



# Reducing the frequency of changing Bonanno Catheter's dressing in Ward 46 within 6 months

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Kellyn Lim Li Juan, Singapore General Hospital  
William Koh Wei Liang, Singapore General Hospital  
Nurshifa Binte Shaik Hussain, Singapore General Hospital  
Lim Elin, Singapore General Hospital  
Seetha Annamalai, Singapore General Hospital  
Lin Mei, Singapore General Hospital  
Andrea Choh Chau Lin, Singapore General Hospital

## Background of the Problem

Ward 46 is a 90 bedded multi-disciplinary acute medical ward that caters mainly to Gastroenterology and Endocrinology patients. Among the Gastroenterology patients, one common condition is **liver cirrhosis**.

Due to liver cirrhosis, patients are often admitted for ascites, a complication where fluid is retained in the abdominal spaces. Often, to relieve the abdominal discomfort caused by ascites, the doctors will perform a bedside insertion of a **Bonanno Catheter** into the peritoneal cavity at the ward level, aiming for large-volume paracentesis. These Bonanno catheters will then be dressed in gauze and secured with transparent dressings (Tegaderm).

Due to the stiff nature of the catheter and frequent patient movement, nurses would need to keep changing/reinforcing the dressing as it would loosen and be unable to secure the Bonanno catheter adequately, leading to dislodgement. Hence, this showed a need to focus on developing and implementing preventive measures to reduce the frequency required to change/reinforce the catheter dressing, thus reducing the potential risk of abdominal drain dislodgement

This project is aligned with SGH Quality Priorities:

- 1) Safety: Focusing on providing a safe environment for patients by preventing unnecessary dislodgement of the Bonanno catheter
- 2) Efficiency: Focusing on improving nurses' efficiency by reducing the frequency of changing/reinforcing the dressing, allowing nurses to have more time to focus on their other duties

## Mission Statement

To decrease the frequency needed to reinforce or change the dressing for patients with Bonanno Catheter in Ward 46 while the catheter is in-situ.

