Anatomic Pathology Process Improvement Stories

From the Simple (Tissue Storage Process) to
the Complex (Placental/Fetal Tissue Process)

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OCTOBER 2019

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After this program you will be able to:

Describe a basic improvement approach in handling nonconformities within an anatomic pathology laboratory.

Identify potential opportunities for improvement within the participant's own laboratory based on the three different case studies.

Apply the common lessons learned from this session to the participants own laboratory.

Agenda

Background

Case Studies

Outcomes

Lessons Learned

What's Next?

Background

ARUP Laboratories | University of Utah Health

1
location

90+
medical directors

>99%
of testing
performed in-house

>6.5M patients supported each year

A nonprofit enterprise of the University of Utah and its Department of Pathology

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Nonprofit, academic affiliate

3,500+ employees

including 90+ medical directors

Provides testing for:

- Genetics
- Immunology
- Oncology
- Pediatrics
- Pain management

Broad test menu

3,000+ tests and test combinations

Clients include:

- university teaching hospitals
- children's hospitals
- multihospital groups
- commercial laboratories
- group purchasing organizations

>10M
specimens/year

>6.5M
patients affected/year

CASE STUDY 1

Placental/Fetal Tissue Handling Process Improvement

How we identified a problem, developed a partnership with Labor & Delivery and increased revenue.

Problem

- APP Staff identified a problem with the Placenta/Fetal Process:

  » Average 10% of pathology orders placed on placental tissue required follow up.

    ▪ Tissue often not submitted to pathology

    ▪ Necessary information frequently not included

      › i.e. gestational age

  » Tissue loss had occurred.

Goals

- Eliminate loss outcomes.

- Improve shared understanding of expectations for hand-off between UH and ARUP Pathology.

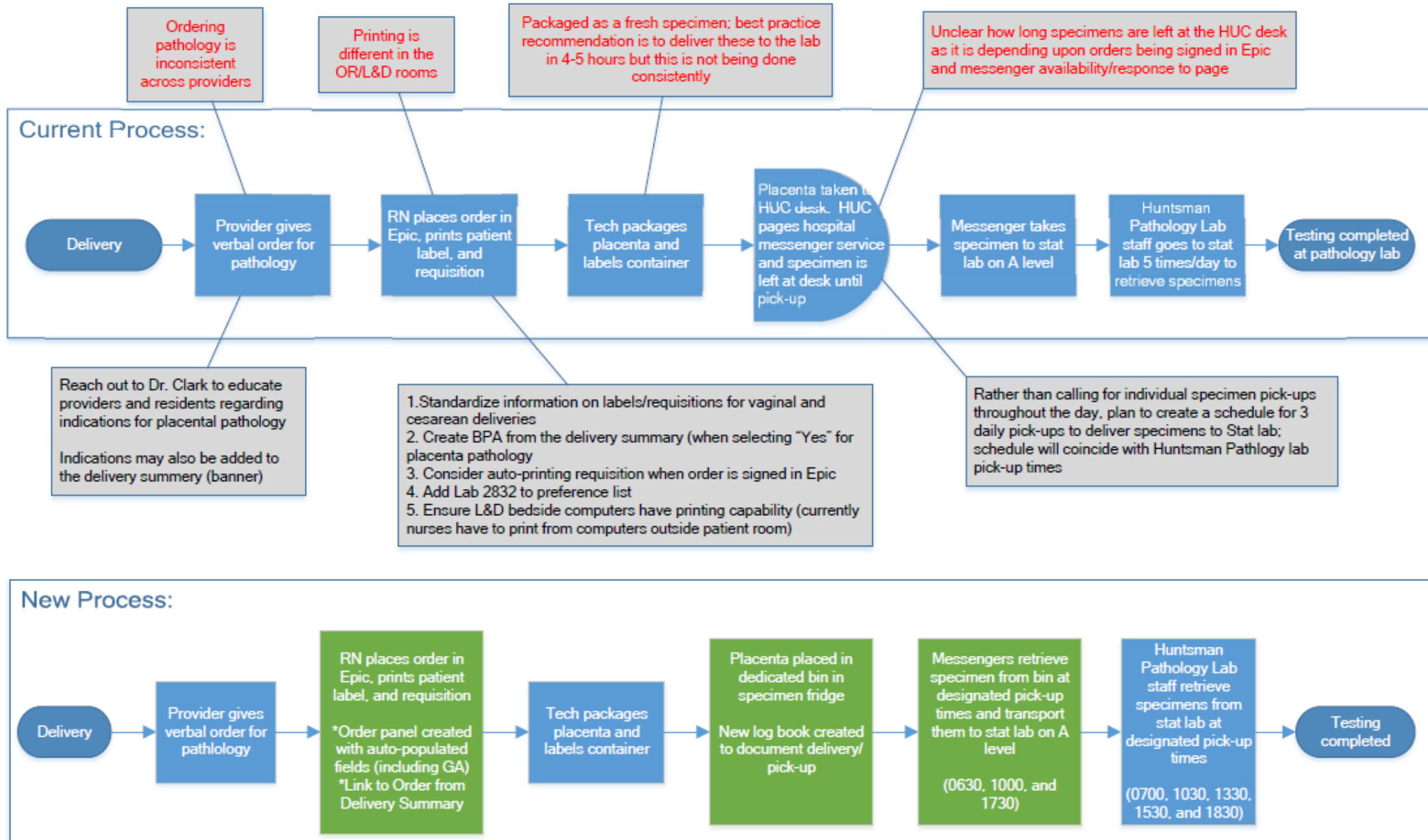 » Distinguish between L&D issues coming from OR/Delivery rooms

