# Prolia Project - A Redesign of the Process of Denosumab Injection at Geriatric Medicine Clinic (GMC) to Reduce Patient's Journey

Singapore Healthcare Management 2023

Wesley Huong Chik Han, Changi General Hospital
Cindy Tan Man Si, Changi General Hospital
Pauline Yap Wei Yun, Changi General Hospital

Changi General Hospital
SingHealth

## Background Information

Osteoporosis is deemed as a healthcare issue globally, especially in countries with an aging population such as Singapore.[1] Denosumab (brand name: Prolia®) injection is one of the treatment options for managing Osteoporosis. Denosumab requires storage in a refrigerator (2°C – 8°C) with temperature monitoring and the injections are kept at the pharmacy. After doctor consultation, patients will bring the prescription paper to the pharmacy to collect the injection prior to the administration at GMC. After that, medication orders for the rest of prescription will be done by a pharmacist. The whole journey involves multiple contact points from waiting for the prescription, collecting the injection from the pharmacy and finally receiving the treatment from the GMC nurses.

## Project Aim:

**A)** To shorten patient's journey

**B)** To improve patient experience and satisfaction

## Methods

A team comprising of Pharmacy @ IB, SC Ops and GMC was formed to review the existing workflow in order to gather insights that help determine the underlying cause of long waiting time. The team conducted workflow mapping of existing processes. The team also conducted on-ground observations and gathered feedback from ground staff at GMC and Pharmacy @ IB.

The team identified these factors contributing to the journey in receiving denosumab treatment:
1) Availability of denosumab in the pharmacy only
2) Time taken to collect denosumab at the pharmacy
2) Preparation time for denosumab administration

