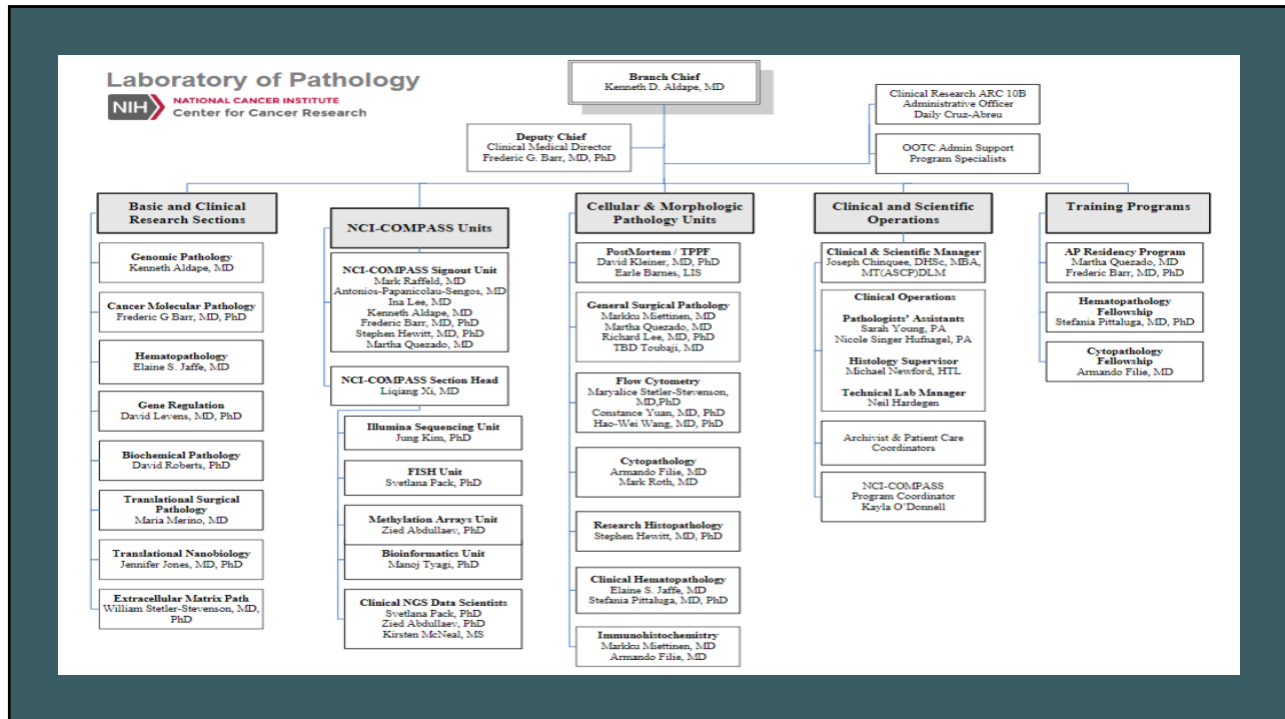


LP/NCI/NIH

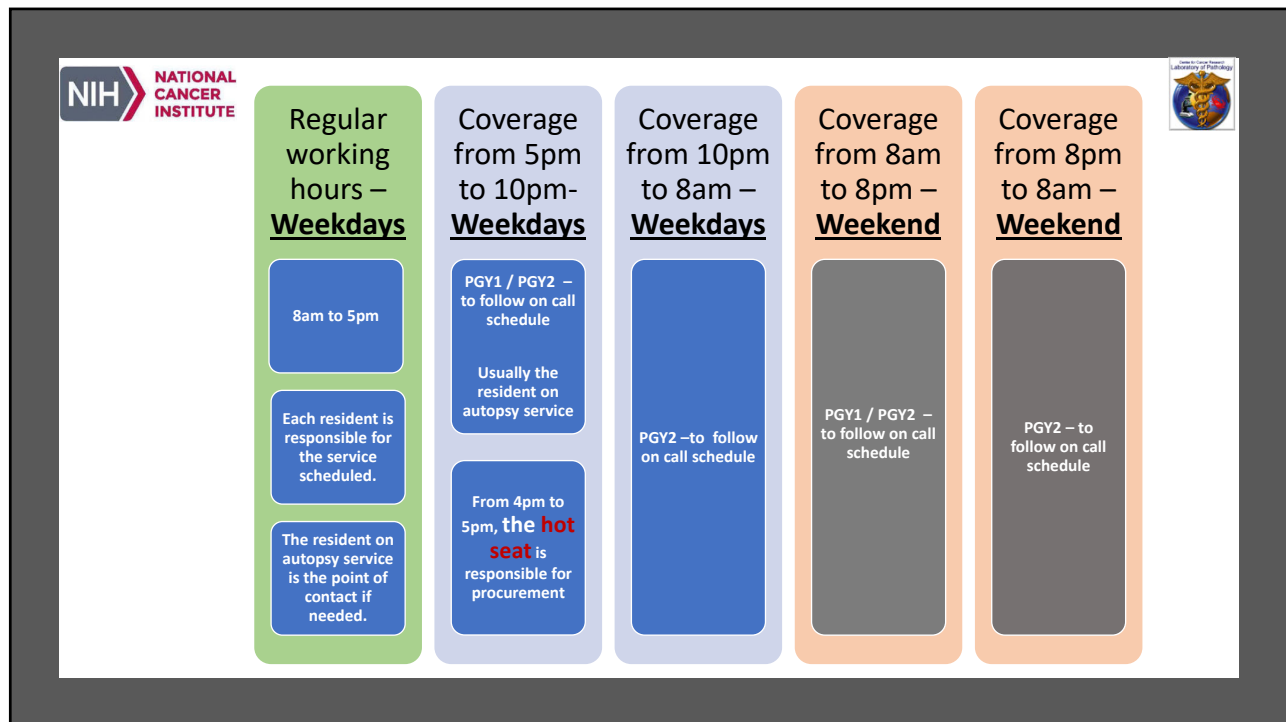
Laboratory of Pathology




