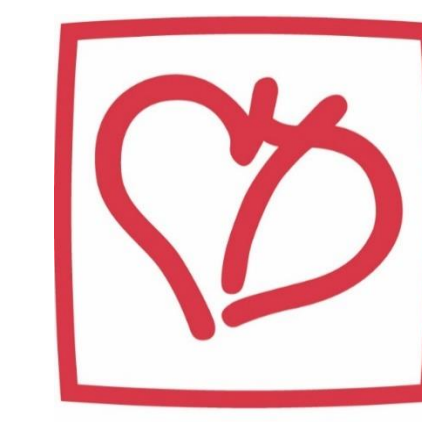


# To Improve Life Support Course Registration & Theory Test workflow



**Singapore Healthcare Management 2024**

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**National Heart Centre Singapore SingHealth**

## BACKGROUND

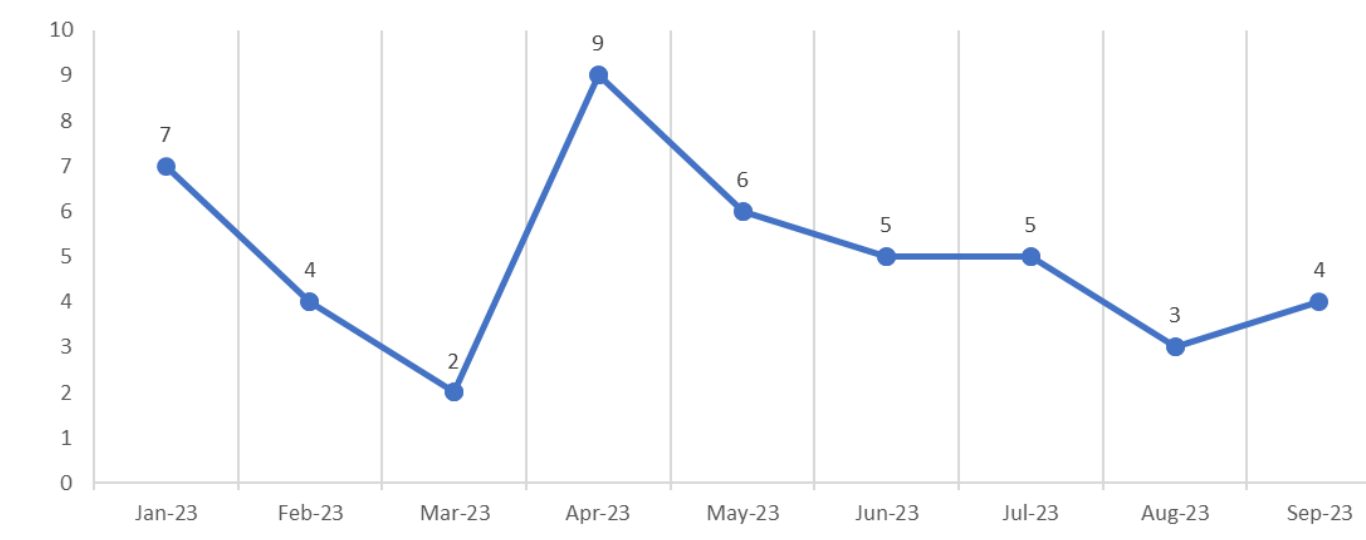
Under new regulatory requirements by Healthcare Services Act (HCSA), all registered healthcare workers are required to maintain a valid BCLS+AED certification by 1st January 2027. National Heart Centre Singapore (NHCS) is the only institute within the Outram campus that offers this course, and certificates have to be renewed every two years to maintain its validity. This results in an increase in demand for BCLS+AED course.

### Problems identified:

- **Registration** was done via email and training slots were managed backend on Excel, which were not visible to participants. This resulted in multiple email correspondences to confirm registration, which can cause delays, resulting in cancellations.
- **Theory test** was done using hardcopy test papers, which requires time to prepare. Test papers were manually marked by chief instructors.