## Analysis of Problem (Using 5 Whys and 1 How)

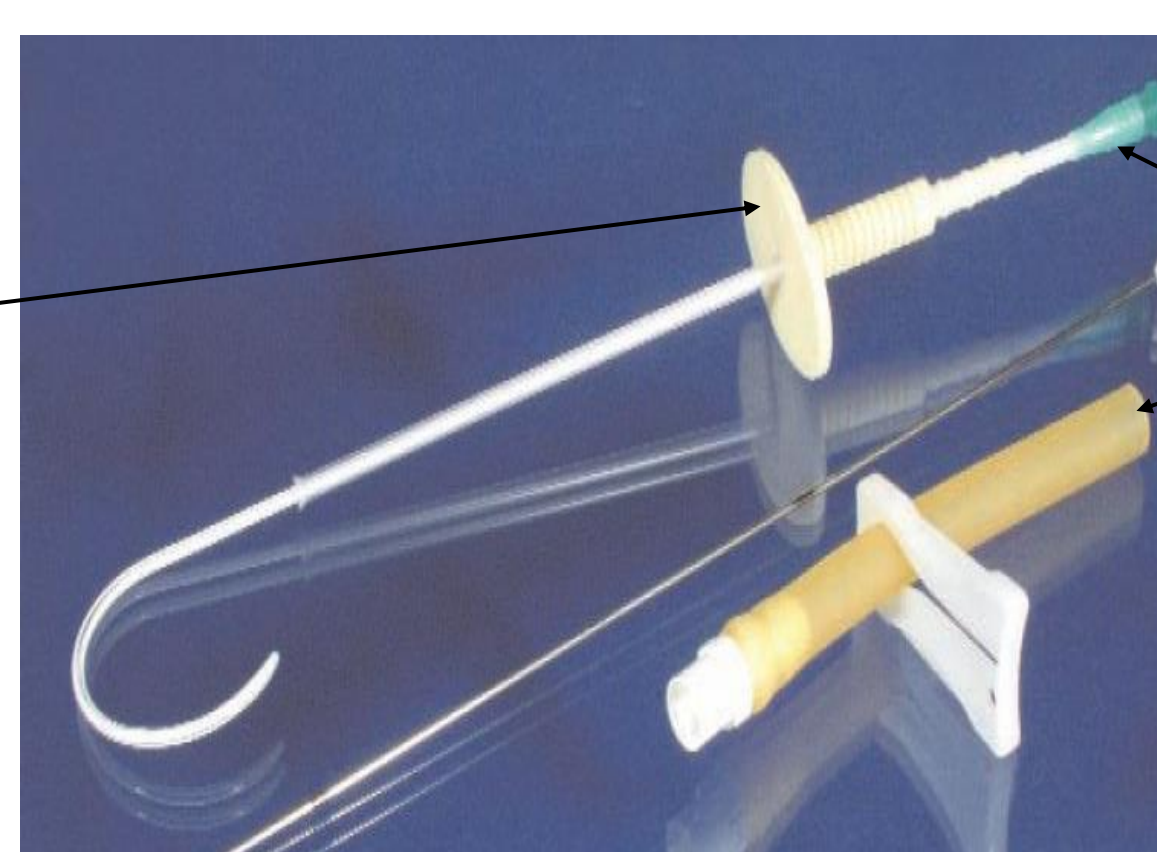
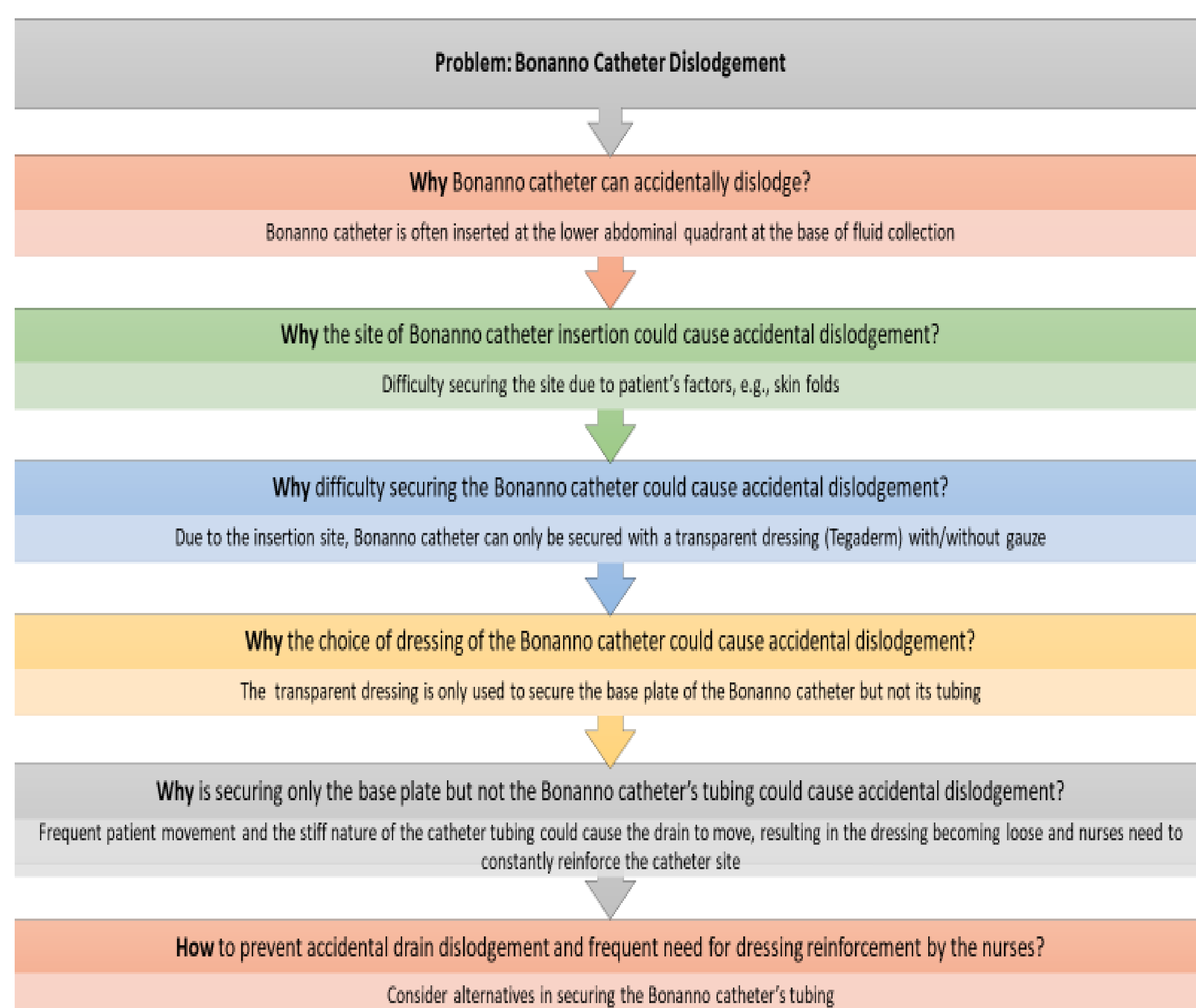


