



# Eliminating Specimen Collection Defects at a Medical Center through Observation, Standardization, Education and LEAN Process Redesign

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*“Today’s standardization, instead of being a barricade against improvement, is the necessary foundation on which tomorrow’s improvement will be based.”*  
– Henry Ford

## ABSTRACT

### Introduction

We focused our efforts on patient safety by standardizing specimen collection and submission from the outpatient clinics at the largest medical center in the Henry Ford Health System. Here we have extended the laboratory's boundary beyond conventional walls to standardize the "supplier" of pre-analytic processes of patient identification, specimen collection, labeling and transport.

### Materials and Methods

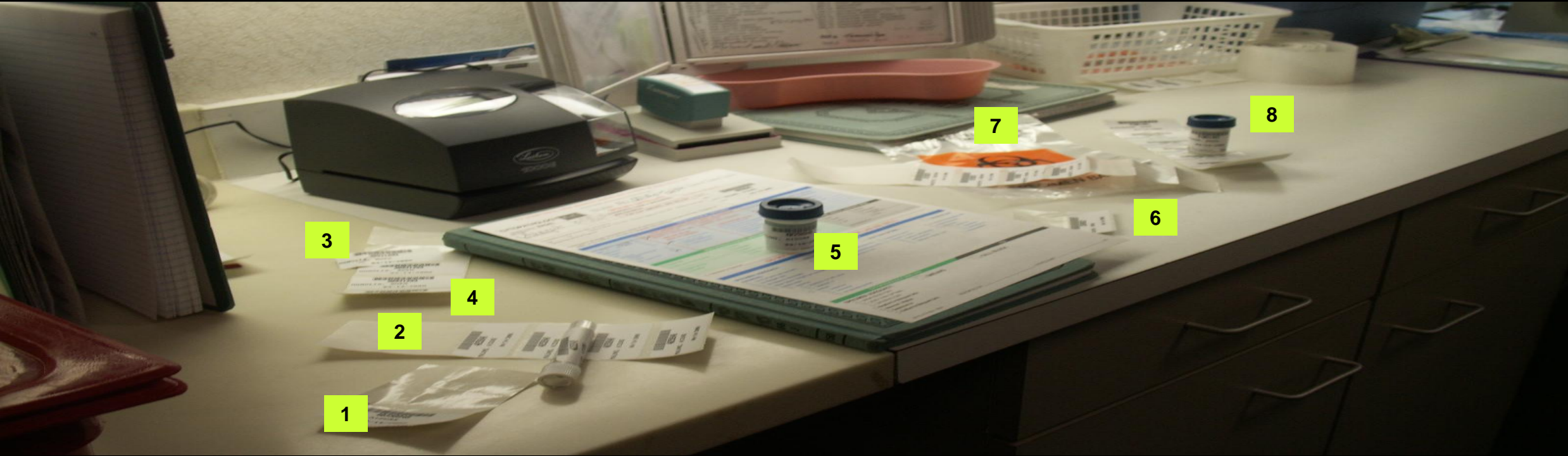
Based on the highest specimen requisition defect rate arising from the OB-GYN clinic, we applied the fundamental LEAN principles of Standardized Work and “Go and See”. The initial improvement included: on-site education and training of nurses and clinicians with mandatory competency assessments. Second, in collaboration with clinic staff, we observed specimen related processes at busy clinic times. All steps from patient identification, specimen collection in exam rooms and specimen drop off were observed and documented. Process maps of the current condition were created and pre-observation defects, observation results and recommendations were presented to clinic staff. After one week of clinic 'supplier' designed reorganization, the improved condition was mapped again and laboratory requisition deficiencies measured over the subsequent week as indicators of successful standardization and redesign. Laminated templates of key specimen collection recommendations were provided as visual education aids to sustain improvements.