1



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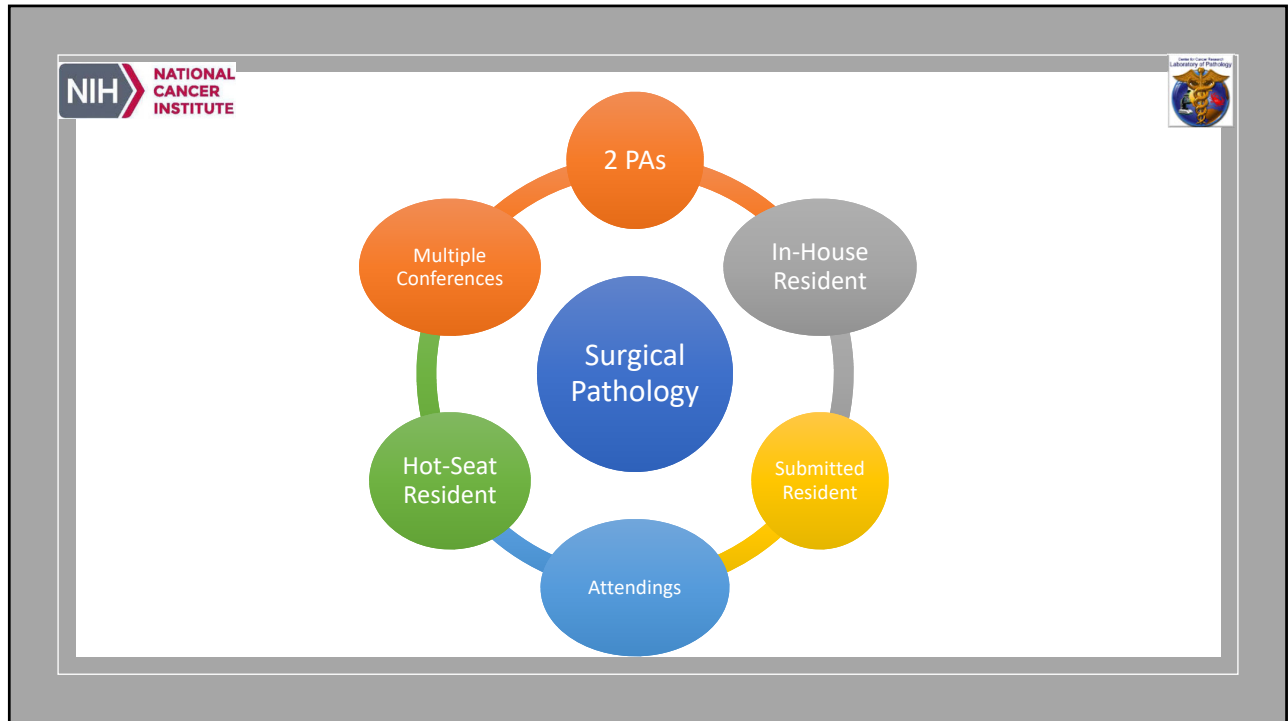
3