**TARGET:** To reduce 55% of the time taken to process registrations and theory tests and eliminate 100% dropouts due to delayed email responses

### NO. OF CANCELLATIONS DUE TO DELAYED EMAIL RESPONSES



- Average of 60 cancellations per year which is equivalent to **5 runs** in a year

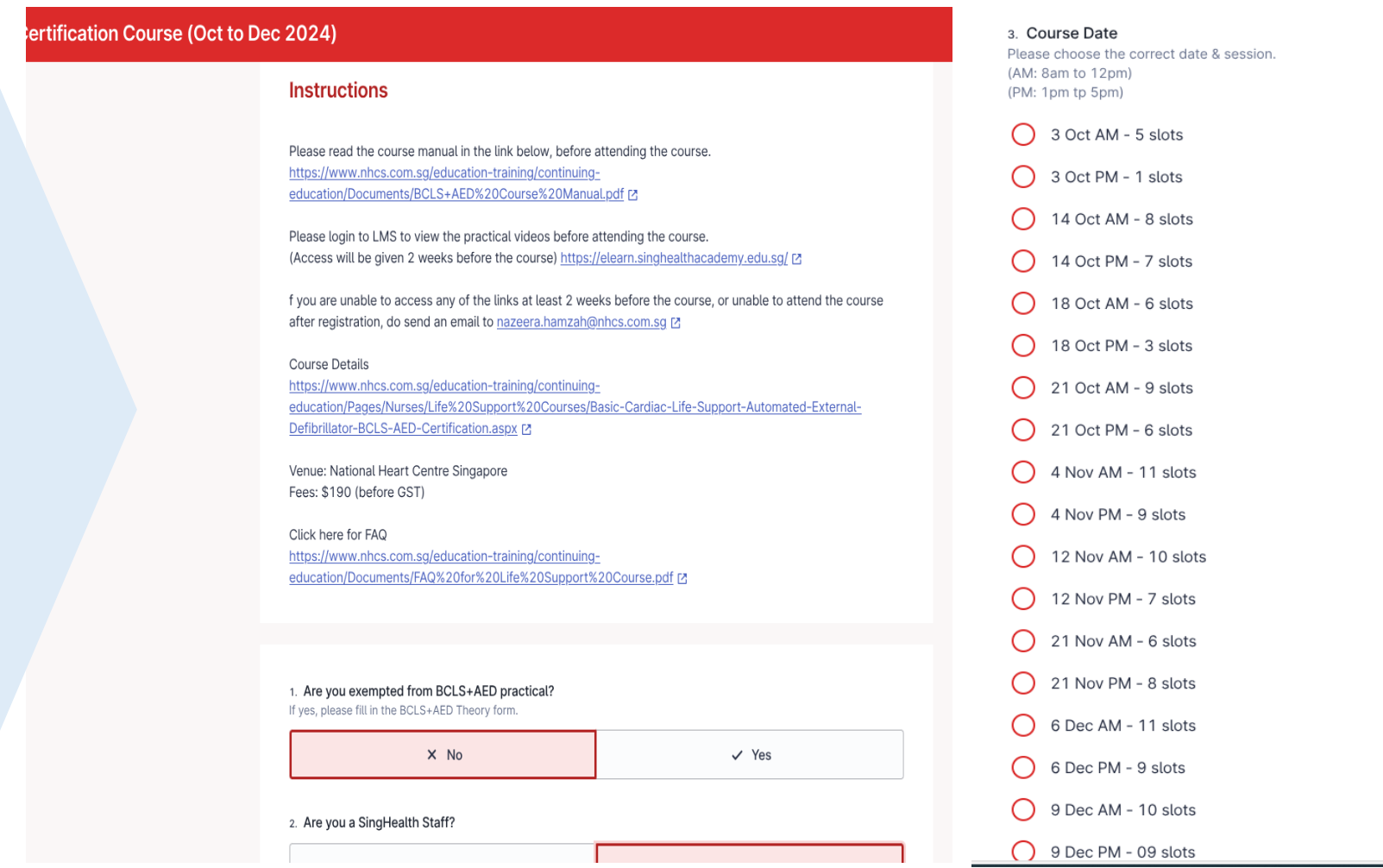
As demand for the course increases, it is important that all available slots are utilized to their maximum capacity.

