Welcome to the IHPI COVID-19 Data Town Hall
To submit a question

Please open the “Chat” function
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Questions?
Send a chat message to co-host Meghan Petiprin

Feedback welcome after town hall at ihpifeedback@umich.edu
Featured Presenters

David Hanauer
MD, MS
Pediatrics

David Hutton
PhD, MS
Public Health

Erin Kaleba
Data Office for Clinical & Translation Research

Hallie Prescott
MD, MSc
Internal Medicine

Emily Somers
PhD, ScM
Internal Medicine
IHPI Data & Methods Hub

Patrick Brady
Manager,
Data & Methods Hub
IHPI 2020 Claims Release Schedule

- OptumInsight
  - April 2021
- Truven Commercial/Medicaid
  - December 2021
- Medicare/Medicaid & HCUP
  - Summer 2022*

Additional Databases (not managed by IHPI)

- FAIR Health
  - 150 million individuals, ~75 large health plans
- Health Care Cost Institute
  - 50 million individuals, actual reimbursement amounts, 4 large payers
- Population Association of America
  - Webcast on HRS, NHATS, PSID, etc.
  - [https://www.youtube.com/watch?v=NuFxfbHLqcY](https://www.youtube.com/watch?v=NuFxfbHLqcY)

For more information & access requests, visit ihpi.umich.edu/data or email ihpi-data@umich.edu
EMERSE: Electronic Medical Record Search Engine

David Hanauer
MD, MS
Clinical Associate Professor, Department of Pediatrics, Medical School
EMERSE: Electronic Medical Record Search Engine

- About me: David Hanauer
  - Dept of Learning Health Sciences, Faculty Lead of MICHRI Informatics
- About EMERSE: Search tool for the free text/unstructured notes
  - Information retrieval system. Not officially a natural language processing (NLP) system
  - Self-service tool. Once you have an account you/your team uses it on your own time
  - No cost for use
- Estimated that 80% of data are in unstructured notes
- Data from multiple sources: MiChart/Epic, Careweb, radiology reports, pathology reports, OB Tracevue
  - Data from around 1995 – present
- Structured data can have errors/be misleading. Chart review is “gold standard”
- Two primary EMERSE functions
  - Find cohort base on mention in free text. Ideal for rare diseases without a specific ICD code.
  - Highlight all terms among a set of patients, to aid in chart review
- Integrated with MiChart, DataDirect
EMERSE: Electronic Medical Record Search Engine

- Used at Michigan, UNC, Cincinnati. Implementing at CWRU, UCSF, Kentucky, Columbia
- COVID research
  - Has been used for multiple COVID projects, no different from any other research project
  - Good for details that aren't going to be coded, such as presenting symptoms
- IRB approval required for research
- Research approval by the Data Office:
  - Follow link to Self-Service Data Tools: https://research.medicine.umich.edu/our-units/data-office-clinical-translational-research/data-access/self-serve-data-tools
- Many EMERSE details can be found at http://project-emerse.org
  - Training videos, online guides, list of publications (350+), etc.
- EMERSE itself is at: https://emerse.med.umich.edu
  - Need to be on the Michigan Medicine Network/connect via the MM VPN
- For questions, 1:1 training, or training for your group, contact David Hanauer: hanauer@umich.edu
State and National Data Resources

David Hutton
PhD, MS
Associate Professor,
Department of Health Management & Policy, School of Public Health
National and International

• Johns Hopkins
  • Daily confirmed cases, deaths by country/state/province/county
    • [https://github.com/CSSEGISandData/COVID-19](https://github.com/CSSEGISandData/COVID-19)

• NY Times
  • Daily cases (confirmed, probable), deaths by states and counties
  • State policies:

• The Atlantic COVID tracking Project
  • Daily tests, positive, hospitalized, ICU, ventilator, deaths by state.
    • [https://covidtracking.com/data](https://covidtracking.com/data)

• CDC
  • COVID-19 Planning Scenarios:
Other Sources

• State and Local: each state and most counties publish daily (or weekday) case counts and deaths.

• “Published Literature”:
  • Hit or Miss
  • Grey literature
  • Most data has small “n’s”
  • Most studies observational
Erin Kaleba
Director, Data Office for Clinical & Translation Research
Pathetic Homeschool Teacher, Quarantine
DataOffice@umich.edu
Data Resources for Your Research

• **BACKGROUND:** 17yrs trying to use data collected for one purpose for another purpose

• **KEEPING HUMBLE:** “Is this what you wanted to be when you grew up?” at family holidays…

• **VISION:** Enable access to data about all contributors of a patient’s wellness and illness *AND* do so in the most secure, innovative manner
Options for Researchers

Self-Serve

Biospecimens

Custom Extract

Genetic Data

Researcher
Discover the following:

1. Cohorts – COVID-19 “starting population”
2. Row-level Data for COVID-19 patients
3. Biospecimens – serum, plasma, nasal swabs
4. Genetic Data – GWAS, viral RNA
Hallie Prescott
MD, MSc
Assistant Professor,
Department of Internal Medicine,
Medical School

https://mi-hms.org/quality-initiatives/mi-covid19-initiative
What is MI-COVID-19?

