

COVID-19 Worldwide Digital Repository

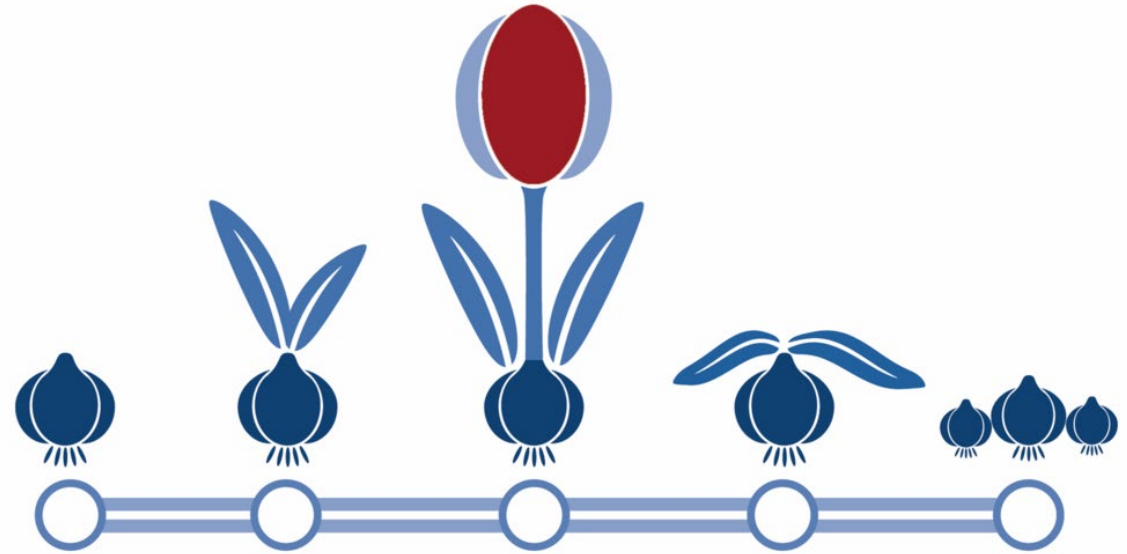
The Alliance for Digital Pathology
April 22nd, 2020

Webinar

- Mute yourself during the webinar
- Q&A session at the end– submit your questions via the Zoom chat

Founded by MGH, MDIC, DPA, FDA

The Alliance



A temporary and voluntary regulatory science initiative to advance digital pathology and streamline innovation by harmonizing and standardizing pathology workflows

<https://digitalpathologyalliance.org>



Program

Community outreach and survey results (Amanda Lowe)

Autopsy guidelines and partners (Matt Leavitt)

Data capture, management, sharing (Markus Herrmann)

