Project Title

SingHealth Management Dashboard for COVID-19 External Operations

Project Lead and Members

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Organisation(s) Involved

Singapore General Hospital

Healthcare Family Group Involved in this Project

Healthcare Administration

Specialty or Discipline

Organisation Planning & Performance, Strategy Management & Analytics, Process Transformation & Improvement

Project Period

Start date: Apr 2020

Aims

To support the national effort in managing operations across Foreign Workers Dormitories, Swab Isolation Facilities, Community Care Facilities, Mobile Swab Team Operations, and Mass Serology Operations

To facilitate regular pulse checks and coordination was needed to maintain management oversight across all SingHealth involvements, and to right-size manpower deployment

Background

See poster appended / below

Methods

See poster appended / below

Results

See poster appended / below

Lessons Learnt

See poster appended / below

Conclusion

See poster appended / below

Additional Information

Singapore Healthcare Management (SHM) Conference 2021 – Shortlisted Project (Operations Category)

Project Category

Care & Process Redesign, Value Based Care, Operational Management, Data Analytics, Technology, Digital Health, Data Analytics, Product Development

Keywords

COVID-19, Dashboard, Multi-Disciplinary Team

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SingHealth Management Dashboard for COVID-19 External Operations

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INTRODUCTION

When incidences of COVID-19 cases climbed among Foreign Worker Dormitories (FWD) in early April 2020, SingHealth was tasked by the MOH-Joint Task Force (MOH-JTF) to **support the national effort in managing operations** across:

- 15 Foreign Workers Dormitories (FWD)
- 4 Swab Isolation Facilities (SIF)
- 5 Community Care Facilities (CCF)
- Mobile Swab Team Operations
- Mass Serology Operations

SingHealth swiftly deployed new facilities and processes including **medical posts, swab operations and dedicated laboratories.** Information of their setup, workload and test results were spontaneously reported in various frequencies and formats (e.g. inconsistent terminologies in lab results, use of Excel files, formSG, powerpoint slides). A dashboard to facilitate regular pulse checks and coordination was needed to maintain **management oversight across all SingHealth involvements**, and to **right-size manpower** deployment.

METHODOLOGY

The team took an **agile** approach that was suited for the uncertain circumstances and varying skillsets needed for this endeavour.

Inception

A **multi-disciplinary** team was urgently organised to produce a **prototype** dashboard. The priorities were to:

1. Establish the data pipeline
2. Outline the reports and their wireframes, and
3. Test its ease-of-use by end users.

Evolution

The dashboard was refreshed daily at 2pm with the most updated data of the previous day. The preferred medium was the Portable Document Format (PDF), since it could be **accessed by personnel at external sites** using any mobile device. Daily product delivery also meant **frequent user feedback and product refinement**. The team huddled before each refresh was circulated, to ensure data accuracy and discuss any matters arising. By end-April, users and developers **built consensus** that weekly refresh with **drill-downs** by dormitories and 2-weeks trending was useful.

Maintenance

The dashboard was created in Microsoft Excel and Powerpoint. Tapping on widely-used softwares allowed dashboard maintenance by a larger pool of staff on shorter rotations **to prevent burnout**. The dashboard was **semi-automated**: Staff gathered and fact-check data, while macros and templates with dynamic formulas and charts automated data processing and visualisation**.**

RESULTS

Components in this dashboard covered key indicators:

1. On-site demographic and occupancy rate
2. Inflow and outflow of site residents
3. Clinic and swab workload
4. Test results returned
5. Manpower deployed
6. Manpower deployment frequency

The target audience was senior management, area leads and key stakeholders.

