



## Innovating a community healthcare coordination platform:

## Move fast and move together

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Director, Digital Health Innovation & Enablement, Digital Health Solutions

*Western Sydney Local Health District*



Westmead  
Health Precinct

→  
CHILDREN'S  
EMERGENCY

→  
ADULT  
EMERGENCY

# Acknowledgement of Country



*“I would like to acknowledge the traditional owners of the land we are meeting on and remind people that we are on Aboriginal land.*

*I also acknowledge the Elders past present and emerging as well as all Aboriginal and Torres Strait Islander people attending today’s event”*



## Agenda – What we will be talking about today

Innovating a community healthcare coordination platform: Move fast and move together

A brief case study into an Innovation Project:

- 1. Problem Statement & Mission Overview**
- 2. MVP Objectives**
- 3. New Way of Working – The Journey**
- 4. Solution – Platform & Products**
- 5. Lesson Learnt & Takeaways**
- 6. Acknowledgements**

Opener...

Innovating a community healthcare coordination platform: Move fast and move together



# What is your innovation mindset?





# How would you describe YOUR innovation mindset?

Quiz question    98 answers    98 participants

Openness to Change - 43 answers



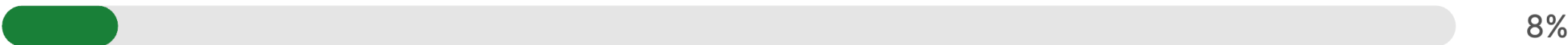
Curiosity and Continuous Learning - 67 answers



Embracing Failure and Taking Risks - 21 answers



Disruptive - 8 answers



I'm not a fan of Change - 0 answers

# Problem Statement

Innovating a community healthcare coordination platform: Move fast and move together



## Health Challenges

1. Covid Cases on the Rise 📈 during 2021
2. **Integrated Community Health** challenges managing COVID+ Patients in the Community and at Home 🏠
3. Following spike and high caseloads in COVID in community outreach Jul '21, **need** for a **technology enabler** to enhance use of clinical systems to manage **COVID clinical workflows**
4. We learnt from use of CHOC eMR to focus in on **pain points** (eMR CHOC Build Opportunities vs. new inTouch MOC)
5. Engagement on an innovation leap of faith opportunity via a **strategic partnership** with industry vendors

## Problem Statement – Cont'd

Innovating a community healthcare coordination platform: Move fast and move together



### Digital Challenges

1. Need to quickly set up a **scalable application** to assist clinicians
2. **Overload** of eMR Production environment and performance
3. **Access + unlock** data in system of record (near real time)



## Mission Overview: What we did...We built an App

Innovating a community healthcare coordination platform: Move fast and move together



1. **Oct '21 – Dec '21** Discovery, **Integrated Community Health** requirements to formulate a Business Case i.e. Statement of Works
2. Develop a **Minimum Viable Product** in under 8 week of design and development and take **Digital Health Solutions, Integrated Community Health** and WSLHD on a journey
3. Stood up a **organic high performing team** from **Digital Health Solutions** with different streams (Clinical Applications, Solution Architecture, Data Analytics, Project Governance)
4. Adopt an **Agile Project Methodology** and a **NWOW**, test the boundaries of collaboration via a truly **multidisciplinary** approach
5. Forge **new partnerships**, alliances, service models (**Integrated Community Health, Digital Health Solutions, Microsoft, eHealth**)



Microsoft

# The Opportunity

Innovating a community healthcare coordination platform: Move fast and move together



## 3 Three-way partnership of collaboration

- Late 2021 the **Digital Health Solutions** project team engaged with **Integrated Community Health** to establish how we could assist inTouch Covid Community Care with **improving** their systems and processes.
- **Integrated Community Health** inTouch COVID-19 Model of Care gave us a canvass to **ideate** and **innovate**
- Innovate in a **LEAN** and **AGILE** manner to build a **Minimum Viable Product**  
→ taking risk to explore **new capabilities** (Cloud Computing Infrastructure / Components, New eMR System Integrations)
- **Near-real time** eMR data accessible for Data Analytics



inTouch COVID Care  
in the Community

MODEL OF CARE

September 2021



# The Journey – Sprinting an MVP

Innovating a community healthcare coordination platform: Move fast and move together



- Collaboration of Microsoft, the WSLHD project team reviewed the **current workflows, infrastructure, and pain points** to identify ways we could improve productivity, accessibility and reportability of inTouch service.
- **70+** User Stories (Product Features) collected, **66+** Backlogged (Future Roadmap)
- **32 Prioritised** to build into a **Minimum Viable Product (MVP)**
- **Under < 8-13** weeks of development time from design to prototype
- Focus on building **capability, usability** and **flow**
- **MVP application:**
  1. **Client List**
  2. **Scheduling**
  3. **Data Analytics Dashboards**



## Realising Benefits

Innovating a community healthcare coordination platform: Move fast and move together



Integrated with the eMR and support our **Integrated Community Health** services. Focus on pain points or gaps.

Some of the short- and long-term benefits include:

1. Improving access to **timely data-driven insights**
2. Improving **patient engagement & experience**
3. Inclusion and **digital connectedness**
4. **Simplifying and automating processes** that facilitate more efficient engagement and monitoring of remote protocols
5. **Integrating multiple data sources** incl. EMR, the patient flow portal, and IoT devices
6. Providing **capability and scalability** of products and platform

## Building Foundations

### What's in capability set?



#### What's in capability set?



#### Skills

##### Notable skills from the MVP

- **Agile** delivery, and a focus on business outcomes,
- Effective **co-innovation** and **skills** transfer to empower in-house delivery

