

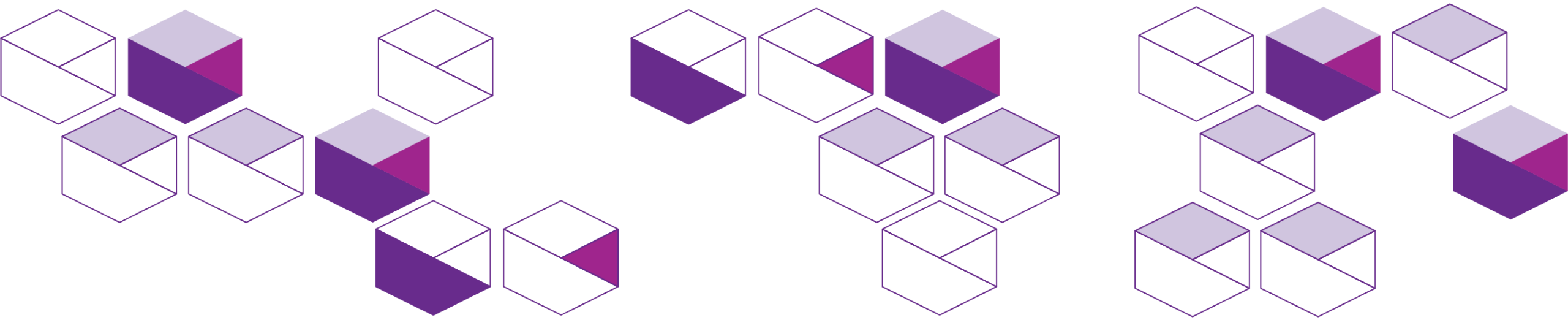


Government of **Western Australia**  
**South Metropolitan Health Service**

# Virtual Care in Immunology

Using Available Technologies to Improve Access to Care

Dr Dominic Mallon, Clinical Immunologist, Fiona Stanley Hospital



# Case study – Patient KT

Patient KT was an 86-year-old, previously well retired farmer from Denmark.

## **Presenting condition PC:**

Systemic Illness

## **History of Present Illness HPI:**

Polymyalgia, fevers, sweats, abnormal chest x-ray (CXR) (? Community-acquired pneumonia (CAP)), elevated inflammatory markers; anorexia, weight loss (10% pre-morbid weight). No response to repeated courses of antibiotics.

Midstream Specimen of Urine MSU bland, (N) renal function; no central nervous system / sinus involvement

## **Infliximab Inx:**

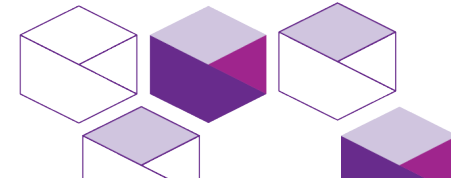
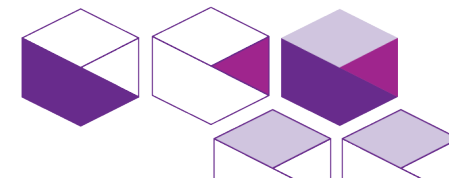
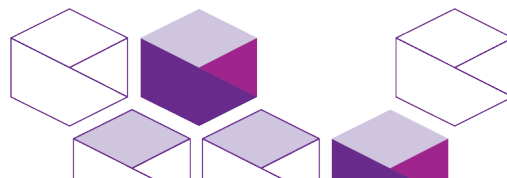
Strongly positive myeloperoxidase anti-neutrophil cytoplasmic antibodies (MPO-ANCA).

