JAMIA Journal Club
JAMIA Journal Club

- June 11, 2020
- 3:00 – 4:00 PM, ET
How to Participate

• Speaker and Moderator converse for 35 minutes
• 25 minutes Q&A
• **Submit questions:**
  – Throughout webinar, type questions into chat box on lower right of screen
• Complete evaluation through link in chat box
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.

Claim credit using the survey link in the chat area.

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

Planners/speakers disclose the following relevant financial and non-financial relationships with commercial interests and other entities:

*Speaker:* Timothy Judson has received consulting fees from the McKinsey Healthcare Systems and Services Practice

The following speakers and planners, and their life partners, have no relevant financial or non-financial relationships with commercial interests or other entities:

*JAMIA*: Michael Chiang, Maryam Zolnoori, Sally L. Baxter

*AMIA*: Susanne Arnold, Pesha Rubinstein
Webinar Objectives

• After this live activity, the participant should be better able to:
  – Identify at least 3 ways that self-triage and self-scheduling tools can optimize efficiency for a health system
  – Evaluate the performance characteristics of a self-triage tool
  – Propose additional use cases for self-triage and self-scheduling
Maryam Zolnoori is a Postdoctoral Research Fellow in the department of Health Sciences Research at Mayo Clinic. She is interested in development and evaluation of text mining and machine learning algorithms, and their applications in promoting patient-centered care, specifically for patients with mental disorders.

Her current research is on developing machine learning algorithms to identify patients with depression who are the high risk of emergency department visit and hospitalization.
Dr. Sally Baxter is a postdoctoral fellow in the University of California San Diego Health Sciences Department of Biomedical Informatics and a comprehensive ophthalmologist at the San Diego Veterans Affairs Healthcare System. Her research interests include predictive modeling of glaucoma, developing novel sensor-based methods for monitoring medication adherence, investigating strategies for optimizing electronic health record use in ophthalmic clinical workflows, and studying electronic health record use in medical student and resident education.
Q&A

• Type your Q into the chat box on lower right of screen within GoToWebinar

We encourage you to send questions during the presentation!
JAMIA Journal Club Selection

  – doi: 10.1093/jamia/ocaa051

• Speaker:
  – Timothy Judson, MD MPH
  – University of California San Francisco
Timothy Judson, MD MPH

- Associate Director of Clinical Innovations, DOM
- Assistant Professor of Medicine
- Practices hospital medicine and urgent care
- Clinical lead for COVID-19 self-triage
- Clinical lead for employee daily health screening
- UCSF Site PI for Track COVID study
Background

- COVID-19 caused a surge in ambulatory demand
- Practices were inundated with phone calls, messages and appointment requests
Symptom Checkers
Program goal

To rapidly deploy a digital patient-facing self-triage and self-scheduling tool to address the COVID-19 ambulatory surge at UCSF
Symptom Checkers, Trackers & Triagers

**CDC**
Launch date: March 23, 2020

**Coronavirus Self-Checker**
Hi, I'm Clara. I'm here to guide you through the Coronavirus Self-Checker.

If you are experiencing a life-threatening emergency, please call 911 immediately.

This system does not replace the judgment of healthcare professionals or the performance of any clinical assessment.

To provide information on the right level of care, we are going to ask you a series of questions.

During the assessment, you can refresh the page if you need to start again.

Ready? Let's get started.

Where are you located?

United States

**Join Zoe**
Launch date: March 24, 2020

COVID Symptom Tracker
Methods: Agile processes and techniques

- Identify area of need
- Assemble cross-functional team

- User research
- Prototype and usability testing

- Quickly launch minimal viable product (MVP)

- Instrument and iterate to improve product

- Lean process controls
- Establish process

- Scale to UCSF
- Scale to Affiliates
Methods: Create clinical algorithm with branching logic

1. Emergent Evaluation: If yes to any of the following:
   - Chest pain
   - Severe shortness of breath
   - Bluish lips or face
   - Confusion
   - Immediate care
   - ED/911

2. Urgent Evaluation: If yes to any of the following:
   - Shortness of breath
   - Severe weakness/ dizziness
   - Trouble drinking fluids
   - Fever and/or cough & immunocompromise
   - In-person care within 12 hours
   - Respiratory Symptom Clinic

3. Non-Urgent Evaluation
   - Any fever and/or cough & 1+ comorbidities
   - Any fever and/or cough & age>60
   - Exposure or diagnosis & fever or cough
   - Fever for >3 days
   - Fever & Cough & duration <2days (eligible for Tamiflu)
   - Video visit within 24 hours
   - Video Acute Care Clinic

4. Low severity/Low risk for complications
   - Fever (<3d) and/or cough w/o comorbidities
   - Any other symptoms +/- comorbidities
   - Self-care
   - Self-care instructions
Methods: Select a platform

You'll answer a series of questions to narrow in on your symptoms. We'll analyze your responses based on the latest evidence. We'll provide you with next steps to take.