#### Functionality

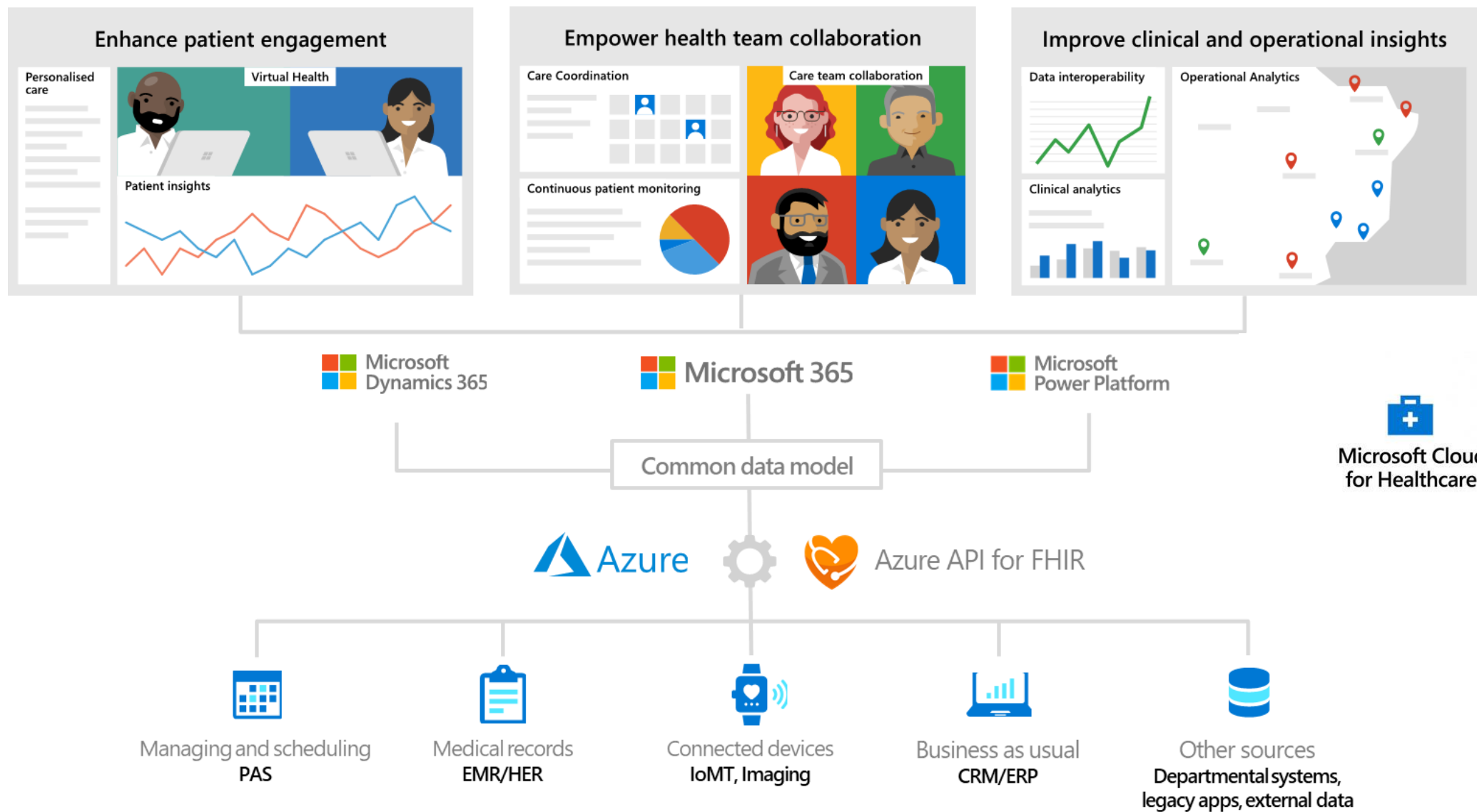
##### Notable functionality as part of the 1<sup>st</sup> MVP

- **Liberating data** by **integration** with the EMR.
- Defining care plan workflow templates.
- **Dashboards** and other **visualization** improvements that have reshaped the staff experience

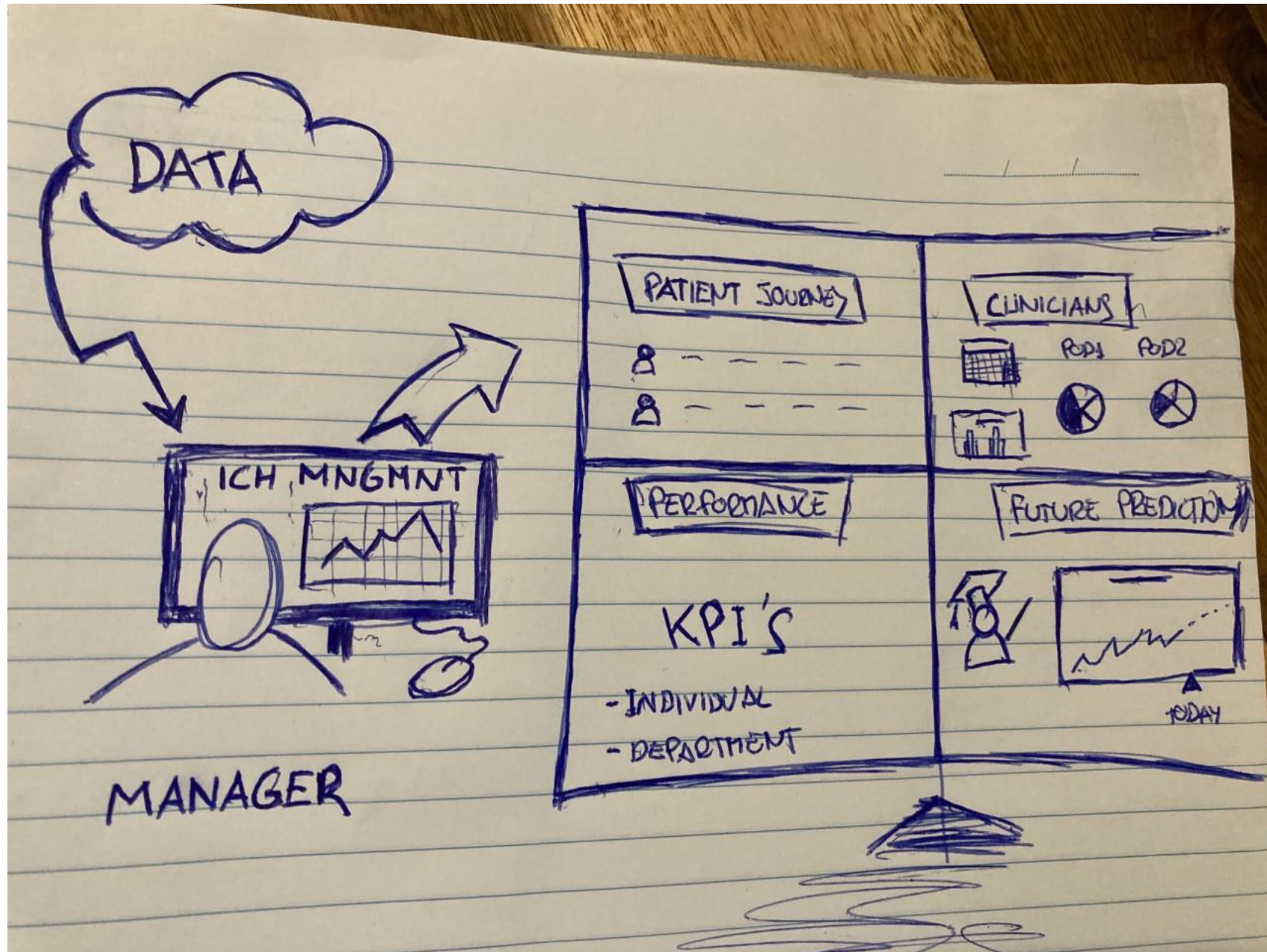
#### Technology

##### Key technology deployed within the 1<sup>st</sup> MVP

- An **integration to Cerner** that is extensible, allowing for more value from clinical data beyond the EMR.
- A **FHIR-based interface**, a key building block for future interoperability including Internet of Medical Things use cases.



# Inspiration & Early Wireframing





The screenshot shows the AWS IAM console 'Groups' page. The 'AWS-ReadOnlyAccess' group is highlighted in yellow. The 'Permissions' tab is selected, showing a list of permissions. The 'AWS-ReadOnlyAccess' group is highlighted in yellow.

[illegible]

**Team Leader Clinical**

change this please

**COVID InTouch** | Margaret Chang  
Case | COVID Encounters

**Summary** | Review | Follow Up | Related

**Encounter Details**

Case Title: COVID InTouch 20210111 - Margaret Ch...