NIH NATIONAL CANCER INSTITUTE

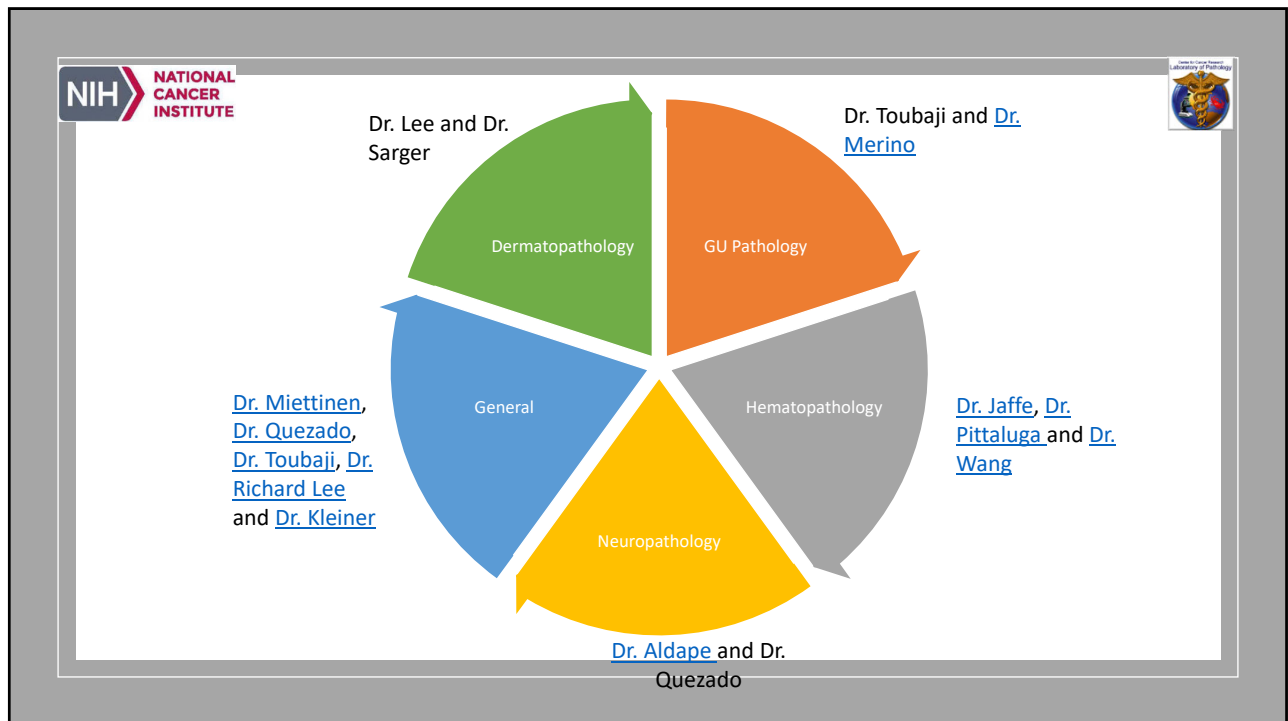
SURGICAL PATHOLOGY

- General
 - [Dr. Miettinen](#), [Dr. Quezado](#), [Dr. Toubaji](#), [Dr. Richard Lee](#) and [Dr. Kleiner](#)
- Neuropathology
 - [Dr. Aldape](#) and Dr. Quezado
- Genitourinary Pathology (GU)
 - Dr. Toubaji and [Dr. Merino](#)
- Hematopathology
 - [Dr. Jaffe](#), [Dr. Pittaluga](#) and [Dr. Wang](#)
- Dermatopathology
 - Dr. Lee and Dr. Sarger

4



5



6



ACCESSIONING AND HISTOLOGY

- **In-house cases**

- SB (Small biopsies)
- SI (surgical in-house cases)

Ralph Nix
Tangi Butler
Larissa Johnson
Keila Marmol

- **Submitted (consultation) cases**

- ST (usually consultation from outside facilities)
- SS (usually for NIH's patients)
- SM (consultation for Dr. Merino)
- SJ (consultation for Dr. Jaffe)

