



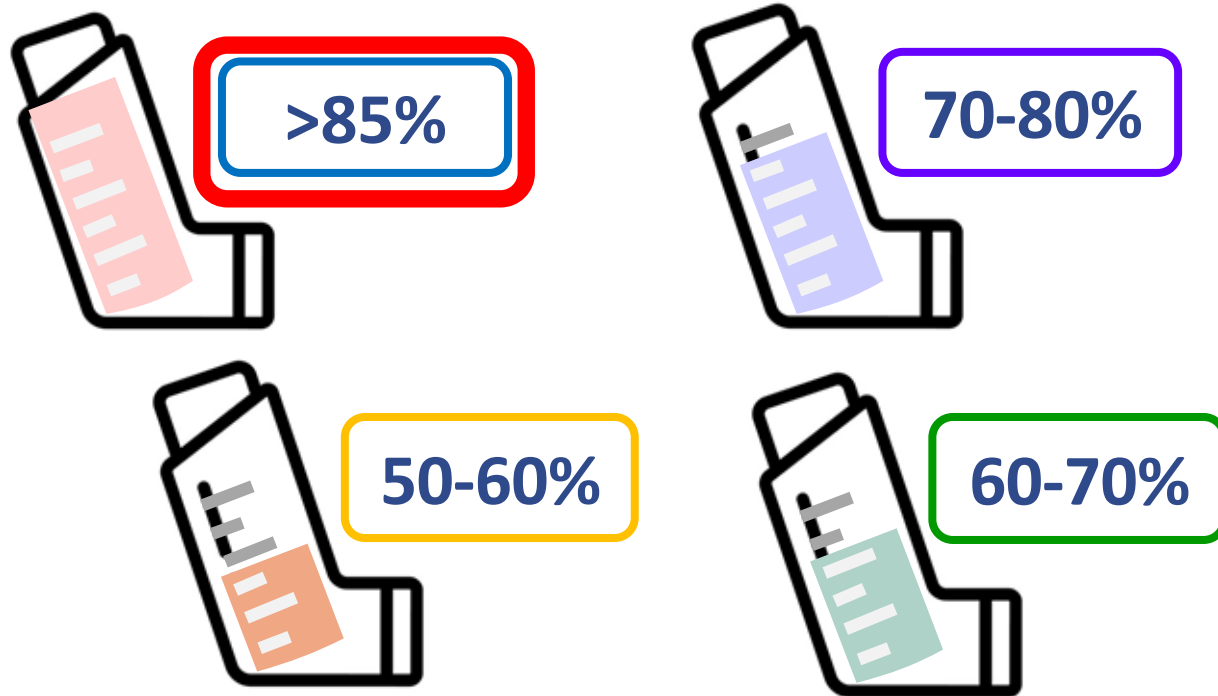
Our Lady of Maryknoll Hospital

Improving Metered Dose Inhaler Technique for Nurses in M&G unit



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What Percentage of Nurses Misuse Pressurised Metered Dose Inhaler (pMDI)



Why correct knowledge in pMDI is important among nurses?



A nurse is closer and primary educators for the patients



Nurses often have suboptimal pMDI technique and asthma knowledge



Improving nurses' pMDI knowledge measurably improves their teaching skills



Standardization of Care



Reduce patient exacerbations / readmissions



Nursing Standard of Care for Inhalation Medication

Device Priming

Shaking and priming (if new or unused) to ensure dose consistency.

Coordination

Slow, deep inhalation synchronized with actuation.

Breath-holding

10-second hold for optimal peripheral lung deposition.

Spacer Use

HA strongly recommends spacer use for pMDIs to minimize oropharyngeal deposition and improve delivery



A pMDI Enhancement Program

Target population

All RN & EN in HKBH A4M ward

Intervention

Educational PowerPoint regarding inhalation skills and one-on-one demonstrations

Period

3 months (21/5/2025-21/8/2025)

Outcome measurement

OLMH pMDI checklists



Objectives



1) To carry out a **CQI project** and to explore **nurses' inhaler technique level** in a medical ward.



2) To enhance the **technique for pMDI use** and competency on providing **inhaler education** to patient among ward nurses.



3) To **decrease the rate of MDI misuse** by ensuring nurses understand and apply correct inhaler use techniques.