Case ID: CAS-012021-MA620V1

Patient: Margaret Chang

Case Type: InTouch COVID

Is New Case: Yes

Opened by POC: WSHAD-F00-1

Owner: Click Top

**Timeline**

12 Phone Call from Clinic Top  
Data Review Call - 20210114 - Margaret Chang  
Data Review Call - 20210114 - Margaret Chang

**Important Information**

Discontinuation Risk (COVID) Low / Medium

Medication Review (COVID) Updated for M...

Flag Admin / High Risk (COVID) Under Review

Ref Score (COVID) 0.07

Workstation 2 / Desk 1 and Desk One West Yes

Need Evaluation (COVID) Yes

Testing Positive Date 11/10/2021

Journey Day (COVID) 3

Estimated Discharge Date 25/10/2021

**Review And Follow Up (4 Hrs)**

Active for 8 hours

Discontinuation Risk Low / Medium

Medication Review Updated for M...

Status Updated for M...

Ready for Clearance No

Medication Review

**Patient Details**

First Name Margaret

Last Name Chang

Gender Female

Date of Birth 23/01/1960

Phone Home 544 5454 0889

Mobile 5405788014

Email margaret.chang@inTouch.com

Street 118

Church Street

Suburb Panmure

State NSW

Postcode 2150

**Early Morning 8 AM to 10 AM**



## Demographics

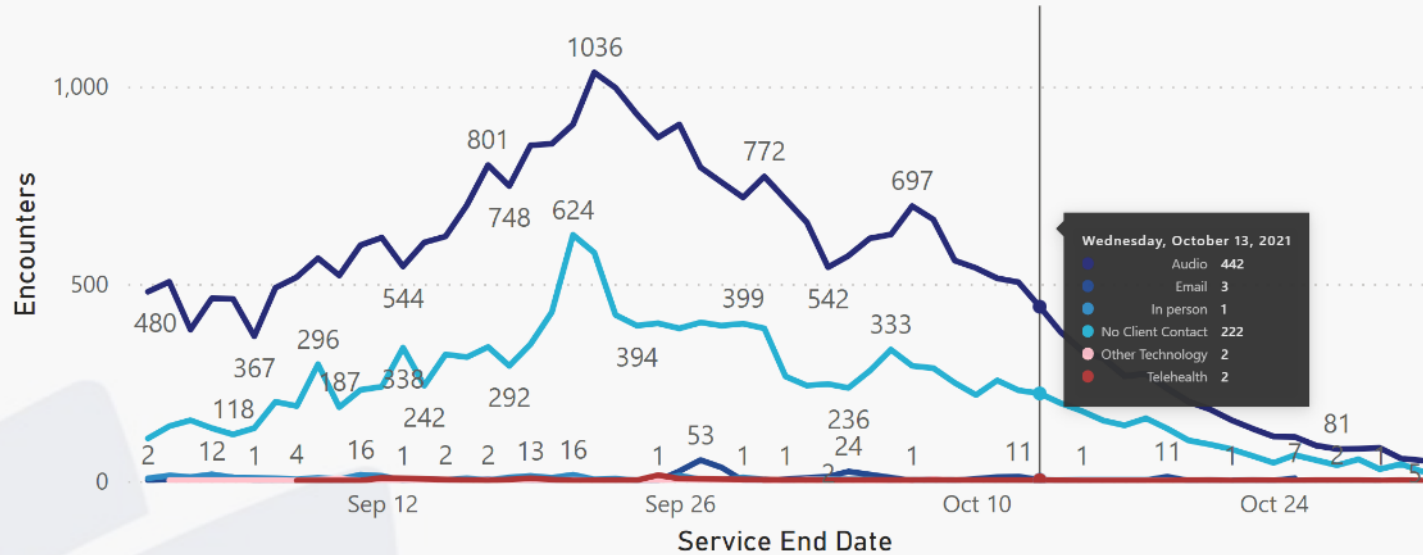
## Modality

## Productivity

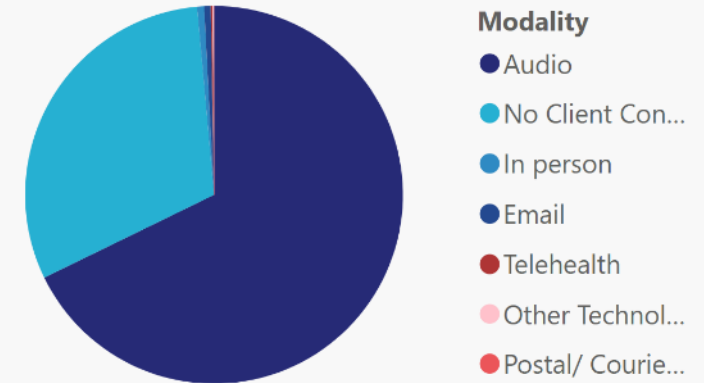
### Provider

All

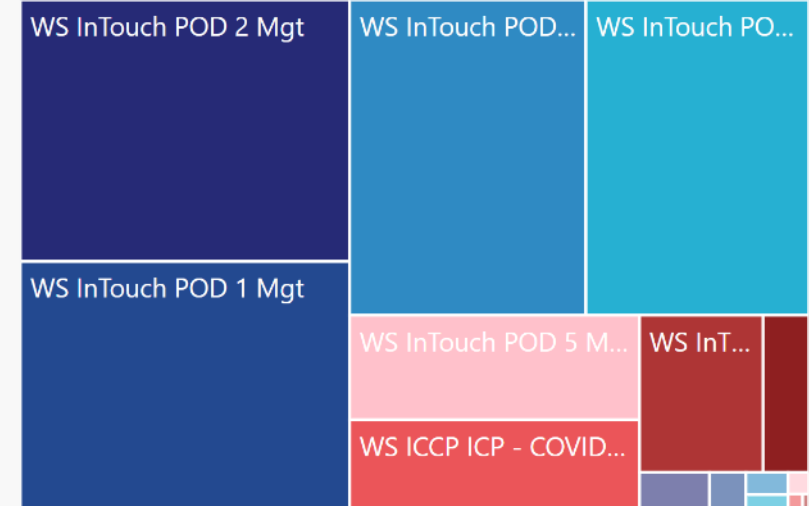
Encounters by Service End Date and Modality



Encounters



Modality	OOS	Encounters	Clients
Audio	31152	10759	8231
No Client Contact	14151	5711	4887
In person	274	260	259
Email	256	251	250
Telehealth	71	51	50
Other Technology	54	47	46
Postal/ Courier Service	3	3	3
Total	45961	11465	8649





Overall

Powerforms

Clinician

## Totals

6917

COVID-19 Initial Assessment

14.48K

COVID-19 Review

10.84K

Contact Attempts

16.02K

ACC Progress Note

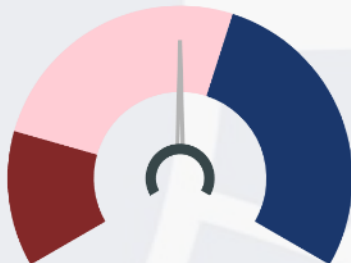
26.45K

ACC Service Event

77.14K

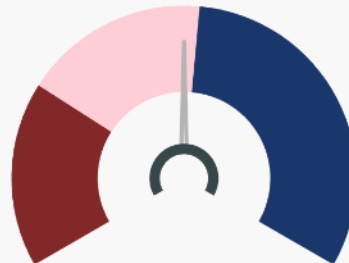
Powerforms and Povernote...