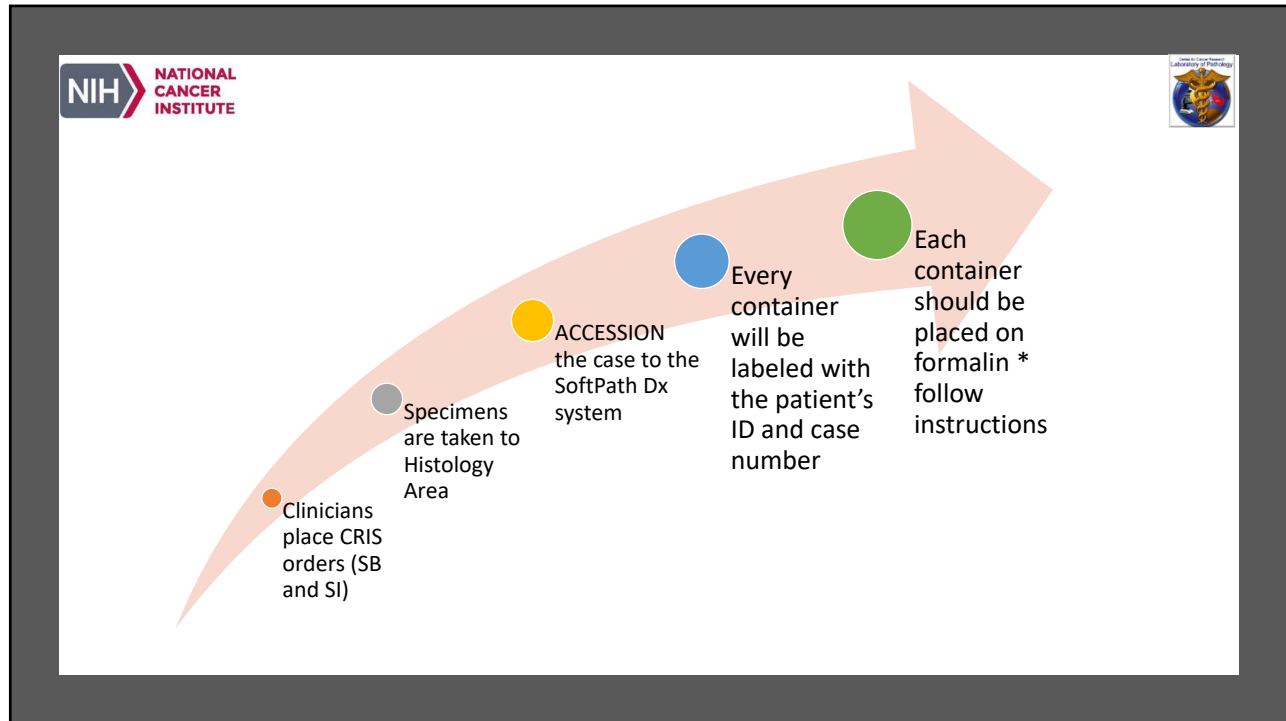
7



ACCESSIONING AND HISTOLOGY – SB and SI

- In-house specimens are from NIH patients
 - They have a NIH MRN#
 - Orders are placed by clinicians via CRIS system
- Once in Histology specimens are prepared by the Histotech for residents or the PA to gross
- Once grossed and processed, specimens are out the next day (H&E)
- Histology also processes recuts and special stains (like reticulin, PAS, GMS etc.)

8





9

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ACCESSIONING AND HISTOLOGY – SS, ST, SM and SJ

- Cases are dropped in the accessioning area by submitting clinicians/ designated people / mailed to NIH by outside facilities, and entered by Program Assistants
- Cases are transferred to histology where they are labelled and recuts of any blocks are obtained and H&Es are prepared
- Cases are placed on trays when ready and residents are paged to pick them up

10

Clinicians place CRIS orders (SS cases) OR the cases are mailed to specific attending or service for consultation (ST cases)

Slides or blocks are taken to the Surgical Office by NIH clinical team or mailed



Program Assistants will enter the case in the SoftPath Dx

Program assistants will check if the slide (s) and block (s) are in accordance with the paperwork

For the cases with slides, you will be able to pick up your tray in the Surgical Office.

For cases with blocks, you will be able to pick up the tray in the Histology Area.



11

ACCESSIONING AND HISTOLOGY – IMPORTANT

Review carefully all Tissue Examination Requisition sheets and CRIS orders (for MRN patients) for any special requests by clinicians (STAT reads, special handling, immunostains etc.)



12

PATHOLOGY ASSISTANTS (PAs)

- **WHO:**
 - [Sarah Young](#)
 - [Nicole Hufnagel](#)
- **WHEN:**
 - Weekdays 8am-4pm
- **WHAT:** PAs will gross SBs, occasionally SI (they will gross additional sampling for LN and gastrectomies for example), will be the leads for tissue procurement, will train and guide you during your first in-house rotation, and will help with questions



13

PATHOLOGY ASSISTANTS (PAs)

- **WHO COVERS:**
 - **From 4pm to 5pm** (weekdays): Hotseat
 - **From 5pm to 10pm** (weekdays): Pathology Resident on-call (usually autopsy/primary frozen resident)
 - **If only one PA is available:**
 - The PA will cover small biopsies and assisting in-house resident.
 - Hotseat will cover procurements.



14



TISSUE PROCUREMENT SERVICE

- General rule of thumb is that up to 50% of the tumor can go to research. We determine how much tissue to give, not the other way around.



15



FROZEN SECTION SERVICE

- **OR nurses will call for this . In-HOUSE and Autopsy Residents are responsible for this**
- The autopsy resident and submitted resident are going to receive an email with the anticipated procurement list every day (in the afternoon) with the list of patients scheduled for a surgery in the next day.
 - The **autopsy resident** needs to add relevant clinical history and any prior pathology report.
 - It is very important to pull any important prior case/slides and take to the frozen room. Prior slides can be very helpful to render a FS DX.