## **Assessment:**

MPO-ANCA+ vasculitis

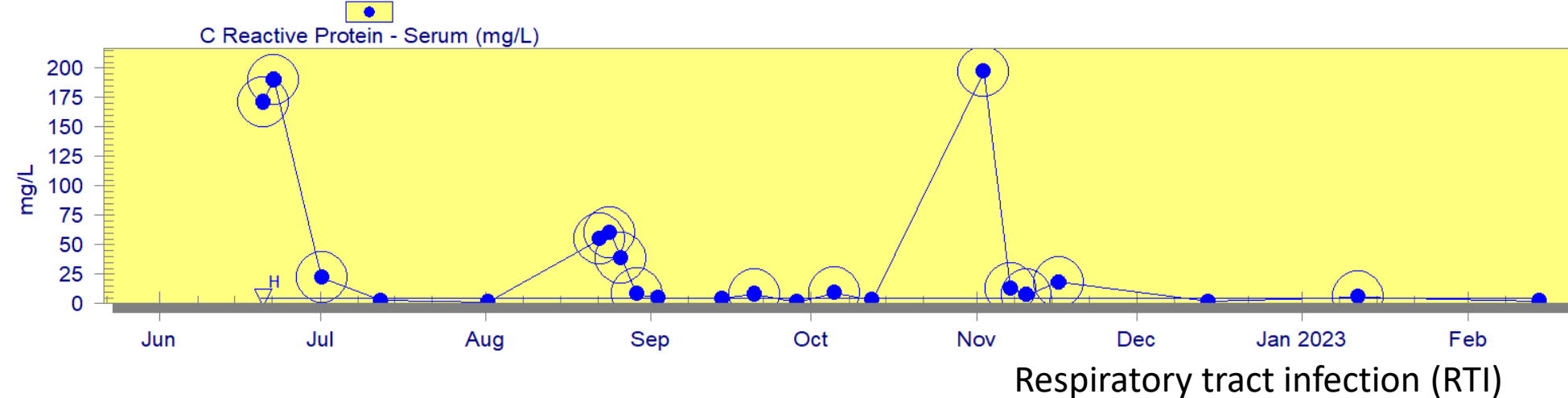
## **Management:**

Oral cyclophosphamide 1gm / kg

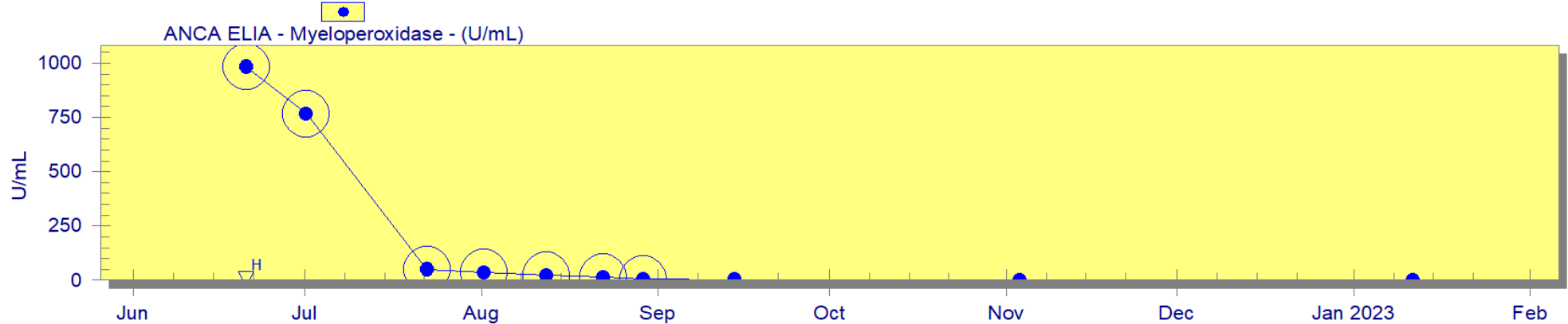


# Case study – Patient KT: Progress

## C Reactive Protein - Serum



## ANCA ELIA - Myeloperoxidase -



# Case study – Patient KT: Summary

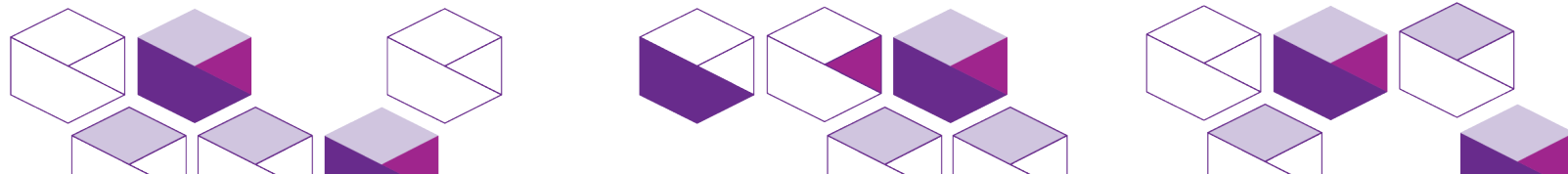
More timely initiation of treatment.

Similar outcome.

Less disruption and risk to patient, patient's family and system:

- No ambulance transfer from Denmark to Fiona Stanley Hospital
- No tertiary admission during COVID pandemic

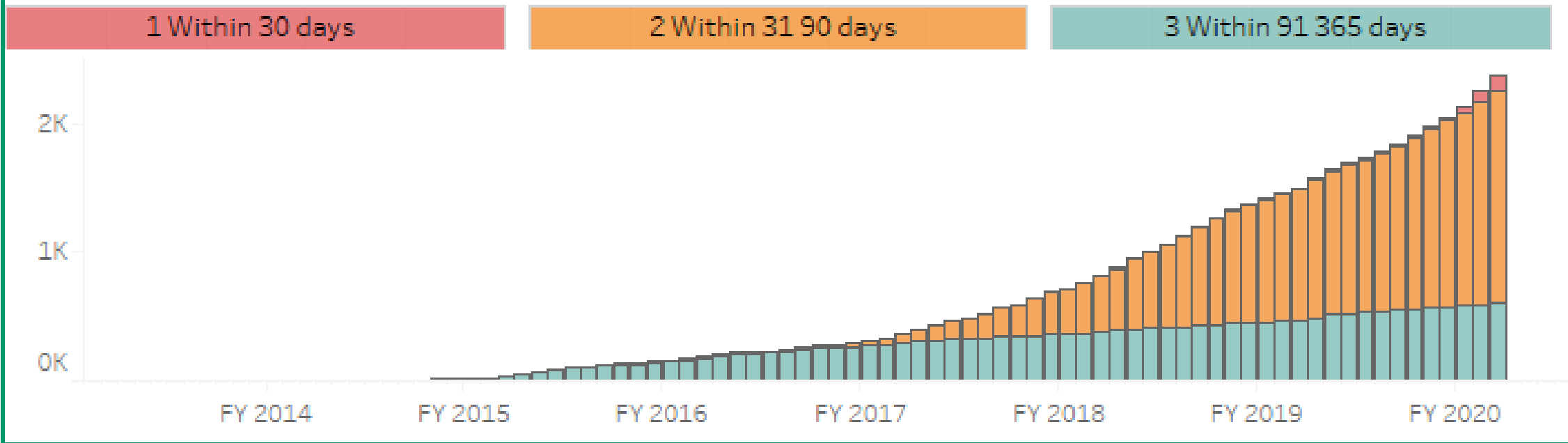
Virtual Immunology Care – GP (VIC – GP) model can work for complex and simple conditions.



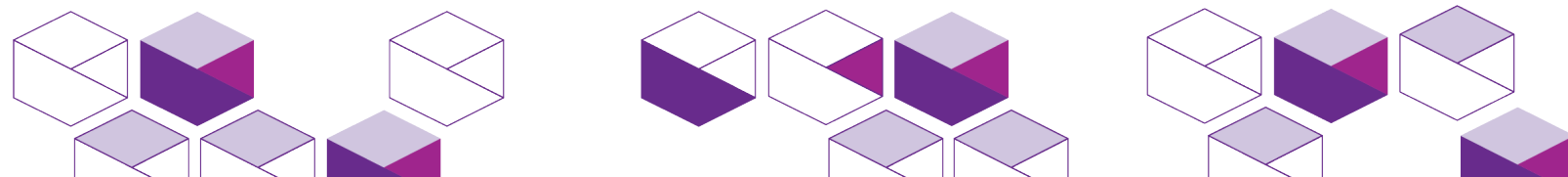
# The Problem

## Accumulated Open Referrals Awaiting First Attended Appointment by Month

(Click on the legend to filter to a specific priority and select one or many bars to see a list with associated referrals for the selected months. The list will only show referrals with referral date in the selected months)

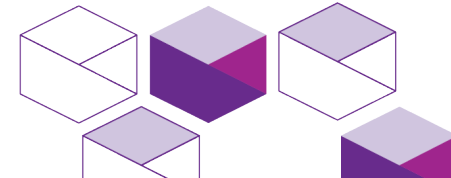
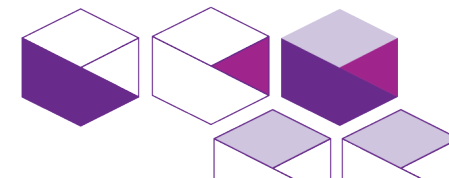
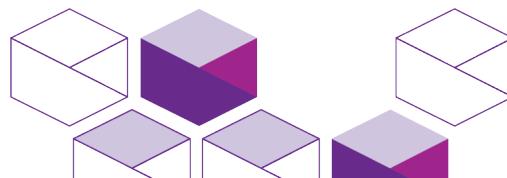