## Averaged



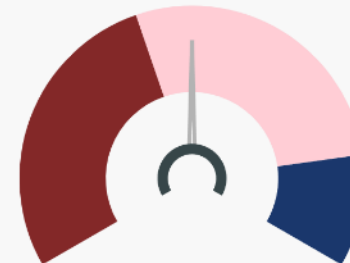
5.23

Review Powerforms per  
discharge patient



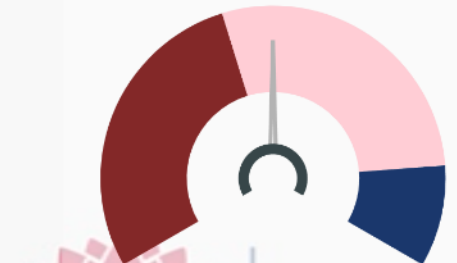
7.67

Review Powerforms per  
active patient



3.56

Contact Attempts Powerforms  
per discharged patient



2.33

Contact Attempts Powerforms  
per active patient



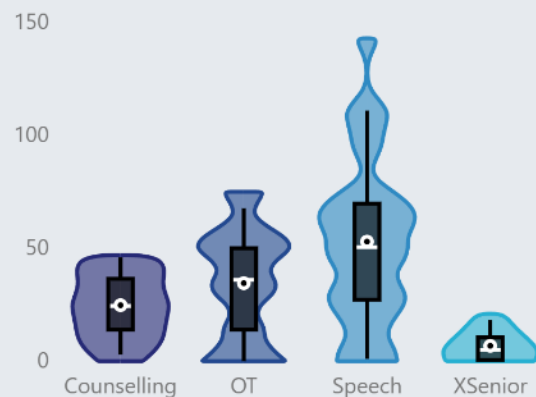


Team

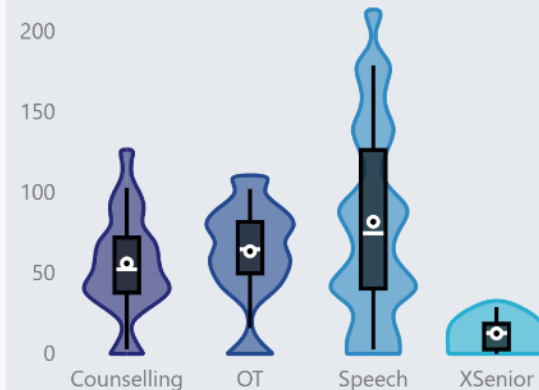
- Counselling
- OT
- Speech
- XSenior

- Median
- Mean

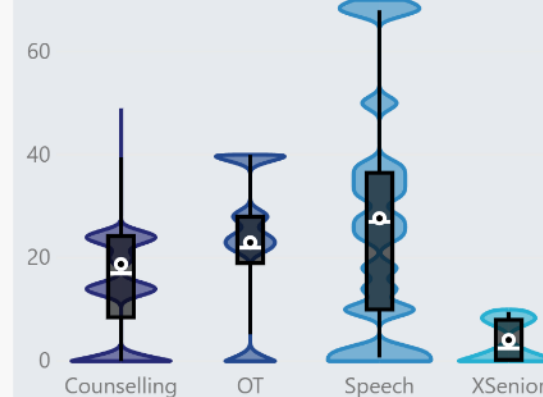
## App SE [pc]



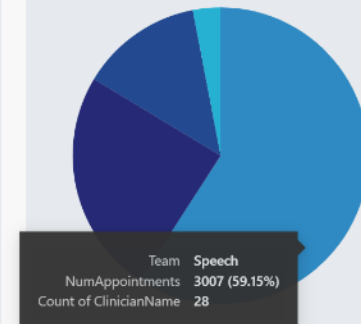
## App Scheduler [pc]



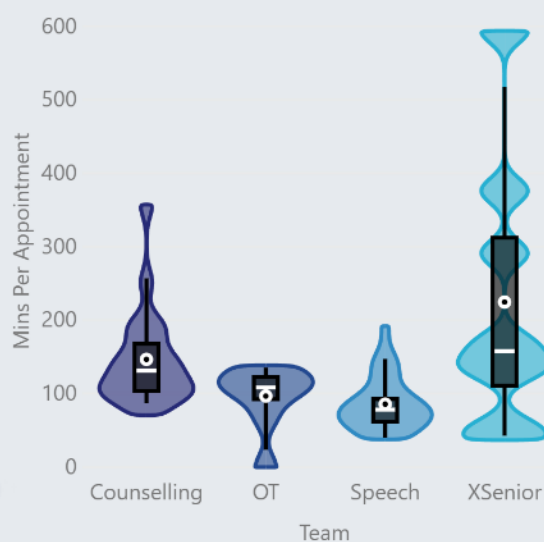
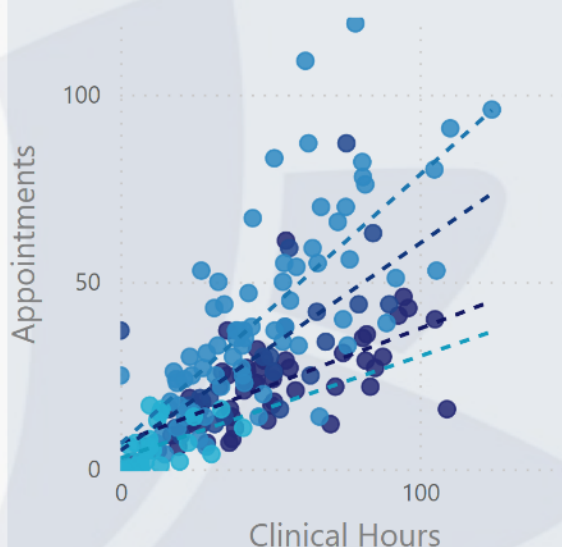
## Cancel & NS [pc]



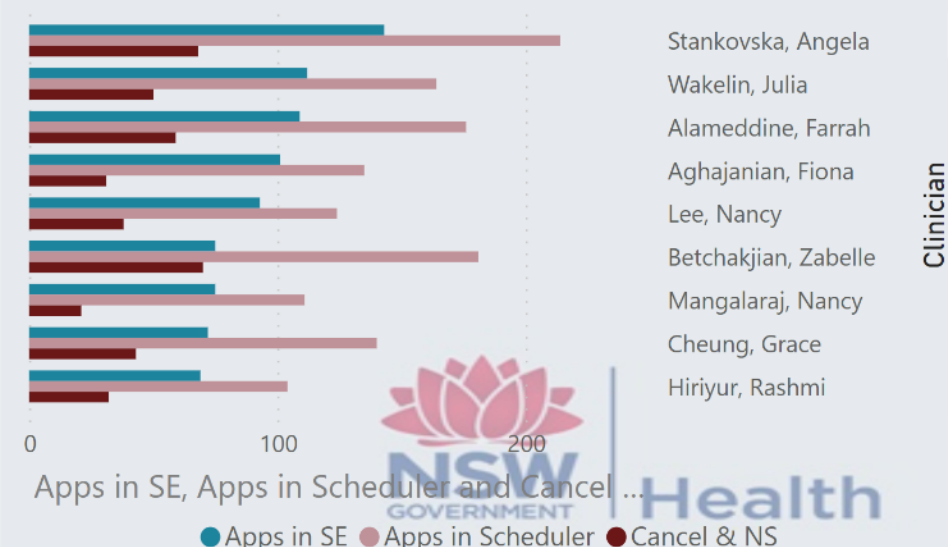
## Total Numbers



## Time per App



## App by Clinician



Stankovska, Angela  
Wakelin, Julia  
Alameddine, Farrah  
Aghajanian, Fiona  
Lee, Nancy  
Betchakjian, Zabelle  
Mangalaraj, Nancy  
Cheung, Grace  
Hiriyur, Rashmi

Clinician

Apps in SE, Apps in Scheduler and Cancel ...

