



明愛醫院
CARITAS MEDICAL CENTRE

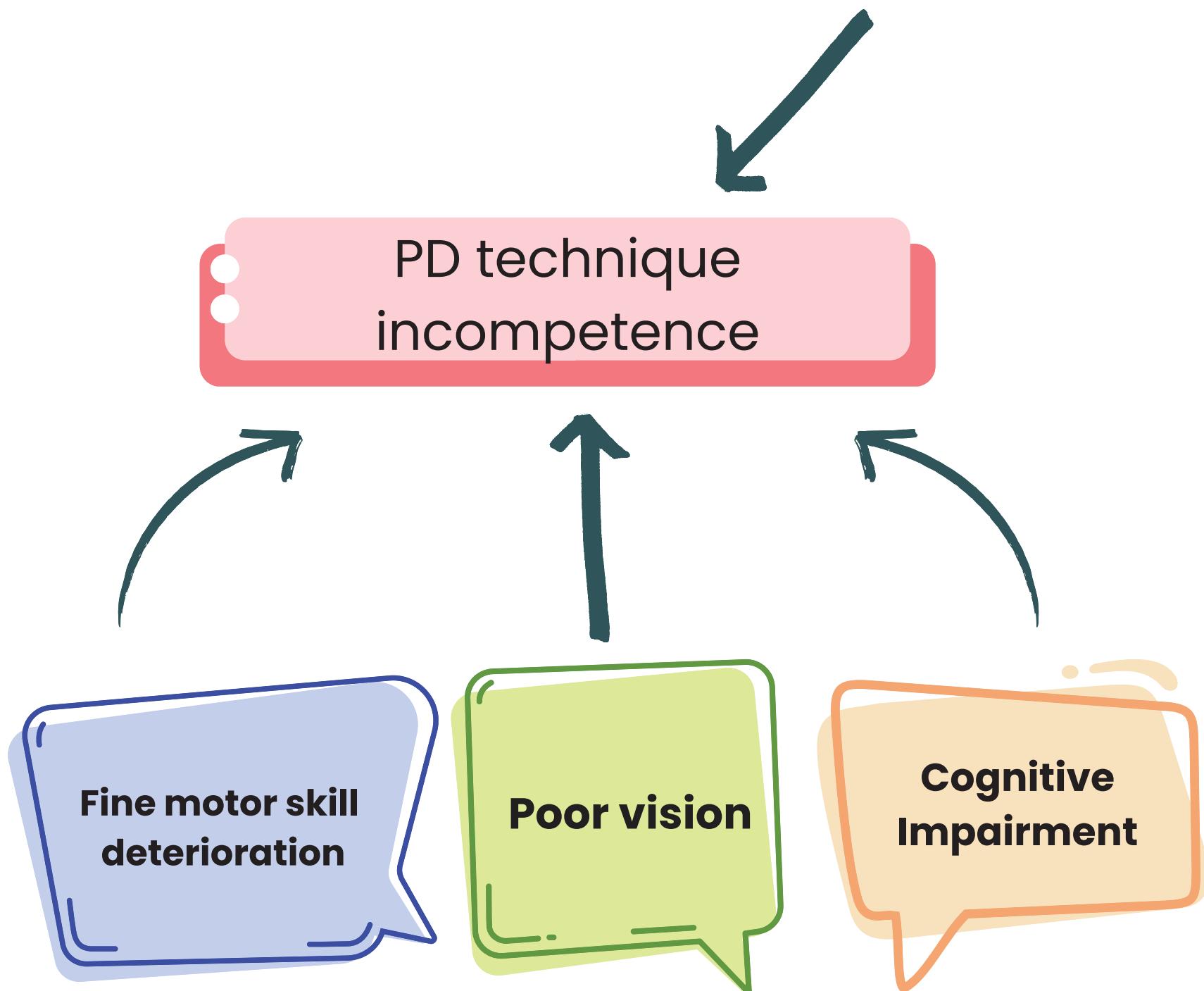
職業治療部
DEPARTMENT OF OCCUPATIONAL THERAPY

Peritonitis risk reduction and cost saving through **Occupational Therapy** Pre-dialysis Program : a pilot study

Project Leader: CHAN Wai Ching Venus, APOT (OCCT)

Team Members: Dr S K YUEN, CMC Hospital Coordinator (Q&S) / CON (MG)
Ms Florence Leung, DM (OCCT)
Ms Katherine Chan, SOT (OCCT)