Timeline

PRIOR WORK

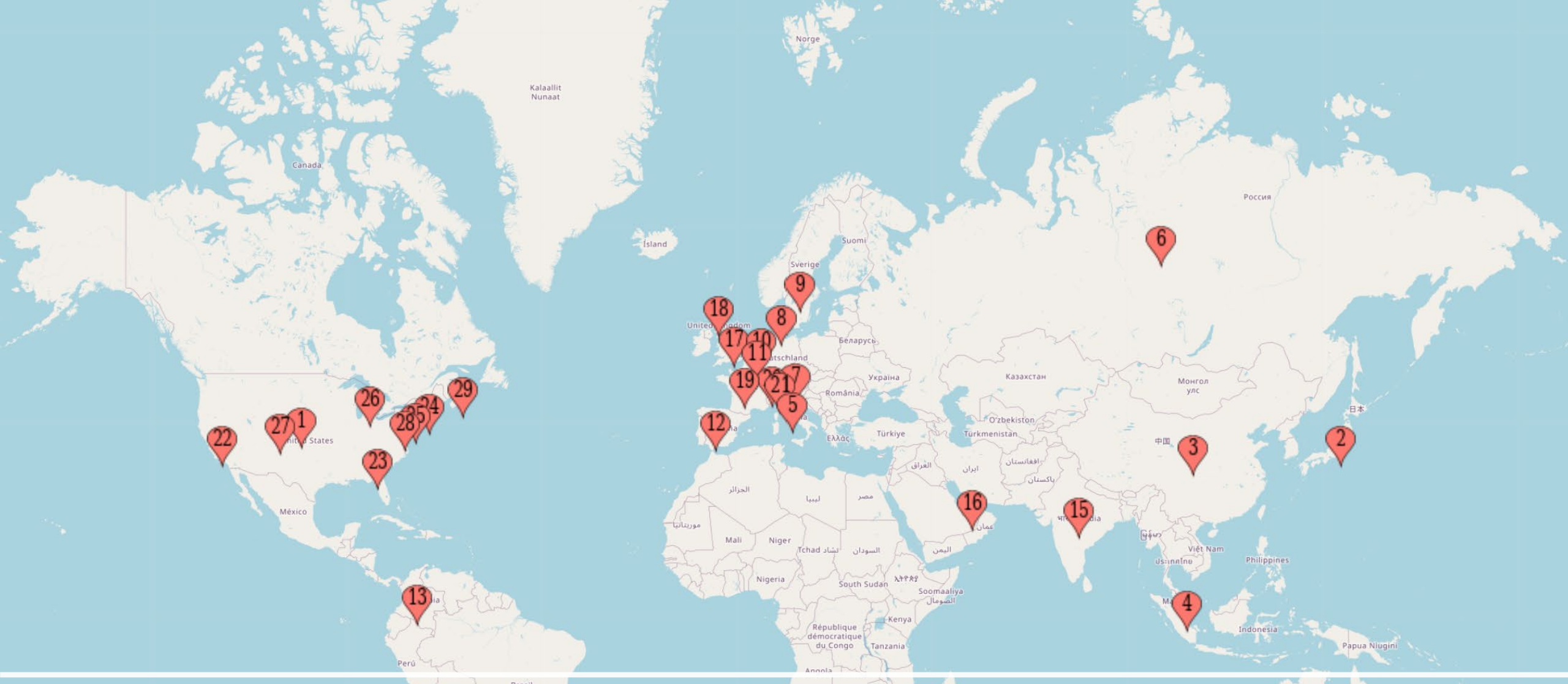
- Pre-Analytics and Standards Alliance Working Groups

CURRENT CORONAVIRUS OUTBREAK

- Histopathologic studies of COVID-19

BEYOND

- Cancer research and classification of tumors
- Machine learning and artificial intelligence



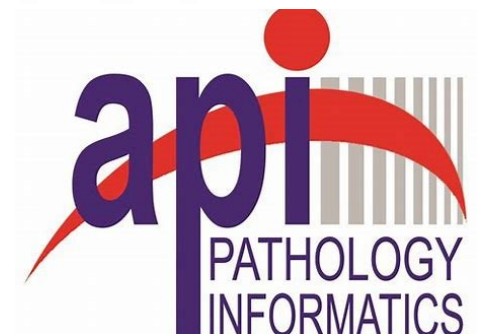
Global Data Repository Community - 22 countries and growing!
<https://www.mapcustomizer.com/map/Alliance%20Data%20Repository>

Community Outreach

Associations who have helped us spread the word.



International Agency for Research



Community Outreach

Survey respondents, contributors, and people or groups interested in our work.

LEADING ACADEMIC MEDICAL CENTERS

- MGH, Cornell, UCLA, UCSF, Vanderbilt, Leeds, MSK, Mount Sinai, Cedars Sinai,



MASSACHUSETTS
GENERAL HOSPITAL

PATHOLOGY ASSOCIATIONS

- Japan, China, Argentina, Belgium, Sweden

CONSORTIUMS AND WORKING GROUPS

- TILS-WG

INDUSTRY

- Amazon AWS, Advanced Cell Diagnostics, Leica, Lumea, Visiopharm, mTuitive, Objective Pathology, Propel

BIOPHARMA

- GSK, Merck, AstraZeneca

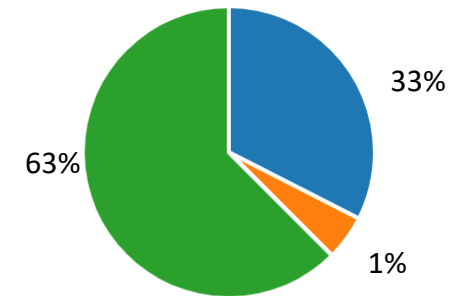
Survey Results

TISSUE PROCESSING AND AUTOPSY OF COVID-19

1. Are you currently processing COVID-19 tissue specimens at your facility?

[More Details](#)