How did we do it?

- Assembled team/identified stake holders

- Mapped Current State and Future State
  - » Identified problem areas
  - » Vetted with Stake holders
    - Tissue stability
    - Indications list

- Developed improvements with full team participation

L&D Pathology Specimen Handling

Ordering pathology is inconsistent across providers

Printing is different in the OR/L&D rooms

Packaged as a fresh specimen; best practice recommendation is to deliver these to the lab in 4-5 hours but this is not being done consistently

Unclear how long specimens are left at the HUC desk as it is depending upon orders being signed in Epic and messenger availability/response to page

Current Process:

Delivery → Provider gives verbal order for pathology → RN places order in Epic, prints patient label, and requisition → Tech packages placenta and labels container → Placenta taken to HUC desk. HUC pages hospital messenger service and specimen is left at desk until pick-up → Messenger takes specimen to stat lab on A level → Huntsman Pathology Lab staff goes to stat lab 5 times/day to retrieve specimens → Testing completed at pathology lab

Reach out to Dr. Clark to educate providers and residents regarding indications for placental pathology

Indications may also be added to the delivery summery (banner)

1. Standardize information on labels/requisitions for vaginal and cesarean deliveries
2. Create BPA from the delivery summary (when selecting "Yes" for placenta pathology
3. Consider auto-printing requisition when order is signed in Epic
4. Add Lab 2832 to preference list
5. Ensure L&D bedside computers have printing capability (currently nurses have to print from computers outside patient room)

Rather than calling for individual specimen pick-ups throughout the day, plan to create a schedule for 3 daily pick-ups to deliver specimens to Stat lab; schedule will coincide with Huntsman Pathlogy lab pick-up times

New Process:

Delivery → Provider gives verbal order for pathology → RN places order in Epic, prints patient label, and requisition
*Order panel created with auto-populated fields (including GA)
*Link to Order from Delivery Summary → Tech packages placenta and labels container → Placenta placed in dedicated bin in specimen fridge

New log book created to document delivery/pick-up → Messengers retrieve specimen from bin at designated pick-up times and transport them to stat lab on A level

(0630, 1000, and 1730) → Huntsman Pathology Lab staff retrieve specimens from stat lab at designated pick-up times

(0700, 1030, 1330, 1530, and 1830) → Testing completed

Outcome

- Process is understood and improved between organizations.
  - » Indications for ordering pathology on placental tissue are now known
  - » Designated storage locations in L&D "Pick up for Pathology"
  - » Messengers scheduled delivery to ARUP pick-up sites 3X daily
  - » EPIC order panel built with required fields and process guidance
  - » Both OR and delivery rooms produce barcoded requisitions when orders are placed. (Reduces mislabel opportunities)
- Collaborative relationship developed. (Trust)