16



AUTOPSY SERVICE (AU and AN)

- Supervisor (Dr. Kleiner and the attending of the case)
- Attendings (Kleiner, Hewitt, Brown, Lee, Gasmi)
- Turn around time (60 working days per JCHAO regulations; you will receive a courtesy reminder on day 45)


17



IHC SERVICE

- WHO:
 - Ms. [Patricia Fetsch](#)
 - Ms. [Terrica Johnson](#)
 - Ms. [Charisma Roque](#)
 - [Ms. Hong Jin](#)

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HOTSEAT SERVICE

- **WHAT ?**
- Your role: You are the liaison between LP and other departments
- Triaging of cases, review slides with clinicians, present in various tumor boards
- **WHO?**

COM17
SDMM(I25)

19

NIH NATIONAL CANCER INSTITUTE 

CYTOPATHOLOGY SERVICE

- Supervisor (Dr. Filie and the attending of the case)
- Attendings (Filie and Roth)

20



Slide 19

QM([7 is it true

Quezado, Martha (NIH/NCI) [E], 6/18/2021

SDMM([25 I don't know any rule regarding CDH1, but I think we should discuss it



Sampaio De Melo, Michelly (NIH/NCI) [E], 6/21/2021



HEMATOPATHOLOGY SERVICE

- Supervisor (Dr. Jaffe and Pittaluga and the attending of the case)
- Attendings (Jaffe, Pittaluga, Wang)

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MOLECULAR PATHOLOGY SERVICE

- Supervisor (Dr. Papanicolau-Sengos)
- Attendings (Dr. Papanicolau-Sengos, Raffeld, Ina Lee, Hewitt, Barr)
- Flow of service:
 - Brain NGS, involvement will depend on level and motivation of trainee
 - Non-brain NGS, involvement will depend on level and motivation of trainee
 - Clonalities, all trainees will be involved in preparing reports

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Center for Cancer Research
Laboratory of Pathology



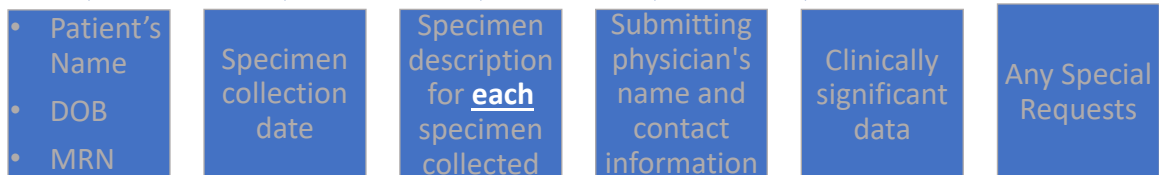
ENTERING CRIS 'SURGICAL – OR' ORDER FOR LABORATORY OF PATHOLOGY SPECIMENS

23

MANDATORY REQUISITION REQUIREMENTS



A CRIS order must include the following information:



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ENTERING AND RELEASING A CRIS ORDER



It is highly recommended that orders be placed and released using a provided workstation on wheels (WOW) post-surgery in the Operating Room. Using any other system to enter the order i.e. a laptop is not best practice.

Using the WOW will also ensure that the specimen labels print to the printer attached to the WOW when the order is released.

Notes:

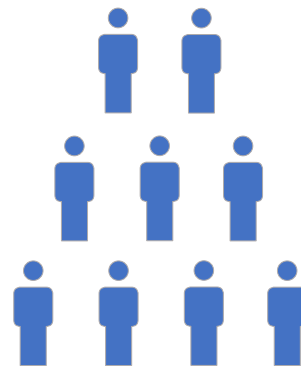
- Order sets can be requested. They can be a time saver by having the CRIS Source fields pre-populated. – **Send Requests to Maria Fagoaga.**
- Specimens sent for Frozen Section can be indicated in the Order Source Field.
- If an order is entered on hold and there are additional specimens, the order can be modified and the additional specimens added prior to releasing the order. – **Please Do Not Enter a Separate Order for additional specimens.**
- Biopsy Selection radio button within Surgical – OR order is required. This indicates ONLY Small Biopsies (less than 1cm) vs all other combinations of specimens.