Pre-Post Intervention Design

Pre-Test

**Educational PowerPoint
&
Demonstrations and
return demonstrations**

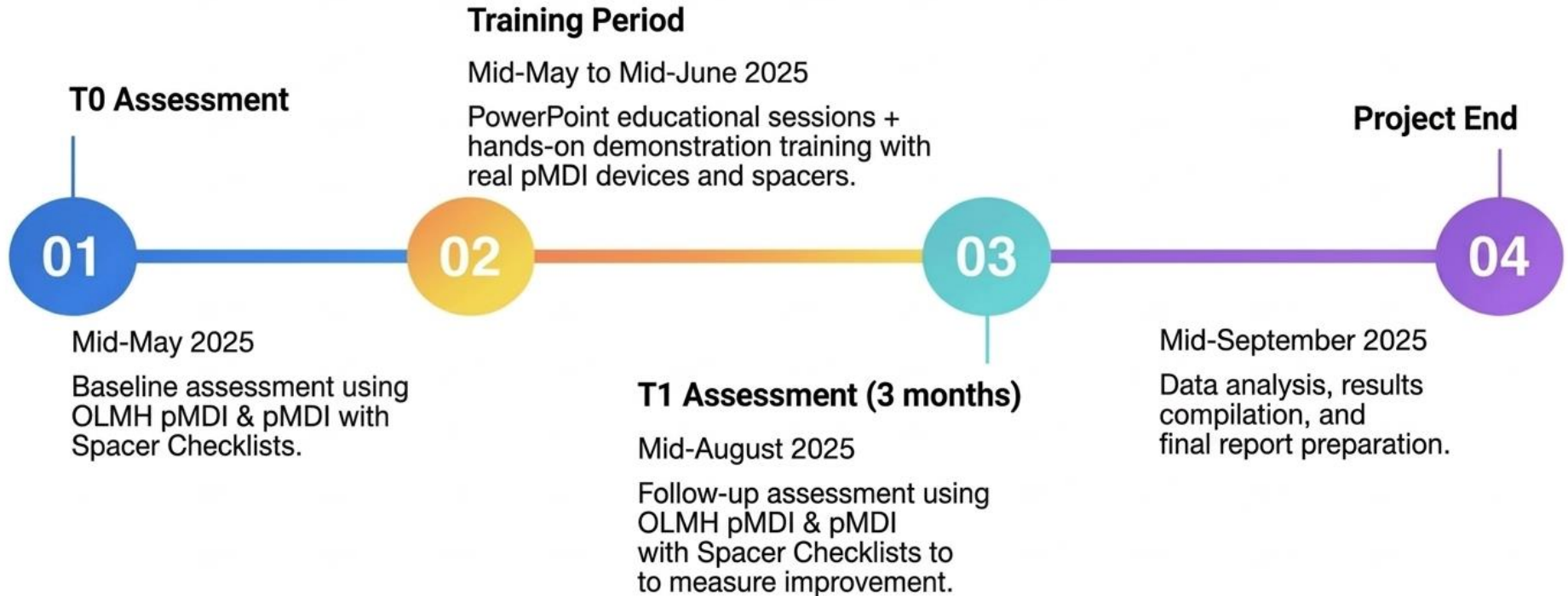
Post-Test

Demonstration of
using pMDI
against pMDI
checklist



Return
demonstration
after
Three month

The Timeline of the Project





Results of the CQI Project



General Characteristics of the Subjects

Characteristics	Mean(n=24)
1. Working experience in the ward (in years)	14.71 ± 11.00 year
2. Male :Female ratio	16: 8
3. Position Registered Nurse : Enrolled Nurse	20:4
4. PRCC Respiratory Certificate	Yes:2 (8.3%) No:22(91.7%)

Key Findings

- ▶ Nurses had good baseline(Full mark=100%) knowledge of pMDI (**70.4%**) vs pMDI with spacer technique (**85.8%**).
- ▶ **Baseline Knowledge Gap (T0):** Initial assessments revealed a significant competency deficit, particularly in pMDI technique without a spacer (**7.04/10**) compared to usage with a spacer (**8.58/10**).
- ▶ **Substantial Improvement (T1):** Three months post-intervention, competency scores rose sharply to **9.29/10** for pMDI only and **9.33/10** for pMDI with a spacer.



Key Findings (2)

- ▶ **Demonstrated Retention:** The 3-month follow-up confirmed excellent knowledge retention, with staff maintaining a **high competency level (over 90%)** long after the initial training.
- ▶ **Statistical Significance:** A **P-value of < 0.001** indicates that the **~32%** increase in pMDI-only scores was a direct result of the educational intervention rather than chance.



Recommendations



Incorporate OLMH checklists into new staff orientation.



Repeated training to sustain the proper use of pMDI among nurses and prevent memory loss, e.g **physical and video demonstrations workshop**



Provide **quick-reference posters or bedside cue cards** in clinical areas.



Further studies need to be performed in larger, mixed populations of healthcare professionals to confirm these findings.