Outcome Measure

Volume of Pathology Orders Placed on Placenta

47 % Increase in orders placed
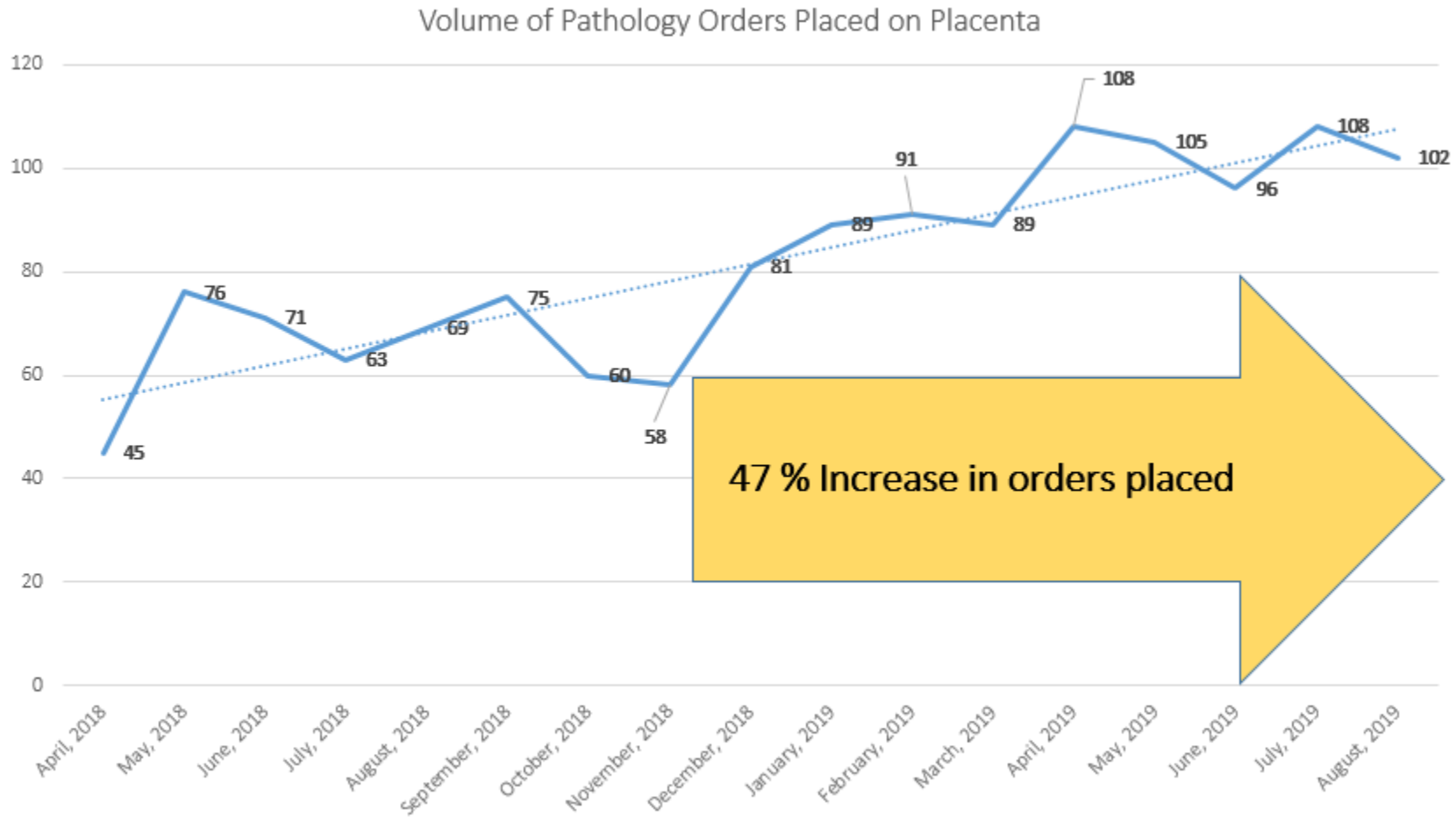
Future plans / Transferability

- Next Project with OB/GYN team
    - » Fetal Demise Process
- Development of shared expectations with additional clinical areas
- Barcoded requisitions from all clinics
- Ordering requisition auto-printing
- Designated specimen locations

CASE STUDY 2

Frozens—Intraoperative Consultation Process Improvement

When opening a "can of worms" is worth it

Problem

- The intraoperative process is complex, fast-passed and crosses organizational lines which resulted in a significant error.

