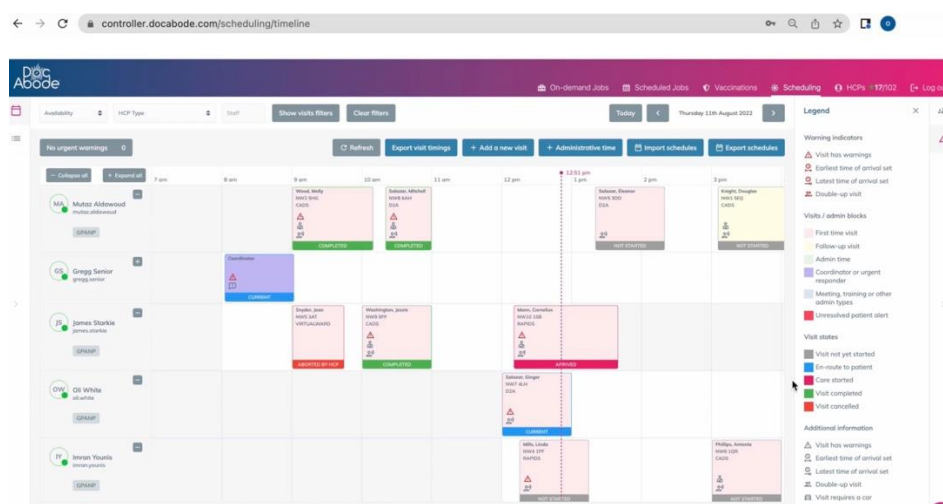


Impact Assessment:

Analysis of the impact of the Doc Abode
dynamic scheduling software
used within the UCR Service, part of
Camden Rapid Access Services
- March '23



Over the last 12 months the Central and North West London NHS Foundation Trust (CNWL) Camden Urgent Community Response (UCR) service have been working with Doc Abode to develop and deploy a dynamic workforce scheduling tool into day-to-day operations. The tool does not replace the need to enter and outcome activity into SystmOne presently which is both the patient's clinical record and source of data for all national and local reporting requirements. Going forward work is underway to integrate Doc Abode with SystmOne. The UCR service sits within the Camden Rapid Access Services portfolio.



Doc Abode Clinician Management Dashboard

The deployment of the service was completed in two phases:

Phase one: started on June 6th 2022 with the deployment of Doc Abode into the UCR therapist team. It was deployed running parallel with existing process. Within the first week the team were comfortable enough to move away from the legacy process and adopt Doc Abode as the workforce scheduling tool of choice.

Phase two: was completed on the 2nd November 2022 when the Doc Abode dynamic scheduling tool was deployed to the UCR Nursing and Paramedic team, with the existing process running in parallel; again within one week the team were happy to move away from the previous process and fully adopt Doc Abode into their day-to-day way of working.



Observed Impact

From the launch of the Doc Abode scheduling tool, team leads observed there was a significant impact on the number of patient visits Nurses and Paramedics were able to complete in a shift. With staff who were previously visiting three to four patients prior to Doc Abode, they were visiting four to eight patients once the dynamic scheduling tool had been deployed.

Initial Analysis

This analysis has been conducted to assess the observed changes in visit capacity and delivery, comparing a data set from the UCR Nursing and Paramedic team from September 2022, prior to the launch of Doc Abode, and November 2022 once the service had been deployed within the team.

Abi Hotson (Business and Transformation Manager, Inner London Adult Health Services, Goodall Division, CNWL) has led this analysis, extracting data from two sources to assess the impact of the Doc Abode tool on the operations of the team.

Rostered staff availability was extracted from Healthroster to provide the number of available hours each healthcare professional worked during the months of September and November 2022.

Additionally, data was extracted from SystemOne via Tableau Performance Reporting tool to identify Initial and Follow-up visits (patients who had been seen) by named healthcare professionals (HCP) during the same time periods.

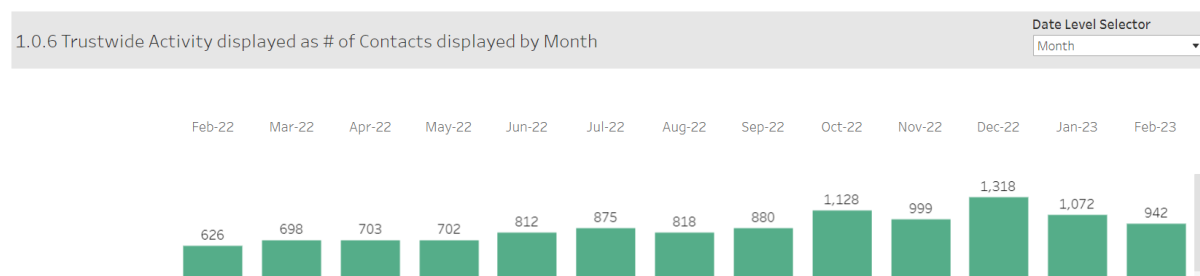
What to measure

To fairly analyse the difference in performance an index was agreed which would show the average number of patient visits per HCP hour worked. This index would give a fair assessment of performance and not just focus on absolute number of visits, which could have significant variance from the number of staff available, hours worked and patient referral demand coming into the team from one month to another.