25

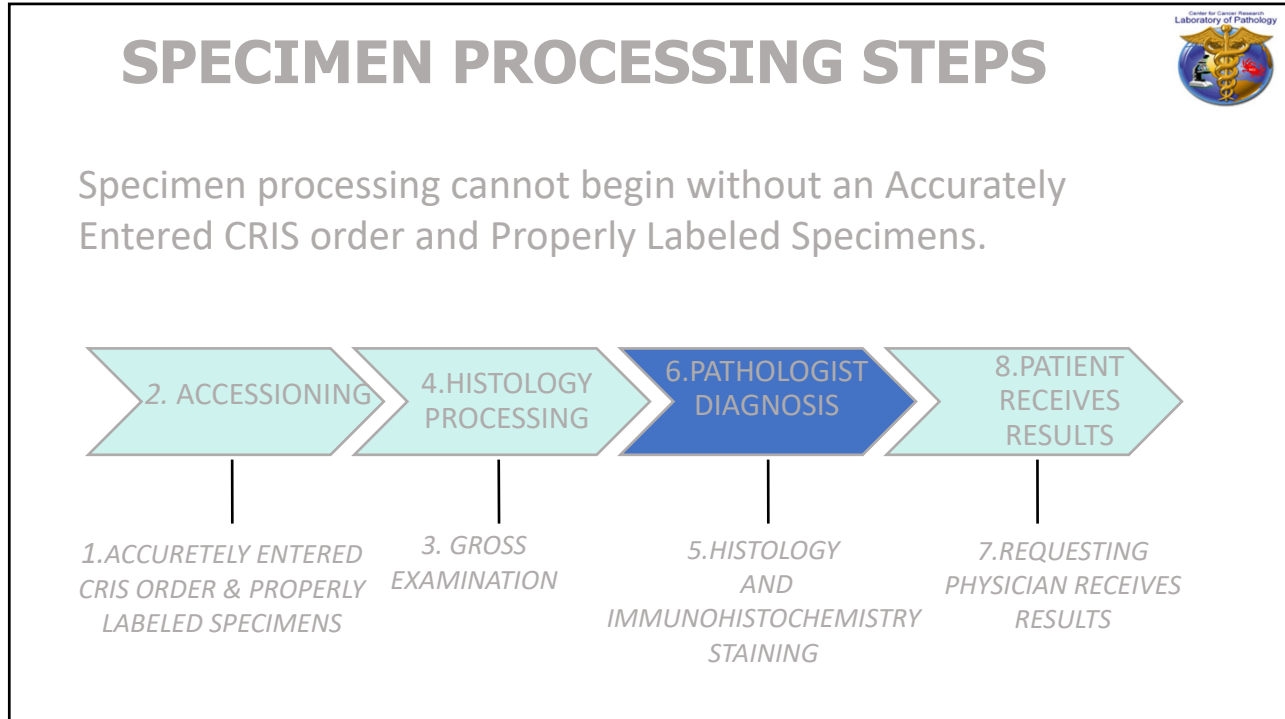
SPECIMENS WITHOUT A CRIS ORDER WILL BE REJECTED



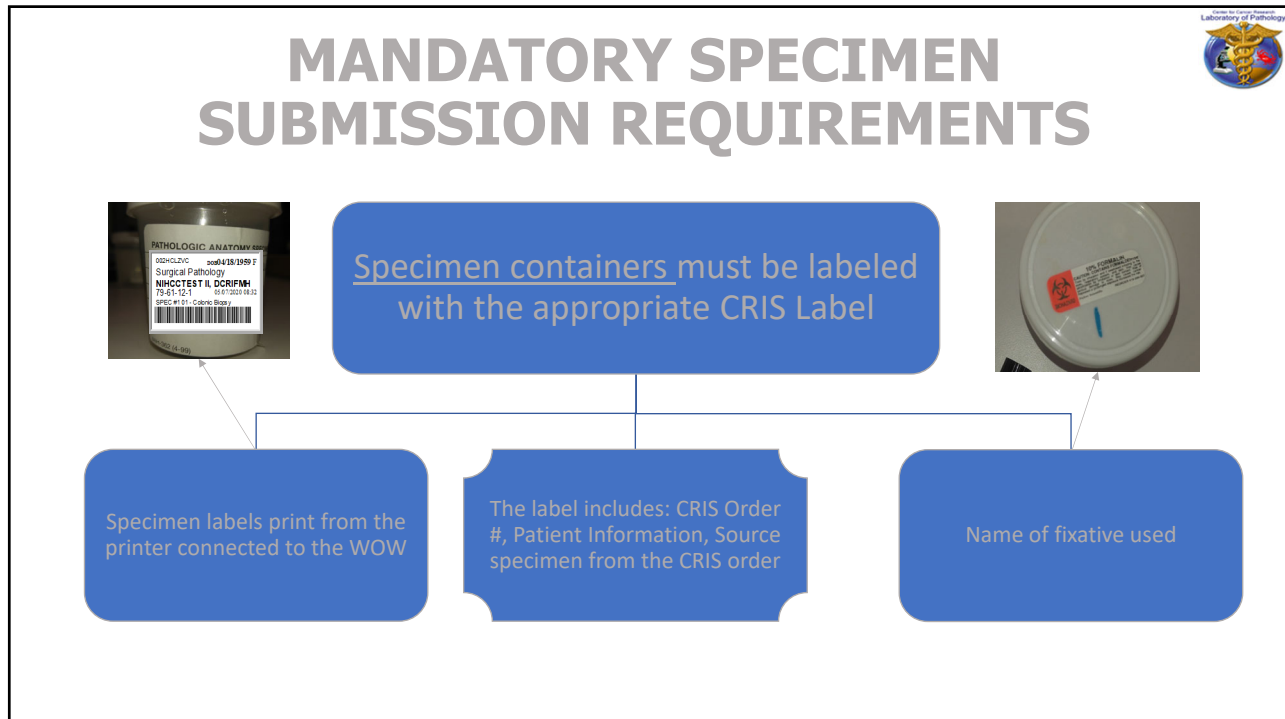
Patient results are delayed!



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REGULATORY REQUIREMENTS FOR SUBMITTING SPECIMENS



COLLEGE OF AMERICAN PATHOLOGIST (CAP)

- Specimen labeled with at least two patient identifiers and anatomical specimen source.
- Requisition (CRIS Order) that contains all relevant patient and requesting physician information.