● Apps in SE ● Apps in Scheduler ● Cancel & NS



Health



46.21K

Total Service Events (OOS)

12.18K

Encounters



## Demographics

## Modality

## Productivity

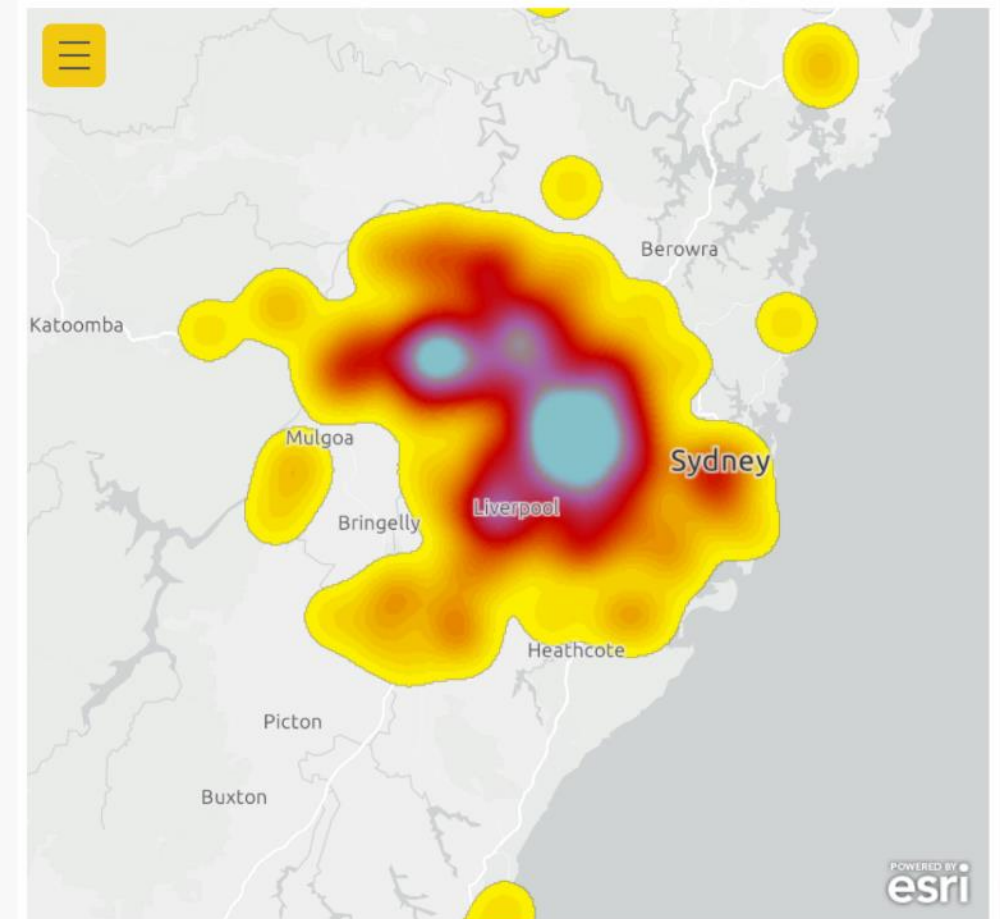
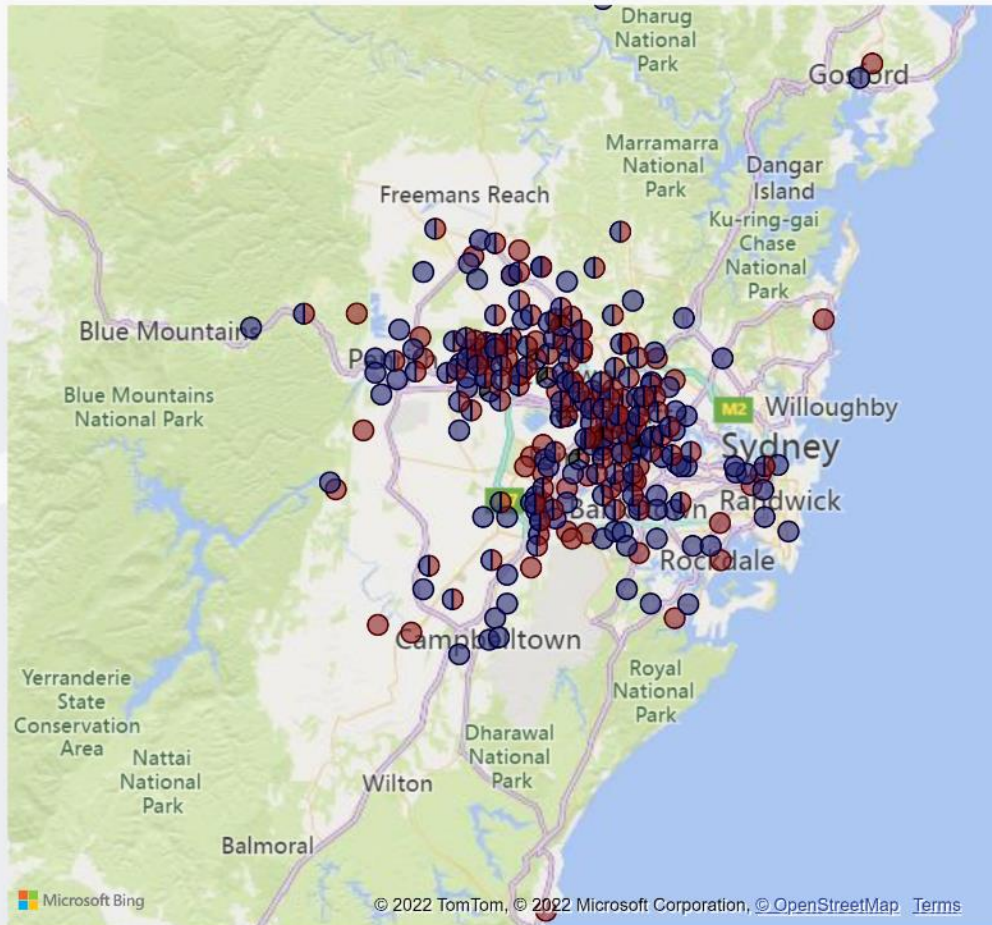
Date range

8/16/2021

10/31/2021



GENDER ● Female ● Male ● Unknown



# EARLY RAPID PROTOTYPING – 1

Dynamics 365

Care Management

Home

Recent

Pinned

InTouch

COVID Encounters

Review / Follow-ups

POD

Patient

Scheduling

Schedule Board

POD Roster

Administration

Analytics

POD Administration

IA

InTouch Admin

Save & Close

Save & Route

New

Save

Create Child Case

Convert to Work Order

Cancel Case

Add to Queue

Queue Item Details

Assign

Do Not Decrement En...