Limitations



Small Sample Size: Focused on 24 nurses in a single unit (M&G);



Results may **not generalise to all settings** e.g. Surgical/ OPD



No control group: Unable to compare with alternative methods



Hawthorne effect: Staff awareness may influence performance

Enhancement

Training
Video

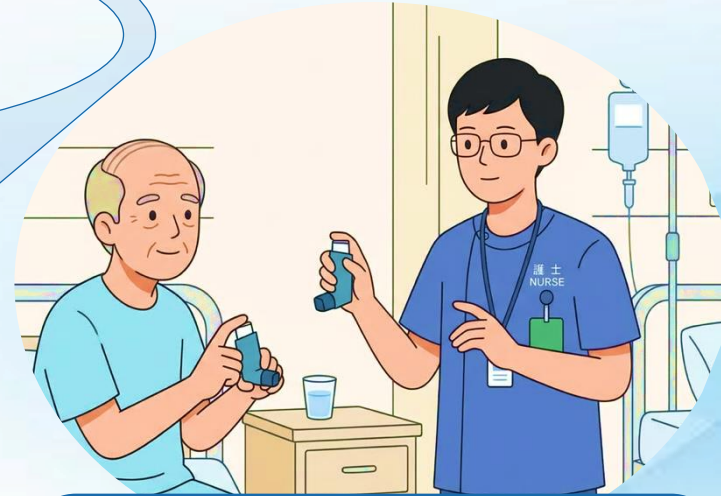
Trainer

(Specialty
nurse in
Respiratory)

pMDI
Checkl
ist

Regular
Training
(annual)

Competence
Nurse on
Inhaler technique



Nurses educate and
train the patients the
proper use of
inhalers

ACKNOWLEDGEMENT

LEADERSHIP & MENTORS:

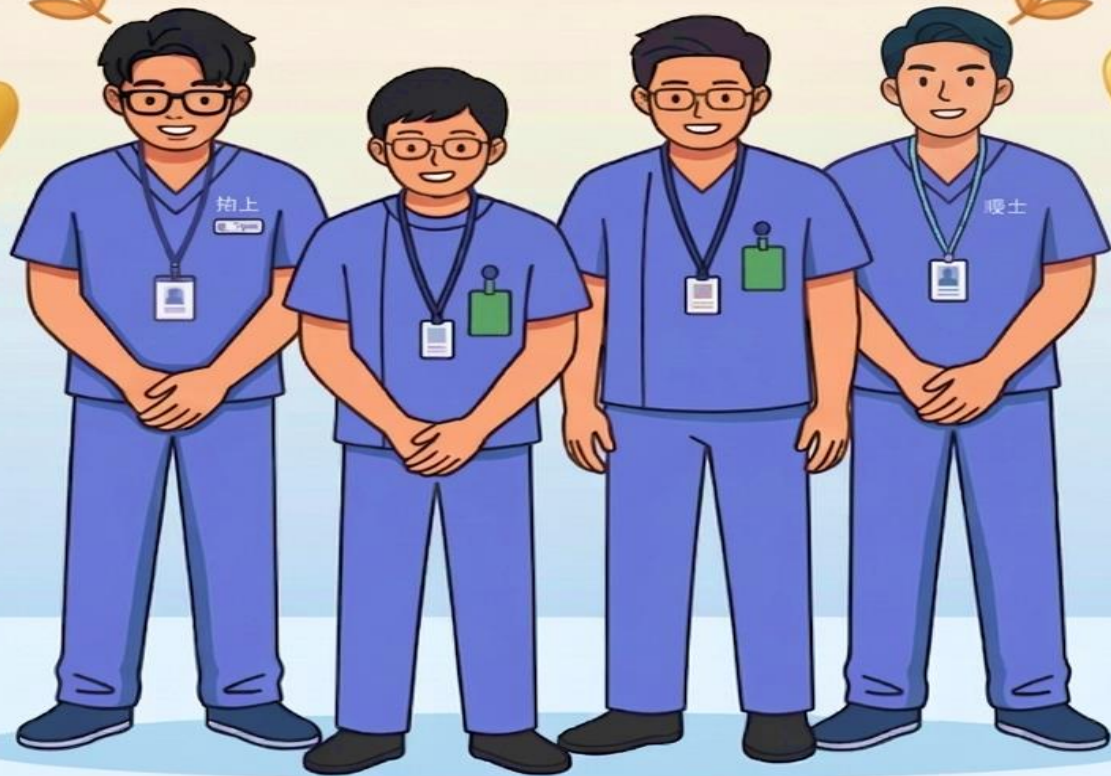
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THANK YOU



Reference

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