## METHODOLOGY

### Revamped Registration Process

#### Registration done online via FormSG

- ✓ Participants can now register and book their training slots via FormSG.
- ✓ All available slots can be viewed online.
- ✓ Participants can select their preferred slots directly in the registration form.



#### FOR LIFE SUPPORT COURSE "FAQ"

1. WHAT IS THE COURSE DURATION?  
BCLS+AED Certification (3.5 hrs)  
AED session - 1 hour (PM session) - 1 hour (AM session)  
BCLS+AED Theory (1.5 hrs)  
AED session - 1 hour (PM session) - 1 hour (AM session)  
LSCN Certification (1.5 hrs)  
AED session - 1 hour (PM session) - 1 hour (AM session)  
LSCN Recertification (1.5 hrs)  
AED session - 1 hour (PM session) - 1 hour (AM session)
2. WHAT IS THE COURSE FEE?  
BCLS+AED Certification: S\$100 (Before GST) | S\$107 (After GST)  
BCLS+AED Theory (1.5 hrs): S\$100 (Before GST) | S\$107 (After GST)  
LSCN Certification: S\$100 (Before GST) | S\$107 (After GST)  
LSCN Recertification: S\$100 (Before GST) | S\$107 (After GST)
3. WHEN WILL I RECEIVE THE CERTIFICATE?  
Certificates will be sent in a PDF copy via email.
4. WHERE IS THE COURSE VENUE?  
National Heart Centre Singapore, Level 11  
Nursing/Development/Training Rooms
5. WHAT IS THE PAYMENT METHOD FOR COURSE FEE?  
We accept Cash, Cheque and Bank transfer.
6. WHEN WILL I RECEIVE A COURSE CONFIRMATION?  
2 weeks before course commences.

#### A FAQ page is created on the NHCS website

- ✓ Common enquiries are available online.
- ✓ A link to the FAQ page is included in the FormSG registration form so that participants can easily access the FAQ & have their queries answered promptly.

- ✓ Delays are reduced & participants can receive course materials two weeks before their course, as per Singapore Resuscitation & First Aid Council (SFRAC)'s requirement.
- ✓ Eliminates last-minute cancellations and wastage of slots.
- ✓ Admin staff no longer needs to handle registrations manually.
- ✓ FAQ page reduces the load of email enquiries to handle; allowing staff to have more time to manage more courses and to focus on more value-adding tasks.

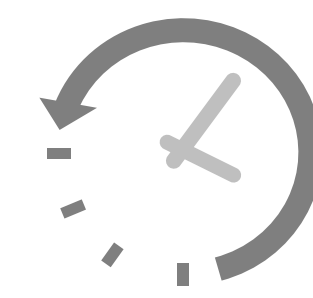
## Theory Test Conducted Online via SingHealth Learning Management System (LMS)

### OLD THEORY TEST PROCESS VS NEW THEORY TEST PROCESS

- ✗ Chief instructors manually prepare and count question papers and answer sheets for each test.
  - ✗ Chief instructors ensure that the three sets of question papers are used in rotation for each test.
  - ✗ Chief instructors mark each answer sheet. Participants have to wait for all answer sheets to be marked before proceeding to the next part of the course or do a retest if they fail.
  - ✗ Chief instructors manually check each question paper after each test for writings or markings that could compromise the integrity of tests.
  - ✗ All answer sheets have to be stored up to three years for audit purposes, requiring sufficient storage space. There is also a risk of misplacing answer sheets.
- ✓ All questions are uploaded onto LMS, eliminating time and manpower needed to prepare and count question papers and answer sheets.
  - ✓ LMS randomly assigns the sets of questions for each test.
  - ✓ Test results are calculated automatically after participants submit their answers. Participants can immediately proceed to the next part of the course or do a retest if they fail.
  - ✓ Checking of question papers is eliminated as questions are uploaded onto LMS.
  - ✓ Test data can be stored on LMS and easily retrieved and downloaded in a report format.

