This webinar series is designed to share informatics responses and discuss clinical informatics challenges to the COVID-19 pandemic

- In collaboration with AMDIS, this session will feature clinicians who are leveraging electronic health records and other health IT tools to deploy rapid screening processes, laboratory testing, clinical decision support, reporting tools, and patient-facing technology related to COVID-19.

- Presenters will discuss strategy and pitfalls related to managing clinical information related to COVID-19 patients and reporting such data to public health authorities during this national epidemic. Presenters will also discuss some of the long-term implications to clinical informatics caused by responding to the coronavirus.
Several additional webinars are being planned to highlight members of AMIA and the wider informatics community.

Visit AMIA.org/COVID19
Health Informatics is the science of how to use data, information, and knowledge to improve human health, including the execution of scientific research, the delivery of health care services, and the promotion of public health. AMIA is the multi-disciplinary, inter-professional home for 5,400+ health informatics experts.
In collaboration with AMIA’s Clinical Information System Working Group and AMDIS, this session will feature clinicians who are leveraging electronic health records and other health IT tools to deploy rapid screening processes, laboratory testing, clinical decision support, reporting tools, and patient-facing technology related to COVID-19.
The AMIA Clinical Informatics Community of Practice provides multiple levels of assistance to help members connect, learn, grow, and lead in the field, including:

- **Advocacy** – Official representation on the Board of Directors through appointed CI liaisons connects the CICOP community directly to the AMIA leadership.
- **Community** – The AMIA Connect online community provides access to 1000+ AMIA member diplomates as a resource for discussion, networking and peer advice. Meeting space at live events is provided for face-to-face business and social activity.
- **Educational Services** – AMIA hosts the annual Clinical Informatics Conference for 600+ practitioner attendees offering 70+ CME-eligible sessions. AMIA is ABPM’s designated partner in helping diplomates achieve continuing certification (CC) requirements.
- **Recognition and Designation** – Fellow status designation is offered to clinical informatics diplomates through the FAMIA program the Fellows of the American Medical Informatics Association.
- **Professional Development and Career Opportunities** – Conferences offer opportunities to present clinical informatics solutions and innovations as well as conference planning leadership roles.
- **Journals** – *ACI - Applied Clinical Informatics Journal* and *ACI Open* the Official eJournals of AMIA and IMIA
Founded in 1997, the Association of Medical Directors of Information Systems is the premier professional organization for physicians interested in and responsible for healthcare information technology.

**AMDIS Members are the thought leaders**, decision makers, and opinion influencers dedicated to advancing the field of Applied Medical Informatics and thereby improving the practice of medicine.

With our symposia, blogs, on-line forum, journal, presentations, sponsored and co-sponsored programs, and networking opportunities, **AMDIS truly is the home for the “connected” CMIO**.
CME Information

Accreditation Statement
The American Medical Informatics Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Credit Designation Statement
The American Medical Informatics Association designates this live activity for a maximum of 1 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The live webinar only offers CME credit. The recording on our website will be openly available for learners, but will not offer CME credit.

Check the Chat area for the link to the survey/credit claim.
Target Audience

Clinical and management-level physician informaticists and other healthcare professionals with an interest in clinical informatics.

Learning Objectives

After participating in this activity, the learner should be better able to:

● Explore various organizations’ clinical informatics responses to the COVID-19 pandemic addressing important challenges such as telemedicine, prioritization and governance of COVID-19, imaging, and data and reporting issues

● Consider what may be the long-term social, economic, technical, and ethical impacts of these clinical informatics responses to COVID-19 due to their rapid deployment during a global health and economic crisis
Disclosures

There is no commercial support for this CE activity.
All planners and presenters disclose that neither they nor their life partners have relevant financial relationships with commercial interests.
Agenda

• Brief introduction to AMIA’s Webinar Series, clinical informatics, and the role of AMIA’s Clinical Information Community of Practice and AMDIS

• Presenters will discuss strategy and pitfalls related to managing clinical information related to COVID-19 patients and reporting such data to public health authorities during this national epidemic.