Increased Peritonitis Risk



Our previous CQI projects 

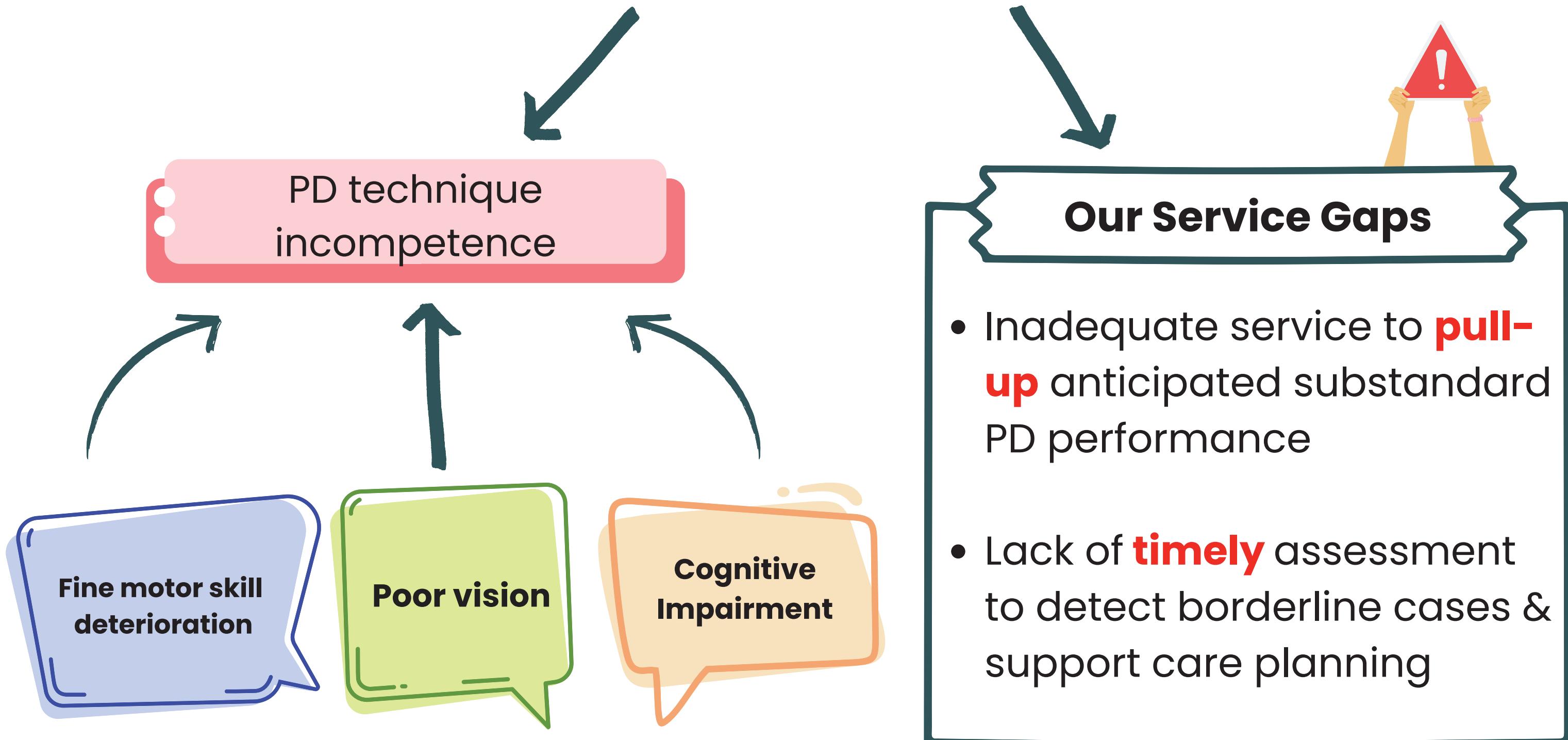
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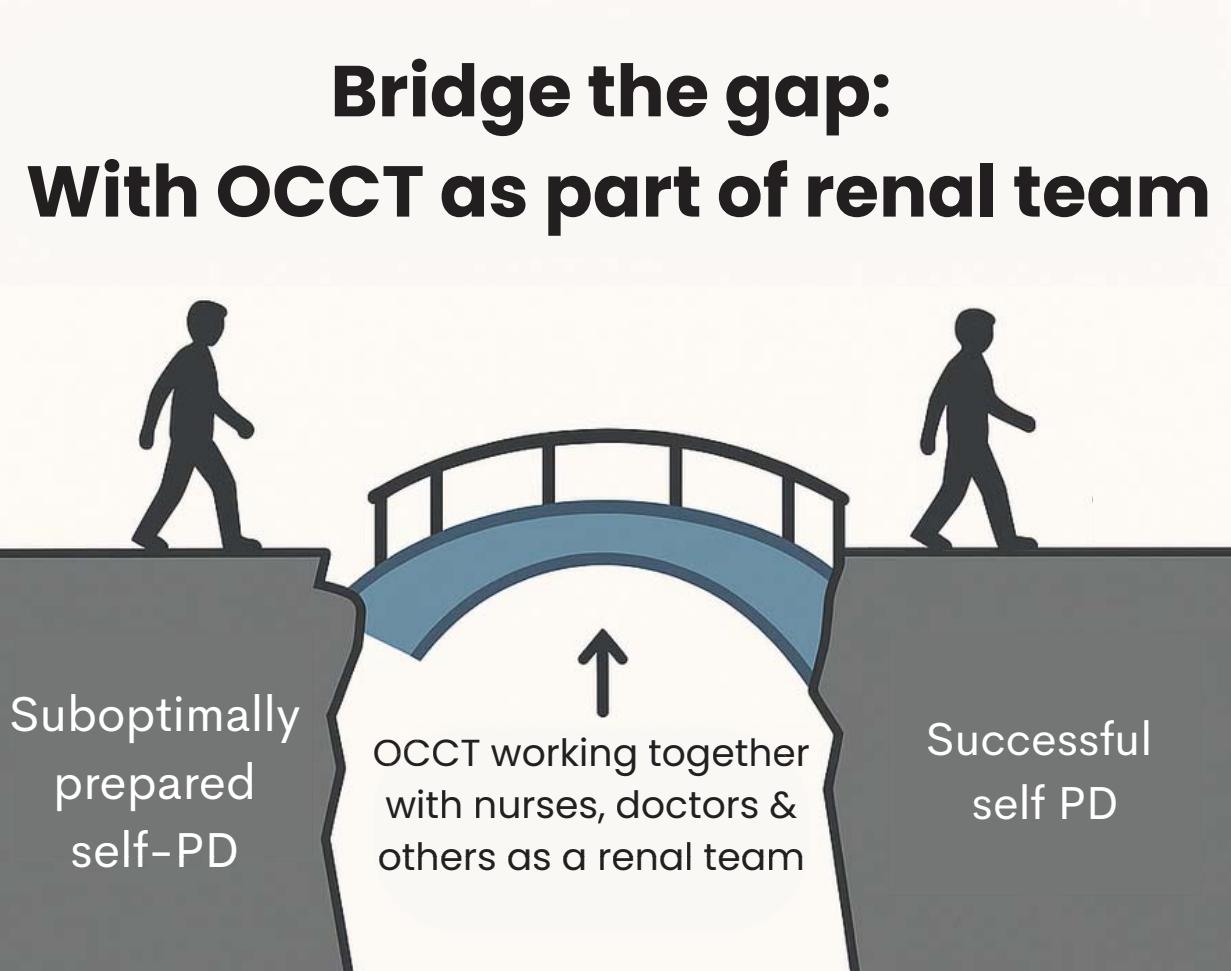
Memory recall

F/72 with episode of peritonitis
MoCA >16th percentile
MBI 98/100

Patients struggled with CAPD performance
despite being ADL-independent with high
HK-MoCA scores

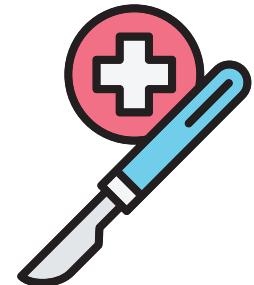
Increased Peritonitis Risk





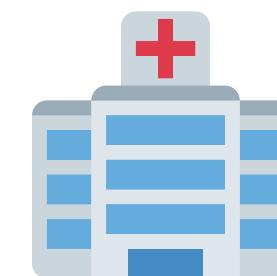
1. Timely assessment on patient capacity

- Support clinical decision making
- Reduce institutionalization
- Avoid unnecessary Tenckhoff insertion and healthcare costs



2. PD skills-enhancing intervention

- Reduce burden of care
- **Lower peritonitis rate**
- **Fewer hospitalization & reduce treatment cost**



Aims of our Pilot Program

Reduce risk of peritonitis

Strengthen PD technique to enhance independency & safety

Being part of the renal team to **support clinical decision-making** & care planning