The dashboard took two formats. The first provided **daily snapshots**, and was circulated daily (including weekends) to provide continuous up-to-date information **for timely decisions and interventions**. The second was a **weekly dashboard** with **longitudinal 14-day trends**, circulated every Monday to identify changing patterns.
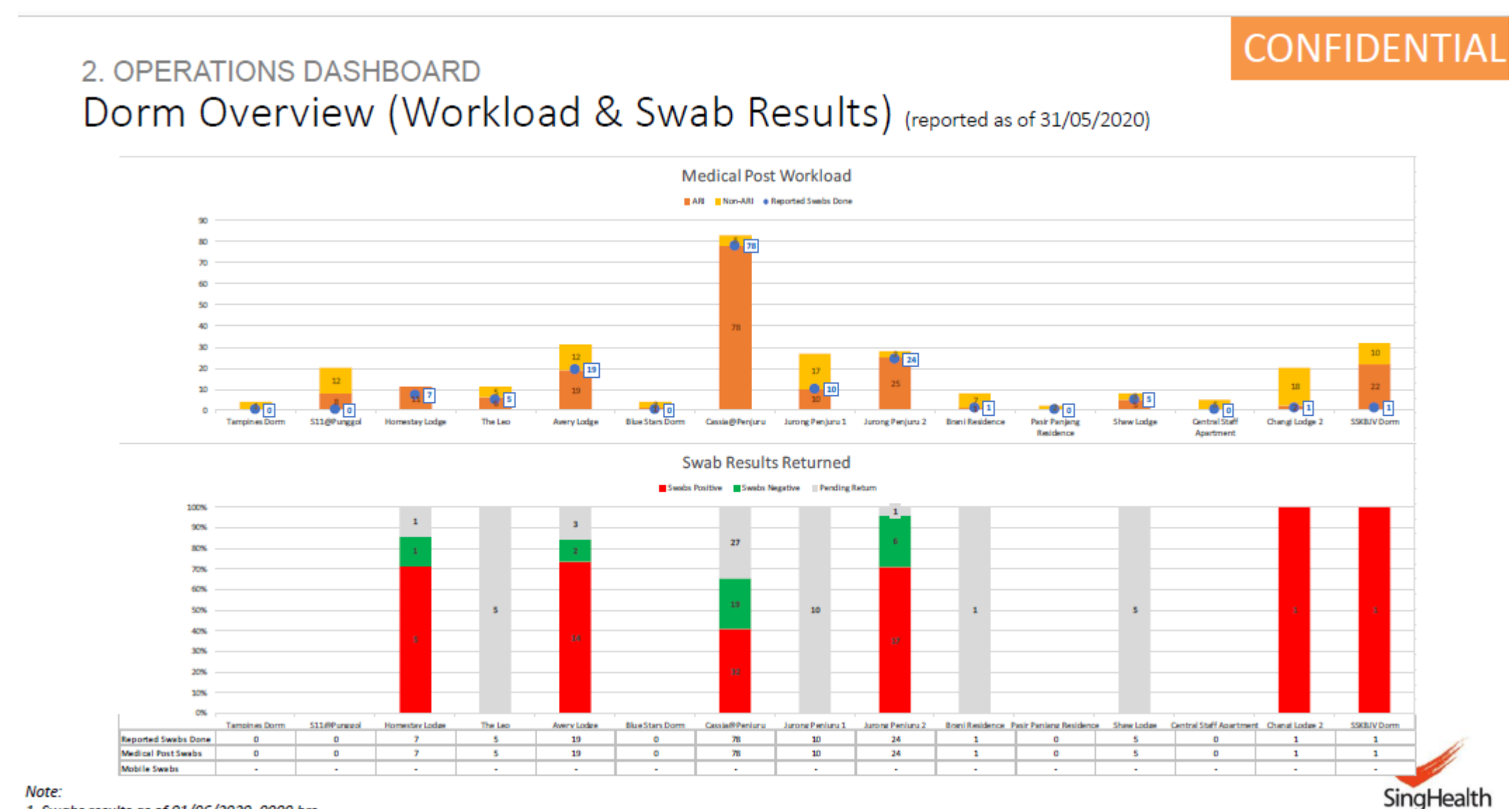