### Results & Conclusion

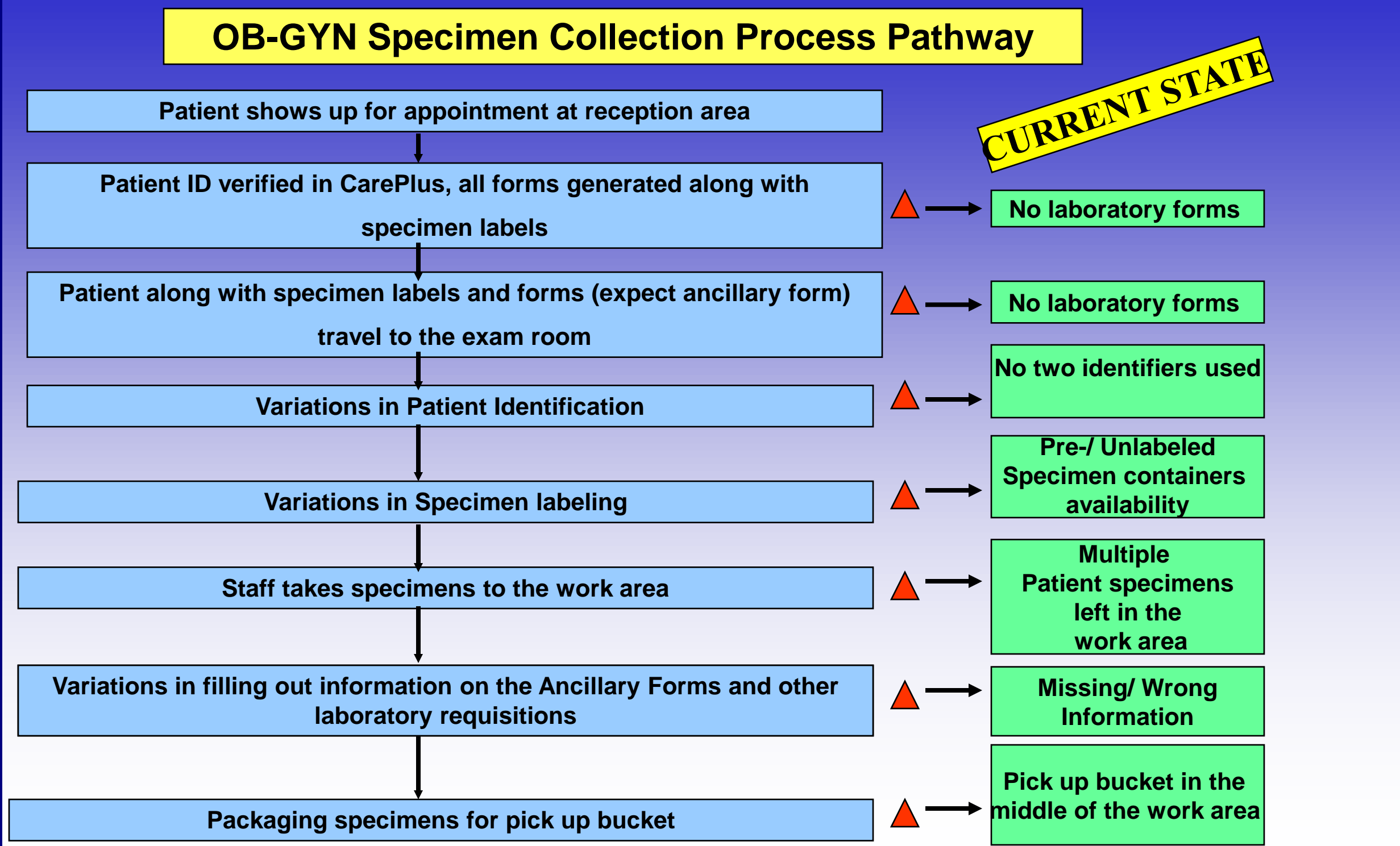
Initially, 17 requisition defects identified from the OB-GYN clinic consisting of missing doctor, diagnostic and test codes, incorrect patient medical record numbers and test orders that were documented as baseline. Post standardization, education and redesign, only 1 defect of a missing diagnostic code was documented. There was a dramatic decrease in the defect rate from 11% to 0.7%. This improvement was obtained by extending the laboratory’s influence in a customer-supplier relationship implementing LEAN process changes.

## HENRY FORD PRODUCTION SYSTEM PRINCIPLE: “GENCHI GENBUTSU “ OR “GO & SEE”

- 8 different patient labels on the counter
- 2 specimens pre-labeled but no lab tags attached
- 1 pre-labeled PAP container with incomplete lab tag (only Patient ID label)
- Disconnected: lab tag & specimen: “A Big NO”