Fig 1

## Interventions/Initiatives

### PDSA 1

The team explored using **Mefix** (Fig. 2), a self-adhesive fabric tape. The flexibility of this tape allows nurses to cut the shape and size needed to provide secure fixation of the Bonanno catheter's tubing and could facilitate patient movement. It is waterproof, has high tensile strength, and is not irritable to the skin when coming into contact. Hence, the team decided to use Mefix to secure the tubing, using the **"H" method** (Fig 3) by pasting two long strips alongside the base plate and a short strip to bridge and tape around the tubing.

After using this tape to secure the Bonanno catheter's tubing for one month, nurses feedbacked that the average frequency of dressing reinforcement/change reduced. However, they found difficulty in applying the tape to the tubing as the material was soft, thus spending a long time doing so.



Fig 2



Fig 3

### PDSA 2

The team looked into other options, such as **Durapore** (Fig 4). Durapore, a silk-like cloth tape, is like Mefix in terms of its waterproof, flexibility, and hypoallergenic properties. However, Durapore is firmer compared to Mefix, and is proven to have stronger adhesiveness to the skin, as it could last longer than 72 hours. The team then used Durapore to secure the tubing using the **"H" method** (Fig 5).

After one month of trialing this approach, nurses feedbacked that the application of Durapore was easier, compared to using Mefix, and the dressing could last longer, without having the frequent need to reinforce/change the dressing. This approach was then continued over the next three months to determine its sustainability.



