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Taiwan Antimicrobial Stewardship Program:



How to improve the turnaround time of clinical microbiology report and the quality of clinical specimens

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Objectives

The human beings face a new challenge of the shortage of effective antibiotics due to resistant strains spread rapidly and the new drugs develop slowly. In 2013, Joint Commission of Taiwan was tendered three-year Antimicrobial Stewardship Program (ASP) by Taiwan Centers for Disease Control, R.O.C. (Taiwan) to decrease the antimicrobial resistance, hospital associated infections, and wisely antimicrobials use. The purpose of this research is to study how the clinical laboratory technologists to enhance the turnaround time of clinical microbiology report and the quality of clinical specimens, in order to provide the fast and accurate results to the physicians as reference for antibiotic orders.

Methods

In 2013, Joint Commission of Taiwan played the Management Center to work with 7 demo centers. We established the strategies, including surveillance of antimicrobial resistance and antibiotic use, antimicrobials use appropriately, infection control and prevention, and culture sustainability. In 2014, 54 participating hospitals joined into this program working with 7 demo centers to adopt the experiences. Thirty-nine indicators were used to track the outcomes.

Results

7 demo centers and 54 participating hospitals provided the data of 39 indicators per month to Management Center. Among these 39 indicators, 9 indicators are related to medical laboratory. After collecting and analyzing the data, the findings include the followings:

- 1.At the beginning of the program, specimen contamination rate was high. One of the reasons was participating hospitals did not follow the same definition of the contamination of blood culture, urine culture, and sputum culture. After the interact meetings of 7 demo centers, the definitions came to the conclusion and implemented.
- 2.The specimen delivery time after collecting was longer than 2 hours. After the interact meetings of 7 demo centers, the specimen had to be delivered within 2 hours as the goal to achieve.
- 3.Some hospitals used barcode system to track the specimen delivery process. Moreover, some hospitals even set up alarm system to remind the laboratory personnel to track the un-arrived specimen.
- 4.The majority of participating hospitals do not have enough staff for 24-hour shift in microbiology department. Therefore, in evening shift and graveyard shift, the staff must at least perform once on the blood culture machine, stain and subculture of the positive blood culture bottles to improve the performance.

Conclusion

Comparing the data of January and December of 2014, the average preliminary report time of the blood culture shortened 7.1 hours in participating hospitals, and 4.6 hours in demo centers.(Figure 1) The average final report time of the blood culture shortened 8.2 hours in participating hospitals, and 3.5 hours in demo centers .(Figure2)

The demo center interact meeting was held every 2 months. In these meetings, the demo centers shared their successful experiences, learned and grow together. More important, it facilitates their mutual learning through such meetings. Therefore, interact meetings on a regular basis can be considered the best way to make effort of providing fast and accurate results to physicians and other care providers to improve the quality of medical care.