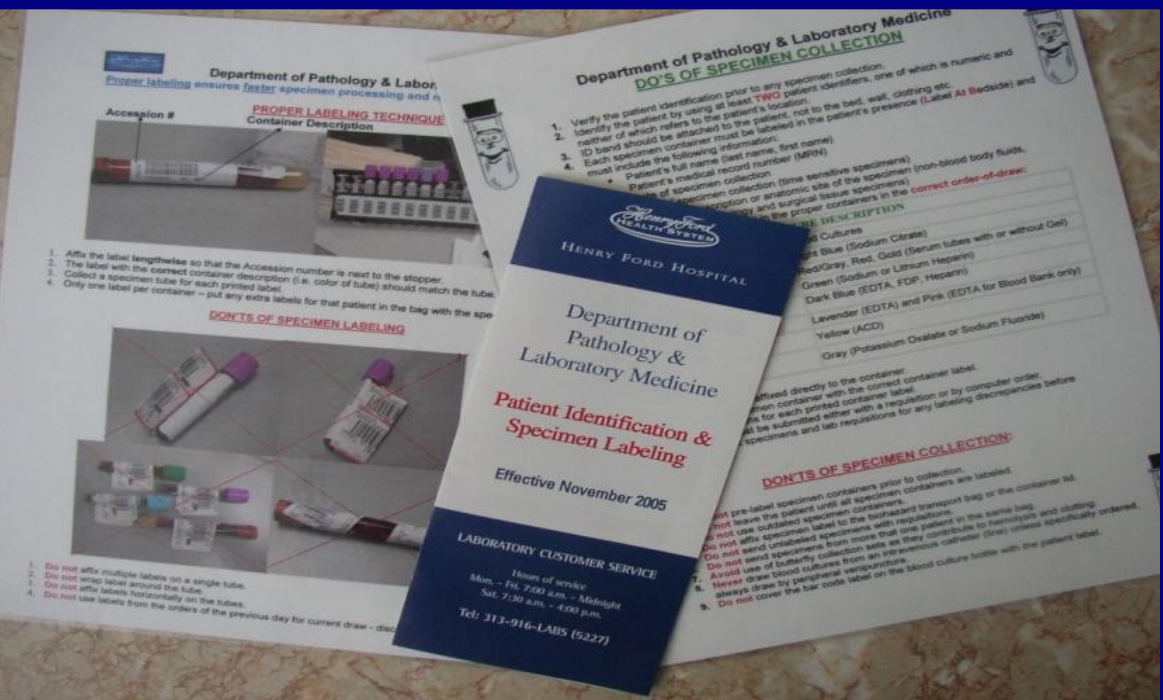


Lack of Visual Aids for Standardized Work



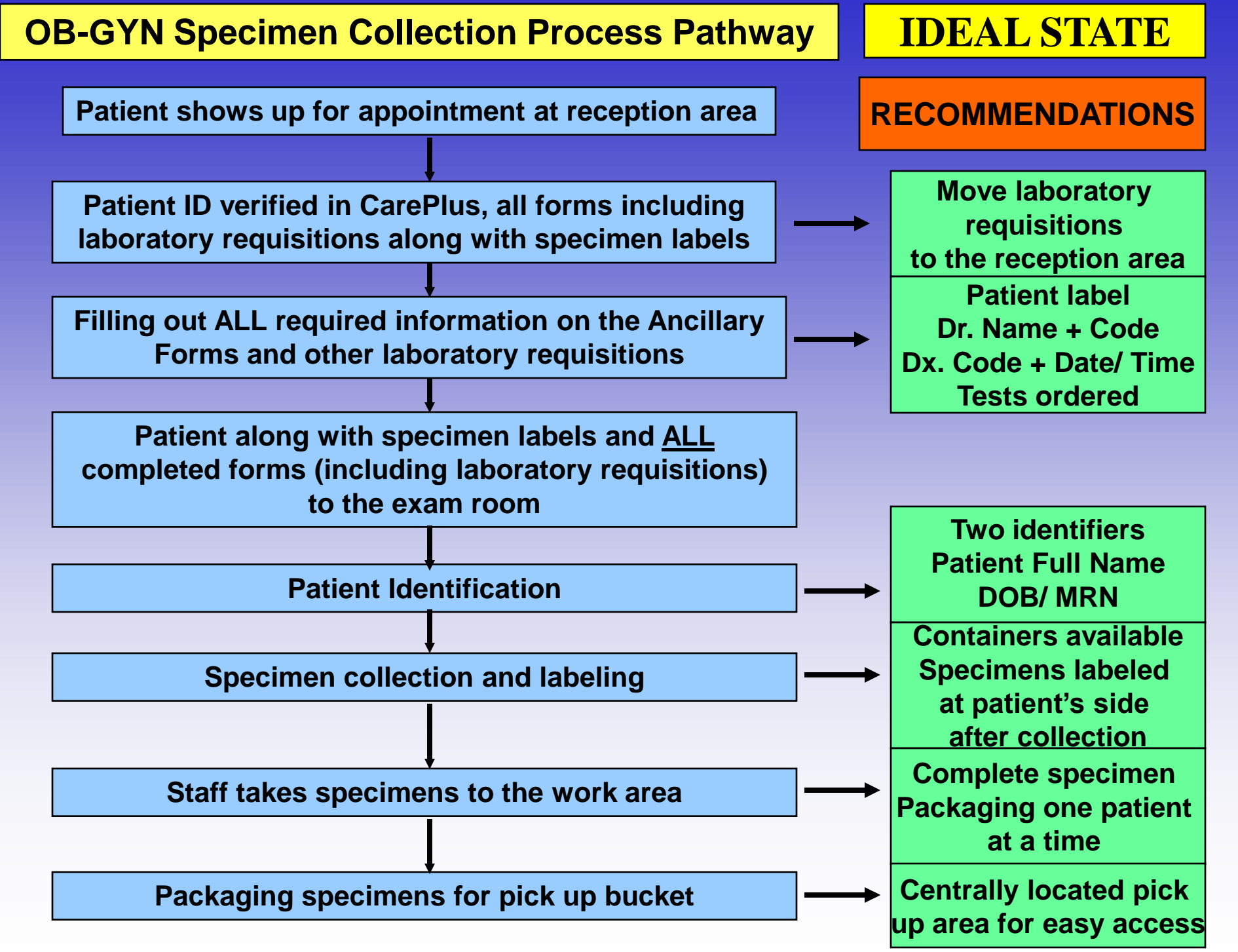
## EDUCATION AND VISUAL AIDS

Standardization of tasks are the foundation for continuous improvements & employee empowerment

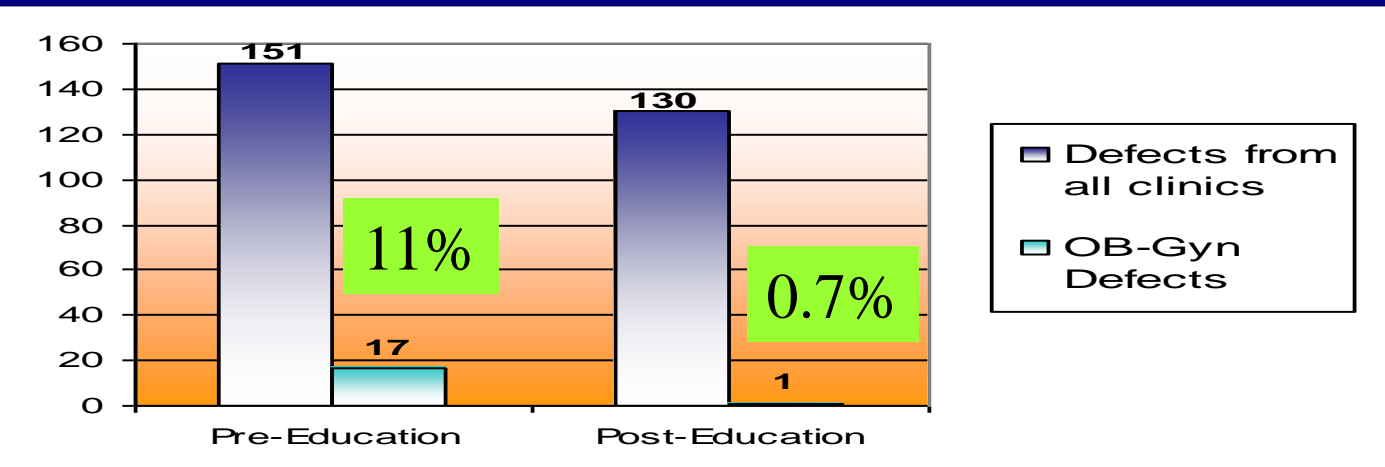


- Brochures:**
- Patient Identification & Specimen Labeling (Clinical & Surgical Pathology)
- Laminates:**
- Do's & Don'ts of Laboratory Specimen Collection
  - Do's & Don'ts of Surgical Tissue Specimen Collection
  - Order of Draw
  - Ancillary form requirements
  - Surgical Specimen Lab Tag requirements
  - Cytology Specimen Lab Tag requirements

## POST OBSERVATION RECOMMENDATIONS



## PRE/ POST STANDARDIZATION/ REDESIGN REQUISITION DEFECT RATE



## KEYS TO SUCCESS

- ❖ Adoption of JCAHO regulations for proper patient identification
- ❖ Standardization of pre-analytic work (specimen collection and labeling) is necessary: minimizes variation and therefore defects.
- ❖ Tangible involvement and action by leadership in support of patient safety with regular communication is the key to success
- ❖ Improvement efforts must be shared with healthcare system leadership in order to effectively address errors/deficiencies generated by non-laboratory staff
- ❖ By extending laboratory influence on standard work outside of our conventional boundary in a partnership to with the specimen 'supplier', we have focused on the HFHS vision of what is *right and safe for the patient* ***Right Patient, Right Test, Right Result, Right Time, Right the first time!***

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