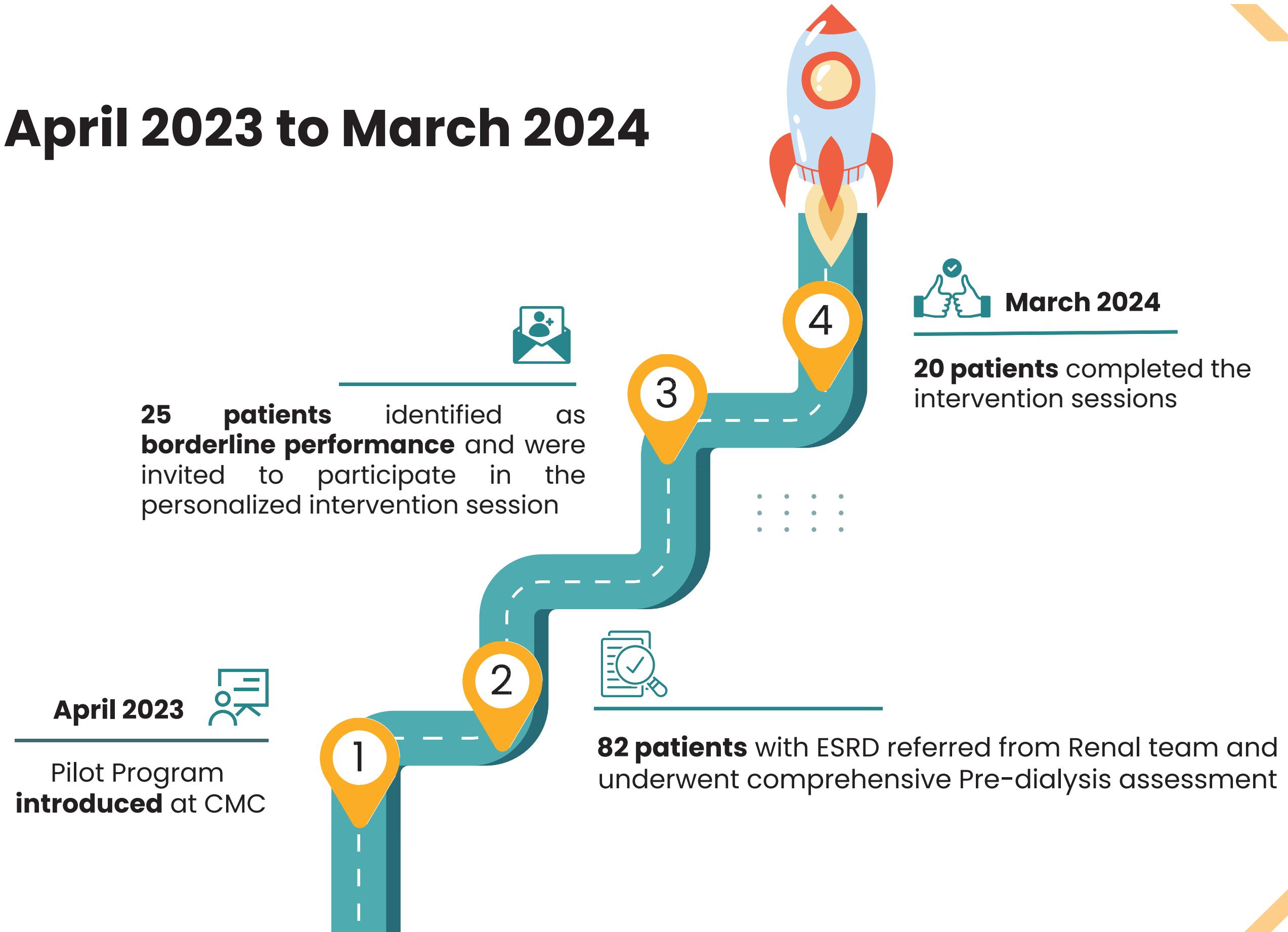


Conduct comprehensive assessments to **identify barrier** to effective self-PD

Provide **targeted intervention** to address barriers and optimize self-PD capability

Facilitate lifestyle adaptation & successful self-management

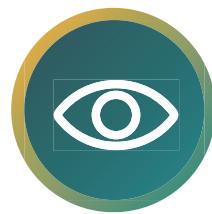
From April 2023 to March 2024



Structured Assessments



Cognition



Vision



Sensation



Hand function



Simulated PD assessment

Activity analysis to identify underlying problems and provide intervention accordingly



Home environment exploration

Assess functional environmental setup & potential hazards and fall risks

Through structured assessment by OCCT,

- Grasp a deep understanding of patients' capabilities
- Make informed decisions on kidney replacement therapy



4 patients failing the assessment opted out of PD



Avoid **unnecessary Tenckhoff insertion** & its related **medical costs**



Personalized Interventions

For borderline performance cases



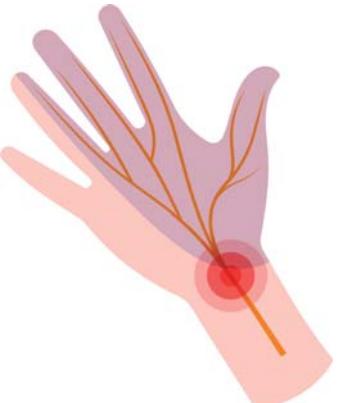
- 1. Rehabilitation Training**
- 2. Assistive Devices Prescription**
- 3. Onsite Training**
- 4. Liftstyle Redesign**

1) Rehabilitation Training

Targeted at hand function impairment

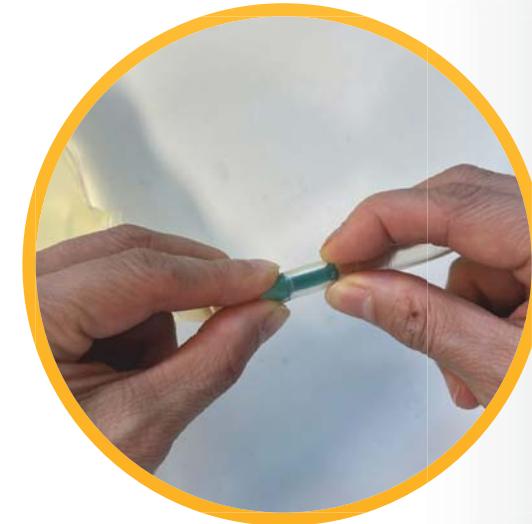
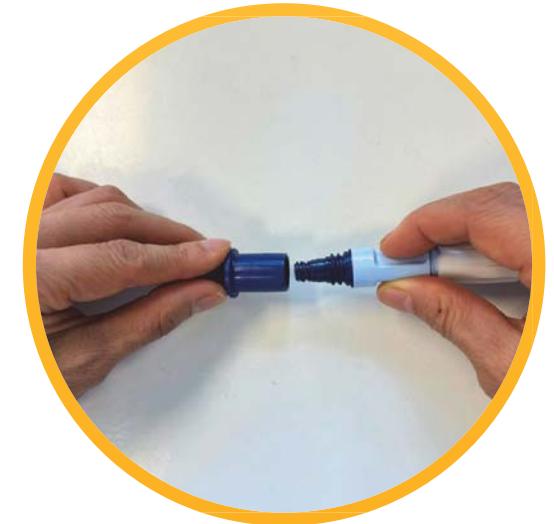


