

NurseFirst

A Nurse Telephone Triage Service

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INTRODUCTION

In Singapore, care is often too accessible and its networks are fragmented. Non-emergency calls (P3 and below) inundate its emergency medical services hotline, 995, contributing 25% call load daily. In the Emergency Department (ED), non-emergencies cases account ~50% of attendances. Poor judgement on condition severity by laymen and not knowing about ED alternate care sites, such as the Urgent Care Centre (UCC), add to the strain.

NurseFirst, a triage nurse-fronted helpline, uses algorithm-based triage protocols to standardize care recommendations. People seeking care are encouraged to call for an assessment on their symptoms, before being advised on where the most apt care site for them is. Partnered with UCC@Admiralty, it aimed to reduce unnecessary visits at the nearest public ED, Khoo Teck Puat Hospital (KTPH).

OBJECTIVE

This study reports the impact of NurseFirst on unnecessary ED visits through factors, such as:

1. Callers' intended site of care before calling NurseFirst - given NurseFirst acts as the intervention, the callers' intentions function as the control group.
2. Proportion of callers disposed to ED vs non-ED sites - given the callers' responsibility to visit the recommended site of care on their own, NurseFirst's intervention is to make a recommendation based on their triage protocols and clinical judgement.

METHODOLOGY

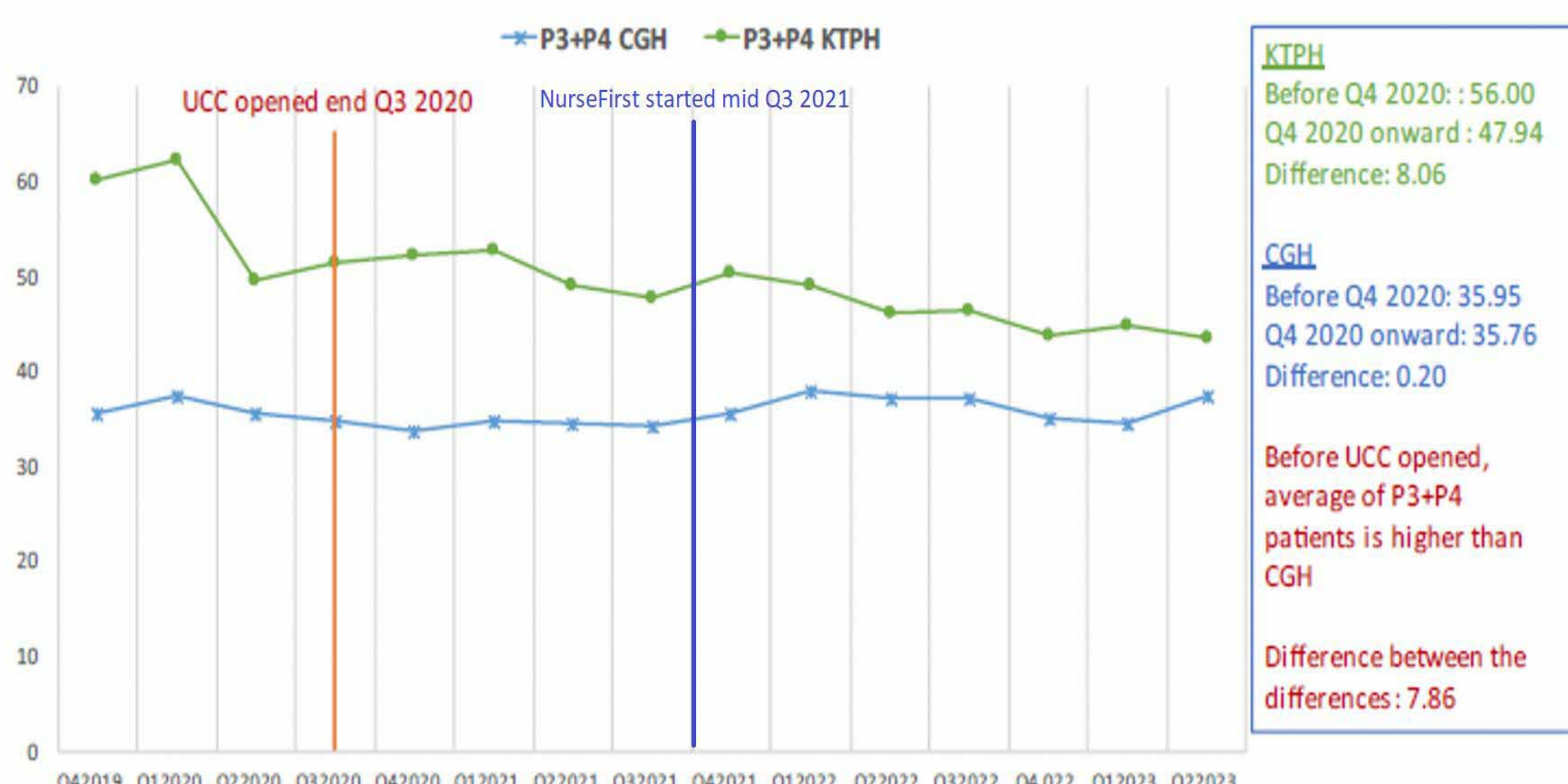
- The pilot uses a triage application from FoneMed, with Schmitt & Thompson protocols and localized dispositions. NurseFirst is staffed by nurses trained in triage.
- Basic identifiers, intended care sites before calling, chief complaint(s), and recommended disposition sites are gathered from the triage calls. These datasets were cross-checked across collaborating EDs and UCC to confirm the adherence to the recommended dispositions.
- Data trending and descriptive analysis were performed to track the efficacy of interventions introduced over time.