FSFHG Head of Services Outpatient Dashboard

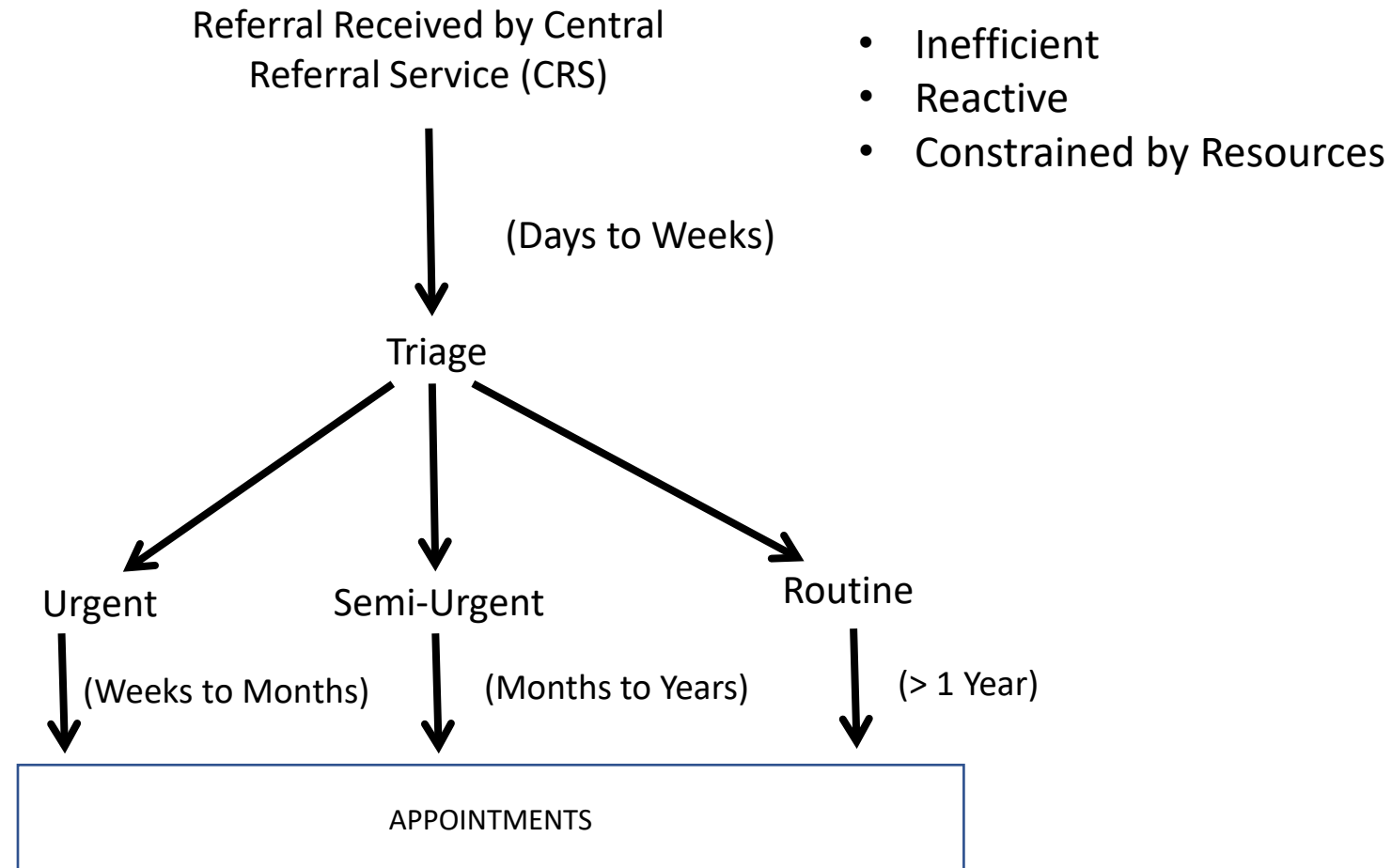


# Common Referrals to Immunology

- Category 1 – anaphylaxis requiring adrenaline, autoimmune disease with organ dysfunction, new human immunodeficiency virus (HIV), immunodeficiency with active, refractory infections, drug allergy requiring desensitisation for active condition
- **Category 2 – severe eczema, active autoimmune disease on steroids without organ dysfunction; chronic or recurrent sinopulmonary infections (? immunodeficiency); chronic urticaria on steroids, drug allergy, food allergy without anaphylaxis**
- Category 3 – allergic rhinitis, chronic sinusitis, mild – moderate eczema, mild - moderate allergic asthma, organ based autoimmune disease, chronic fatigue, ?drug allergy in otherwise well person



# WA Health Referral Management Process



# The Strategy



## **Foundational anecdote**

Late - 2018 Dr Southgate telephones Dr Dominic Mallon regarding a patient with spontaneous urticaria...saves 9 months wait.

“This is the way the system should work – integrated, seamless, efficient...”