Figure 1. The Average Preliminary Report Time Of The Blood Culture

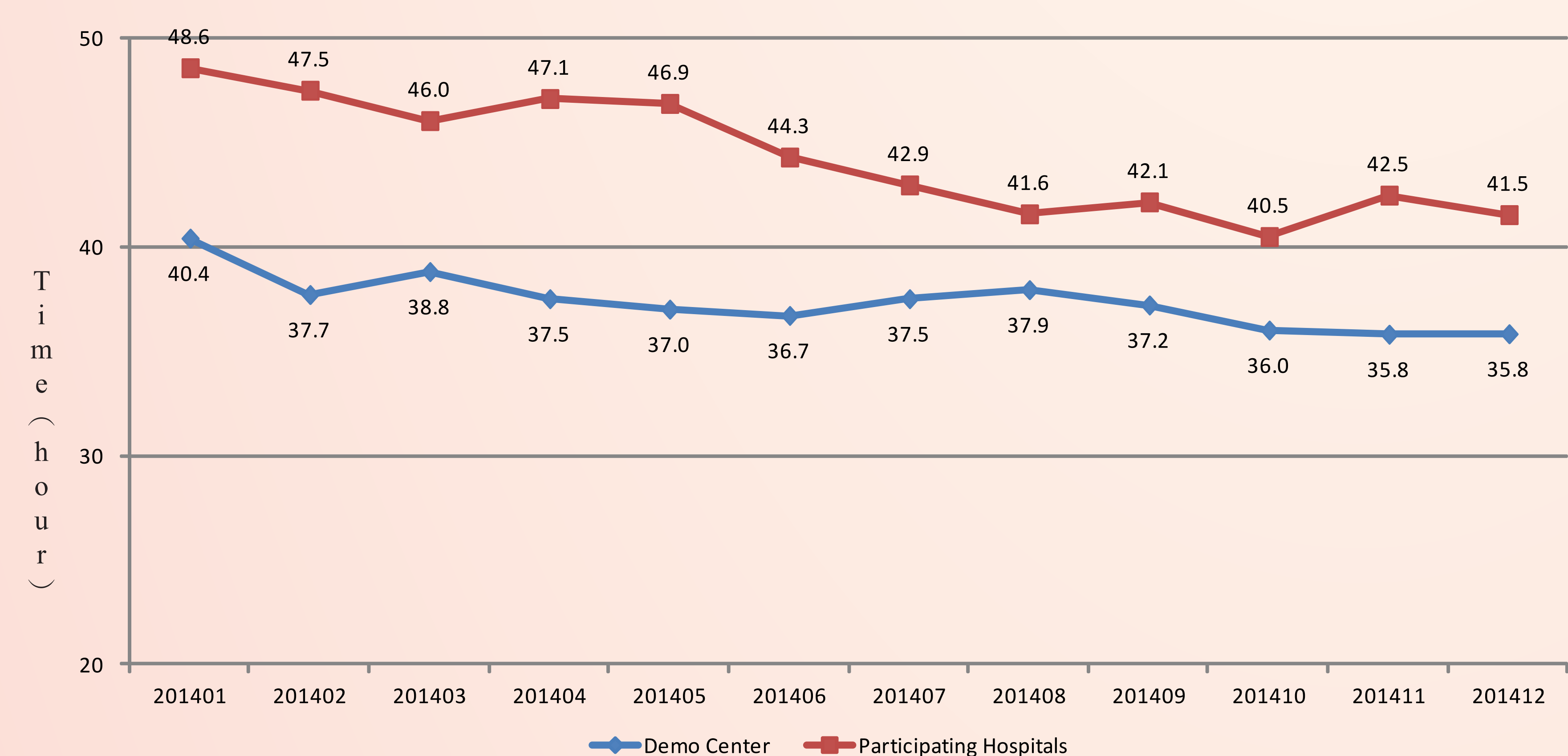
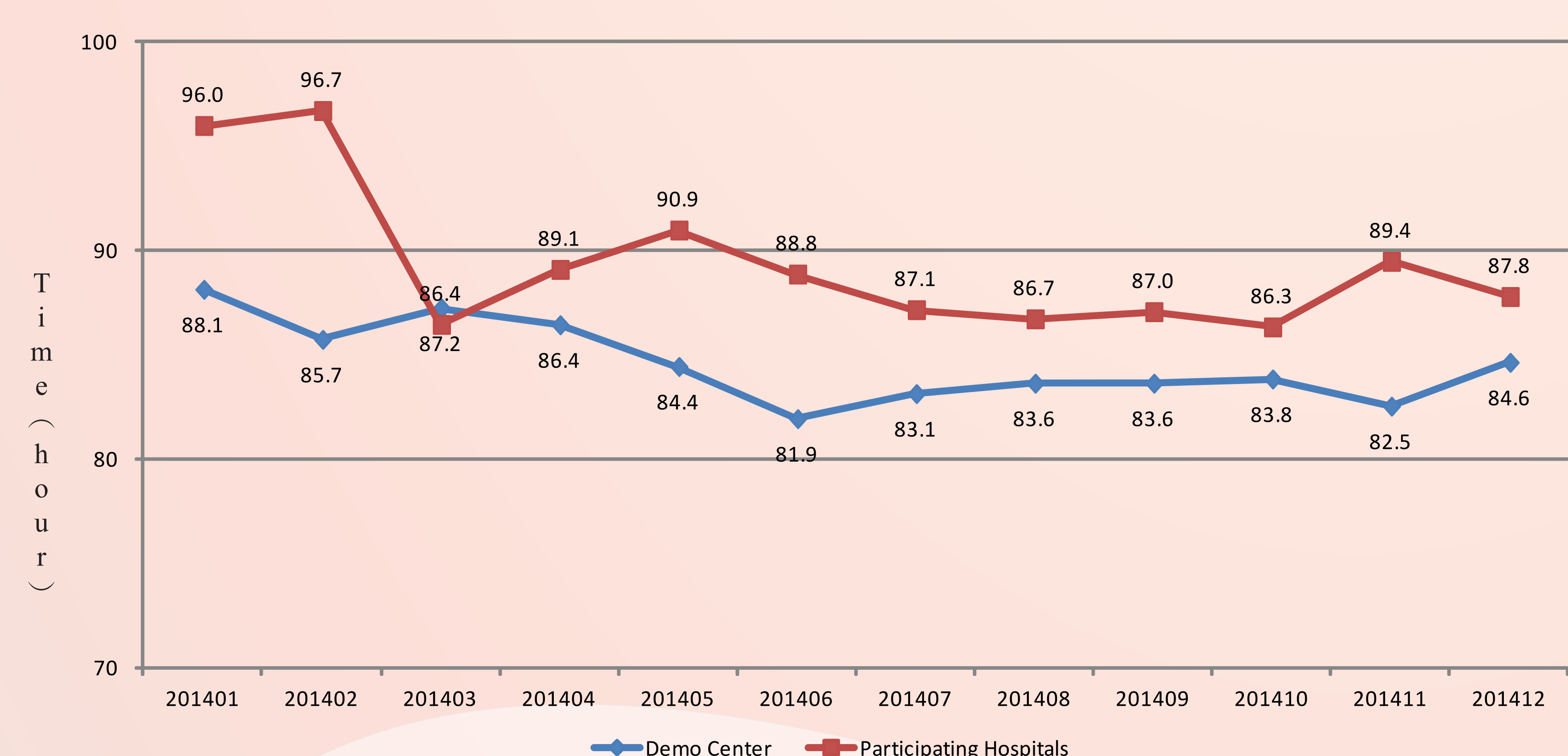


Figure 2. The Average Final Report Time Of The Blood Culture



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