Mr. N



PMHx: **Peripheral Neuropathy**

- Hand muscle atrophy+
- Difficulty in some steps during dialysis



1) Rehabilitation Training

Targeted at cognitive impairment



Computerized cognitive training



Home Program

HA GO COGNITIVE REHAB



2) Assistive device prescription

Compensating for hand function deficiencies

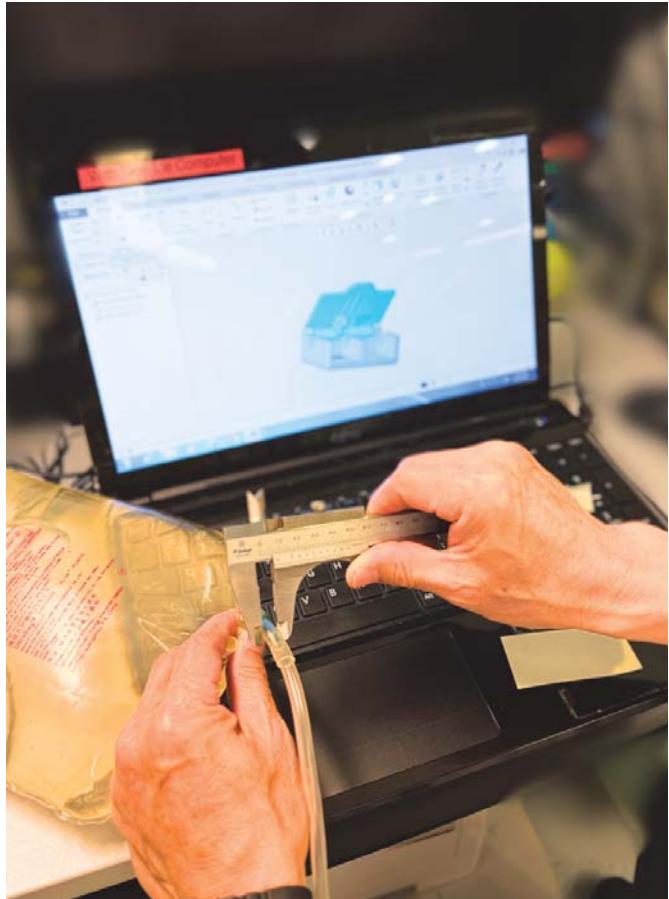
Insufficient strength to break green seal