COVID InTouch 20211011 - Margaret Chang

Case · InTouch COVID Encounters

11/10/2021 2:09 AM

Created On

InTouch Patient Pathway

Active for 43 hours

Registered

Initial Assessment

Review And Follow Up (8 Hrs)

Clearance

Summary

Review / Follow Up

Related

Encounter Details

Case Title · COVID InTouch 20211011 - Margaret Ch...

ID · CAS-01021-M4G0V1

Patient · Margaret Chang

Case Type · InTouch COVID

Is New Case · Yes

Owned by POD · WSLHD-POD-1

Owner · Clare Yap

Timeline

Search timeline

Enter a note...

Phone Call from Clare Yap

Daily Review Call - 20211014 - Margaret Chang

Daily Review Call - 20211014 - Margaret Chang

Active

5:48 PM

Important Information

Deterioration Risk (COVID) · Low / Medium Risk

Patient Movement Status (COVID) · Escalated for MO review

Flag Actions / High Risk (COVID) · Uncontactable - for welfare check

RoH Score (COVID) · 0.07

Vaccinated 2 Doses / 2nd dose One Week (COVID) · Yes

Need Escalation (COVID) · No

Testing Positive Date (COVID) · 11/10/2021

Journey Day (COVID) · 3

Estimated Discharge Date · 25/10/2021

Preferred Contact Window (COVID) · Early Morning 8 AM to 10 AM

Review And Follow Up (8 Hrs)

Active for 8 hours

Deterioration Risk · Low / Medium

Need Escalation · No

Patient Movement Status · Escalated for MO

Ready for Clearance · No

Next Stage

Margaret

Chang

Female

23/01/1960

5454 54545 3

Home Phone · 02 8686 8899

Mobile Phone · 0450789654

Email · margaret.chang@outlook.com

Street · 159

Church Street

---

Suburb · Parramatta

State · NSW

Postcode · 2150

Save

# EARLY RAPID PROTOTYPING – 2

Dynamics 365

Care Management

Home

Recent

Pinned

InTouch

COVID Encounters

Review / Follow-ups

POD

Patient

Scheduling

Schedule Board

POD Roster

Administration

Analytics

POD Administration

IA

InTouch Admin

COVID InTouch 20211011 - Margaret Chang

Case · InTouch COVID Encounters

11/10/2021 2:09 AM  
Created On

InTouch Patient Pathway

Active for 43 hours

Registered

Initial Assessment

Review And Follow Up (8 Hrs)

Escalation Plan

Clearance

Summary

Review / Follow Up

Related

Timeline

Search timeline

Enter a note...

Phone Call from Clare Yap

Daily Review Call - 20211014 - Margaret Chang

Daily Review Call - 20211014 - Margaret Chang

Active

5:48 PM

Phone Call from Clare Yap

Daily Review Call - 20211013 - Margaret Chang

Daily Review Call - 20211013 - Margaret Chang

Active

5:46 PM

Phone Call from Clare Yap

Daily Review Call - 20211012 - Margaret Chang

Daily Review Call - 20211012 - Margaret Chang

Active

5:40 PM

Phone Call from Clare Yap

Daily Review Call - 20211012 - Margaret Chang

Daily Review Call - 20211012 - Margaret Chang

Closed

3:34 PM

Auto-post on WSLHD-POD-1

COVID InTouch 20211011 - Margaret Chang was added to W...

11/10/2021 9:26 PM

Testing Positive Date (COVID)

11/10/2021

Journey Day (COVID)

3

Estimated Discharge Date

25/10/2021

Preferred Contact Window (COVID)

Early Morning 8 AM to 10 AM

Preferred Contact Language (COVID)

Mandarin

Interpreter Requirement (COVID)

No

Patient Registered in CHOC (COVID)

Yes

Initial Intake Triage Assessment Completed (COVID)

Yes

Notification Received (COVID)

Yes

Ready for Clearance (COVID)

No

No. of Overdue Review Calls

---

Street

159

Church Street

---

Suburb

Parramatta

State

NSW

Postcode

2150

Save & Close

Save & Route

New

Save

Create Child Case

Convert to Work Order

Cancel Case

Add to Queue

Queue Item Details

Assign

Do Not Decrement En...

Save

## DYNAMIC PATIENT LIST

Home

Recent

Pinned

Care Scheduling

Schedule Board

Scheduled Appointment...

Care Planning

Patients

Encounters

Care Plan Activities

Team Management

Clinicians

Time Off Requests

Care Templates

Plan Templates

Save

Save & Close

New

Open org chart

Deactivate

Connect

Add to Marketing List

Assign

Delete

Refresh

Check Access

AL

- Saved

Patient

General

Vaccination Status

Equipments

Notes & Activities

Conflicts Tab

Related

Deceased Indicator

No

Deceased Date

---

Covid 19 Vaccination Doses

14

Contact Methods

Preferred Contact Time

---

Contact Method

---

Email

Allow

Consent For SMS

---

Email Address

---

Mobile Phone

Home Phone

Business Phone

---

Address Line 2

---

Suburb

Dharruk

State

NSW

Postal Code

2770

Get Directions

NSW 2770

Dharruk

Latitude

-33.74621

Longitude

150.81905

Description

Cough

Dizzy standing up

Pt symptom of nausea

1 - 3 of 3

- Home
- Recent
- Pinned

Care Scheduling

- Schedule Board
- Scheduled Appointment...

