safety. Guys' and St Thomas' NHS Foundation Trust (GSTT) uses a trust-wide paper based CD ordering system involving senior nurses who order and physically deliver an order book to pharmacy for dispensing. Ward staff sign for collection and receipt on the ward. However, incident reporting identified inappropriate controlled drug ordering causing delays in dispensing which could lead to patient harm.

In addition, the process had not been previously audited to confirm CDs were signed on the ward upon receipt posing the risk of missing controlled drugs. During the COVID-19 pandemic, the order books were relocated to dispensary to prevent transmission & reducing nursing time. Therefore, a quality improvement group reviewed CD process and agreed to implement and audit an electronic controlled drug ordering system. This was ratified at critical care governance committees with end user testing, both with nursing and pharmacy. Staff training occurred via SOPs and 'watch out for notices' circulated to the directorate alongside face to face training for key stakeholders.

Objectives: An electronic ordering system to order, dispense, deliver and record receipt of controlled drugs was implemented to streamline the paper-based system. A retrospective audit was conducted to confirm a safe and effective process as developed by the QI project. It assessed adherence of the system to standards set by the aims of the paper ordering system. The aims were to prove if the Controlled Drug Ward e-Ordering system (e-CD) was a viable process for trust-wide implementation.

Method: The critical care ward pharmacist reviewed Controlled Drug Ward e-Ordering system daily during the implementation period to ensure competency of utilising new system. A retrospective audit, approved by GSTT Pharmacy Audit Lead, was conducted in July 2020 during a 4 week trial period, reviewing 17 electronic controlled drug orders (n=17). One pharmacist collected the data reviewing the various steps of the electronic drug ordering process measured against six standards and the percentage compliance per controlled drug order. This study did not require ethics approval

Results (Number of electronic orders n=17)

Standard	% Compliance
Standard 1 - 100% compliance to order electronically for CDs	100%
Standard 2 - 100% compliance to bleep the pharm for non-stock CDs / Out of Hours (OOH) CDs	50%
Standard 3 - 100% compliance for pharmacy to dispense and check CDs within 2hrs	100%
Standard 4 - 100% compliance to sign for delivery/ collection from pharmacy in log book	n/a
Standard 5 – 100% compliance to receipt orders within 30mins	22%
Standard 6 – 100% compliance to sign CDs into register	100%

Conclusion: The results showed the Controlled Drug Ward e-Ordering was successful at ordering and dispensing e-CDs. However, due to difficulties and limited resources, the audit highlighted a key concern regarding receipting on the wards as it was time-consuming for nursing staff during the COVID-19 pandemic. There was also incomplete data for adherence to sign for delivery/ collection due to resources. This will be addressed in future plans, by introducing a Prescription Tracking System (PTS) to track the movement of medications across the hospital via a scanning/barcode system. In the interim, annual re-audits are required to ensure the safe and secure handling of controlled drugs ordered electronically as it will be incorporated into Epic©, the new trust wide electronic patient record system.

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Optimising Information Visualisation on the ICU Ward Round to Improve Speed and Accuracy

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Introduction: Critical care requires high-tech information support. Functional systems have been associated with improved outcomes such as ICU length of stay.[1] However, poorly implemented electronic patient records (EPR) can contribute to doctor burnout via "death by 1,000 clicks."[2] The British Medical Association estimates the cost of poor IT systems in the NHS at £1 billion/yr.[3]

Objectives: We implemented an EPR template to improve the availability of relevant information for the ICU clinician on a ward round with the goal to reduce time spent on obtaining critical and accurate basic information, "releasing time to care."[4]

Methods: Using the Epic EPR we made use of a departmentally integrated Physician Builder[5] (ICU Consultant and Clinical Lead) to implement a New Timeline Visualisation (NTV) of clinical metrics, observations, lab results, therapy start/stop dates *et cetera*, for each system.

After stable release, we asked care providers to provide feedback and to take a timed assessment of information finding typical to a daily ward round in a ventilated patient both with and without the NTV. We compared total time to completion, and percentage accuracy, using two-tailed paired t-tests. We then performed an extrapolation of any time and costs saved for 10 patients' full review once daily using salary information for Consultant, ACCP, Registrar, SHO, Band 6 Nurse and Band 5 Nurse.

Results: Staff recruited (*n* = 8) included Advanced Critical Care Practitioners (n = 3), Intensive Care Consultants (*n* = 2), Intensive Care Medicine Registrars (*n* = 2) and Acute Care Common Stem Trainees (*n* = 1); 5 participants were male (62.5 %). The average time to find all information was 5:58 minutes and seconds (range 3:54 – 8:04) using the NTV vs 9:34 using standard clicking and information tabs (range 4:00 – 15:30, p = 0.012). Additionally, the percentage of complete and accurate information was 61.5 % using the NTV (range 61.5 % – 84.6 %) and 76.0 % using standard clinking and information tabs (range 61.5 % - 92.3 % p = 0.041).

Feedback included: "everything is in one place and easily searchable," "more intuitive", "much easier to see key info…including trends", "quicker", "helps find info faster", "more efficient", "great improvement", "great system". Constructive criticism included the need to make timing and columns consistent, the need for familiarisation, and that they are "still not as nice as old ICU paper charts". We estimated hours saved per year in the region of 219 hours, with an estimated associated cost savings of £34,806 per year in a single ICU.

Conclusions: This care provider centred information technology design improvement showed significant time savings and higher accurate information retrieval rates. These findings demonstrate the potential of good interaction design in EPRs in the ICU to save money and minimise error or failure to retrieve or access information, with the potential to prevent patient harm. We recommend that EPR design should be continuously improved in order to address outcomes directly relevant to critical care delivery.

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Whispers from the Community: Differences in Primary Care Utilisation Before Critical Illness

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Introduction: Critical illness is associated with significant mortality and morbidity including a risk of long-term disability and functional decline.[1,2] The early identification of patients at risk of critical illness may allow early preventative measures to be instigated to avoid admission and allow individuals to understand the implications of a possible future critical illness. Here we demonstrate that, across the country of Wales, interactions with primary care are significantly different for patients that suffer a critical illness compared to the general population.

Methods: We performed a retrospective observational study using the Secure Anonymised Information Linkage (SAIL) Databank[3-5] which contains billions of linked primary and secondary care, person-based health records and covers over 80% of the population of the country of Wales. We identified all adult patients aged 18-100 in the database for the years 2016-2018 and extracted all dates where at least one data point (e.g., general practice attendance, lab test, prescription, administrative action) was recorded in their primary care electronic healthcare record (EHR). We refer to these dates collectively as General Practice Events (GPEs). Our outcome of interest was emergency ICU admission in the year 2018. For all patients with an emergency ICU admission, we extracted all GPEs up to 24 months prior to their admission. For patients that did not undergo an ICU admission, a random date in 2018 was selected and all GPEs up to 24 months prior were extracted. As such, regardless of outcome, each patient was assigned an outcome date and 24 months' worth of preceding GPEs were extracted. We calculated the total number of GPEs identified for each patient and the median time difference between all sequential GPEs. We report the median and [interquartile range (IQR)], by outcome group, for each of these values. This study was approved by the SAIL independent Information Governance Review Panel (IGRP) (ref 1323).

Results: 1,400,014 individuals met study inclusion criteria. A total of 3268 patients had an emergency ICU