

Reducing Catheter Infection Rates in Hemodialysis Patients

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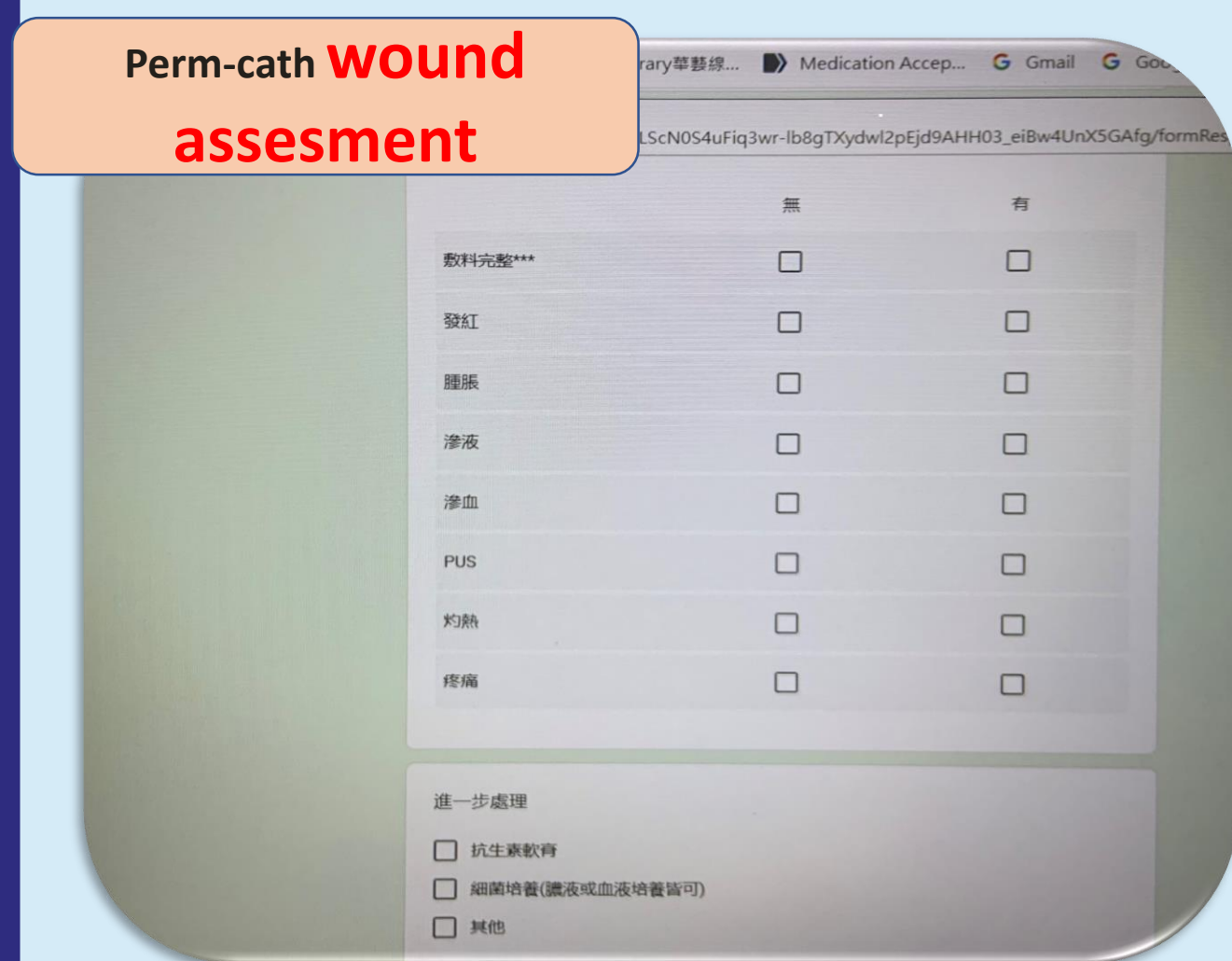
P436