Care Planning

- Patients
- Encounters
- Care Plan Activities

Team Management

- Clinicians
- Time Off Requests

Care Templates

- Plan Templates

POD 1 : POD 2 : +

Filters Hourly Gantt 12/06/2023 - 18/06/2023 Book

jo

Tuesday - 13/06/2023

8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM

Joanne Medlin  
(0m booked) 0%

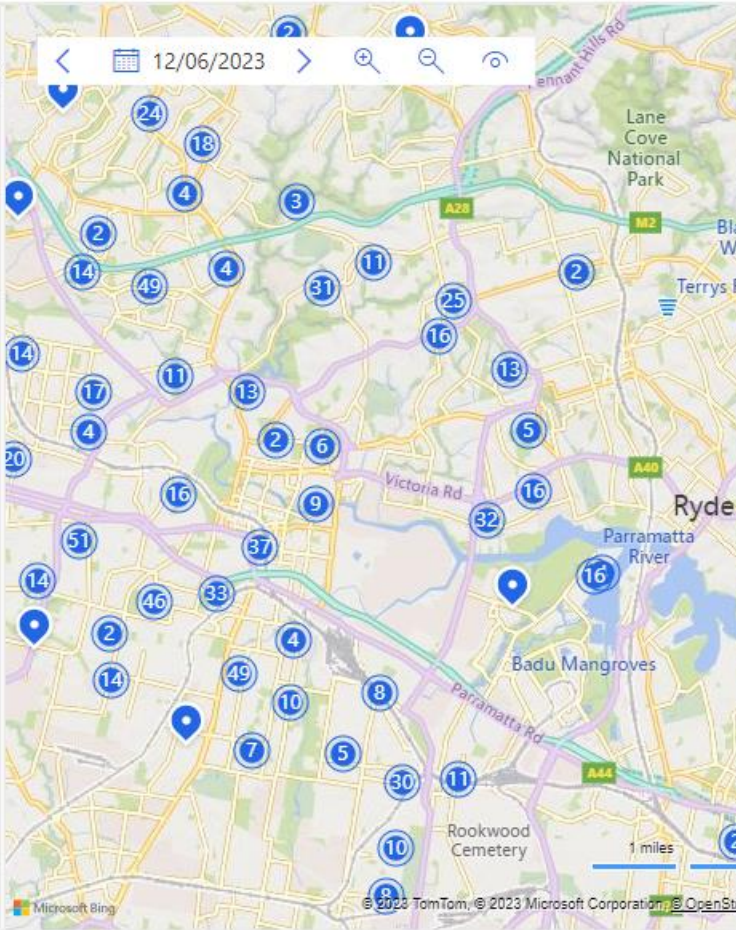
Katia Joseph  
(0m booked) 0%

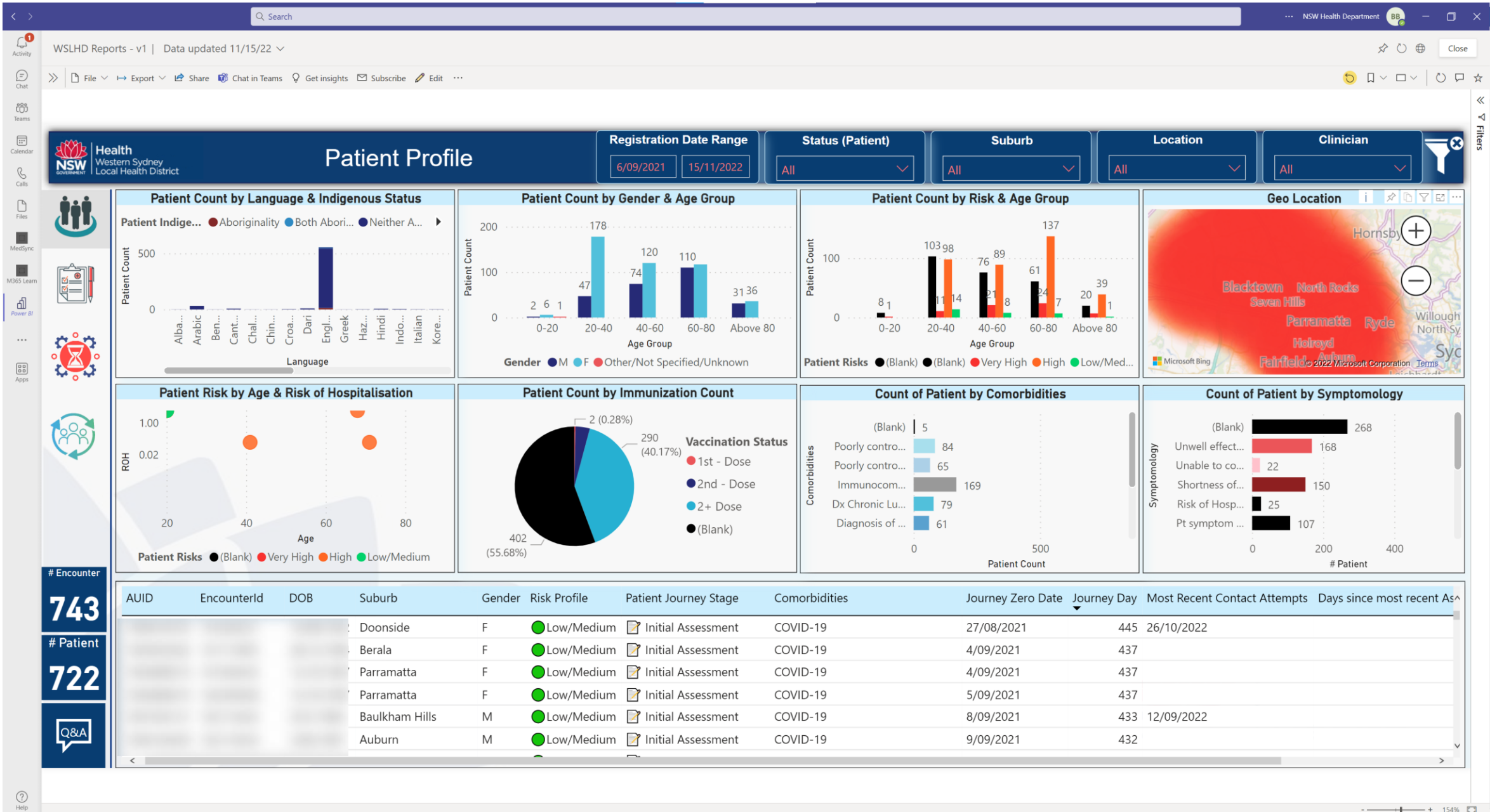
1 - 2 of 2

100

All Open Activities All Activities for Today All Activities for Tomorrow All Activities for the Next Week

Name	Patient	Activity Start Date	Interpreter Booked	Interpreter Booked DateTime	Contact Window
		18/07/2022	No		
		03/07/2022	No		
		11/06/2022	No		





# Documentation

Registration Date Range

6/09/2021

15/11/2022

Status (Patient)

All

Location

All

Clinician

All



# Encounter

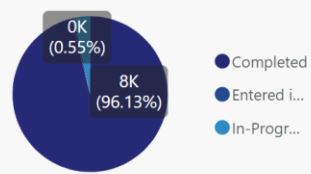
743

# Patient

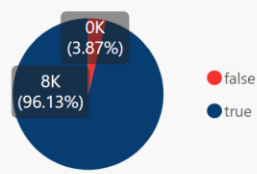
722



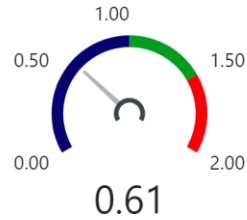
## Powerform Status



## Signed / Unsigned



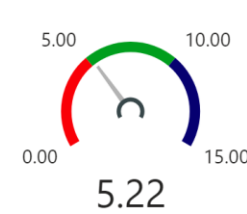
## AVG of Initial Assessment



## AVG of Review Assessment



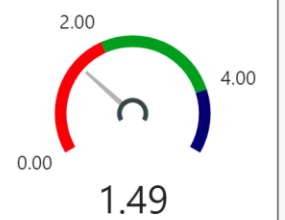
## AVG of Service Event



## AVG of Contact Attempts



## AVG of Progress Note



## # Powerform

8794

## # Powernote

(Blank)