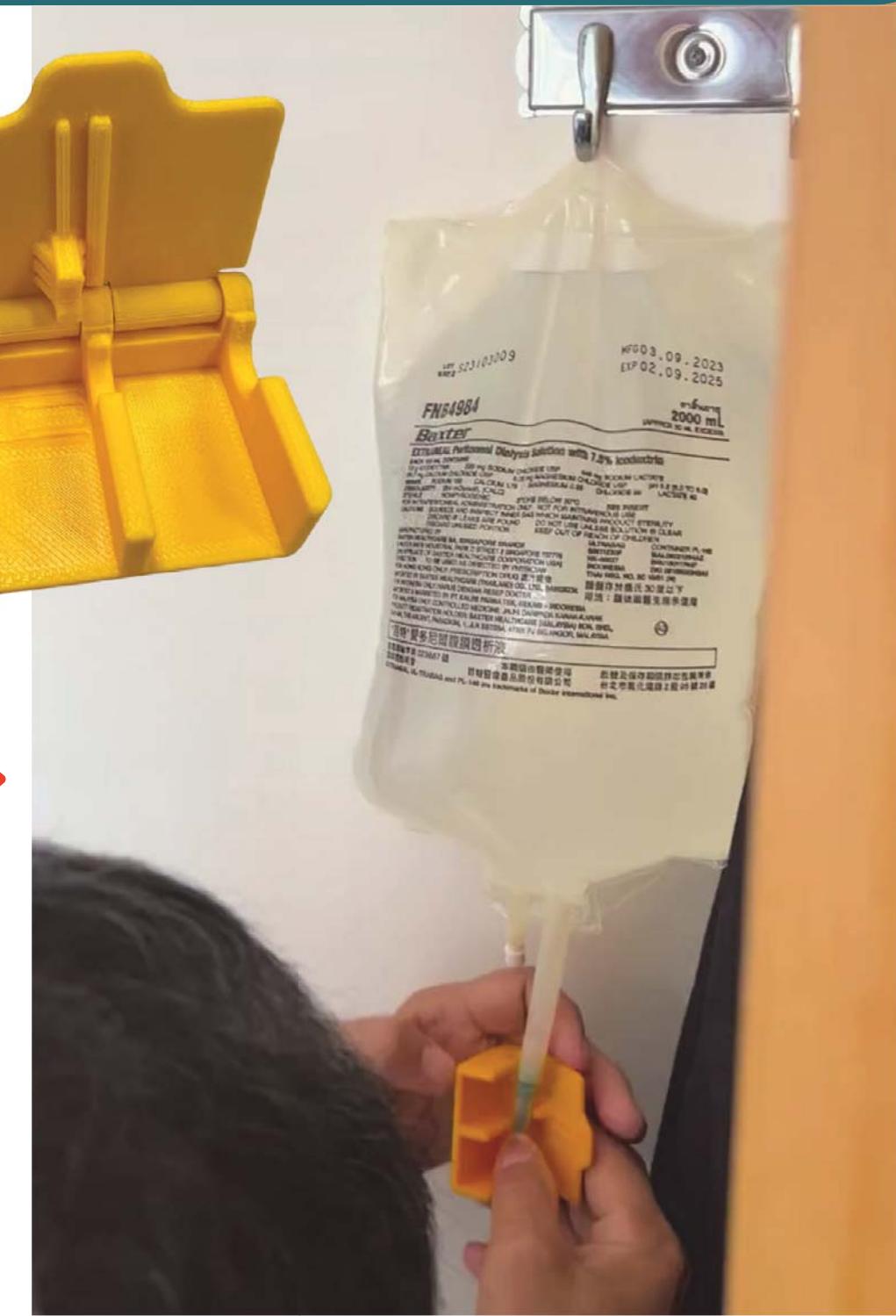
2) Assistive device prescription

Compensating for hand function deficiencies

3D-printed green seal breaker



Our design for Sham Shui Po patients
->>>Small/no working surface<<<<



Design according patient's individual needs

Using 3D Printing technology

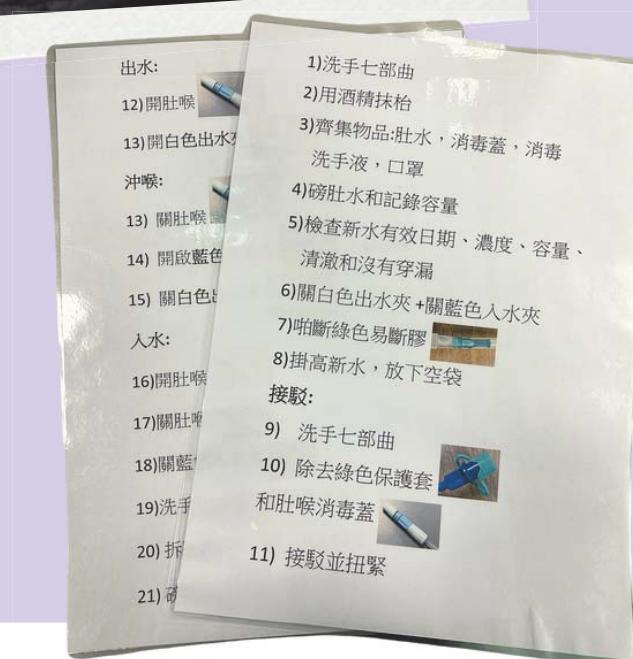
2) Assistive device prescription

Compensating for visual / cognitive deficiencies

Hand free Magnifier

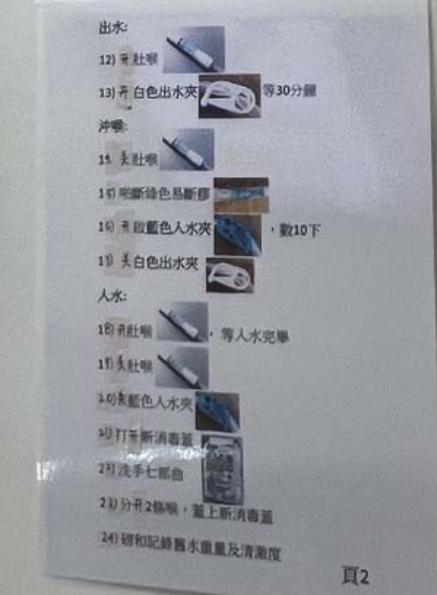
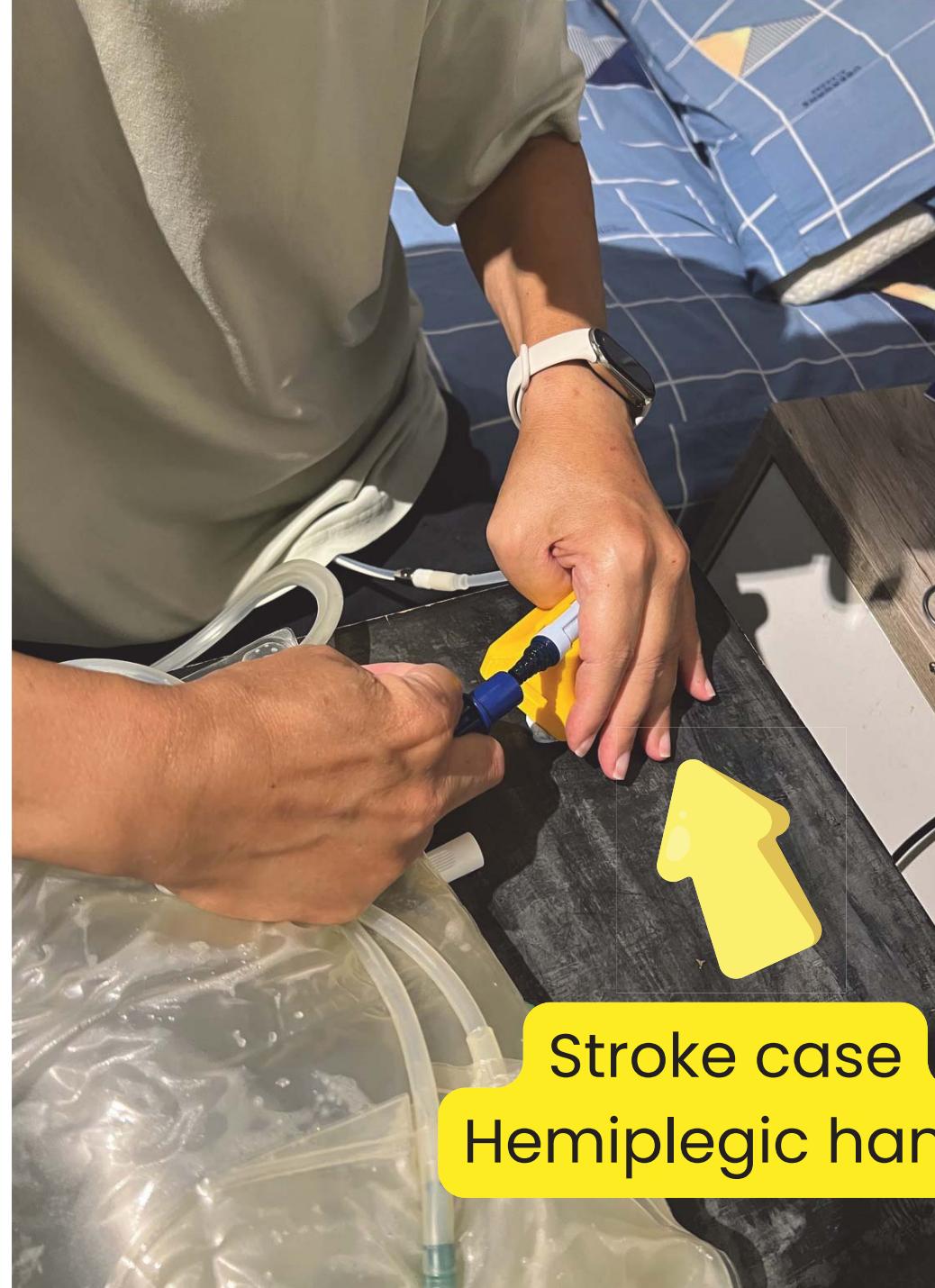