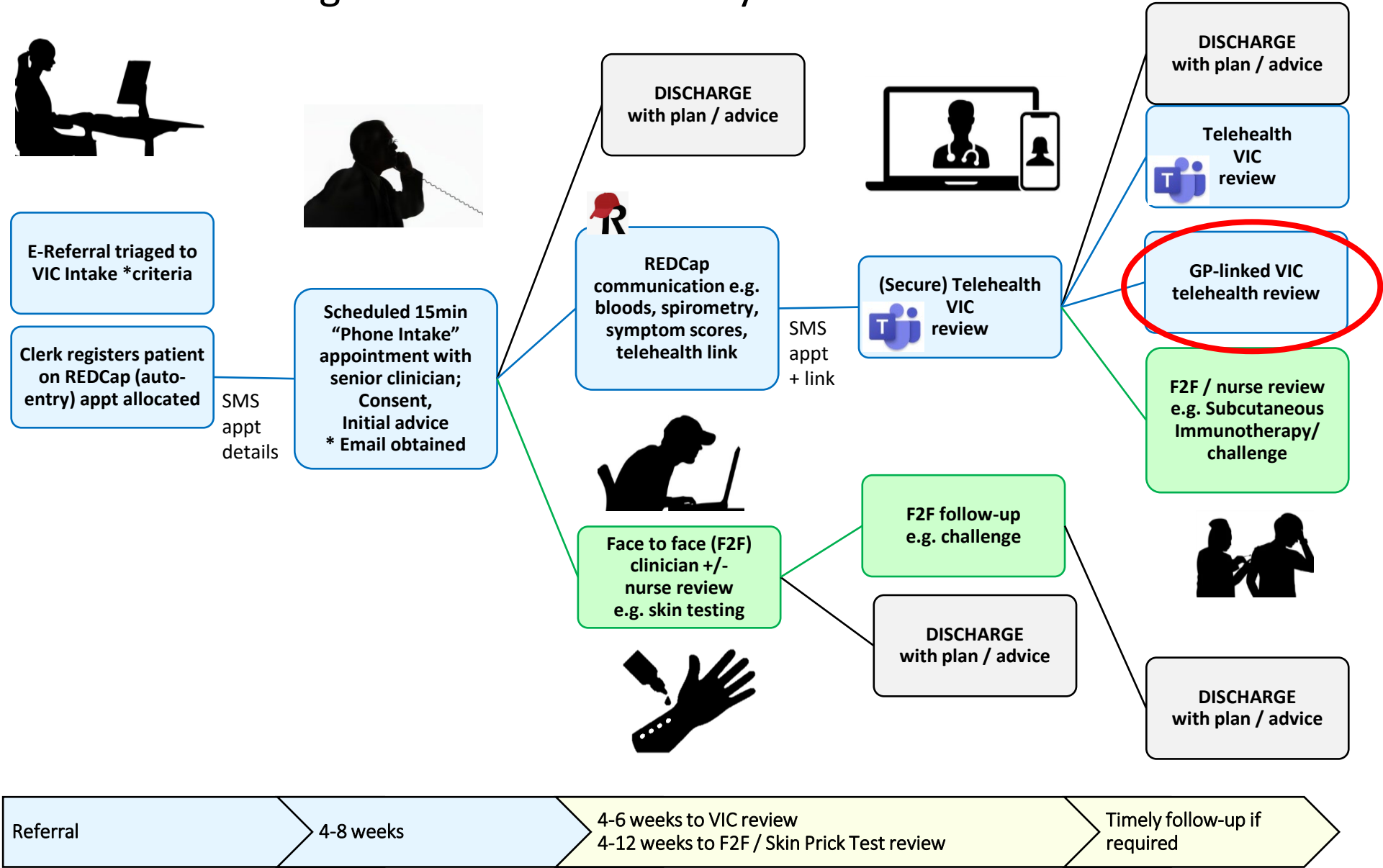


## **Immunology FSH 2019 Strategic Statement**

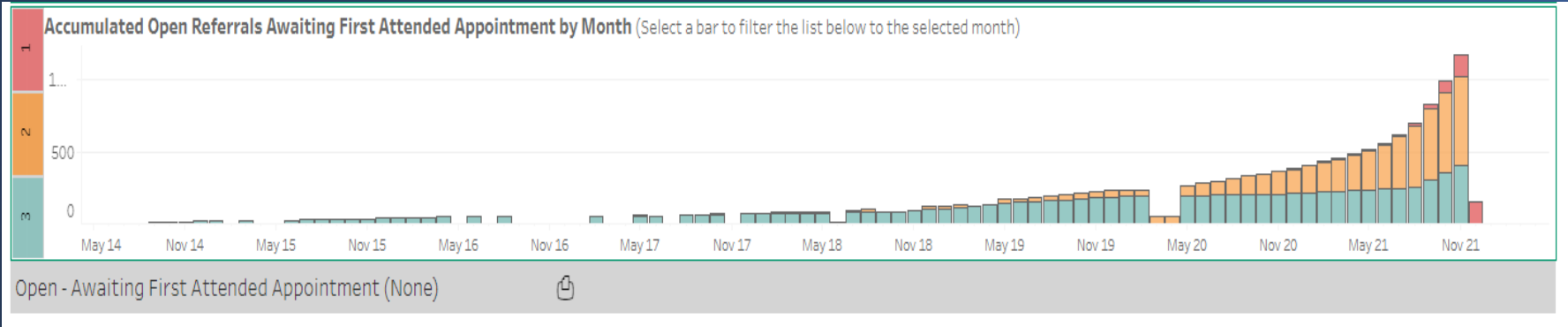
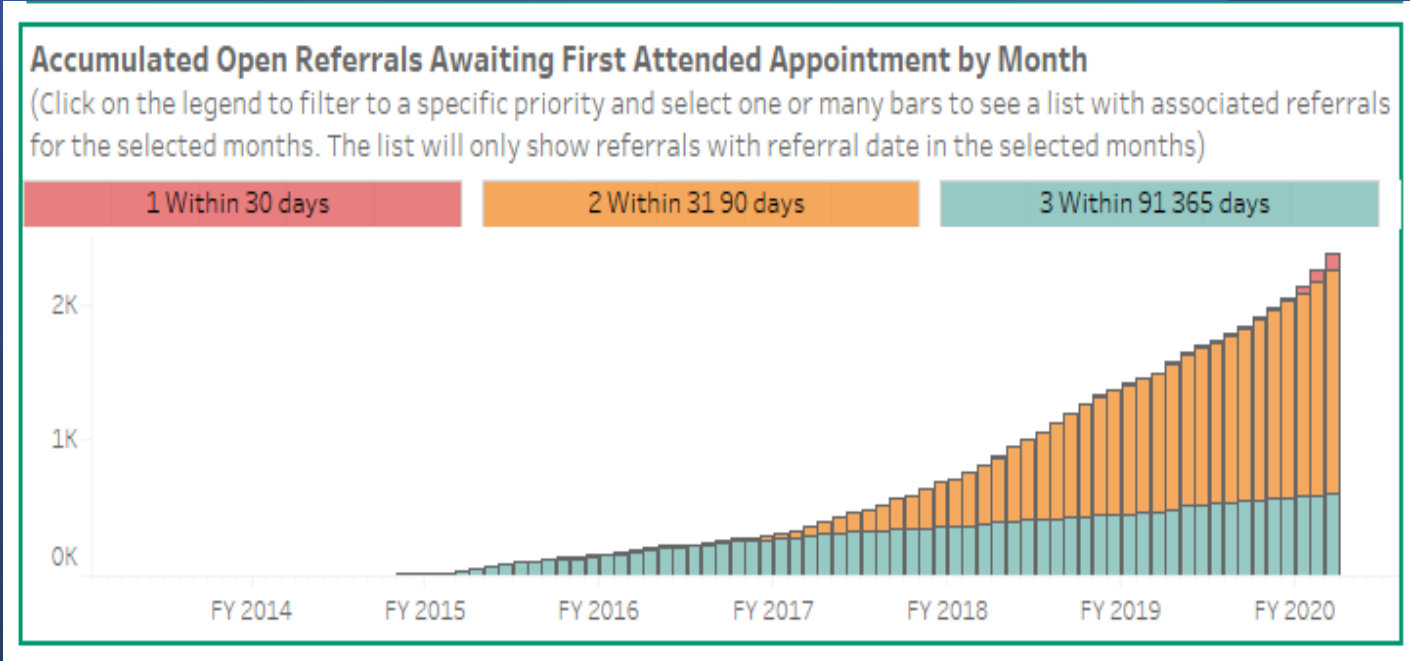
“Provide all patients referred to our service with timely access to the care they need, regardless of where they are”