  » Ownership of process tasks are not explicitly defined

    ▪ Lack of associated training/competency

  » Gross description was not documented: residual tissue was missed during clean-up step

Goals

- Eliminate loss outcomes.
- Understand ownership of steps.

How did we do it?

- Assembled team and identified stake holders

- Mapped current state and identified problem areas.
  - » Vetted with Stake holders/team
    - Dept. of Pathology/Residency program
    - Gross Dissection/AP Processing

- Developed improvements with full team participation

Intraoperative Consultation Workflow
Investigative Scope: Start: Tissue arrival Gross Room   End: Submission to Histology

AP Processing

Specimen Arrives → Contact Pathologist / Accession case / Print slides

Sent for Histologic processing

Resident

Multiple ARUP/House Staff Residents may be involved in handling each case

Documentation of residency training/competency gap

Resident FS training/ competency will be incorporated to on-boarding

PAs/Grossing Techs

Document gross description:
- Measurement
- Weight
- Margin/ink color correlation
- Chuck ID
- Cryostat #
- ESS/RSS (submission type)
- Workforce member initials

Additional information:
- Touch/prep–smear
- # slides submitted

Overlap of task ownership caused grossed description to be missed

Need standardized abbreviations for gross documentation

No prompts on FS forms for documentation expectations

Two different forms used by UH

Work with UH to develop/ incorporate documentation prompts in FS form and eliminate redundancy

Cryostat work:
- Place in chuck
- Freeze/cut
- Place tissue on slides
- Coplin jar placement

Slide staining / Coverslip

Frozen Section Residue clean-up

Permanent Grossing: Frozen section dictation of tissue received

Attending Pathologist

GR-PROC-2008 enhanced: define ownership gross documentation, small residual FS stabilization

GR-PROC-2008 to include attending pathologist responsibilities of ensuring gross documentation

Attending Pathologist does not ensure documentation of gross description

Microscopic Evaluation and Clinician contact for diagnosis

Corrective Actions, Implementation, Outcomes

Department of Pathology/ Residency program

- Enhanced procedural steps
  - » Tasks associated with Intraoperative process are better understood
- Training further developed for on-boarding residents
- No tissue loss to date

ARUP: Gross Dissection/AP Processing

- Standing meeting developed between ARUP and Dept. of Pathology residency team
- Enhanced procedural steps
  - » Development of prompts on Intraoperative form
- No tissue loss to date

CASE STUDY 3

Residual Tissue Handling and Disposal

How simple solutions come from a well formed team

Problem

- The tissue disposal process was taking two people, 3–4 hours to complete.

- It was a labor intensive, time consuming task that was prone to error.

Goals

- Automate the reconciliation of the specimen in the disposal process
    - » Save time
    - » Increase accuracy

Volume of Containers Evaluated for Disposal Weekly

Tissue Containers

Jake discarding specimens

RESIDUAL TISSUE HANDLING AND DISPOSAL

Old Process

| Pull a list of verified cases | → | One person reads case # from specimen container, another checks list (2—3 hours, 2 people) | → | Scan all pulled containers as "disposed" | → | Discard tissue |