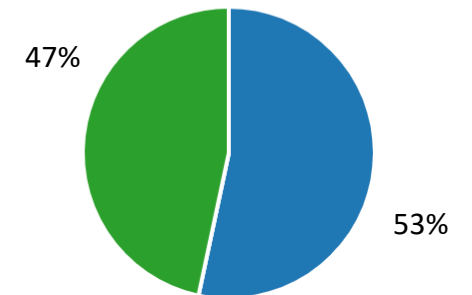
Yes	13
No, they are sent to another la...	2
No	25



2. Is your institution performing autopsies on COVID-19 patients?

[More Details](#)

Yes	8
Yes, but it's being Yes, but the...	0
No	7



Survey Results

PLEASE EXPLAIN WHY AUTOPSIES ARE NOT BEING PERFORMED AT YOUR INSTITUTION

- We do not have a proper Airborne Infection Isolation Rooms (AIIRs)
- Autopsies are not performed due to health regulations.
- No protocol and small number
- Lack of trained pathologists to do autopsy

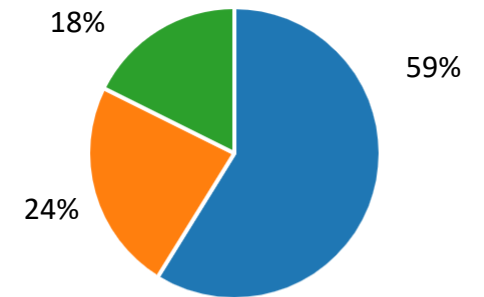
Survey Results

TISSUE EXCISION AND TYPES

4. How is the tissue being excised from COVID-19 patient(s)? Select all that apply.

[More Details](#)

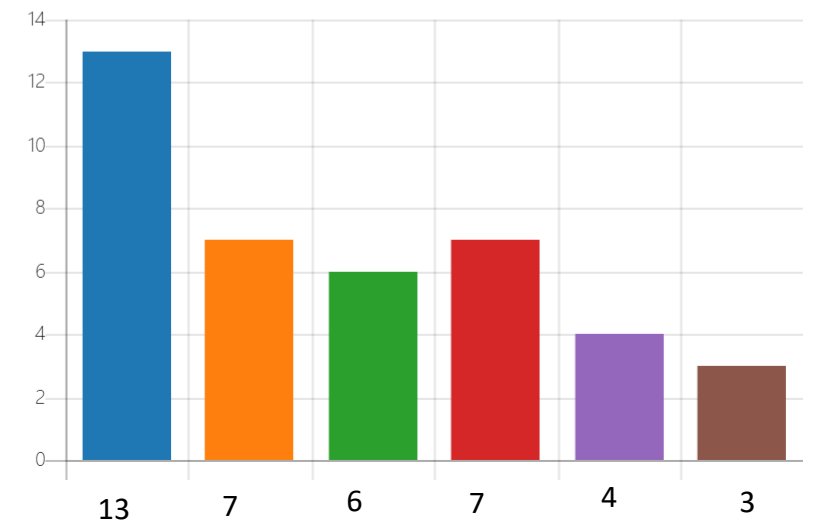
During Autopsy	10
CT or MRI guided Needle Bio...	4
Other	3



5. What type of tissue are you excising of COVID-19 cases? Select all that apply.

[More Details](#)

Lung	13
Liver	7
Kidney	6
Heart	7
GI	4
Other	3



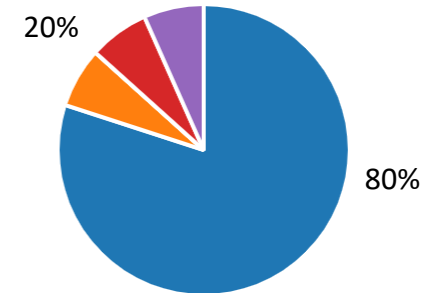
Survey Results

WHOLE SLIDE IMAGING

6. Do you have access to a Whole Slide Scanner?

[More Details](#)

