



to reduce rejection rate



for better usability

## ABOUT US

The Division of Laboratory Medicine at Changi General Hospital, offers a comprehensive range of laboratory tests for the diagnosis, management and prevention of a wide variety of diseases.

Histopathology refers to the microscopic examination of whole tissues in order to study the manifestations of disease.

Cytopathology, sometimes called smear test, is generally used on samples of free cells or tissue fragments.

A Histopathological Request Form is required to be completed for all laboratory test.

## METHODOLOGY

The histopathological request form underwent a total of 7 design reiterations (PDSA cycles), aimed at aiding users in preparing specimens.

The new form now features duplicated serial number tabs, specially designed to be stuck easily using existing patient ID labels, thereby reducing transcribing errors resulting from manual copying of serial numbers.

Other features include various reminders to help communicate vital information that may otherwise result in specimen rejection if not complied.

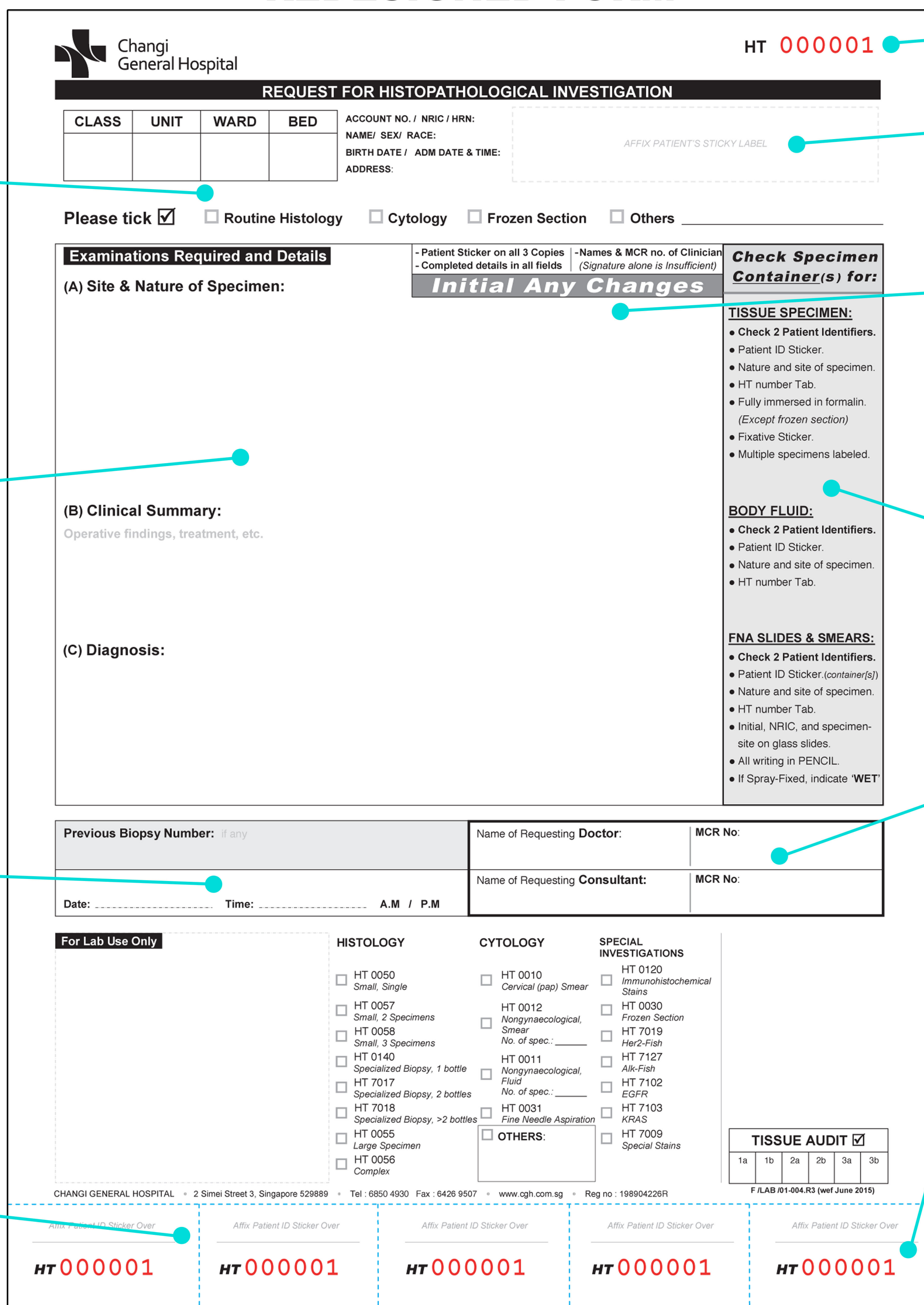
## RESULT

The forms were piloted at in-patient, out-patient, and surgical settings. Over a period of 6 months, pre- and post-pilot rejection data were captured and analysed. Refinements was done to further perfect the form design based on user feedbacks.