The graph below shows total activity of patients seen attributed to the Camden Rapid Access Service work unit excluding 'Silver Triage' and 'Pharmacy' caseloads. We didn't differentiate between clinical



and administrative contacts due to the event details screen set to default to 'administrative' rather than 'clinically relevant' within the work unit. This was noticed and corrected on the 8th February 2023. The figures below show an increase in recorded activity suggesting the risk of staff not entering data onto SystemOne due to dual entry recording practices has reduced significantly. There may be some incidences where this does happen and currently we have no way of comparing like for like between the two systems, however the impact is not marked.



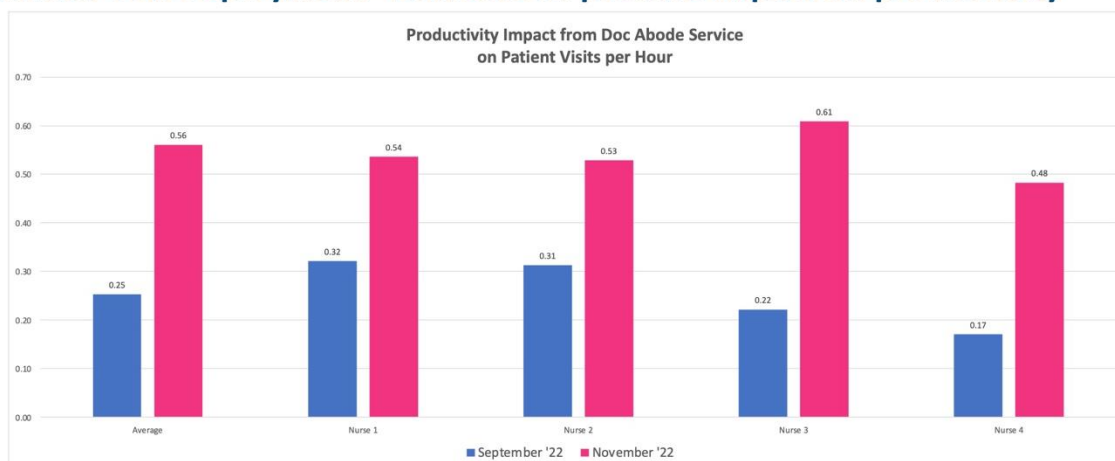
Working with the Nursing Team Lead, Toby Daniel, it was agreed to focus the analysis on the performance of Band 6 Nurses and Paramedics as they only commit their time to patient visits. For more senior Bands of Nurses and Paramedics their shift time is used in both the administration and coordination of the team as well as patient visits which would have distorted the analysis.

Measured Impact

On the graph below, you can see on the left-hand side the average number of patients visits per hour for an HCP for both September and November 2022. Next to this average the performance of each individual Nurse and Paramedic is shown comparing the September and November 2022 performance.



Camden UCR Deployment– Evidence of positive impact on productivity



Over an 11.5 hour shift, on average there is a doubling of patient visits per shift from 2.9 to 6.4 visits

In all cases you can see there was an increased performance from September to November 2022 with the average increasing from 0.25 to 0.56 patient visits per hour. As these numbers are quite abstract we have applied this index to a typical “long shift” for the Nurse and Paramedic of 11.5 hours. This results in an increase in the number of patients seen from an average of 2.9 to 6.4 patient visits per shift. This more than doubling of patient visits per shift correlates with the observation seen by the coordinators when the service went live.

To test the statistical significance of the result a **Paired sample T-test, using T(df:4) distribution (two-tailed)** was conducted. Results of the paired-t test indicated that there is a significant large difference between Before ($M = 0.3$, $SD = 0.07$) and After ($M = 0.5$, $SD = 0.05$), $t(3) = 7$, $p = .006$. Further details in Appendix 1

Extending the Analysis

AHSN UCL Partners have been engaged to run a more details analysis of the impact, delving deeper into the data and extending the dataset to cover more months.



Appendix 1

1. H_0 hypothesis

Since the p-value $< \alpha$, H_0 is rejected. The **After** population's average is considered to be not equal to the **Before** population's average.

In other words, the sample difference between the averages of **After** and **Before** is big enough to be statistically significant.

2. P-value

The p-value equals **0.006076**, ($P(x \leq 6.9637) = 0.997$). It means that the chance of type I error (rejecting a correct H_0) is small: 0.006076 (0.61%). The smaller the p-value the more it supports H_1 .

3. Test statistic

The test statistic **T** equals **6.9637**, which is not in the 95% region of acceptance: [-3.1824, 3.1824]. The 95% confidence interval of **After minus Before** is: [0.1548, 0.4152].

4. Effect size

The observed effect size d is **large, 3.48**. This indicates that the magnitude of the difference between the average of the diff