• Presenters will also discuss some of the long-term implications to clinical informatics caused by responding to the coronavirus.
Panelists (in order of appearance)

- **Brian Clay, MD**, CMIO for Inpatient and Hospital Affiliations, Health Sciences Clinical Professor of Medicine, UC San Diego School of Medicine; Member, AMDIS Advisory Board

- **Howard Landa, MD**, Vice President of Clinical Informatics and EHR, Professor of Radiology, Sutter Health; Chairman, AMDIS Advisory Board

- **Margaret Lozovatsky, MD**, Chief Medical Information Officer, St. Louis Children's Hospital, Chief Medical Information Officer of Child Health for BJC Health Care; Associate Professor, Pediatric Hospitalist Medicine; Washington University School of Medicine in St. Louis; Member, AMDIS Advisory Board

- **Kevin McEnery, MD**, Director of Innovation in Imaging Informatics, Professor of Radiology, The University of Texas M.D. Anderson Cancer Center; Vice Chairman, AMDIS Advisory Board
Brian Clay, MD
CMIO for Inpatient and Hospital Affiliation, Health Sciences Clinical Professor of Medicine
UC San Diego School of Medicine
Member, AMDIS Advisory Board
bclay@health.ucsd.edu
Leveraging telemedicine to deliver efficient, effective care during a pandemic
COVID-19 and Telemedicine

Challenges

- Need to rapidly expand telemedicine capability
- EHR-integrated vs. stand-alone system
- Hardware considerations and high-volume strain on video software
- Including residents and students in workflows
- Specialty-specific design vs. standard deployment
- Documentation requirements
- Rapidly changing CMS regulations on billing
- Over-adoption?
COVID-19 and Telemedicine

Response

- Establishment of a TeleSPRINT team and command center
- EHR-integrated approach – mobile-to-mobile design
- BYOD provider smartphones (Epic Haiku) and clinic-based iPads for outpatient; Zoom-based workflow in hospital setting
- Design and implementation of multi-provider video capabilities
- Standard deployment – standard visit type in outpatient, standard EHR security
- System-level standard phrases to document consent and prompt for required billing documentation; rapid updates as billing regulations evolved
- Framing of inpatient virtual visits as strategy to reduce use of personal protective equipment (PPE) for patients with isolation precautions
COVID-19 and Telemedicine

Outcomes

- UCSDH moved from baseline of several dozen video visit a week to over 1000 a day
- 40% to 50% of ambulatory volume currently done via video visits; ramp up to this level accomplished in one week
- Providers generally willing to move to using telemedicine
- Key lessons:
  - Standardize – security, platform, documentation
  - Establish a dedicated team to manage ramp up
  - Mobile platform for telemedicine well received
  - Find right balance of virtual and in-person care

Accepted Manuscript

Rapid Response to COVID-19: Health Informatics Support for Outbreak Management in an Academic Health System

J Jeffery Reeves, MD, Hannah M Hollandsworth, MD, Francesca J Torriani, MD, Randy Taplitz, MD, Shira Abeles, MD, Ming Tai-Seale, PhD, MPH, Marlene Millen, MD, Brian J Clay, MD, Christopher A Longhurst, MD

Journal of the American Medical Informatics Association, oc037, https://doi.org/10.1093/jamia/oc037
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Howard Landa, MD
Vice President of Clinical Informatics and EHR, Professor of Radiology
Sutter Health
Chairman, AMDIS Advisory Board
landah@sutterhealth.org
Reporting during a pandemic -- challenges, response, and goals and outcomes
COVID-19 Reporting Challenges

- Perfection is the Enemy of good enough
- Evolving data definitions
  - Screening, Travel, PUI
- COVID is a pragmatic disease
- You don’t clean usually places that nobody sees
- You *shouldn’t* always get what you want, but you get what you need
- One size does NOT fit all
  - Tactical Reporting/Real-time
  - Strategic Reporting/Trending
  - Public Reporting/Flexibility
- Access Governance
COVID-19 Reporting Challenges

- Anticipate the need: requests lagged but then were emergent
- Standardize the Solution: Firm but gentle pushback
- Fix what we have and leverage your vendors: Don’t reinvent the wheel
- Minimal viable product and iterate
- Involve operations at opportune moments
  - Tactical (Census, Meds, PPE, Biomedical)
  - Strategic (Surge planning, Procurement)
  - System level public reporting: standardized, controlled, defined
COVID-19 Reporting Challenges

- Collaboration
  - Operations, Data/Analytics, Informatics, Research & Development
- Optimized and updated reporting tools
- Leveraged our EHR vendor
- Robust operating support tools
- Optimized definitions
- Data governance alignment
- Long-term data integrity
- Long-term system integrity
- We are SO MUCH more ready for the next time

Leadership and Learning are indispensable to each other - JFK
Margaret Lozovatsky, MD

Chief Medical Information Officer for St. Louis Children’s Hospital
Chief Medical Information Officer of Child Health for BJC Health Care
Associate Professor, Washington University School of Medicine, Department of Pediatrics, Division of Hospitalist Medicine

Member, AMDIS Advisory Board

margaret.lozovatsky@wustl.edu
Prioritization and governance of COVID-19 activities
Prioritization and Governance of COVID-19 Activities