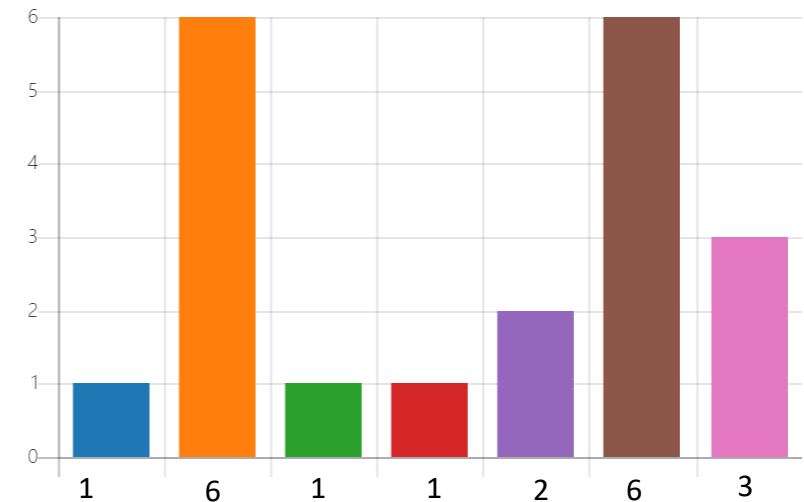
Yes, at my institution	12
Yes, through another institution	1
No, but I can take microscope ...	0
No, I have no access to imagin...	1
No, but I would be able to sen...	1



7. What type of Whole Slide Scanner do you use?

[More Details](#)

Hamamatsu	1
Leica/Aperio	6
Motic	1
Olympus	1
3DHistech	2
Philips	6
Other	3



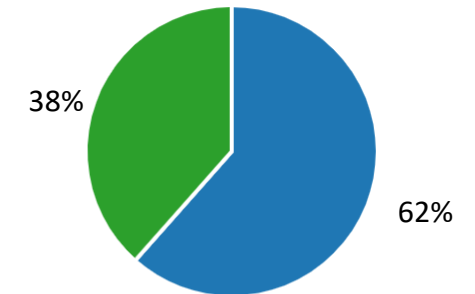
Survey Results

PRIVACY, PROTECTION AND SHARING

9. Would you be able to share digital images of COVID-19 cases for international research and education of the disease?

[More Details](#)

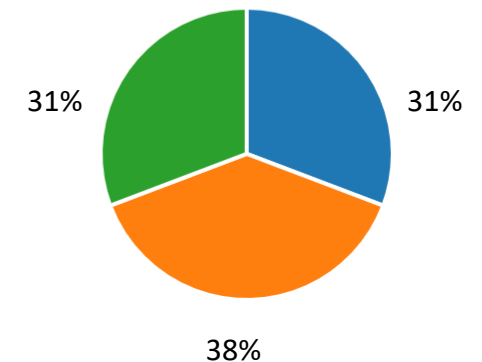
Yes	8
No	0
Maybe, but would require app...	5



10. Would it require patient consent at your institution to use COVID-19 specimens or images for research?

[More Details](#)

Yes	4
No	5
I do not know	4

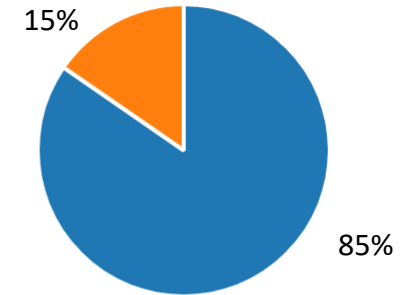


Survey Results

PRIVACY, PROTECTION AND SHARING

11. Do you have a method in place to anonymize cases to comply with HIPAA and/or GDPR requirements?

[More Details](#)



12. Would your institution consider being collection site for COVID-19 specimens and images?

[More Details](#)



Survey Results

CONNECTING THE DOTS

13. Do you have access to unprocessed tissues or slides of COVID-19 patients and are willing to share them? If you need help with this, please describe how we could help.

[More Details](#)

38

Responses

Latest Responses

"yes"

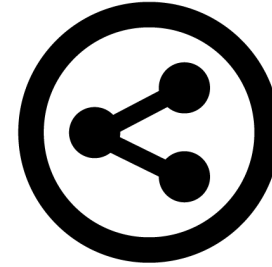
"no"

14. Can we contact you regarding this questionnaire? If yes, please provide your contact information and include your name, title, institution, country, email and phone number.

