

# Successful reduction in the “Door-to-Needle time” for antibiotic administration in the emergency management of chemotherapy-induced neutropenic fever

Tong M[1], Lim FMY[1], Yau CC[1], Lit ACH[2], Lo JCK[1], Cheng ACK[1]  
[1]Department of Oncology [2]Department of Accident & Emergency  
Princess Margaret Hospital / KWC



# Introduction

- Neutropenic fever (FN) is a serious complication from cytotoxic chemotherapy.
- Prompt initiation of antibiotics improves the clinical outcomes.
- International guideline recommends a “door-to-needle” time (DTN) for antibiotic administration within 2 hours as a performance standard.



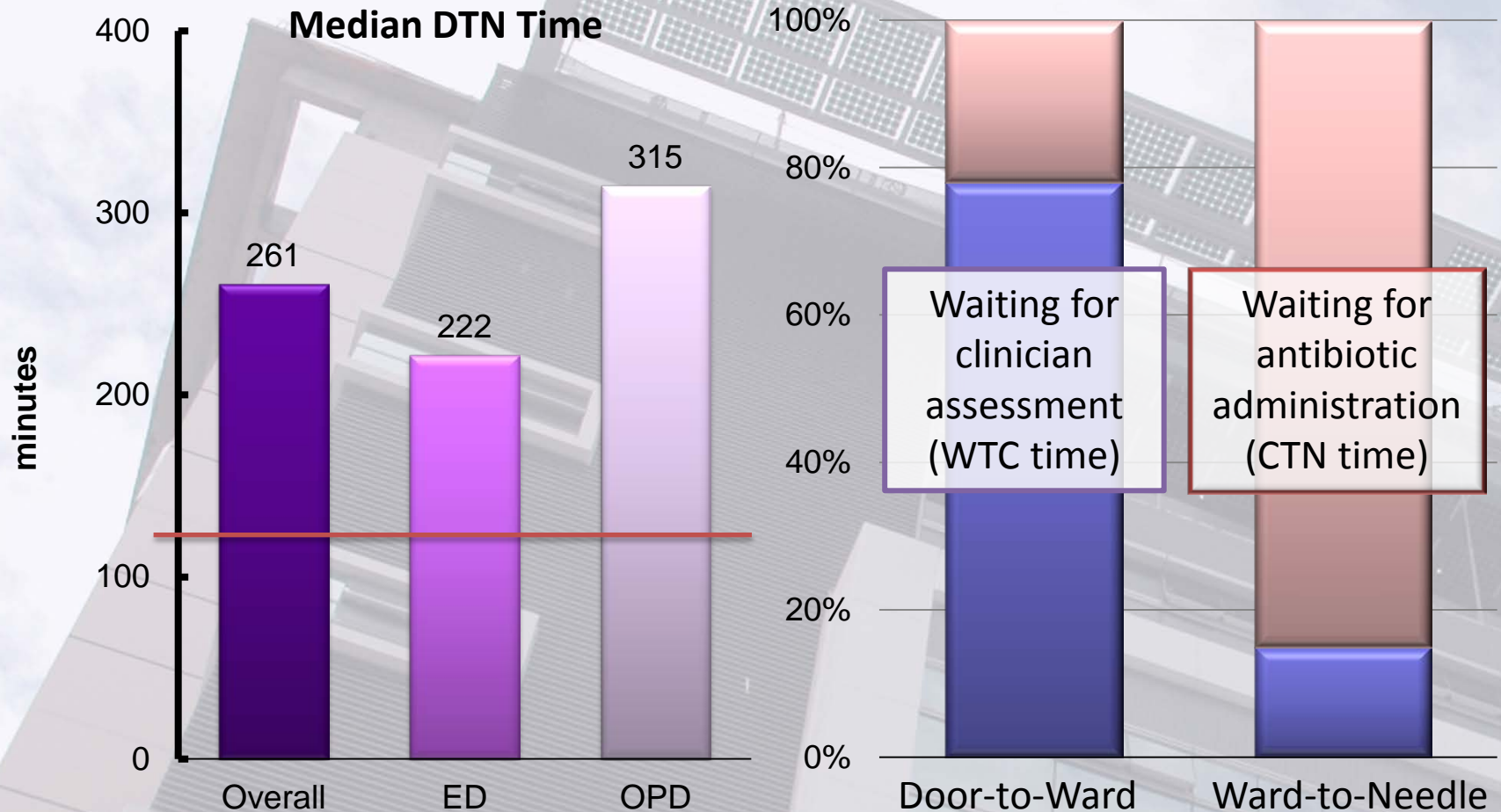
# Objectives & Methods

- A quality improvement project to improve the compliance of DTN within 2-hour target
- Two-staged audits
  - Data retrievals from CDARS
  - DTN and its breakdowns determined along the patient care pathway
- System factor and existing hurdles to major delays were identified.
- Strategies and improvement actions were derived, disseminated and implemented.