## # Occasion of Service

4846

## # Initial Assessment

437

## # Review Assessment

2285

## # ACC Service Event

3771

## # Contact Attempts

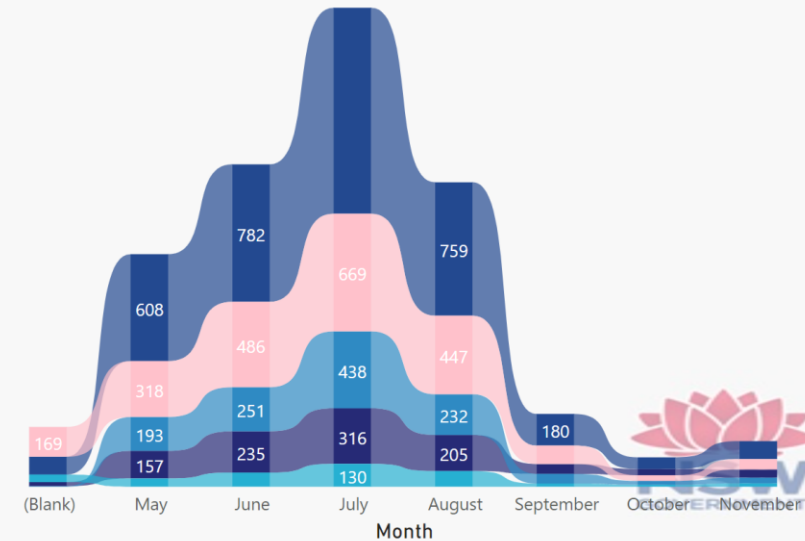
1226

## # ACC Progress Note

1075

Form Name	Form Id	AUID	Location	Created On	Modified On
Aged & Chronic Care Progress Note V3				6/11/2022	6/11/2022 10:3
Aged & Chronic Care Progress Note V3				24/08/2022	24/08/2022 11
Aged & Chronic Care Progress Note V3				24/08/2022	24/08/2022 11
Aged & Chronic Care				15/08/2022	15/08/2022 10

## Powerforms Count by Date & Type



## Powerform Names

- Aged & Chronic Care Progress Note...
- Aged & Chronic Care Service Event ...
- Contact Attempts
- COVID-19 Community Chronic Care...
- COVID-19 Community Chronic Care...

# Patient Flow

Registration Date Range

6/09/2021

15/11/2022

Status (Patient)

All

Risk Level

All

Location

All

Clinician

All



Referral To Registration (Days)



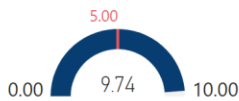
Registration To Today (Days)



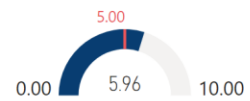
Registration To IA (Days)



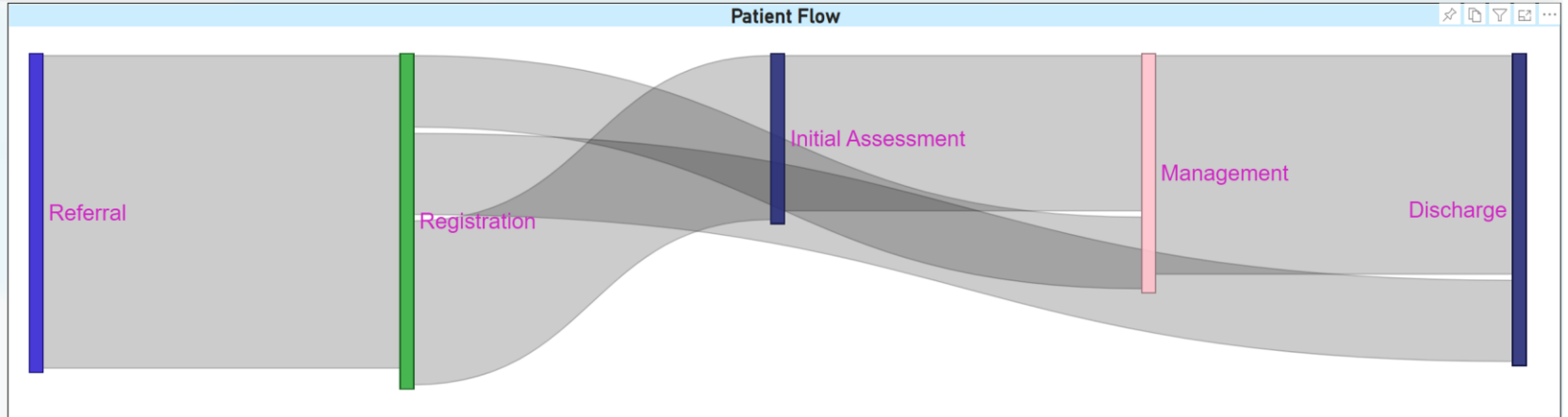
Registration To Discharge



Registration To OOS (Days)



Patient Flow



Patient Journey

AUID	EncounterID	Day	J0	J1	J2
		15	🔥 Registered, 🚑 Covid +ve, 📄 Initially Assessed, 🏠 Referred	🔍 Review Assessment	🔍 Review Assessment
	6		🔥 Registered, 🚑 Covid +ve, 🏠 Referred	🔍 Review Assessment	🔍 Review Assessment
	10		🚑 Covid +ve	🔥 Registered, 🏠 Referred	📄 Initially Assessed
	5		🚑 Covid +ve		
	2		🚑 Covid +ve	🔥 Registered, 📄 Initially Assessed, 🏠 Referred	👤 Discharged
	5		🔥 Registered, 🚑 Covid +ve, 🏠 Referred	📄 Initially Assessed	🔍 Review Assessment
	8		🔥 Registered, 🚑 Covid +ve, 🏠 Referred	📄 Initially Assessed, 📞 Contact Attempted	🔍 Review Assessment
	7		🔥 Registered, 🚑 Covid +ve, 🏠 Referred	📄 Initially Assessed, 📞 Contact Attempted	
	0		🔥 Registered, 🏠 Referred, 👤 Discharged		
	7		🚑 Covid +ve		🔥 Registered, 🏠 Referred
	6		🚑 Covid +ve	🔥 Registered, 📄 Initially Assessed, 🏠 Referred	
	6		🚑 Covid +ve	🔥 Registered, 📄 Initially Assessed, 🏠 Referred	🔍 Review Assessment
	4		🚑 Covid +ve	🔥 Registered, 📄 Initially Assessed, 🏠 Referred	🔍 Review Assessment

# Encounter

743

# Patient

722



# Lessons Learnt & Insights

Innovating a community healthcare coordination platform: Move fast and move together



1. Being a **trail blazer** requires **innovative** thinking, **opportunities** and **growth culture** from all stakeholders
2. Adopting an **AGILE** and a **Digital Health Solutions / Integrated Community Health Multidisciplinary Team** approach results quickly with **high value buy-in** and **engagement**
3. **Prototyping** can help showcases what works and what doesn't very quickly (i.e., Weeks) e.g., FHIR integration, enriched visualized Data Analytics capability / common data reference model, Enterprise Scheduling, elastic cloud compute.
4. Technical Jargon **Translation** → Dev Ops to clinical business '**real talk**'
5. Data Analytics insights is a **MUST HAVE upfront NOT** an afterthought function
6. **Great Executive Sponsorship** can and will move mountains 🏔️

# Acknowledgements

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“Alone we can do so little, together we can do so much. Simple yet so true” Michelle Gabriel 14/2/22

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# Thank You

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