Customized Memory Aids



3. Onsite Training

Assist in generalizing the adapted skills effectively into real-life situation



3. Onsite Training

Assist in generalizing the adapted skills effectively into real-life situation

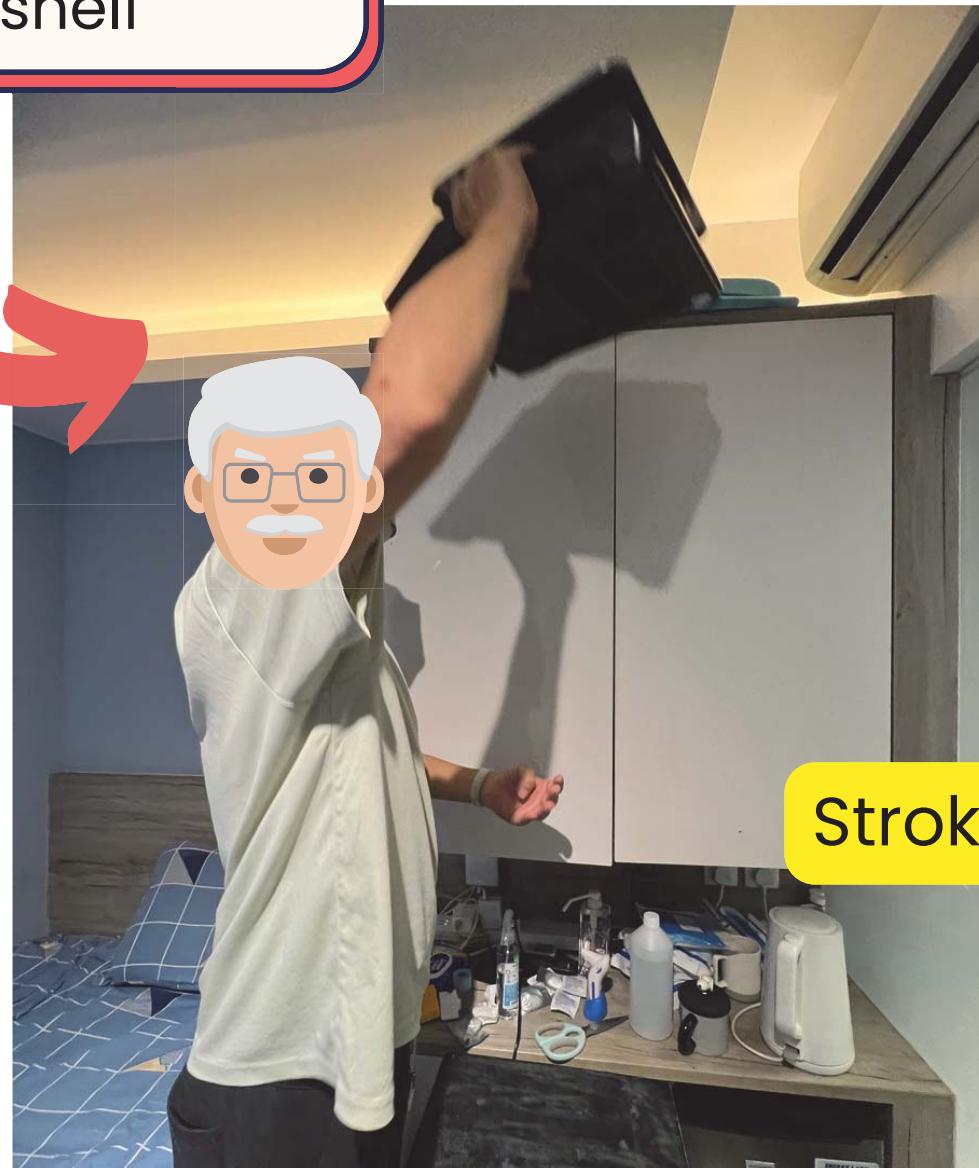
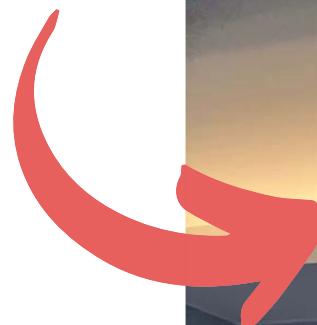
- Real-life situation might be incompatible with hospital based training
- Requiring **real-time adaptation**



3. Onsite Training

Assess risk of fall and provide recommendations

One-handed lifting of heavy electronic scale to overhead shelf



Catheter tangling on the floor, posing a tripping hazard



3. Onsite Training

Assess risk of fall and provide recommendations



Safety issue identified:

Patient using walking frame needed to move through confined space for accessing living room

WHAT CAN WE DO?

- Consider **home modification** as an alternative option
- Bring it to the attention of the clinical team

4. Lifestyle Redesign

First impression:
PD disrupt current
lifestyle, affect daily
routine

明愛醫院
職業治療部

時間表 姓名 _____

2023 年 6 月 11 日 星期 四

天氣: 

07:00	煮早飯比喺食，餵魚
08:00	食早飯，洗碗
09:00	家務(洗衫，拖地...)
10:30	休息，睇下電視(新聞)
12:00	落佢食晏就
13:00	行下商場，買下𩵚
14:00	買𩵚
15:30	返屋企休息下，沖涼
16:00	洗腳，坐下休息。
17:00	煮晚飯
19:00	食晚飯
20:30	洗碗
21:00	睇下電視 ← 洗腳兼睇電視
22:30	睡覺

Reduce resistance to PD

**Successfully transition to
new lifestyle**

**Improve successful PD
completion rate**



Pilot Program from April 2023 to March 2024

Covered

~80%

of Pre-dialysis patients

98%

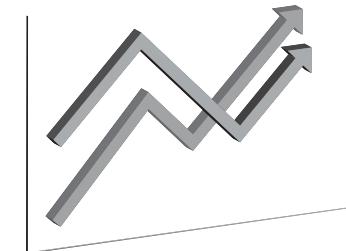
referral answered before
patient's PD training

~16 DAYS

between ACP and
assessment date

Incorporation into Renal team

**MORE
COVERAGE**



FASTER

Study Outcomes

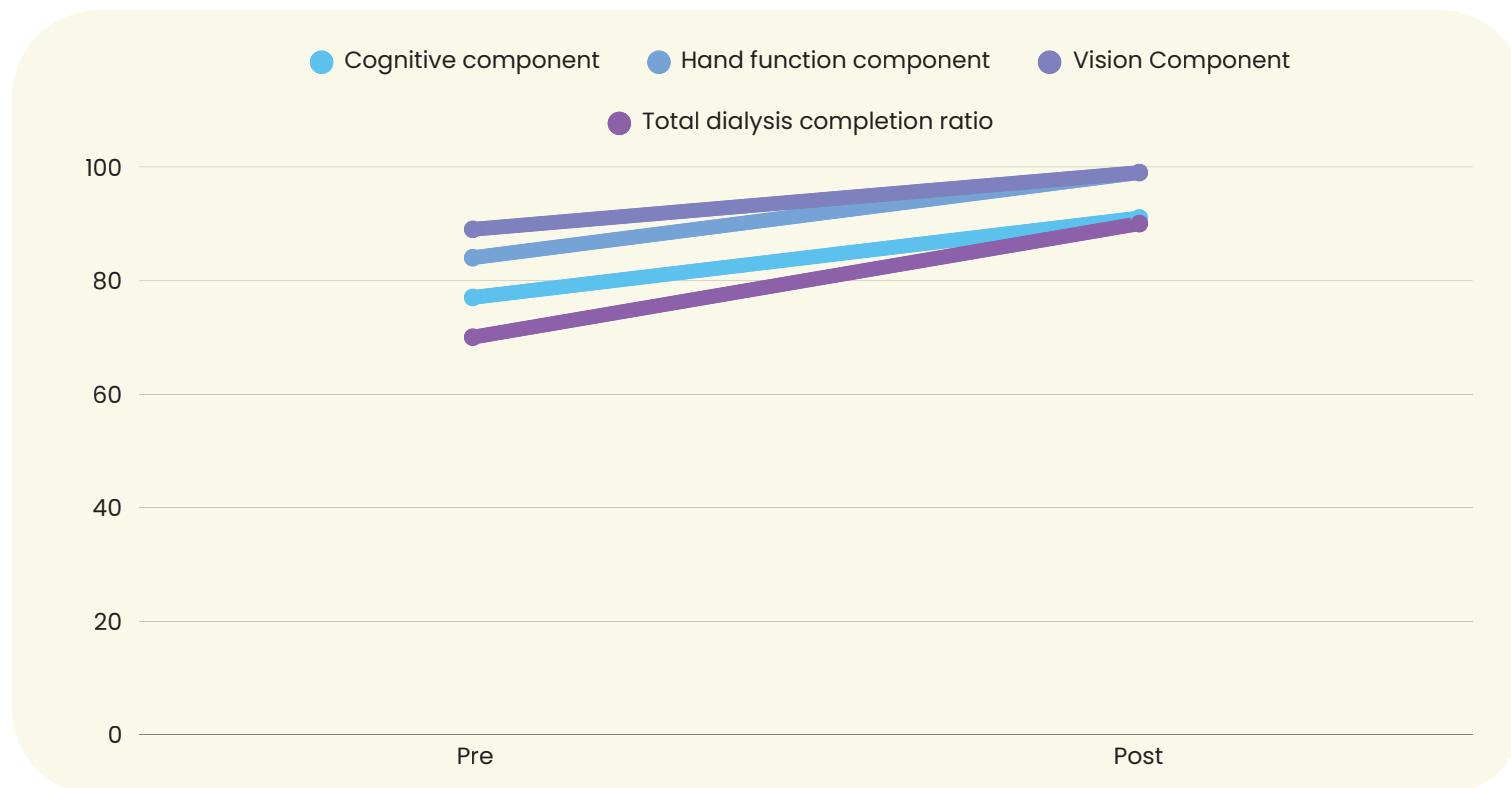
- 20 borderline performance patients completed intervention program
- Achieved **significant improvements in both disinfection & dialysis procedures**