Fig 4

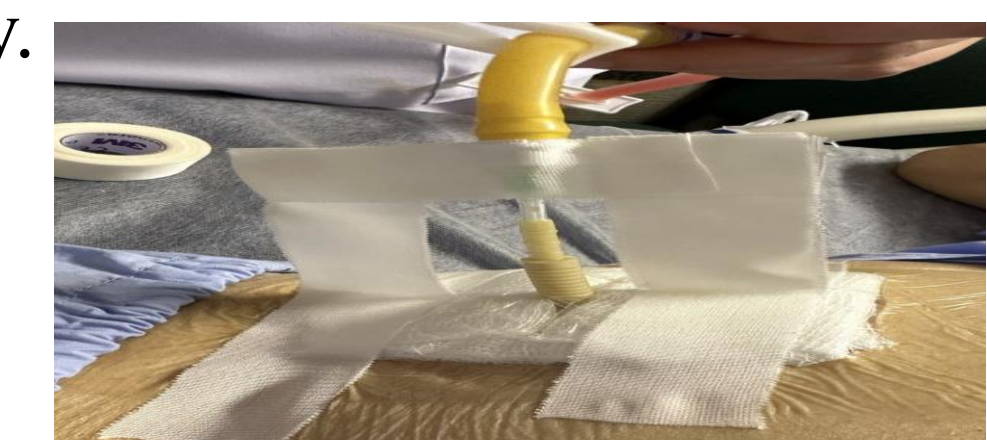
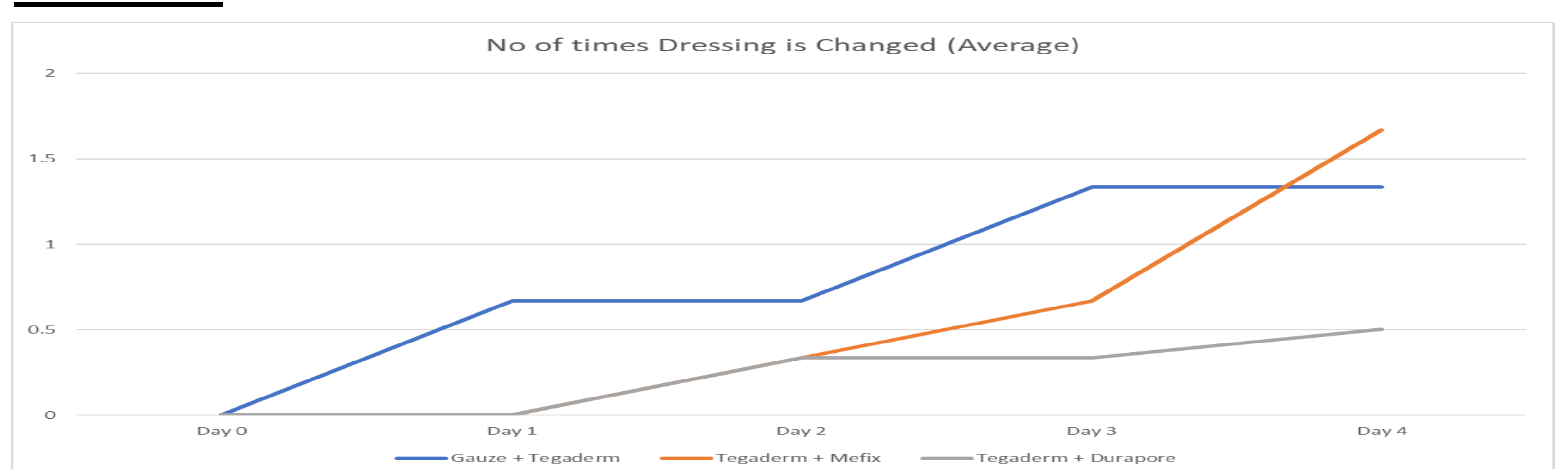


Fig 5

## Results



| Ave. No of times dressing is changed | Day 0 | Day 1       | Day 2       | Day 3       | Day 4       | Total average |
|--------------------------------------|-------|-------------|-------------|-------------|-------------|---------------|
| Gauze + Tegaderm                     | 0     | 0.666666667 | 0.666666667 | 1.333333333 | 1.333333333 | 0.8           |
| Tegaderm + Mefix                     | 0     | 0           | 0.333333333 | 0.666666667 | 1.666666667 | 0.533333333   |
| Tegaderm + Durapore                  | 0     | 0           | 0.333333333 | 0.333333333 | 0.5         | 0.233333333   |

- Significant results were seen when comparing the average frequency of dressing reinforcement/change per day among the three dressing choices. Results showed that other than having no drain dislodgement incidences during the project period, using Durapore to secure the Bonanno catheter's tubing required the least dressing reinforcement/change, and these results were sustainable.
- Further analysis revealed that nurses took the initiative to change/reinforce the dressing even though it was not loose as Durapore was used. The reason was they noticed leakage from the insertion site, causing the gauze and surrounding skin to be wet.
- Nurses on the ground expressed satisfaction regarding the use of Durapore. They mentioned that minimizing the need for frequent dressing reinforcement/change, allowed them to have more time for other patient-related care activities.

## Sustainability Plans

This initiative in securing the Bonanno catheter's tubing using Durapore and the **"H" method** was started and practiced in Ward 46. Briefings were conducted to the ward staff regarding this initiative and all queries were addressed accordingly. To sustain this initiative, the team has decided to conduct regular briefings and competencies for the ward staff. Additionally, all new staff posted to the ward will also be briefed on this initiative. Concurrently, the team will continue to gather feedbacks and welcome any queries regarding this project.