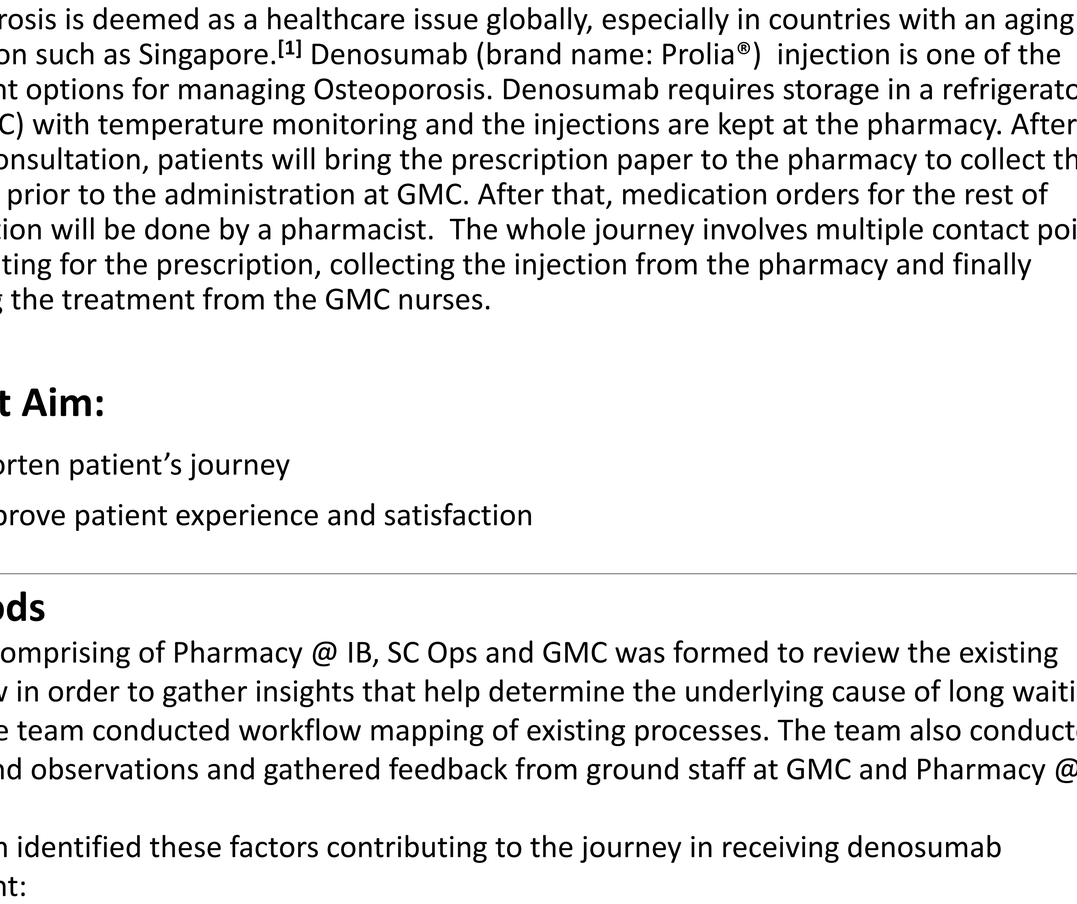


*Figure 1. Process mapping diagram of existing workflow*

With these findings, the team decided to steer improvement efforts to revise the existing workflow .

**Changes**

1. Pharmacist at medication order counter to bring denosumab and store at GMC refrigerator
- **Patient does not need to collect denosumab from the pharmacy after doctor consultation**

2. Medication orders to be taken before denosumab administration then electronically send to pharmacy for packing
- **Shorten total waiting time at pharmacy for medicine collection as they are prepared prior to patient's arrival**

3) GMC nurse to verify patient identifiers with pharmacist instead with another nurse before administration
- **Increase nursing manpower in treatment room to attend to more patients**

*The 3 changes above all contribute to reducing patient's waiting time at the respective contact points.*