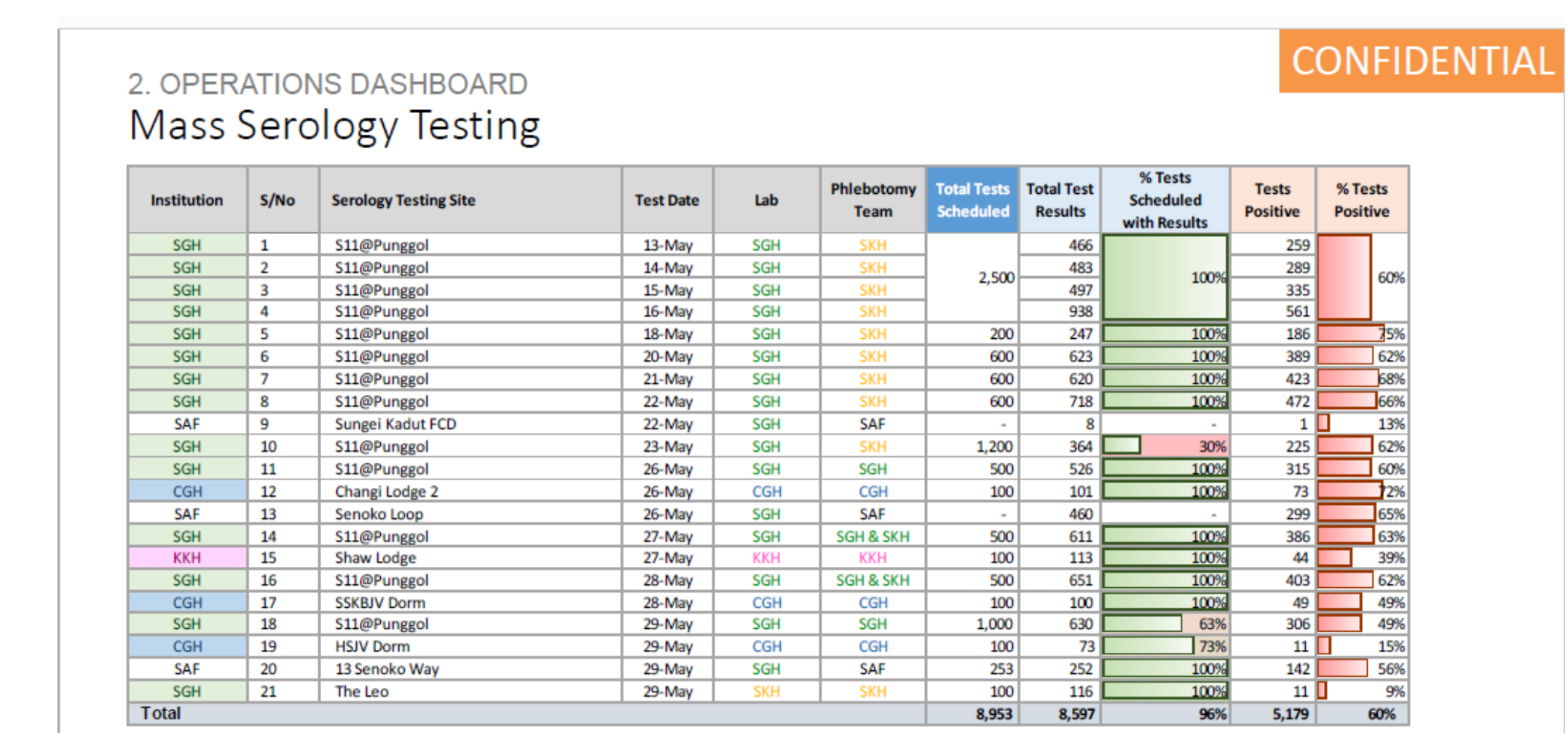Figure 1: Excerpt of Daily Dashboard – Workload & Swab Results