On average, the new form resulted in 50% reduction in specimen rejections by the laboratory across the different trial clinical units.

Rejections due to incorrect serial numbers within a specimen dispatch was brought down to near-zero (and subsequently zero) using the redesigned form, traditionally the third most frequent reason for rejections.

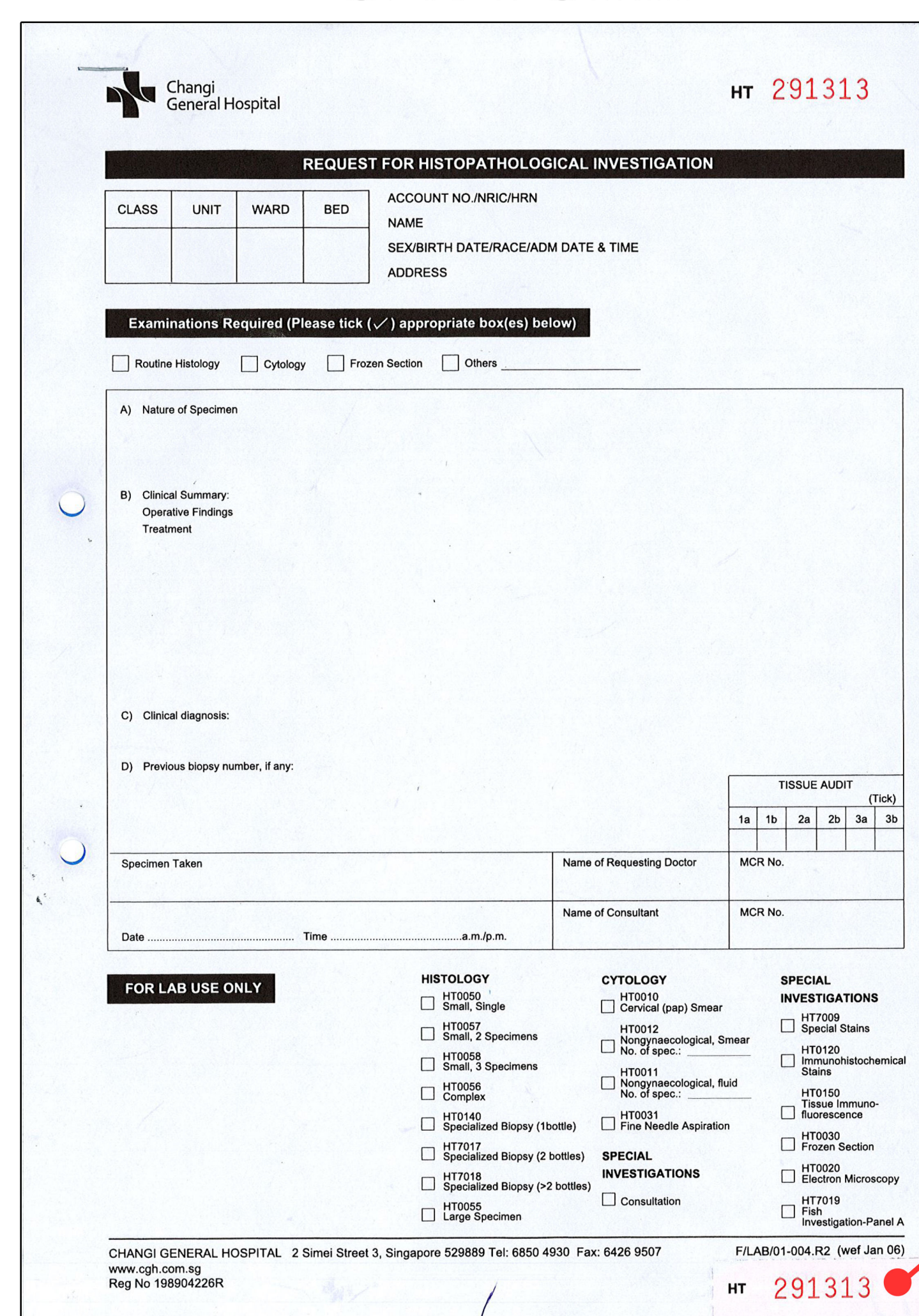
## REDESIGNED FORM



The redesigned form includes the following sections and features:

- Header:** Changi General Hospital logo and name.
- Form Title:** REQUEST FOR HISTOPATHOLOGICAL INVESTIGATION.
- Patient Location Details:** CLASS, UNIT, WARD, BED.
- Account Information:** ACCOUNT NO. / NRIC / HRN, NAME/ SEX/ RACE, BIRTH DATE / ADM DATE & TIME, ADDRESS.
- Examinations Required:** Please tick ☒ Routine Histology, ☐ Cytology, ☐ Frozen Section, ☐ Others.
- Examinations Required and Details:** (A) Site & Nature of Specimen, (B) Clinical Summary, (C) Diagnosis.
- Checklist for Specimen Preparation:** TISSUE SPECIMEN, BODY FLUID, FNA SLIDES & SMEARS.
- Unique HT Number:** HT 000001.
- Patient Identity Details or Patient ID Sticky Label:** AFFIX PATIENT'S STICKY LABEL.
- Salient reminders for Doctors and Nurses:** Initial Any Changes.
- Checklist for Specimen Preparation:** TISSUE SPECIMEN, BODY FLUID, FNA SLIDES & SMEARS.
- Requesting Doctor details:** Top-Bottom box layout to facilitate 1x Stamp if both fields are same person.
- Date & Time of specimen prepared:** Date, Time, A.M. / P.M.
- For Lab Use Only:** HISTOLOGY, CYTOLOGY, SPECIAL INVESTIGATIONS, TISSUE AUDIT.
- 3-Page carbon-copy form:** Provides a total of 15 HT number tabs for multiple specimen tagging.

## OLD FORM



The old form includes the following sections and features:

- Header:** Changi General Hospital logo and name.
- Form Title:** REQUEST FOR HISTOPATHOLOGICAL INVESTIGATION.
- Patient Location Details:** CLASS, UNIT, WARD, BED.
- Account Information:** ACCOUNT NO. / NRIC / HRN, NAME, SEX/BIRTH DATE/RACE/ADM DATE & TIME, ADDRESS.
- Examinations Required:** Please tick (✓) appropriate boxes below.
- Examinations Required and Details:** (A) Nature of Specimen, (B) Clinical Summary, (C) Clinical diagnosis, (D) Previous biopsy number, if any.
- Unique HT Number:** HT 291313.
- Patient Identity Details or Patient ID Sticky Label:** None.
- Checklist for Specimen Preparation:** None.
- Requesting Doctor details:** None.
- Date & Time of specimen prepared:** None.
- For Lab Use Only:** HISTOLOGY, CYTOLOGY, SPECIAL INVESTIGATIONS, TISSUE AUDIT.

### Frequent reject reasons:

HT number on the specimen container did not tally with form

No initial after changes on request form

Date/ Time error

Erroneous details on nature of specimen

Specimen site details on specimen container did not tally with form

No patient ID label on form

Patient ID mismatch on specimen container

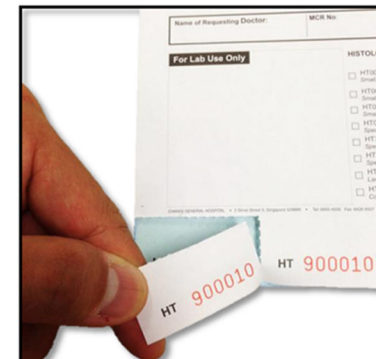


HT Numbers were usually written onto containers, resulting in transcription errors and illegibility. Written HT 291323 (mistake)