Challenges

- Nimble and effective governance
  - Consistency vs variation
- Accelerated pace of new technology implementation
  - Virtual Care
  - Communication strategies
- Training and Access changes to accommodate changing clinical roles
- Rapid evolution of clinical guidelines and organizational priorities
- Technology to support repurposing of physical spaces
Prioritization and Governance of COVID-19 Activities

Organizational Responses

● Pair Local Clinical Informatics Teams with Local Operational Leaders
  ○ Local prioritization and approvals first
  ○ System alignment with variation when necessary

● Clinical Informatics Team – building trust and transparency
  ○ Bi-directional communication with end users
  ○ Identify/anticipate needs, collate requests, obtain approval, provide training/education

● Clear processes with minimal required steps

● Don’t let perfect be the enemy of good enough – PDSA Cycles

● Clinical and operational needs drive all technology changes

● Reduce redundant work
Prioritization and Governance of COVID-19 Activities

Long Term Impact of the Response

- We have Virtual Care!
- Major IT initiatives can be done in a matter of days
- Stronger governance
  - Weakest links in processes became apparent quickly
  - Necessary approval bodies were stood up
  - Iteration happened quickly
- Clinical and Operational ownership is key to success
- Transparency is essential
- Strong governance will be essential in addressing the post-COVID era
Kevin McEnery, MD

Director of Innovation in Imaging Informatics
Professor of Radiology
The University of Texas M.D. Anderson Cancer Center

Vice-chairman, AMDIS Advisory Board

kmcenery@mdanderson.org
Imaging during a pandemic -- challenges, organizational responses, long-term impacts
COVID-19 Reporting Challenges

- CT Chest and X-ray of COVID-19 Patients – Suspected and Proven
  - Mitigate interactions between PUI patients and non-PUI patients

- Standardized reporting COVID-19 imaging outcome

- Order entry alerting technologists and radiologists of COVID-19 status

- Off-campus image interpretation
  - Move >95% interpretation off-site – minimize on-campus radiologists

- Continue fellowship training experience
  - Fellows and radiologists no longer in physical proximity

- Multidisciplinary conference (tumor boards) continuity – 30+ groups
  - Sub-speciality Medical, Surgical and Radiation Oncologists, Radiologists, and Pathologists
COVID-19 Imaging – Organization Responses

- Mitigate interactions between PUI patients and non-PUI patients
  - Physically separate areas (building location) for PUI and non-PUI patients
  - "A Platoon" and "B Platoon" technologists

- Standardized reporting COVID-19 imaging outcome
  - Adopted ACR, RSNA, STR consensus reporting standards

- Order entry alerting technologists and radiologists of COVID-19 status
  - Placed COVID-19 Order questions on all CT Chest and CXR procedures
  - Included EMR infection status on all tracking boards, dashboards, etc.

- Off-campus image interpretation
  - Leverage existing “business continuity” investments
  - "After-hours" infrastructure became “All-hours” infrastructure
COVID-19 Imaging – Organization Responses

- SD-WAN infrastructure for radiologists (>100MB encrypted)
  - Off-loads radiologist bandwidth from at-home employees (9,000+)
- Maintain fellowship training experience
  - Relocation of (currently unused) on-campus workstations to fellow’s homes
  - Utilize remote meetings (Skype and WebEX) for realtime case review
  - Virtual didactic conferences
- Multidisciplinary conference (tumor boards) continuity – 30+ groups
  - Transitioned to virtual conference format
  - Case discussions continue albeit in a virtual meeting format
  - Anecdotally substantial increase in conference attendance
COVID-19 Imaging - Long-term Impact

- Acceleration of transition to standardize radiology reporting
- Validation of alignment of order entry to reporting and downstream analytics
- Post-COVID collaboration-patterns will clearly be transformed
  - Increased reliance on virtual collaboration technology
- Coordination of response across enterprise is essential
  - IT personnel embedded into all decision making activities
- Available in-house expertise to implement any requested IT infrastructure changes
- Validates the need for proactive IT investment in business continuity
  - Tiered approach to institution encrypted access
  - High-bandwidth users on separate VPN infrastructure enables greater availability for low-bandwidth users (1,500 to 8,000 simultaneous users)
STRONGER

TOGETHER

YOU MAKE
A DIFFERENCE!!

#ENDCANCER

THANK YOU
HEALTHCARE HEROES

Sidewalk Art @ MDACC
4/7/2020

Kevin McEnery, MD
kmcenery@mdanderson.org
Audience Q&A
AMIA 2020
COVID-19 Webinar Series
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