JOINT COMMISSION REQUIRE LABORATORIES TO:

- Have a specimen quality process that identifies guidelines for specimen collection, labeling, and rejection.
- Require a requisition which contains all of the pertinent information for the patient and requesting physician.


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SURGICAL PATHOLOGY REPORT

- Generated from in-house specimens (SB and SI)
- Generated from submitted outside specimens (SS, ST, SM, SJ)



Staining and Cover Slipping of Histological Section



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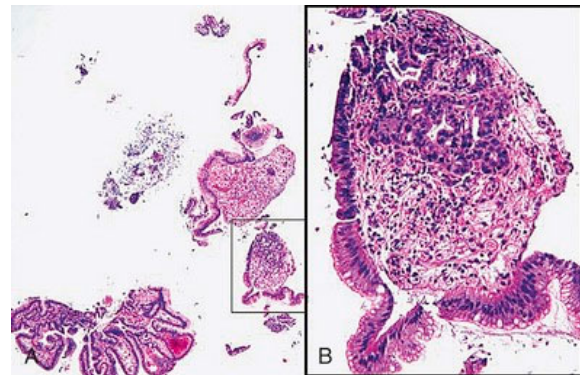
Pathologists at work



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SURGICAL PATHOLOGY REPORT-SB

MEDICAL RECORD		Surgical Pathology Report	
National Institutes of Health/National Cancer Institute Lab. of Pathology, National Cancer Institute Bldg. 10/Room 25235 Bethesda, MD 20892 Phone: (301) 496-8470 Fax: (301) 496-7173			
Surgical Pathology Report			
PATIENT:	██████████	MRN:	SB-22-6576
ACCOUNT#:	██████████	COLLECTION DATE:	9/13/2022 11:14 AM
DOB:	██████████	RECEIVED DATE:	9/13/2022 2:39 PM
AGE:	██████████	SEX:	F
ATTENDING:	██████████	LOCATION:	OUTPATIENT
REQUESTING:	██████████		
CONTACT NO.:	██████████		
DIAGNOSIS: Stomach, antrum, erosions, biopsy. Focal erosive gastritis. Warthin stary stain for H. pylori like organisms is negative.			
<small>Immunohistochemical and in situ hybridization tests performed have not been used for diagnosis and their performance characteristics determined by the Laboratory of Pathology, NCI. They have not been tested or approved by the U.S. Food and Drug Administration. The FDA has also determined that coverage is approval is not necessary. The laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity clinical laboratory testing.</small>			
CLINICAL INFORMATION: Specimen Taken For Protocol: Yes Brief Clinical History: Antral erosions Allocate Order to Protocol: 18-DK-0091			
OPERATION INFORMATION: Pre-Operative Diagnosis: Antral erosions Post-Operative Diagnosis: Antral erosions Operative Findings: Antral erosions			
SPECIMENS SUBMITTED: 1. ANTRUM BIOPSY #1 Antral erosions			
GROSS DESCRIPTION: Received in one formalin-filled container labeled with the patient's name ██████████ and Medical Record Number ██████████ and specified as "antral erosions" are two pink-tan soft tissue fragments measuring 0.8 x 0.3 x 0.2 cm in aggregate. The specimen is filtered through a biopsy bag and entirely submitted into cassette SB22-6576 A1. Gross Description dictated by S. Young on 9/13/2022.			



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SURGICAL PATHOLOGY REPORT-SI

MEDICAL RECORD Surgical Pathology Report
National Institutes of Health/National Cancer Institute
 Lab. of Pathology, National Cancer Institute
 Bldg. 16F Room 2022B Bethesda, MD 20892
 Phone: (301) 480-8470 Fax (301) 480-7173

Surgical Pathology Report SI-22-4581
 PATIENT: [REDACTED] MRN: [REDACTED]
 ACCOUNT#: 220912419431 COLLECTION DATE: 9/15/2022 12:04 PM
 DOB: (301)901- DOB: [REDACTED] RECEIVED DATE: 9/15/2022 2:48 PM
 AGE: 62 Y SEX: M LOCATION: OP SURGERY
 ATTENDING: [REDACTED]
 REQUESTING: [REDACTED]
 CONTACT NO: (301)902-9254

DIAGNOSIS:
 A. Peritoneum, #1, biopsy: Fibromuscular tissue with chronic inflammation and scattered and aggregates of tumor cells. See note.
 B. Peritoneum, #2, biopsy: Fibrous tissue with chronic inflammation and scattered and aggregates of tumor cells. See note.
NOTE:
 Overall features are consistent with metastatic poorly cohesive gastric adenocarcinoma.
 Tumor cells are positive for AE1/AE3 immunostains performed on parts A and B.