Table 1. Comparison of Pre- and Post- Pre-dialysis Program Results

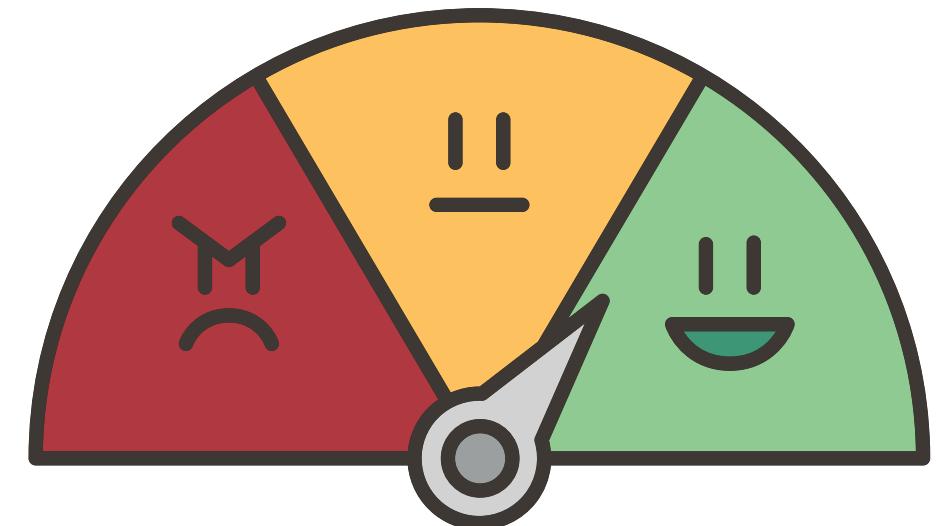
	Z	p
Disinfection accuracy ratio*	-2.994	.003
Dialysis completion ratio*	-2.959	.003
- Cognition component	-2.355	.019
- Hand function component	-2.836	.005
- Vision component	-1.820	.049

*Disinfection accuracy ratio / Dialysis completion ratio refers to the proportion of successfully completed steps as per the standard disinfection / peritoneal dialysis exchange procedure checklist, specific to the brand/system used.