# Phase I Re-Design: VIC Process January 2020-Present



# Improvement to Open Referrals following implementation of VIC-GP



# Observations from VIC

- Level of GP understanding and ability to manage commonly referred immunological conditions is variable
- Small improvements in understanding will reduce need for referral, to the benefit of the patient and the system
- GP linked follow up appointments through the VIC educationally valuable but logistically difficult and do not fit well with the current patient focused workflow

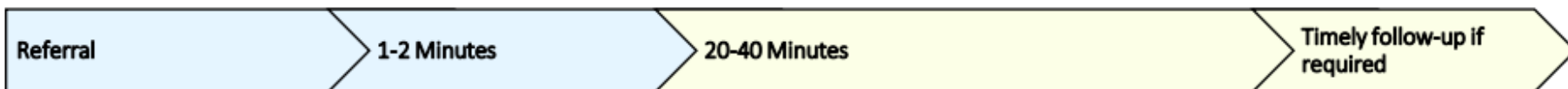
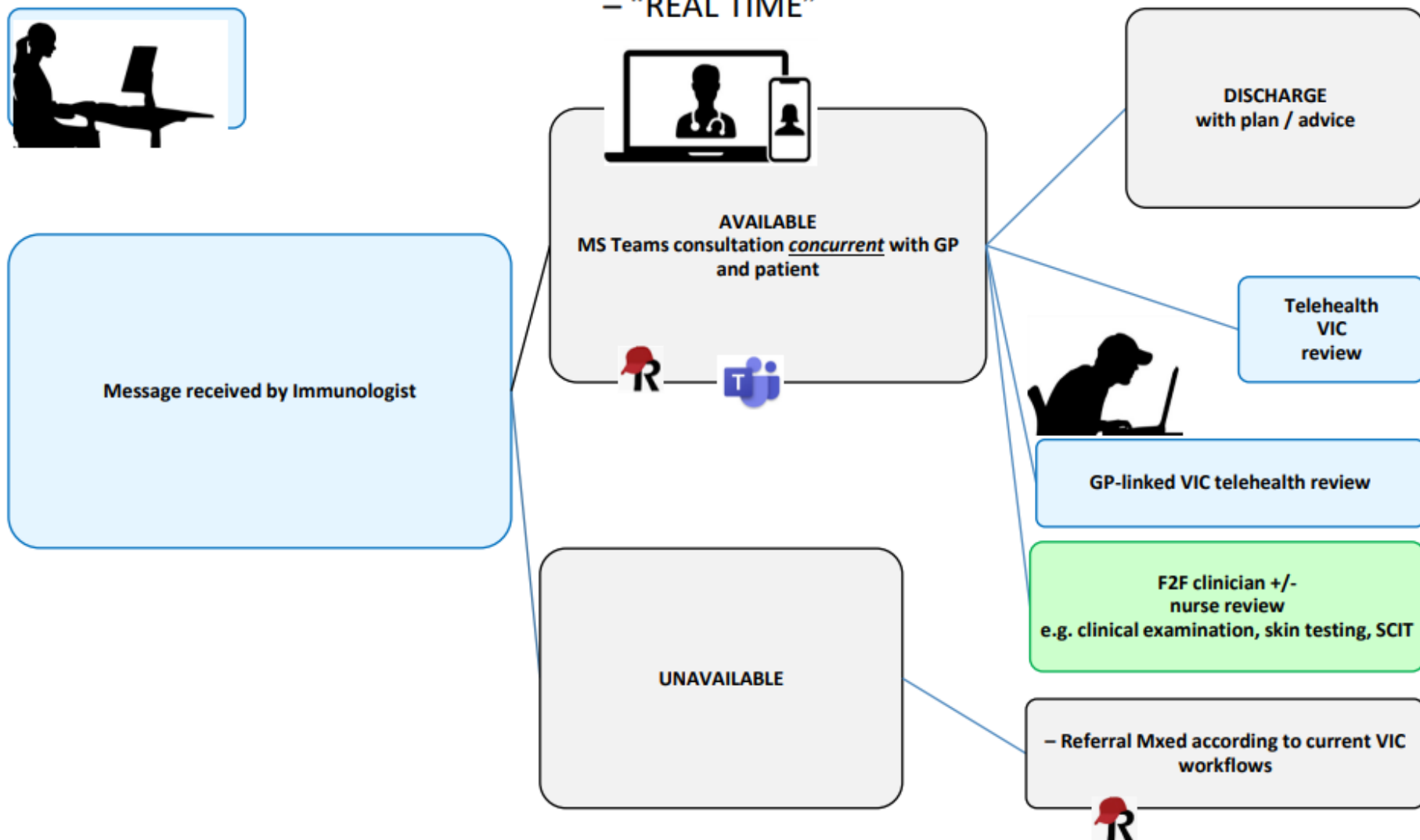
## VIC Phase II:

Real Time or Scheduled consultation to empower and provide in context education to the GP