[More Details](#)

Latest Responses

Share our Survey



[LINK HERE](#)

English (United States) ▾

Global COVID-19 Specimen and Data Acquisition Questionnaire

The Digital Pathology Alliance (digitalpathologyalliance.org) is leading an effort to develop a public, international repository of Whole Slide Images of COVID-19 patient tissue samples for the medical and scientific communities around the world. To support this effort, we request 2 minutes of your time to complete the questionnaire below.

* Required

1. Are you currently processing COVID-19 tissue specimens at your facility? *

☐ Yes

☐ No, they are sent to another laboratory.

☐ No

Autopsy Guidelines Purpose

We need to answer some critical questions:

Mechanism of partial immunity—> Prevention strategies

Disease pathways—> Enlightened Therapies

Autopsy Guidelines Purpose

Purpose: The purpose of these recommendations is not only help ensure the safety of those performing post-mortem examination, but to coordinate efforts:

Standardizing collection and data sharing methods, the global Pathology community can work together as ONE, to apply our unique skills and understanding to solve these problems.

Autopsy Partners

CAP Autopsy Committee

Health Dept and State ME officials

Royal College of Pathologists

Center for Disease Control

International Societies (eg. Italian AP / Cytology Soc.)

Academic Autopsy Groups

COVID-19 Worldwide Digital Repository

- **Purpose** – Studying COVID-19 and beyond
- **Scope** – Autopsy, structured reporting, digital imaging
- **Actors** – Data collectors, coordinator, distributors and consumers
- **Workflow** – Data submission, review and sharing
- **Live demo** – Presentation of prototype web interface
- **Legal aspects** – Data sharing agreements and licensing
- **Participation** – Getting involved
- **Q & A** – Questions and answers and discussion
- **Conclusion** – Next steps

Purpose

CURRENT CORONAVIRUS OUTBREAK

- Pathophysiology of COVID-19 disease
- Histopathologic diagnostic criteria of COVID-19

BEYOND

- Emerging infectious diseases
- Cancer research and classification of tumors

Scope

AUTOPSIES

- Promote autopsy procedures
- Standardize autopsy procedures and reporting

STRUCTURED REPORTING

- Create structured electronic autopsy report template
- Capture metadata using standard medical ontologies

DIGITAL IMAGING

- Collect digital images of autopsy tissue specimens
- Share images together with relevant metadata

Actors

DATA COLLECTORS & CURATORS

Pathologists around the world

DATA COORDINATOR

World Health Organization (WHO)