A registry of patients COVID19 in 40 Michigan hospitals. A multi-CQI venture, supported by BCBSM. Goal is to improve care of patients with COVID.

Demographic Abstractions (Full Sample)
Demographics; Outcomes
~2000 COVID; 1300 PUI to date

Full Abstractions (A random sample)
Detailed clinical data (2-4 hrs / case)
60-day telephone follow-up
~1300 COVID; 150 PUI to date
The Data

**Strengths:**

Diverse set of hospitals, variation in treatment/ outcomes across hospitals, human-abstracted, detailed clinical info before/during/after hospitalization.

**Weaknesses:**

Not a huge dataset (can’t look at COVID outcomes among patients with rare diseases), human-abstracted (not a full EHR extract).
Data Access

Michigan Medicine Data

- available to anyone with appropriate IRB

Full Registry Data:

- data request / prioritization process
  - consistent with our QI mission
  - available bandwidth
  - not duplicative

- done in partnership with CQI statistician & steering committee member
MICHR COVID-19 RRR ➔ harmonization with ISARIC

ISARIC – International Severe Acute Respiratory & Emerging Infection Consortium

- Global federation of clinical research networks, providing a proficient, coordinated, and agile research response to outbreak-prone infectious diseases (inception 2011)
- Collaborative platform through which global, patient-oriented clinical studies can be developed, executed & shared
  - Protocols & data tools developed in consultation with WHO colleagues

MICHR COVID-19 RRR

- UM one of 1st US sites to partner w/ISARIC for COVID-19
- Registry utilized ISARIC protocols/tools as starting point
- Supplemented data collection with additional details & modules; input from various investigators*
- Through MICHR Research Development Core (RDC)/Interdisciplinary Research Initiatives, we developed a COVID-19 consultation process (>45 consultations)
  - RRR intended as resource for UM scientific community to both access and contribute to
    - streamline/standardize data collection and identify synergies between groups
Clinical characterization protocol (CCP)
COVID-19 hospitalizations

Major categories of data elements/CRFs

- Epidemiological factors
- Demographics
- Comorbidities
  - “Special populations” (eg, pregnancy, SOT, rheumatic disease, etc)
- Onset & admission (diagnosis, signs, symptoms, meds at onset)
- Pathogen testing
- DAILY assessment (during hospitalization)
  - Labs, imaging, medications/interventions, process of care, etc.
- Complications
- Outcomes (long-term outcomes also planned)

CRF excerpt

<table>
<thead>
<tr>
<th>Co-morbidities and risk factors – Charlson Index will be calculated for each patient at analysis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic cardiac disease, including congenital heart disease (not hypertension)</td>
</tr>
<tr>
<td>Obesity (as defined by clinical stuff)</td>
</tr>
<tr>
<td>Hypertension</td>
</tr>
<tr>
<td>Diabetes with complications</td>
</tr>
<tr>
<td>Diabetes without complications</td>
</tr>
<tr>
<td>Chronic pulmonary disease (not asthma)</td>
</tr>
<tr>
<td>Asthma (physician diagnosed)</td>
</tr>
<tr>
<td>Rheumatologic disorder*</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
</tr>
<tr>
<td>Autimmune disease (non-rheum) if yes, specific:</td>
</tr>
<tr>
<td>Moderate or severe liver disease</td>
</tr>
<tr>
<td>Dementia</td>
</tr>
<tr>
<td>Mild liver disease</td>
</tr>
<tr>
<td>Malnutrition</td>
</tr>
<tr>
<td>Chronic neurological disorder</td>
</tr>
<tr>
<td>Smoking</td>
</tr>
<tr>
<td>Former smoker</td>
</tr>
<tr>
<td>Stroke</td>
</tr>
<tr>
<td>Current e-cigarettes or vaping</td>
</tr>
<tr>
<td>If Y: cannabinoids via e-cig/vaping</td>
</tr>
</tbody>
</table>

Manual abstraction of data

KEY
Black: items from ISARIC CORE CRF
Blue: UM supplemental items
Registry structure overview

ISARIC Global Database
• 67,130+ patients
  o 42,656 w/≥14 days f/up
• 488 sites
• 37 countries

Data access
• Schedule RDC/Registry consult to review options: michr-covid@umich.edu
• ISARIC/pooled data: Data Access Committee based @WHO will review applications
Questions?

Andy Ryan
PhD, MA
Director, Data & Methods Hub

Akbar Waljee
MD, MSc
Associate Director, Data & Methods Hub
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