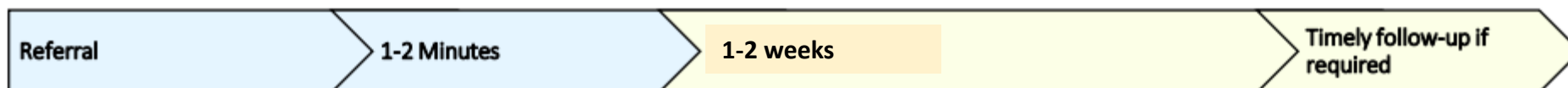
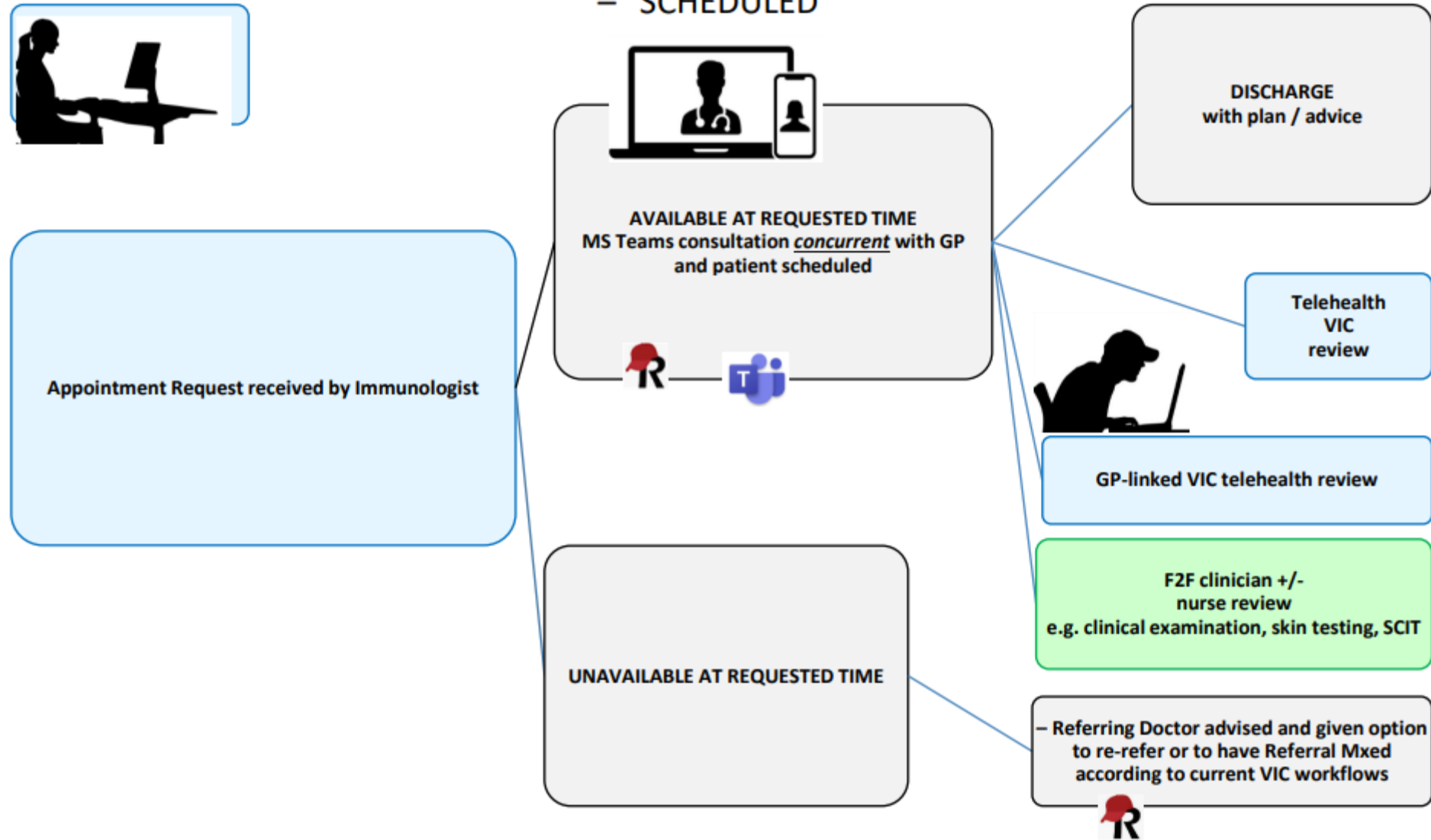
- Adapt Emergency Telehealth Service (ETS) concept for Immunology outpatient referrals
  - Implement User friendly Telehealth program in GP offices – “VIC-GP”
  - Provide access in real, or at an appointed time to an immunology specialist available 9:00am – 5:00pm

# VIRTUAL IMMUNOLOGY CLINIC – GENERAL PRACTICE WORKFLOW

– “REAL TIME”

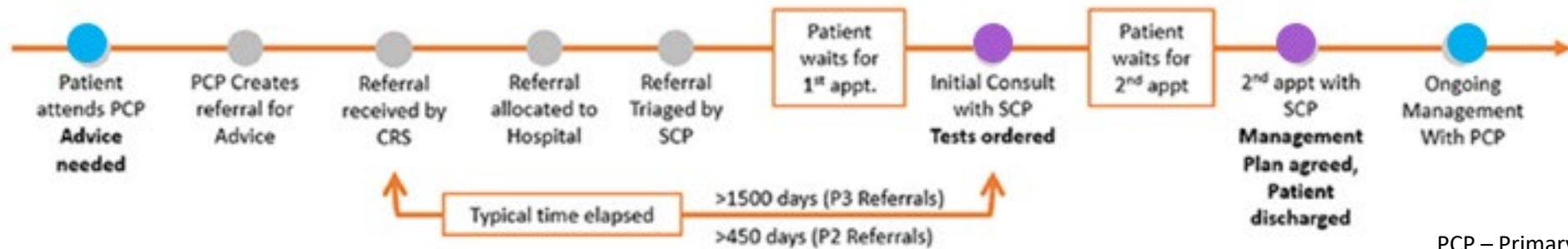


# VIRTUAL IMMUNOLOGY CLINIC – GENERAL PRACTICE WORKFLOW – “SCHEDULED”



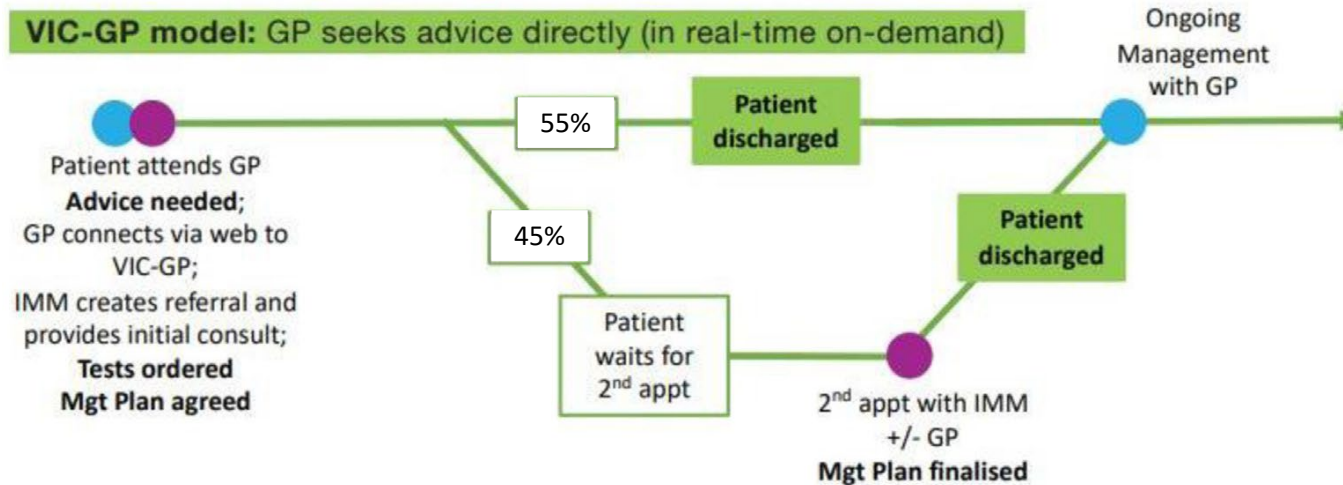
# VIC-GP model is more integrated and efficient than business as usual (BAU)

## BAU



PCP – Primary care physician  
CRS – Central Referral Service  
SCP – Specialist care physician