New Process

| Pull a list of verified cases | → | Scan all specimen container barcodes into Excel tool (30 minutes, 1 person) | → | Scan all pulled containers as "disposed" | → | Discard tissue |
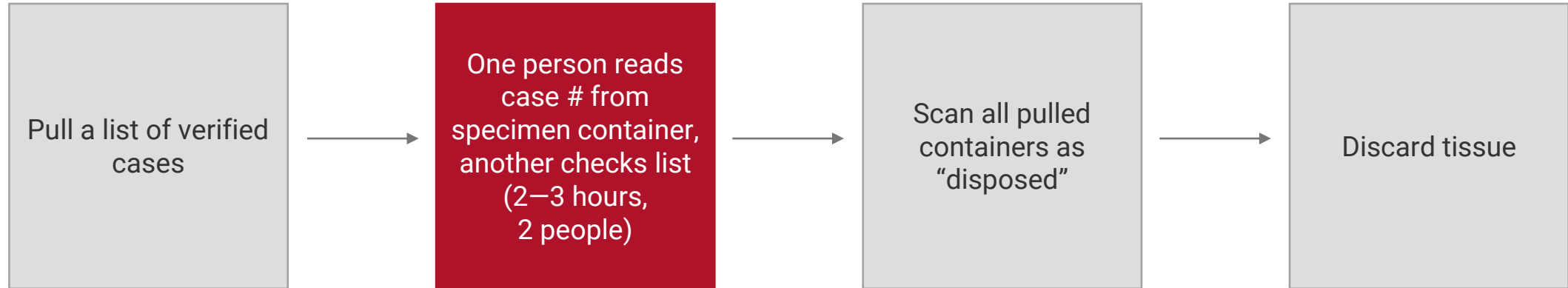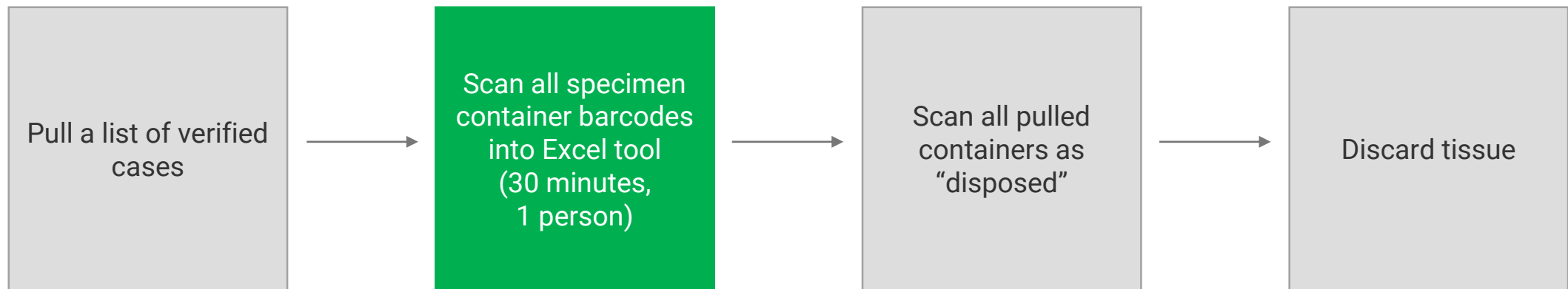
How did we do it?

- Team worked with IT Analyst to develop an excel tool for us to utilize.

- Transferability: Could be considered for any lab that performs disposal of specimens

Outcome

Outcome	Outcome Measure
• Time saved: 3-4 hours per week	• Audit in 6 months to demonstrate sustained improvements.
• Financial benefit: approx. $3000 per year	
• Increased accuracy: automated a portion of a manual process, reducing the potential for human error.	

Lessons Learned

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Lessons Learned

- Trust is the foundation of successful team work

- A well-developed team can solve any problem

- Remove "blame" by vetting with your team and then confirming with data.

- Never forget who the "customer" is.

What's Next?

Using Data to Identify Opportunities

- Specimen Intake Process Improvement Project

- Gross Room TAT Improvement Project

- Pathology Review and Concordance: **PaRC**—Development of a digital tool to assist pathologist with overall quality and competency assessments

Shout Outs

Labor and Delivery Department University of Utah Health

Nikole Ihler, RN, Clinical Nurse Coordinator

Erin Clark, MD Division Director, Maternal-Fetal Medicine

PCH attending Pathologists

Sarah Lauer, Quality

Jennifer Spackman, BSN RN Application systems Analyst III

Labor and Delivery Registered Nurses

 Julie O'Neil/Erica Cuvelier, RN

 Breann Hilton/Maria May, RN

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Erika Prince, AP Processing, Supervisor

AP Processing group

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Margaret Coppin, Operations Director, Pathology

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Questions?

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