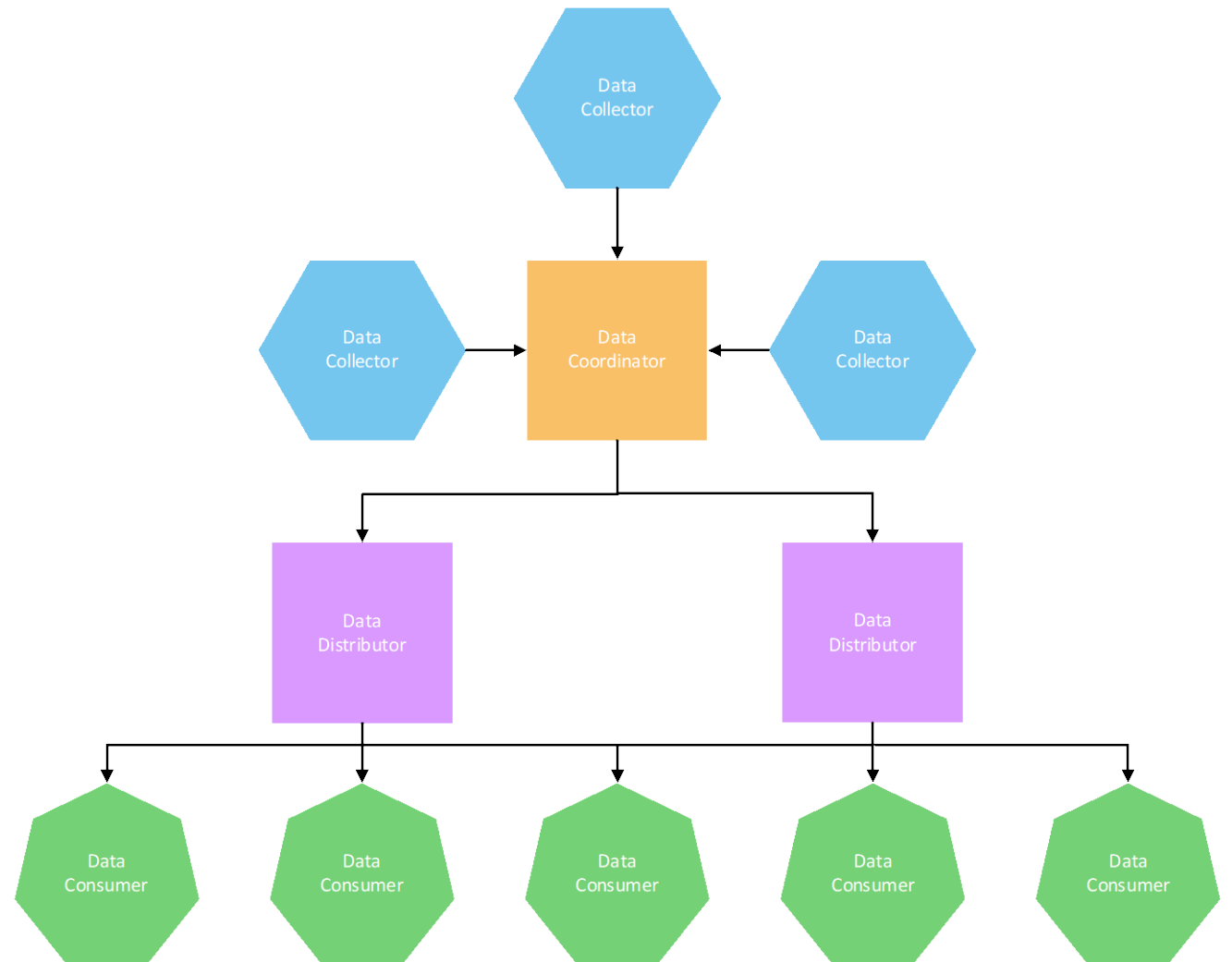
DATA DISTRIBUTORS

- Professional associations, e.g. DPA
- Government agencies, e.g. NCI/NIH
- Industry consortia, e.g. MDIC
- Academic consortia, e.g. BIGPICTURE

DATA CONSUMER

Pathologists and scientists around the world

Actors



Workflow

DATA SUBMISSION

Pathologists enter metadata, upload images and download report

DATA PEER REVIEW

Pathologists review data and perform quality control

DATA CURATION

Imaging informaticists clean and harmonized data sets

DATA SHARING

Imaging informaticists make data sets publicly available

Live Demo



WHO Classification of Tumours ONLINE SUBMISSION SYSTEM

Login:

Password:

Login

Legal aspects

COLLECTOR – COORDINATOR

Data sharing agreement

COORDINATOR – DISTRIBUTOR

Data sharing agreement

DISTRIBUTOR – CONSUMER

Open license

Participation

CODE OF CONDUCT

- Voluntary
- Collaborative
- Precompetitive
- Not-for-profit
- Free and open source

<https://digitalpathologyalliance.org/code-of-conduct>

Next Steps

PUBLISH

- Manuscript is actively being worked on
- In discussions with several journals

AUTOPSY GUIDELINES

- Finalize, endorse, release to community

LAUNCH DATA REPOSITORY

- Formalize metadata template
- Procedures for upload
- Formalize agreements

FUNDING SUPPORT

- Evaluate needs
- Funding methods

Acknowledgment

College of American Pathologists (CAP)

- Autopsy Committee
 - Henry Sanchez, MD
- Pathology Electronic Reporting (PERT) Committee
 - Samantha Spencer, MD
 - Mary Edgerton, MD, PhD

International Agency for Research on Cancer (IARC)

- Group of WHO/IARC Classification of Tumours Series
 - Alberto Machado



Q & A

Please send any questions to the following address:
data-repository@digitalpathologyalliance.org