Adequacy Assessment for Ancillary Testing:
 Material available adequate for molecular evaluation: No
 Requires macrodissection: Choose Yes or No
 Estimated Fraction of Viable Lesional Cells (%): %

CLINICAL INFORMATION:
 Specimen Label for Protocol: Yes. Brief Clinical History: Metastatic, gastric cancer. Allocate Order to Protocol: 21-C-004

Surgical Pathology Report
 9/15/2022 (7:07)
 P.A. 09-25-0009
 Path Section 9 Tissue Examination
 Page 1 of 2



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SURGICAL PATHOLOGY REPORT-SS

MEDICAL RECORD Surgical Pathology Report
National Institutes of Health/National Cancer Institute
 Lab. of Pathology, National Cancer Institute
 Bldg. 16F Room 2022B Bethesda, MD 20892
 Phone: (301) 480-8470 Fax (301) 480-7173

Surgical Pathology Report SS-22-4602
 PATIENT: [REDACTED] MRN: [REDACTED]
 ACCOUNT#: [REDACTED] COLLECTION DATE: 9/14/2022 2:08 PM
 DOB: [REDACTED] DOB: [REDACTED] RECEIVED DATE: 9/16/2022 2:09 PM
 AGE: [REDACTED] SEX: M LOCATION: OUTPATIENT 13
 ATTENDING: [REDACTED]
 REQUESTING: [REDACTED]
 CONTACT NO: (240)858-3429

DIAGNOSIS:
 Brain, right frontal tumor, excision (PS22-7789 B1, 05/04/2022): Malignant epithelioid and sarcomatoid neoplasm morphologically consistent with glioblastoma. See note.

NOTE:
 Histologic sections show hypercellular brain tissue composed of at least two cell populations. There is an epithelioid component with plump cells with eosinophilic cytoplasm and usually eccentrically located nuclei with prominent nucleoli and occasional binucleate forms. There is another component of spindle-shaped cells arranged in haphazard fascicles and embedded in a variably myxoid and fibrotic stroma. There are also regions with clusters of foamy histiocytes. Stains performed at the NIH (reticulin, GFAP) show lesional cells are GFAP-positive, and the spindle-cell component is associated with substantial reticulin deposition.

Per report, material from the same lesion was reviewed at Emory, where immunohistochemical stains were performed. The stains reportedly showed lesional cells were positive for GFAP and negative for CD117 (KIT) and BRAF V600E with retained nuclear expression of ATRX, BRG-1, and INI-1. p53 showed markedly reduced expression. CD117 was locally positive in the spindle cell component, which was also weakly positive for SMA and highlighted by reticulin stain. CD34 was positive in the glial component. Neurofilament highlighted rare entrapped neurons. MIB-1 was variably elevated.

Chromosomal microarray performed at Emory reportedly showed numerous copy number aberrations including concurrent whole chromosome gains of 7 and loss of 10. Copy molecular testing reportedly detected pathogenic variants in NF1 and TP53 without variants in IDH1, IDH2, or EGFR. CDKN2A/B deletion was not detected, nor was KMT2D promoter methylation.
 Overall, the morphologic, immunohistochemical, and molecular results are consistent with glioblastoma, IDH-wildtype, CNS WHO grade 4, with substantial mesenchymal metaplasia, which may be classified as a gliosarcoma.

Per clinical request, no additional molecular studies will be performed at this time in order to preserve tissue for possible future testing.

Adequacy Assessment for Ancillary Testing
 Material available adequate for molecular evaluation: Yes - NIH A-1, PS22-7789 B1
 Requires macrodissection: No
 Estimated Fraction of Viable Lesional Cells (%): 70 %

Immunoperoxidase and In-situ hybridization tests performed here and used for diagnosis were developed and their performance characteristics determined by the Laboratory of Pathology, NCI. They have not been cleared or approved by the U.S. Food and Drug Administration. The FDA has also determined that such clearance or approval is not necessary. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity clinical laboratory testing.

CLINICAL INFORMATION:
 Brief Clinical History: Patient with diagnosis of Glioblastoma. Specimen Collected Outside NIH On: 05/04/2022 Allocate Order to Protocol: 21-C-0015

SPECIMEN SUBMITTED:
 1. SUBMITTED SURGICAL PATHOLOGY 1 BLOCK
 MATERIALS

GROSS DESCRIPTION:
 Received in Surgical Pathology in 1 tissue block labeled PS22-7789 B1 along with the corresponding surgical pathology report from Piedmont Atlanta Hospital in Atlanta, GA.

DISTRIBUTION:
 Solmaz Sahebji MD (NIH)
 solmaz.sahebji@nih.gov
 Karen Evans, RN (NIH)
 karen.evans2@nih.gov
 Piedmont Atlanta Hospital
 Department of Pathology
 1968 Peachtree Road, NW
 Atlanta, GA 30309
 Fax: 404-609-8645

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SUPPLEMENTAL SURGICAL PATHOLOGY REPORT

- Additional results without a change in DX

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REVISED SP REPORT

- DIAGNOSIS CHANGE
- CLINICAL TEAM NEEDS TO BE INFORMED
- DOCUMENTATION

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