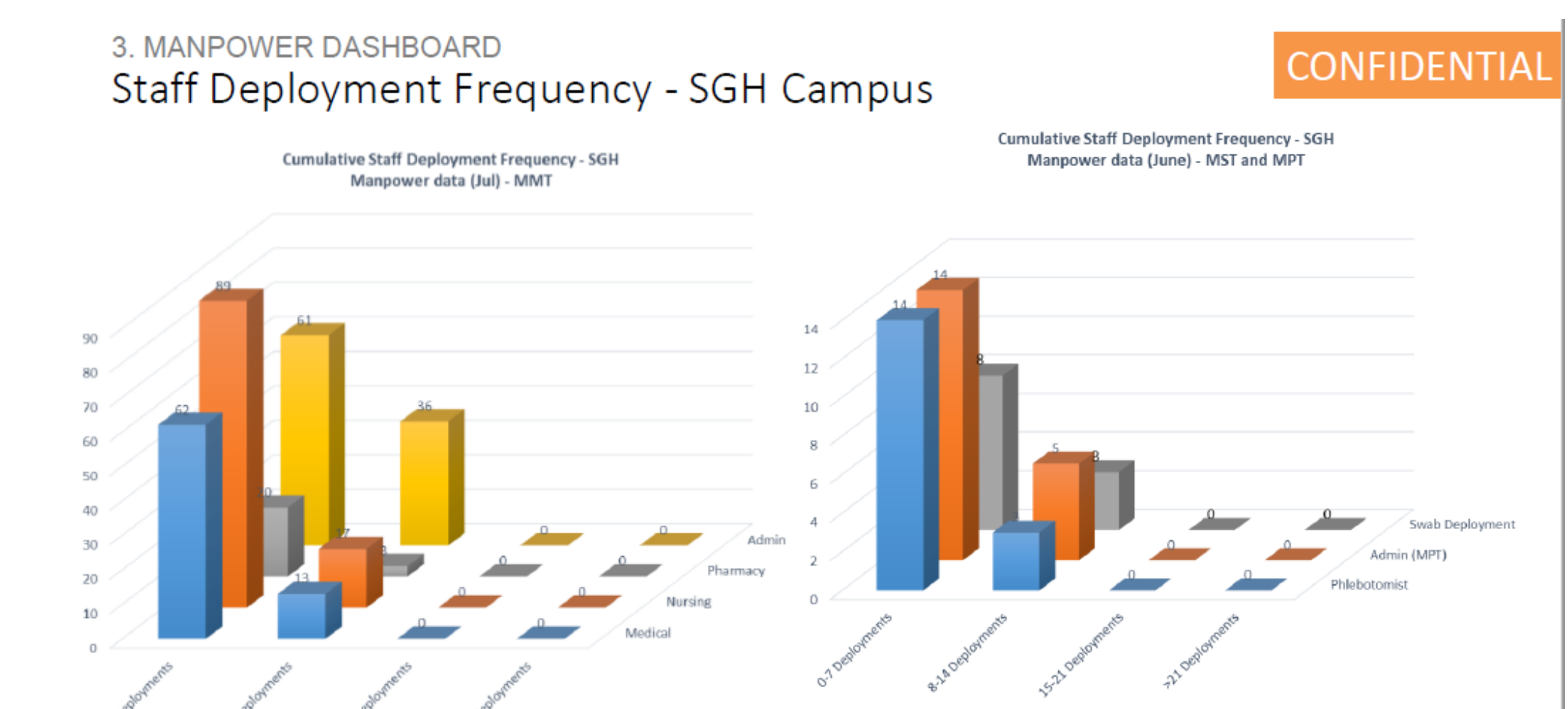Figure 2: Excerpt of Daily Dashboard – Mass Serology Testing

Figure 3: Excerpt of Weekly Dashboard - Staff Deployment Frequency

CONCLUSION

Creation and circulation of the daily and weekly dashboards enabled oversight, planning and active intervention when required. In addition, the tracking of deployment across professional groups allowed for appropriate deployment protocol that is streamlined and provides visibility to prevent burnout.