## VIC-GP



● MBS reportable event  
● ABF reportable event  
● Not reportable event

MBS – Medicare Benefit Schedule  
ABF – Activity Based Funding

# VIC-GP Outcomes – Pilot Phase: January 2022 – June 2023

- Established automated workflows
- Established administrative processes
- 65 GPs registered from 13 practices (*in 2024, increase from 65 to 172 GPs registered!*)
  - 25 successfully referred at least one patient
  - 3 practitioners have referred >10 patients
- >240 new patient referrals (*in 2024, >800 new patient referrals*)
  - 55% discharged after first consultation
  - 12% reviewed via Telehealth with GP
  - 20% seen face to face (F2F) at Fiona Stanley Hospital
    - 10% reviewed F2F – VIC-GP clinician
    - 5% Nursing procedure
    - 5% on-referred to other Immunology Clinics
  - 11% chart review / results follow up
  - 0 did not attend
  - Time from referral to being assessed - minutes



# Conditions referred

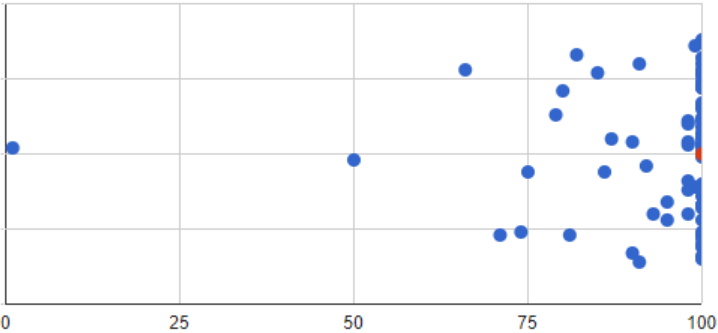
- COVID vaccine advice
- Acute and chronic urticaria
- Allergic rhinitis
- Food allergies
- Eczema
- Angioedema
- Antibiotic allergy
- Facial rash - ? Lupus
- Systemic lupus erythematosus (SLE)
- Antineutrophil Cytoplasmic Antibodies (ANCA+) vasculitis

# Patient Feedback (n=69)

How well did the VIC-GP process address the problem you attended your doctor for? (gpl\_4\_v2)  
[Refresh Plot](#)

Total Count (N)	Missing*	Unique	Min	Max	Mean	StDev	Sum	Percentile						
								0.05	0.10	0.25	0.50 Median	0.75	0.90	0.95
69	643 (90.3%)	21	1	100	93.30	14.94	6,438	72.20	79.80	92	100	100	100	100

Lowest values: 1, 50, 66, 71, 74  
Highest values: 100, 100, 100, 100, 100

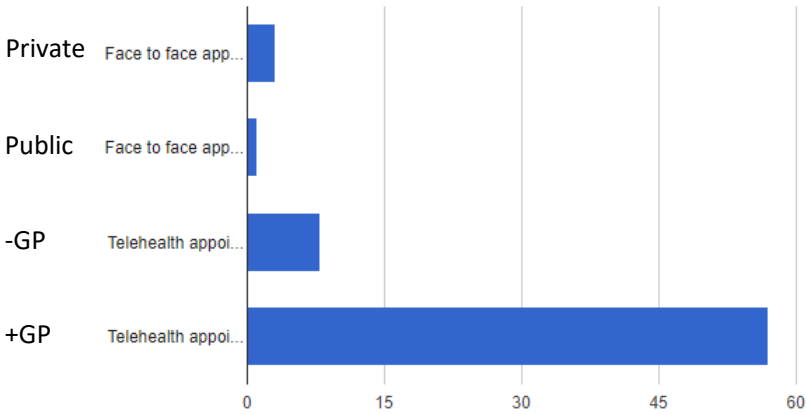


Download image

Having been through the VIC-GP process for your condition, what would be your preferred way to receive Specialist Immunologist advice for your condition? (gpl\_7\_v2) [Refresh Plot](#) |  
[View as Bar Chart](#)

Total Count (N)	Missing*	Unique
69	643 (90.3%)	4

Counts/frequency: Face to face appointment with the Specialist in Private Practice (3, 4.3%), Face to face appointment with the Specialist or Registrar at the Hospital (1, 1.4%), Telehealth appointment with the specialist via the Hospital on my own (8, 11.6%), Telehealth appointment with the specialist with my GP present (VIC-GP) (57, 82.6%)



Download image

# Patient Feedback - Qualitative

“Thanks for making specialist advice more accessible. Perhaps provide some information to frequently asked questions for the particular immunological problem via link or email.”

“Very happy with the first round of talks , questions and answers, I feel that they have advised me of the best steps to take for the next of discussions.”

**“... I really like having my GP and Specialist in the same room- as the GP knows the doctor speak and some of the things I forget, but i know the details on the day to day. Also, as the GP helps with ongoing care I think it's very useful for them to be involved. ...”**

**“As a health professional myself, I found the overall experience great.** The chance to have a more cohesive interdisciplinary approach far more beneficial. This approach will see I believe a decrease in wait times and significant gaps in receiving care via multiple specialists.”



# Summary

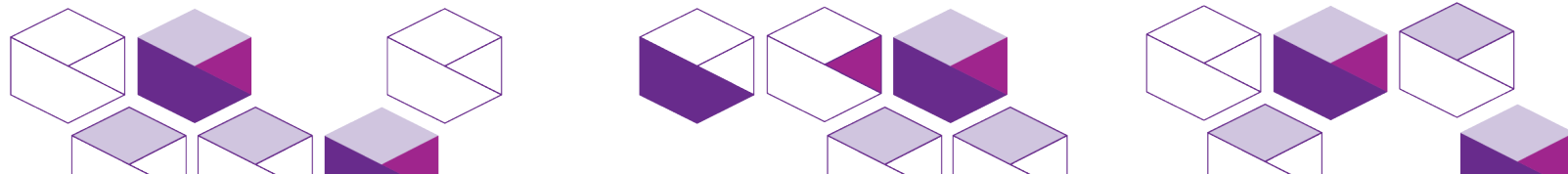
Virtual Care can provide improved access to care with equivalent clinical outcomes for selected conditions.

VIC-GP has demonstrable advantages over the traditional model.

- Timeliness and equity of access to care
- Improved patient convenience
- Improved patient reported outcomes
- Enables collaboration and GP upskilling
- Reduced requirement for hospital resources

The key to timely and equitable access to healthcare in Australia is well educated and supported Primary Care.