INTRODUCTION

According to the 2020 URSD report, around 80% of patients started hemodialysis treatment with permanent catheters. Although catheter placement is life-saving, complications such as bleeding, thrombosis, infection, pneumothorax, and air embolism can also occur. In addition, patients with permanent catheters (permcath) had a 15-fold increased risk of catheter-related bloodstream infection (CRBSI) compared to ESRD patients with arteriovenous fistulas. Once a catheter-related bloodstream infection occurs, the patient's hospital stay will be extended by about 20.1 days, and medical expenses will cost around 3000 USD. Therefore, it is very important to implement infection control. There have been dialysis catheter infections events in our hemodialysis unit for 3 consecutive months. The infection rates were 2.46‰ in March, 2.29‰ in April, and 2.07‰ in May. According to our data, 3 patients received catheter replacement due to infection. The coexistence rate of permanent catheter and arteriovenous fistula accounts for 40%, and the average implantation of permanent catheter is 290 days (>4 months). Therefore, we make an improvement project.

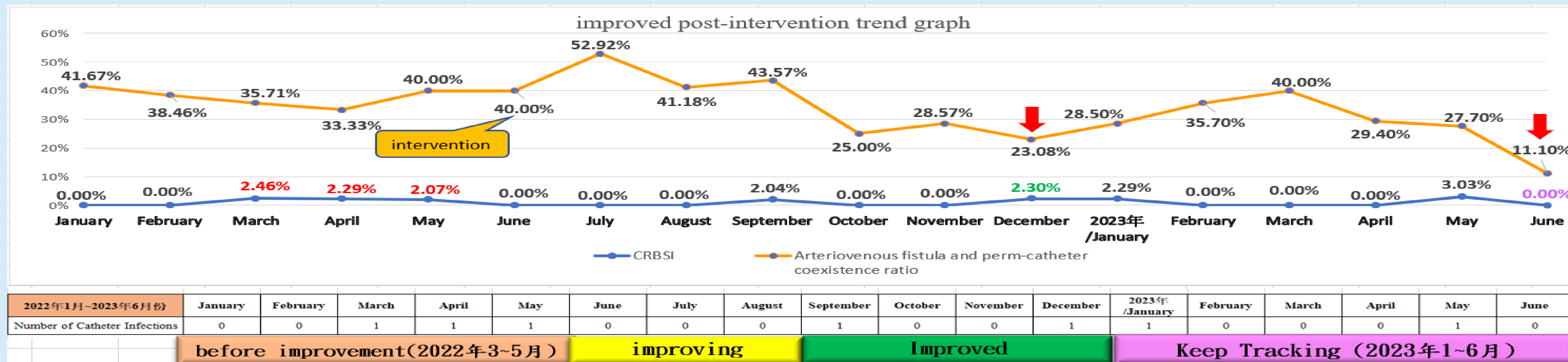
METHOD

Based on the PDCA management cycle, we use team member brainstorming and medical team resource management (TRM), through leadership, communication, and problem-solving methods to analyze the reasons, including medical staff, patients, and environmental equipment, to investigate the problems and to solve them. The countermeasures include (1)formulating a permanent catheter wound assessment form .(2)organizing catheter care education and training courses(3)making posters with “pictures of catheter care process” and responding to the demonstration.(4)implementing health education on "care for new fistula maturation" ,reduce dialysis catheter retention.(5) adding dry hand sanitizer at the end of the bed.



RESULTS

After the intervention of improvement measures, from August 2022 to December 2022, the average infection rate of dialysis catheters in our hemodialysis unit dropped from 2.5‰ to 2.3‰. Although the improvement is limited, the coexistence of catheters and arteriovenous fistulas in our unit decreased from 40% to 23%. The correct rate of permanent catheter care by nursing staff increased from 69.2% to 92.2% which reaching our target.



CONCLUSIONS

The home care of hemodialysis patients improved by promoting the "catheter care process pictures" and “bundle care model” which can effectively decreased the rate of catheter-related bloodstream infection in the unit. Due to aging society and the increasing number of foreign care-giver, it is recommended that we add catheter care in different languages in the future. Once the correct concept of infection control can be rooted early, we can achieve the better patient safety and care quality.

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