## RESULTS

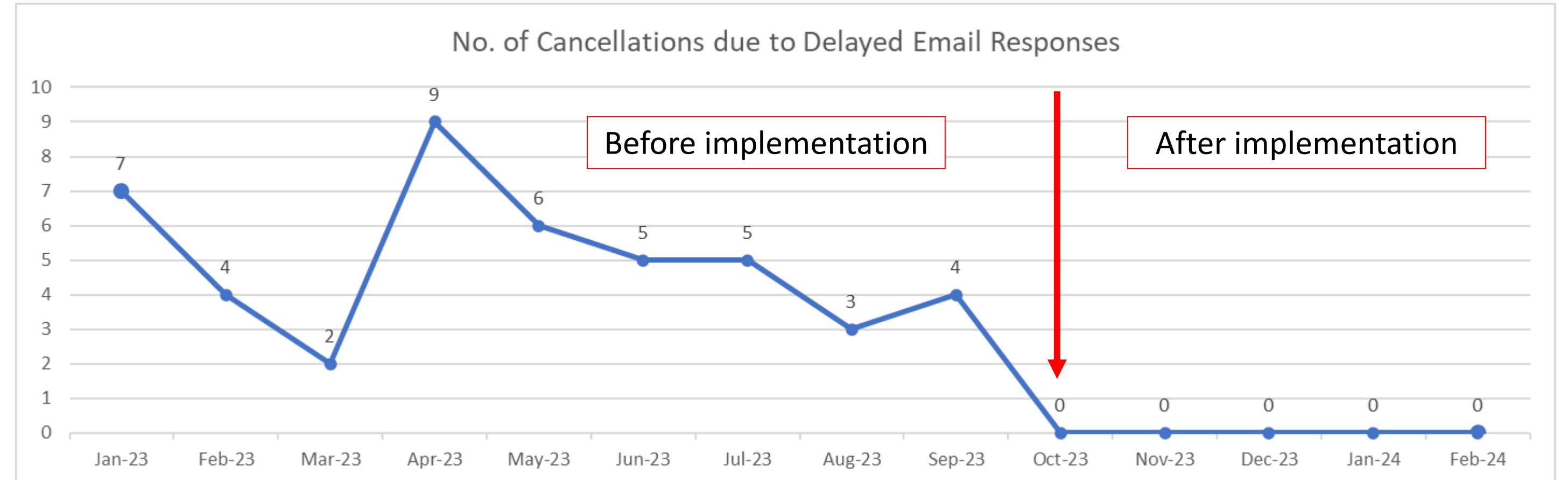
### TIME SAVINGS



Time savings for registration process = 223 – 137 = **86 hours/year**  
Time savings for theory test process = 747 – 294 = **453 hours/year**  
Total time savings = **539 hours/year**

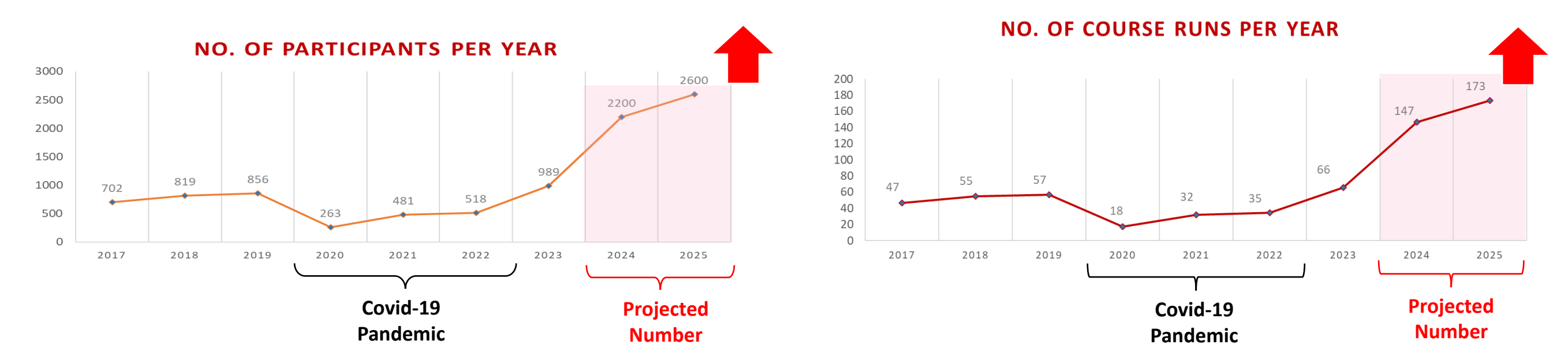
This is a **55.5%** reduction in time spend in processing registrations and theory tests altogether.