RESULTS

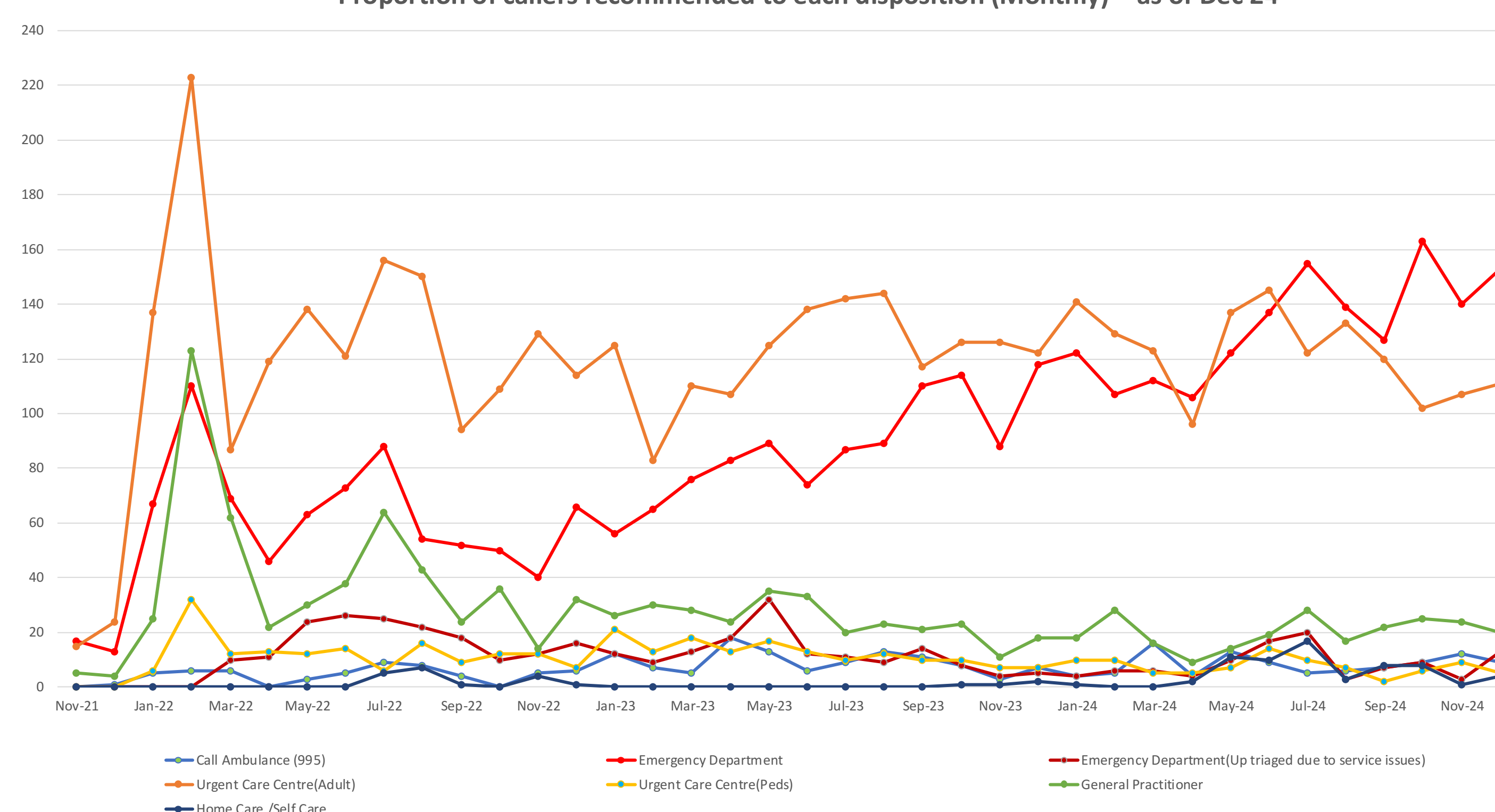
In 2024, NurseFirst saw 40% of its triage calls disposed to ED. This approaches the averaged 29% ED disposed calls from established health systems in North America, gathered by FoneMed. Until today, nearly 60% of the callers received were unsure which suitable care site to go to, but are conscious on using the right site.