Improved patients' PD techniques

Study Outcomes

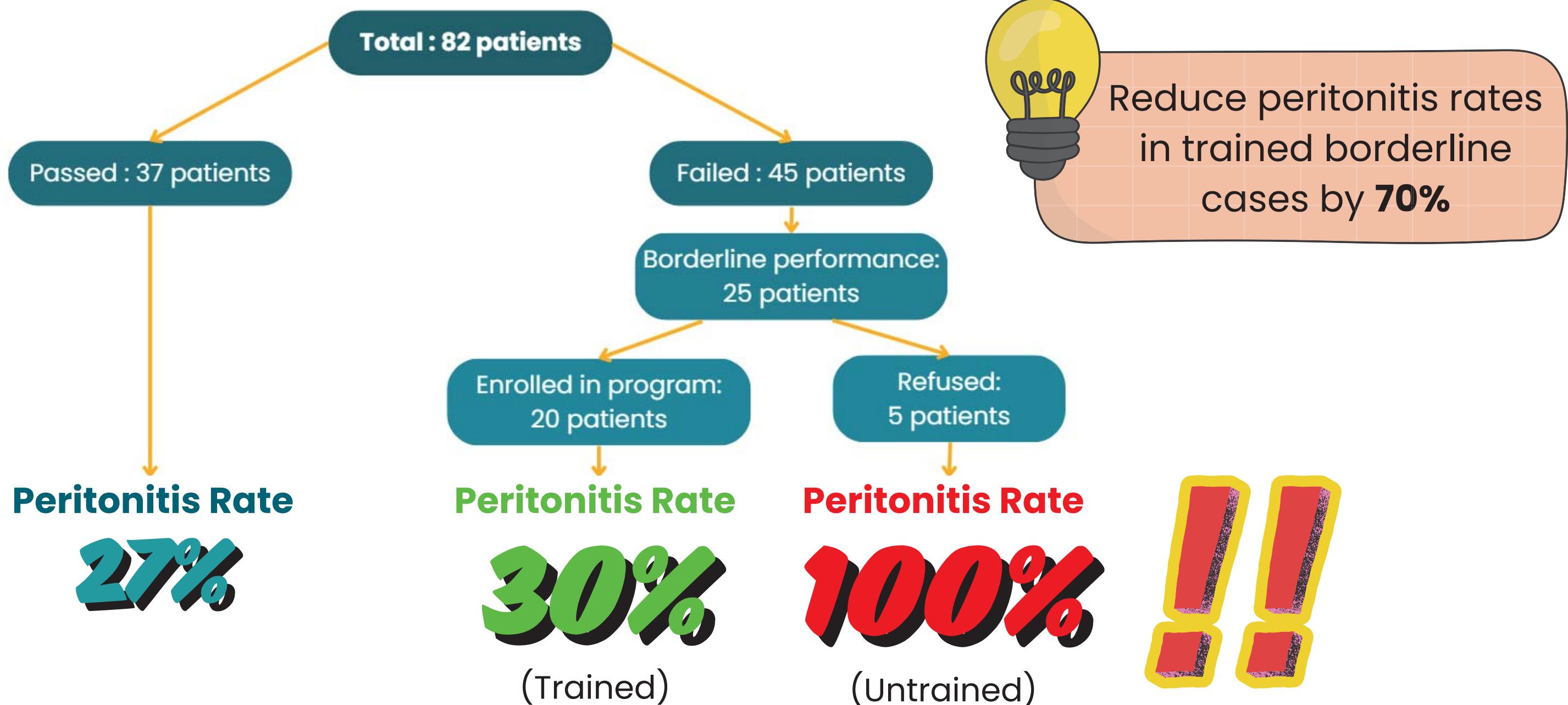


All patients were satisfied with the program and their holistic improvement

Study Outcomes

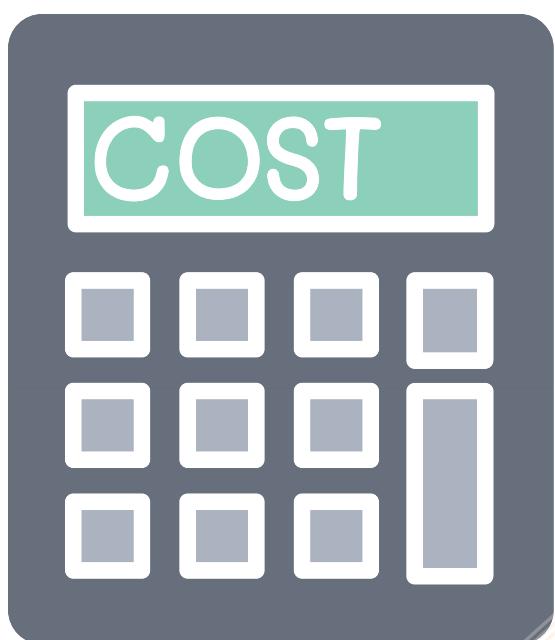
Assessment Outcomes and Crude Peritonitis Rates

Reviewed date on 7/11/2024



Financial Impacts

(CMC 22/23 data)



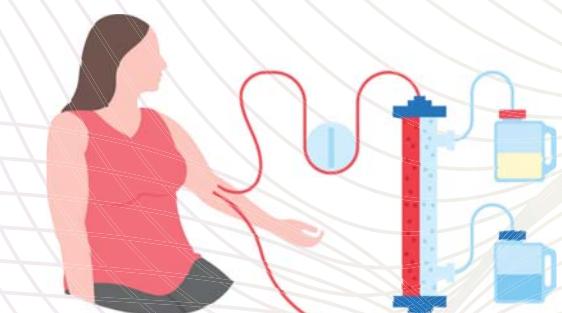
= **Peritonitis associated admissions:
estimated over \$7M** +



Multiple **antibiotics** used for treatment

Avoidable Tenckhoff insertion and operation sessions

Temporary **HD services** due to recurrent peritonitis



Financial Impacts

Our pilot program

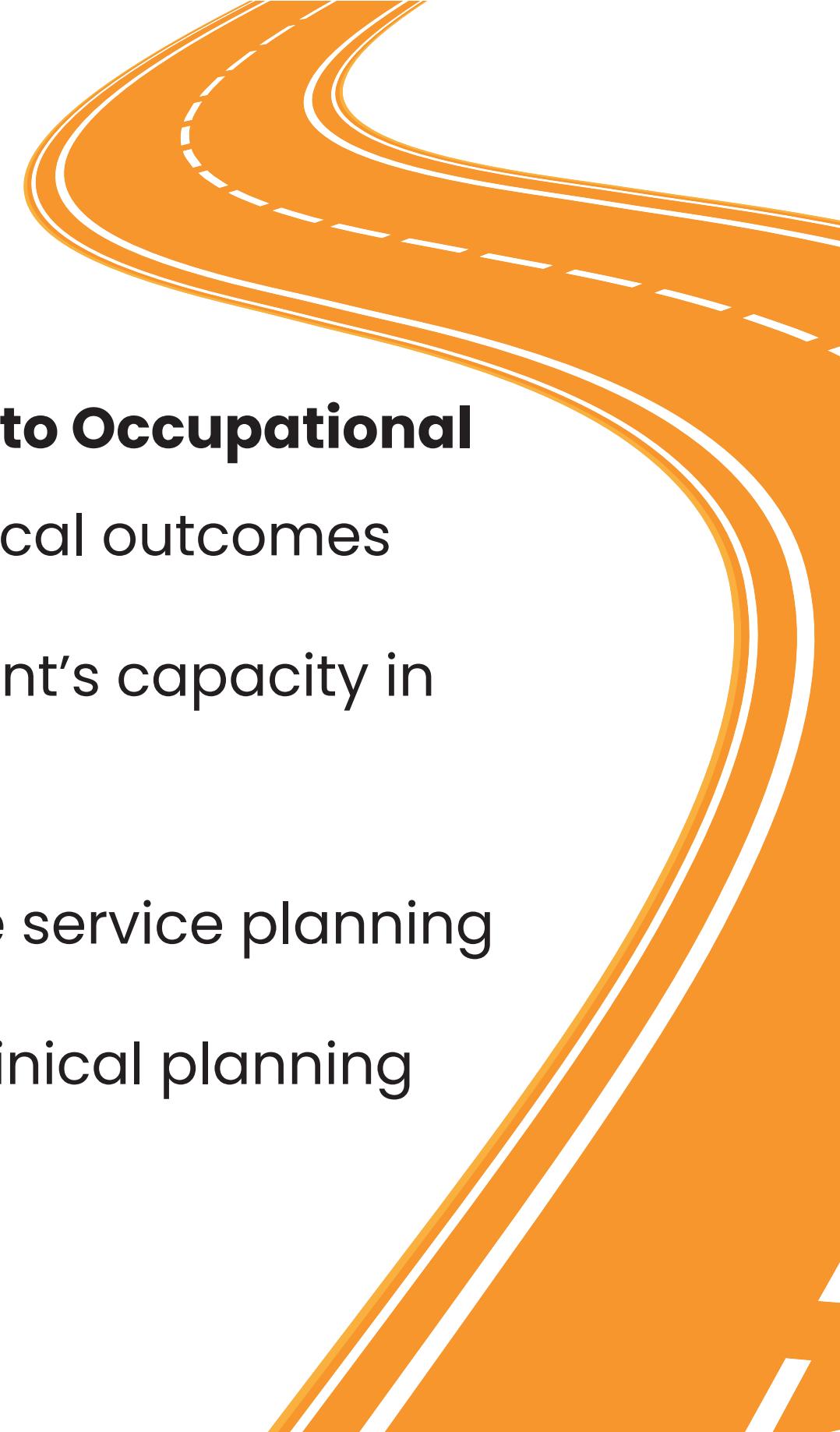
- Reduce peritonitis rates in trained borderline cases by 70%
- Extrapolating cost-saving analyses
 - Reduced **280 bed days**
 - **Annual savings of over \$1M** in peritonitis-related hospitalizations and treatment
 - Further reduce cost through early identification of failed cases to avoid Tenckhoff insertion operations



Way forward



- Recommend **establishing pre-PD referral pathways to Occupational Therapy in KWC** for improving patient safety and clinical outcomes
- Strengthen **rehabilitation element** of optimizing patient's capacity in PD through OT interventions
- Review peritonitis cases to identify risk factors & guide service planning
- Sustain close team collaboration to support quality clinical planning





Thank You



Acknowledgement



Special thanks to

- Dr. S K Yuen, CMC Hospital Coordinator (Q&S) / CON (MG)
- Ms Queenie Cheong, CMC WM (MG)
- Ms Cecilia Leung, KWC & CMC ANC (MG)
- Members of CMC Renal Team