### ELIMINATION OF CANCELLATIONS DUE TO DELAYED EMAIL RESPONSES



The improved registration process reduced delays, eliminating last-minute cancellations.

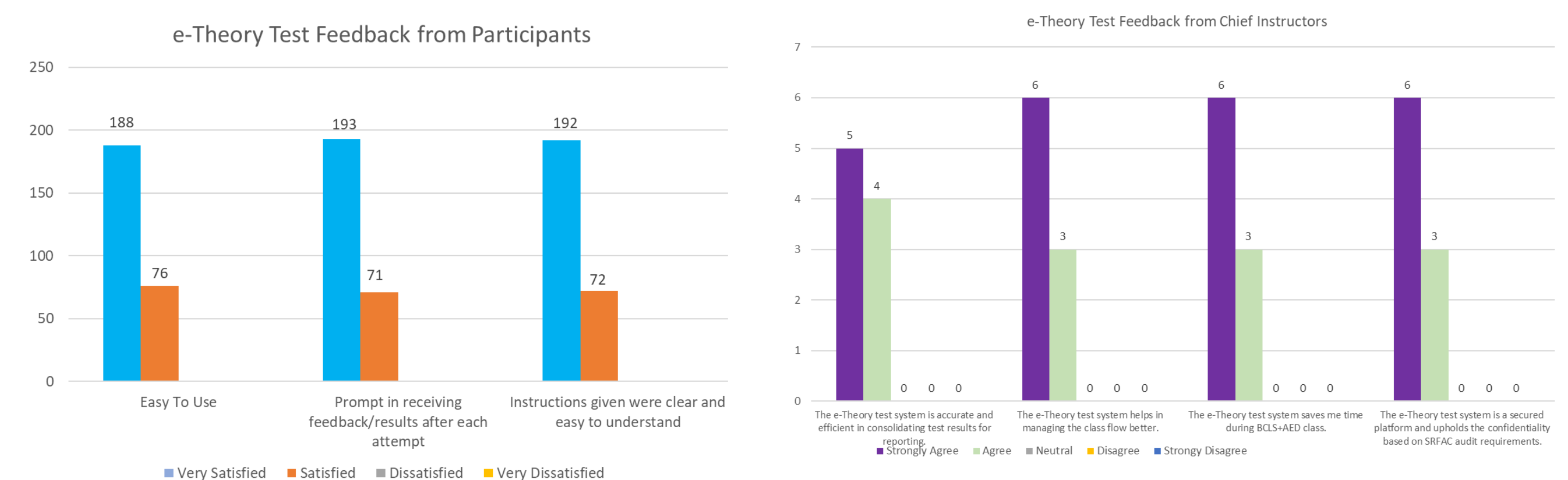
### INCREASE NUMBER OF COURSE RUNS



With the improved registration process and theory test workflow, NHCS Nursing Development Unit (NDU) has the capacity to increase the number of BCLS+AED course runs; meeting the increased demand due to the new regulatory requirements.

With the increased capacity, NHCS NDU is able to **increase the training capacity by more than double**. A total of **147 courses have been scheduled in 2024 compared to 66 courses in 2023**.

### INCREASE PARTICIPANT AND TRAINER SATISFACTION



Both **staff and participants are also 100% satisfied** with the new registration and theory test workflow.

## CONCLUSION

Through exploring options that are readily available and maximizing existing resources, NHCS NDU has improved the effectiveness and efficiency of the registration and theory test processes without incurring additional costs and manpower. It has met the needs of NHCS and SingHealth institutions to comply with HCSA's new regulatory requirement. Patient and public safety can also be assured in the event of emergencies within Outram campus and in public spaces.



Fig 1: Theory test held on LMS with instant results