- VIC-GP model is designed to do both



# VIC-GP NEWS....



australasian society of clinical immunology and allergy

## Poster Prize

awarded to

*Professor Dominic Mallon*



ASCIA 2022 CONFERENCE  
32<sup>nd</sup> ANNUAL CONFERENCE OF THE AUSTRALASIAN SOCIETY OF CLINICAL IMMUNOLOGY AND ALLERGY (ASCIA)  
Tuesday, 30th August to Friday 2nd September 2022 | HYBRID | Melbourne, Australia



## Congratulations, you're a finalist!

I was delighted to award the **2024 Director General Award** to South Metropolitan Health Service and PathWest's Virtual Immunology Clinic for General Practice – a standout project – recognising its remarkable contribution to our health system.

You're a Finalist! - 2024 WA Rural Health Excellence Awards

Re: I have cited a publication of yours... [EXTERNAL]

RC Rea, Corinna  
To: Mallon, Dominic

You replied to this message on 01/12/2022 3:03 AM.  
If there are problems with how this message is displayed, click here to view it in a web browser.

CAUTION External Communication: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

This is so interesting! I wanted to try a video consult model too, but never got it off the ground. I'm impressed you did it! And I will let Danny know 😊

I have two first cousins in Perth—small world!

Corinna Rea, MD, MPH  
Assistant Professor, Harvard Medical School  
Director, General Academic Pediatric Fellowship  
Boston Children's Hospital



Winner



Reply Reply All Forward ...  
Wed 30/11/2022 11:27 PM

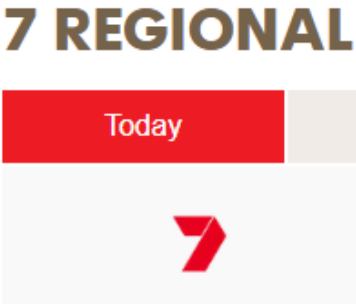
## Clinical Communications

Use of modern information communication technology to enable real-time consultation between primary and specialty care providers

Dominic Francis John Mallon, MB, BS, FRACP<sup>a,b</sup>,  
Justin Callaghan<sup>c</sup>, Chloe Goodred, BSc<sup>d</sup>,  
Brittany Rose Stevenson, MB, BS, FRACP<sup>a</sup>, and  
Jack Bourke, MB, BS, FRACP<sup>a</sup>

### Clinical Implications

This novel model of care uses available technology to provide patients with immediate access to advice from a specialist care provider via their primary care provider, enabling improved coordination of care and more advanced skills through additional education and training within context for the primary care provider.



Went to Air 8<sup>th</sup> February 2023

2023;11:966-7

Home > About SMHS > SMHS Excellence Awards >

## Excellence in clinical care

Recognising team excellence in the delivery of safe, high quality clinical care



This award recognises excellence in the delivery of safe, high quality clinical care and service by a team.

### Virtual immunology clinic – Fiona Stanley Fremantle Hospitals Group

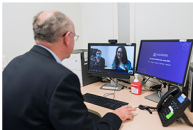
Chronic immunological conditions often require lifelong care coordination between hospitals and general practitioners (GPs) which can be challenging due to service capacity, and can result in lengthy wait times for patients.

To help alleviate these pressures and improve the patient experience, the establishment of the Fiona Stanley Hospital (FSH) Immunology Service telehealth clinic doubled the service's capacity to deliver care more efficiently and closer to the patient's home. Access to care was improved for 4,000 patients who were able to receive treatment outside of hospital. The long-term adult and paediatric wait lists were eliminated, including expediting treatment for over 1,000 children who had been waiting for an appointment.

This model was subsequently extended to GPs to refer patients to an FSH clinical immunologist via video call. It resulted in the team delivering timely, high quality, integrated patient care while building relationships and providing in-context education for participating GPs. Patients have reported high levels of satisfaction with the clinic's services.

### Congratulations to our other 2022 finalists:

- Assessment liaison escalation response team – Fiona Stanley Fremantle Hospitals Group
- SABSI reduction and minimisation program – Fiona Stanley Fremantle Hospitals Group



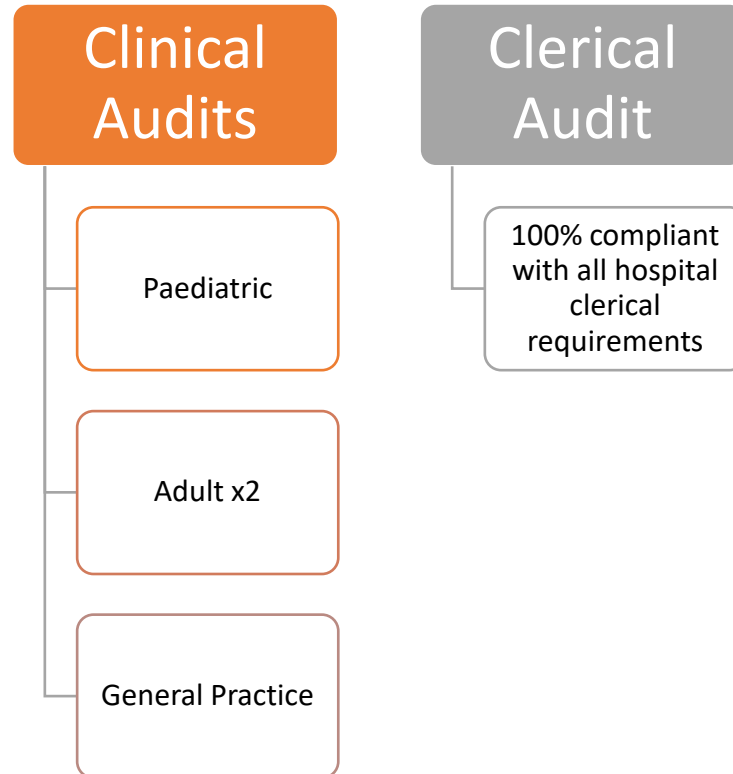
## Community of Practice

- Via MS Teams
- Using referred patients as material from which to teach
- Incorporating subject matter experts from within the Department

## Four tutorials held thus far

- Cow's Milk Protein Allergy (with Michael O'Sullivan)
- Penicillin Allergy (with Jack Bourke)
- Use of the Immunology Laboratory in the Investigation of Allergic Symptoms
- Management of Peanut allergy in Children

# Quality Assurance (n=53)



# Issues

Changing GP referral behaviour is difficult.

- Expression of interest for pilot → opt in – does not replace central referral service process
- N = 157; from 54 practices / hospitals / Aboriginal Medical Services (AMS)

Workflows are clunky for the specialist – Bossnet / REDCap / eReferrals / iSoft / Teams.

Activity Based Funding.

- 3-way consultation is currently ineligible for funding of all entities under ABF
  - SMHS does not charge for these consultations BUT
  - Immunology generates sufficient billable activity to maintain current investment (0.7 FTE)
- Model may soon be billable under Medicare
- Politicians to resolve....?