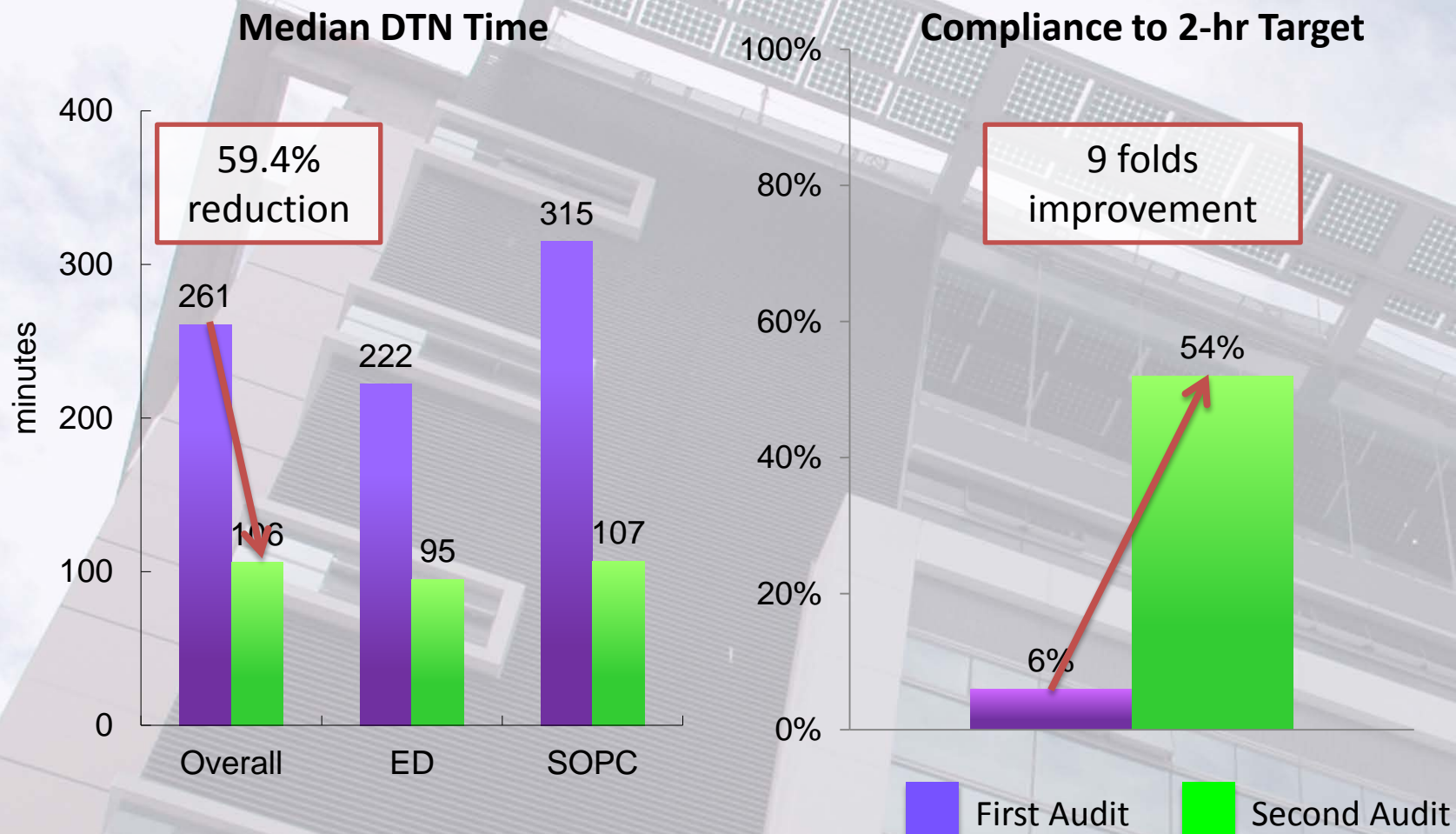
# Main Results



Problems Identified	Strategies for Improvement
Lack of awareness of presentation of FN, its risks and the importance of early antibiotic administration.	Educate staff about the importance of prompt administration of antibiotics. Introduce the concept of DTN.
Lack of a system to identify patients presented to Oncology OPD.	Set up a triage system with standard criteria for early identification of potential cases.
Late turn around time of the blood results	Empirical antibiotics would be initiated before lab result a/v. Empirical antibiotics would be initiated in ED before admission.
Long waiting time for phlebotomist to set up the IV line	IV access would be set up by doctor during blood culture sampling.
Antibiotics was administered on next drug round instead of a stat treatment.	Enforce the prescribing stat dose.
Prescription was not handled immediately by nurse.	Set up target action time of < 30 minutes from prescription to administration.
Long turn around time from vetting the prescription by pharmacist to drug dispensing.	Pharmacists will vet the prescription on urgent basis. A stock of antibiotics for urgent use is a/v in oncology ward.



# Main Results



# Conclusion

- Quality improvement in management of FN was achieved by collaborative multidisciplinary efforts, by applying the clinical audit results into modification of the system and workflows.
- This systemic approach of multidisciplinary engagement and process re-engineering may also be applicable to similar clinical scenarios.