## Using HT Tabs

1 Tear one HT TAB

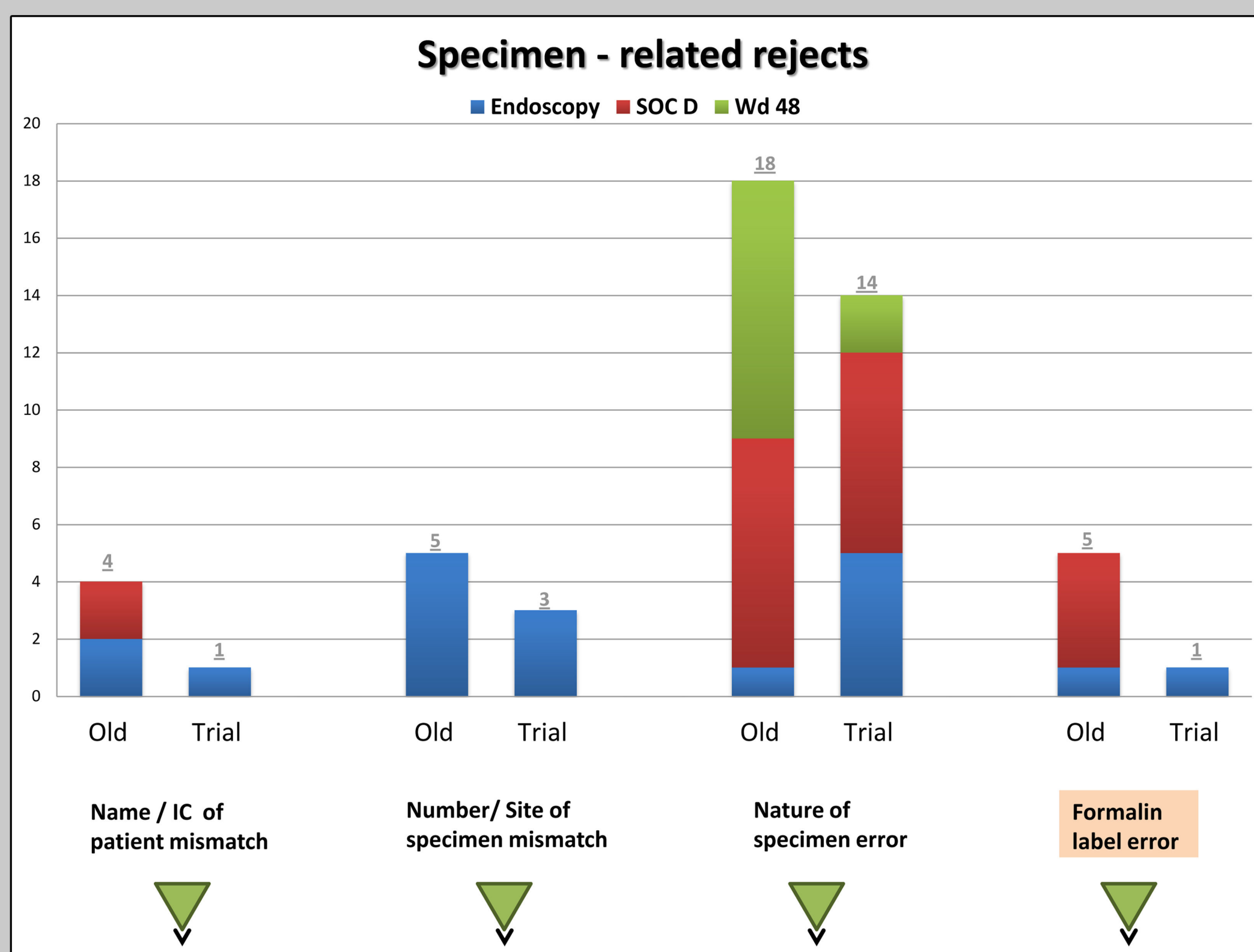
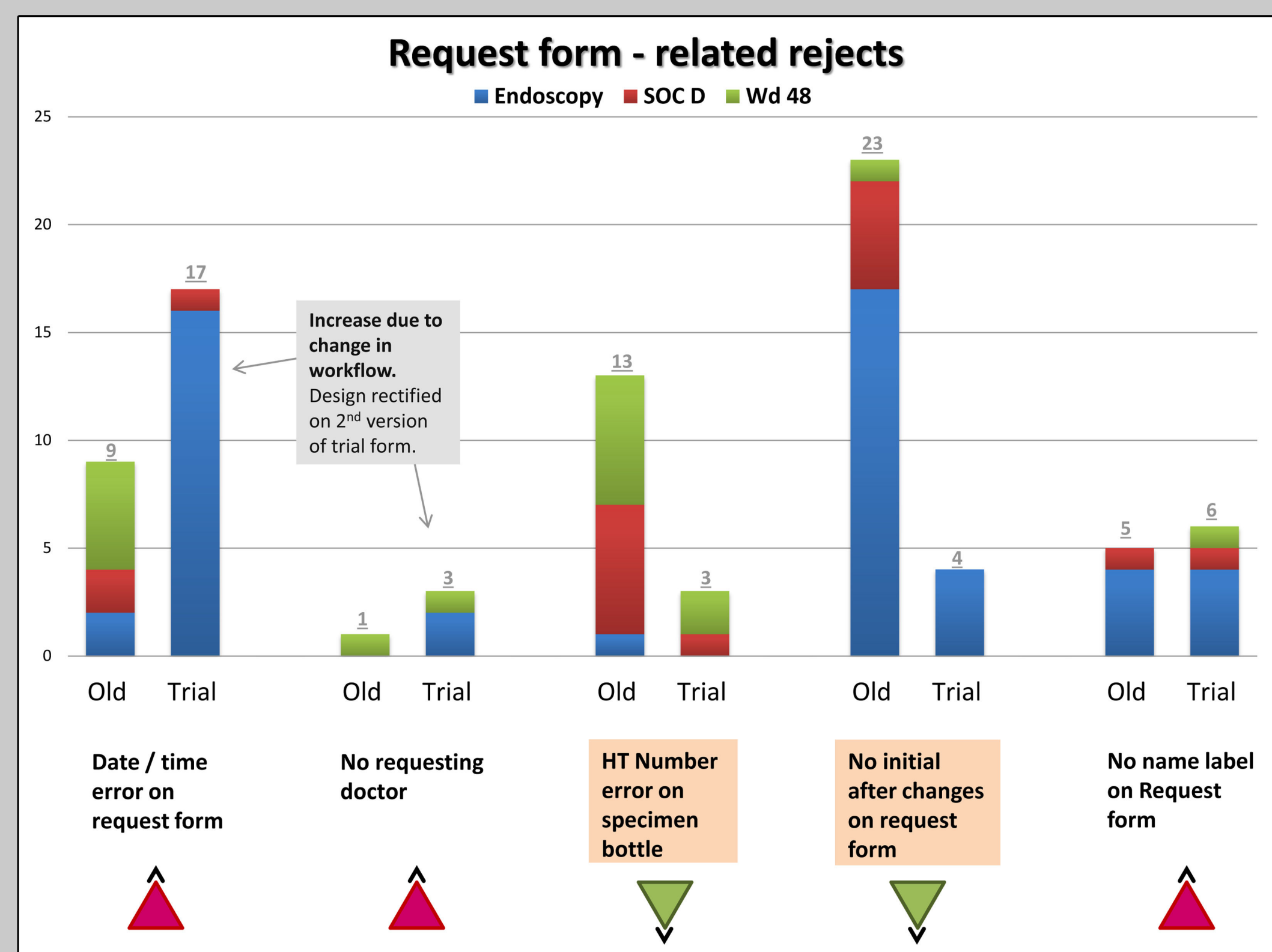
2 HT TAB below patient ID label



3 Labeled Container. Clear tape over HT TAB



## DATA



### Summary:

#### Old forms Rejects:

- Endoscopy Centre
  - Specialist Clinic 'D'
  - Ward 48
- 76 Rejects

#### Trial forms Rejects:

- Endoscopy Centre
  - Specialist Clinic 'D'
  - Ward 48
- 37 Rejects (possibly even lower for 2<sup>nd</sup> version of trial form)

#### Data range:

June – November 2014

#### FURTHER PLANS:

The new form has been used hospital-wide since June 2015. The 6-month pre- and post-intervention rejection data will be analyzed in early 2016.



Changi General Hospital

#### Project Team:

Toh Ai Hong, Asst. Manager, Laboratory  
Woon Liwen, Supervisor, Laboratory  
Alicia Ho Pek Yun, Supervisor, Laboratory  
Dahlia Ho Siu Ling, Snr Med Technologist, Laboratory  
Dr Yin Shanqing, Human Factors Specialist, Clinical Services  
Johnathan Siew Jun Howe, Executive, Clinical Services



A MEMBER OF

EASTERN HEALTH ALLIANCE