Early response to the new initiative has been promising – in particular, during the Omicron surge (Jan-Feb 22), many members of public did not know where to turn to for their questions on Covid, and they contributed to a large increase in NurseFirst's call volume. Given that call volume had not been high before that, nurses had to learn to cope with the increased workload and the stresses it posed on the system, both upstream and downstream. However, much of the feedback we received from callers was positive, given that they had been unable to get through to other Covid hotlines in that busy period.

Proportion of P3 and P4 patients: KTPH and CGH



Proportion of callers recommended to each disposition (Monthly) – as of Dec 24



Collaboration with other EDs, such as NTFGH, allowed NurseFirst to reach more ED-intended callers by placing the hotline on their ED websites. Compared to periods before publishing, there was a 6x increase in calls from these prospective ED visitors.

DISCUSSION

Education and behavioural change is the long term goal of NurseFirst, and callers' intended site of care before calling NurseFirst represents a good opportunity – the high percentage of 30% of callers who were unsure of where to go demonstrates the addressable market for NurseFirst. Without NurseFirst, this group may very well end up in the ED in the long run, but even the mere knowledge that NurseFirst exists can sway such callers to utilize non-emergency services more.

There were challenges in tracing the actual disposition of the callers, since most sites (GPs, self-care, other EDs) did not share a common electronic health record. NurseFirst thus had to make follow-up calls to the callers themselves, to ask them directly where they had visited in the end. Currently, while NurseFirst is styled as a Woodlands service, there is utility for it to be expanded to other areas of Singapore – this will increase in importance as newer models of care arise – more UCCs for example.

Further finessing of protocols and workflows is required and will take place as we go on. As telephone triage inherently over-triages, there is bound to be a larger than expected proportion of callers triaged to visit the ED. This will decrease through case reviews and protocol customizations.

CONCLUSION

As NurseFirst expands nationally, it needs to find a sustainable collection of more data required for efficacy in right-siting callers. It will also need to continue to seek alternatives to EDs, such as more UCCs, or community resources, and to partner with 995 to preserve emergency resources.

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