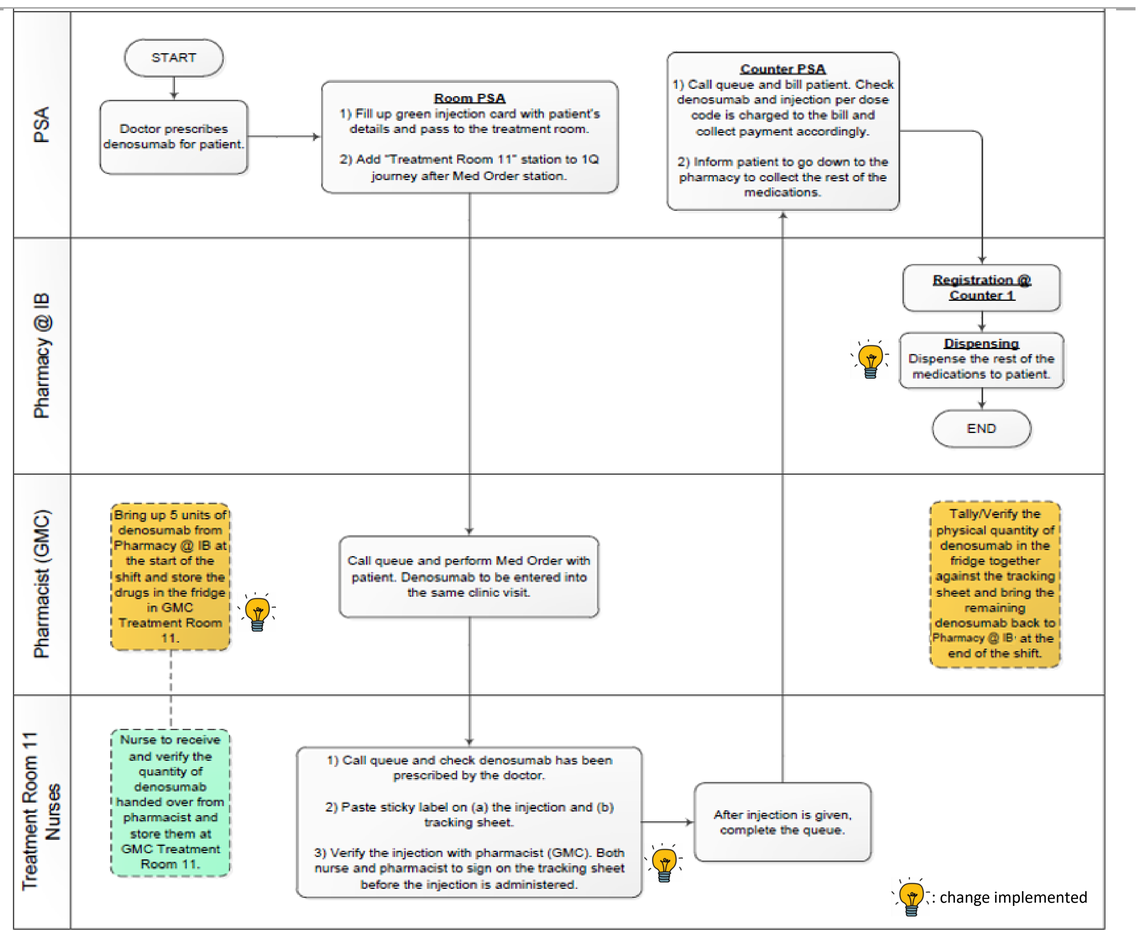


*Figure 2. Process mapping diagram of revised workflow*

## Measures (Results , Outcomes and Figures)

**Data collection**

**A)** Total time taken for patient's journey in receiving denosumab treatment (from the time doctor prescribed the prescription to injection administration)

**B)** Patient's satisfaction level with waiting time

**Results**

√ Decreased time taken to receive denosumab treatment

√ Reduced frequency of medicine collection from pharmacy (from 2 to 1 contact point)

√ Improved patient satisfaction with lesser waiting time

**A)**

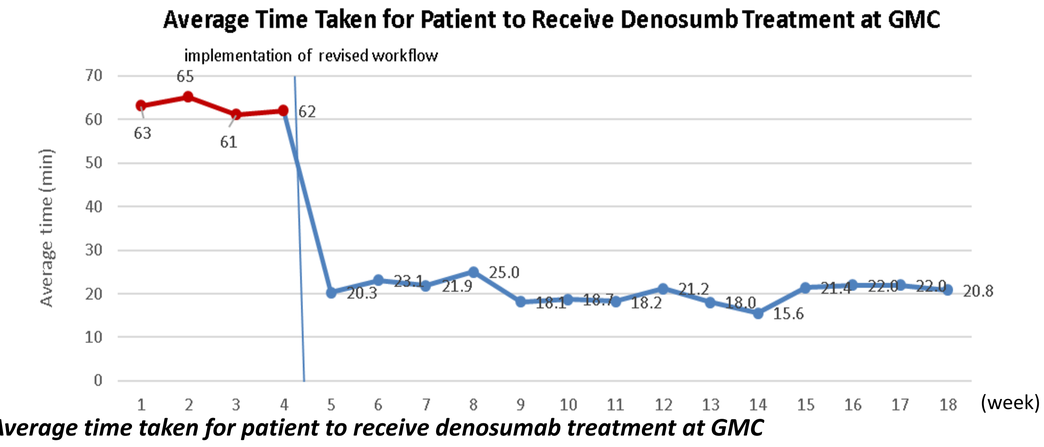


*Figure 3. Average time taken for patient to receive denosumab treatment at GMC*

Post-implementation, the average time taken for patient to receive the denosumab treatment at GMC was reduced from 62 minutes to 20 minutes.

**B) Question: How satisfied are you with the waiting time to receive denosumab treatment?**

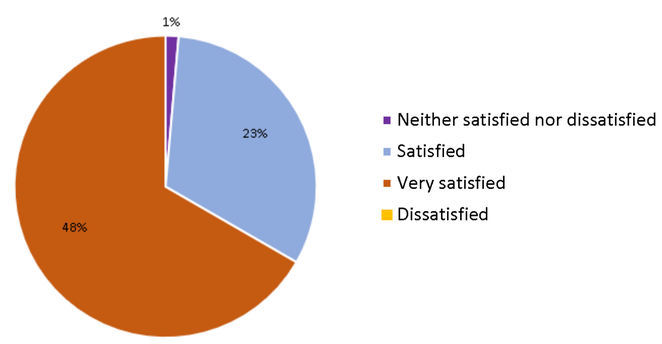


*Figure 4. Result of patient satisfaction survey*

From the results (n=72), none of the patients had expressed dissatisfaction. The revised workflow had received positive feedback that it is convenient, hassle free, effective and time saving.

## Conclusion

**Successes**

- The team achieved its primary objective of shortening patient's journey in receiving denosumab treatment at GMC, improved patient's experience and satisfaction; with additional benefit of improved GMC nurse efficiency at the treatment room.

**Moving forward**

- To explore feasibility of keeping denosumab at GMC.
- To explore possibility of keeping other clinic-specific medications at specialist outpatient clinics.