referrals from accident and emergency to the whole ambulatory care unit have halved, and referrals by primary care have reduced by up to 75%. This is in line with national data.[8]

Planned attendances, referrals, and patient pathways

As the A and E department developed a respiratory assessment zone and non-COVID-19 areas, MAC has expanded the streaming service to include all A and E ambulatory patients that have not been redirected back to urgent treatment centers at the front door. This includes some typical A and E presentations such as epistaxis, head injury, toothache, and confusion. As far as possible, MAC is being run as a non-COVID-19 area. We continue to stream straight from the ambulance service and the ambulance corridor which is an area in A and E, where patients are received and triaged from the paramedics. A small number of frailty assessment patients are also been seen on unit.

Alternative pathways for patients have been developed to prevent unnecessary attendances. These patient groups are now reviewed by telephone with phlebotomy support (deranged liver function tests, deranged clotting including international normalized ratio checks, cellulitis on oral antibiotics, and electrolyte disturbances such as hyponatremia, hypocalcemia, hypomagnesemia, all acute kidney injury review discharges, rash reviews and requests for a second ultrasound in case of a first negative one for deep vein thrombosis, and high clinical suspicion). This list is again not exhaustive and is based on clinical judgment. High-risk discharge follow-ups are still accepted.

Telephone appointments have been created for planned morning appointments and are for patients not requiring bloods, needing a phone review or results given. The afternoon slots are for patients who require phlebotomy in the morning, thus allowing time for processing. If phlebotomy is required, the discharging practitioner now requests the review bloods on the trust's electronic system for the date of the requested telephone review. An email referral is then sent to the newly created "Rapid Review" inbox. This email inbox is checked by senior nurse practitioners who action requests and plan reviews.

Second ultrasound appointments for venous thrombosis are now being performed at the base sites and communicated to team for telephone review. All computer tomograms for pulmonary angiography are now discussed with the consultant to reduce the number of scans and infection control issues with scans and potential COVID-19 patients.

Telephone calls are documented as clinical reviews and discharge letters completed. All local primary care practices receive letters electronically. The administrative staff input the patient data and the telephone appointment into a new patient appointment system coding system. The implementation of this service has been agreed with the clinical commissioning group. A tariff for work undertaken by this system is being charged.

Video calls through the software Attend Anywhere have started and proved useful. For example, in the review of a patient with an asthma exacerbation due to COVID-19, the nurse was able to see his respiratory effort, assess his ability to speak in full sentences, and visualize his condition. Peak flow measurements were undertaken, and the inhaler technique was checked on camera. The feedback from experience, as narrated by a relative, is reproduced here:

"*D began with a cough and lethargy on the 27th of March. He developed very high fevers on the 29th and was unable to get out of bed other than for going to toilet. D was taking the maximum paracetamol dose alongside his Serevent and clenil modulite inhalers as normal and ventolin as required. His shortness of breath worsened on the 1st of April, and thus, D was taken the acute care site in Northumbria. D was investigated and COVID-19 swabs taken. He was discharged and follow-up arranged through MAC. On the 2nd of April*, *D received a telephone call from the nurse practitioner on MAC to set up a video call on the 3rd of April to assess his clinical condition. Results were confirmed and the weekend consultant continued the calls over the weekend. On the 7th of April*, *a course of steroids was started and a new inhaler prescribed. D was formerly discharged with a letter to GP on the 14th of April.*

The follow-up service has been exceptional. There were support and advice as needed, with contact numbers provided, which were very much appreciated.…."

If any clinical concerns arise and any patient is felt to require face to face review, this is organized through the normal pre-COVID-19 existing pathways. Standard precautions apply and staff has been told to limit the use of stethoscopes

and ophthalmoscopes. Pleural and peritoneal services for ambulatory pneumothorax, malignant pleural, and peritoneal fluid have also been consolidated and described.[9]

The weekly neurology liaison service and the oncology pathways for the assessment of neutropenic sepsis are still ongoing. Blood transfusion services have moved off the acute site.

Staff welfare

The unit has been recently open and has already seen huge changes. Staff has shown incredible resilience and adaptability. The daily morning staff huddle has continued and allows us to identify, raise, and respond to concerns from any staff. This huddle also ensures dissemination of up to date information regarding COVID-19. The palliative care and chaplaincy team have been providing a drop-in service twice weekly pastoral service. A once-weekly junior doctor forum has been set up to give them an opportunity to ask any questions regarding COVID-19. The consultant body recognizes the burden that this workload is placing on staff and feels that regular contact for support in informal settings help.

Conclusions

Reorganization of our MAC was challenging, but has yielded benefits. Some aspects of this, such as the telephone appointments and their associated tariffs, might be widely applicable. Such reorganization is crucial to limit what is being termed as "collateral damage."[10] The drop in non-COVID-19 attendances has been replicated anecdotally all over the region and has helped with the reorganization. The success of the remote reviews by telemedicine will have long-term positive impacts on our service.

Authorship Statement

AA, PW, and SM wrote the initial manuscript, all authors revised it, and all agreed on the final version.

Disclosure Statement

None of the authors have anything to declare. Conflicts do not exist.

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