* Indicates a required field.
* Are you pregnant or have you given birth within the last two weeks?
  - Yes
  - No

* Do you have any conditions that weaken your immune system? Select all that apply.
  - Active cancer (not including previously treated cancer in remission)
  - An organ transplant or bone marrow transplant
  - An autoimmune disorder (such as rheumatoid arthritis or lupus)
  - Any condition for which you are currently taking steroid pills or other medications that weaken your immune system
  - Any other condition that affects your immune system, such as HIV

* Have you been told by a doctor that you have any of the following? Select all that apply.
  - Asthma, COPD, emphysema, or any other types of chronic lung disease
  - Congestive heart failure or a weak heart
  - Diabetes (Type 1 or Type 2)
  - Chronic kidney disease requiring dialysis
  - Cirrhosis
  - Hypertension (high blood pressure)

BACK CONTINUE FINISH LATER CANCEL

MyChart® is a registered trademark of Epic Systems Corporation.
Methods: Design operational workflows

Coronavirus Symptom Checker
Methods: Create a reporting platform
Results (16 days)
Launch date: March 11, 2020

Accessed tool
1327 sessions

Abandoned
198 sessions (15%)

Completed
1129 sessions (85%)

Asymptomatic
315 (28%)

Negative exposure history
263 (83%)

Positive exposure history
52 (17%)

Symptomatic
814 (72%)

Emergent: 193 (24%)

Urgent: 193 (24%)

Non-Urgent: 99 (12%)

Self-care: 329 (40%)
Results: Disposition over time

Shelter-in-place in effect in Bay Area
Results: Outcomes

Table 2: Highest level of care received by disposition category

<table>
<thead>
<tr>
<th>Highest level of care received within 48 hours of using self-triage tool</th>
<th>Emergent</th>
<th>Urgent</th>
<th>Non-Urgent</th>
<th>Self-Care</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED visit</td>
<td>14 (8%)</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
<td>6 (2%)</td>
<td>16</td>
</tr>
<tr>
<td>In-Person visit</td>
<td>27 (16%)</td>
<td>43 (28%)</td>
<td>9 (11%)</td>
<td>6 (2%)</td>
<td>85</td>
</tr>
<tr>
<td>Video visit</td>
<td>41 (24%)</td>
<td>23 (15%)</td>
<td>36 (43%)</td>
<td>17 (6%)</td>
<td>61</td>
</tr>
<tr>
<td>Telephone call</td>
<td>19 (11%)</td>
<td>16 (10%)</td>
<td>2 (2%)</td>
<td>13 (5%)</td>
<td>50</td>
</tr>
<tr>
<td>Patient portal message</td>
<td>41 (24%)</td>
<td>26 (17%)</td>
<td>12 (15%)</td>
<td>71 (26%)</td>
<td>150</td>
</tr>
<tr>
<td>No further action</td>
<td>32 (18%)</td>
<td>47 (30%)</td>
<td>23 (28%)</td>
<td>169 (61%)</td>
<td>271</td>
</tr>
<tr>
<td>Total</td>
<td>174</td>
<td>156</td>
<td>83</td>
<td>276</td>
<td>689</td>
</tr>
</tbody>
</table>

Detection of emergent condition
- Sensitivity: 87.5% (95% CI 61.7-98.5)
- Specificity: 76.2% (95% CI 72.9-79.5)

Recommendation of self-care
- Sensitivity: 53.7% (95% CI 49.1-58.3)
- Specificity: 89.5% (95% CI 84.6-93.2)
Updated Results (3/11-6/5)

4,027 Sessions
- 2050 Symptomatic (51%)
- 1977 Asymptomatic (49%)
Efficiency for patients and providers

A

Symptomatic patient uses Symptom Checker

Recommended for Video Visit

Self-schedule video visit

B

Call OPH Hotline

Navigator

Scheduler books Video Visit

C

Symptomatic patient calls Hotline

Navigator

RN Call back

Scheduler books Video Visit
Triager time on the phone per patient

- 7 minutes
- 0.9 calls/visit
- 35 minutes
- 1.6 calls/visit
Patient time to getting an appointment

2 minutes    135 minutes

Symptomatic patient uses Symptom Checker

Recommended for Video Visit

A  Self-schedule video visit

B  Call OPH Hotline

Navigator

Scheduler books Video Visit
Implication of the Findings

• Demonstrated feasibility, safety, and initial benefits
• An integrated self-triage and self-scheduling tool offers several advantages:
  – Time savings for triagers and schedulers
  – Streamlined triage and scheduling experience for patients
  – Pre-documentation for providers
  – Uniform triage algorithm and information exchange
Key Points

1. Pilot digital tools
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2. Diagnosis vs. triage
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3. Think hard about target population and interoperability
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1. Pilot digital tools
2. Diagnosis vs. triage
3. Think hard about target population and interoperability
4. First, do no harm
5. Power in standardization of assessments
Future work

• Study use by underserved and elderly populations and adapt accordingly
• Expand access to additional languages
• Build additional self-triage and self-scheduling modules to connect patients to virtual care options
Q&A

• Type your Q into the chat box on lower right of screen

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• At end of webinar, please complete evaluation in the chat box.
Upcoming *JAMIA-JC*

- Today’s webinar archived at [https://www.amia.org/COVID19](https://www.amia.org/COVID19)
- The next *JAMIA-JC* will be on **Thursday, July 9, 2020, 3:00 – 4:00 ET**
- “Constructing Co-occurrence Network Embeddings to Assist Association Extraction for COVID-19 and Other Coronavirus Infectious Diseases” to be presented by Feichen Shen from Mayo Clinic.
This JAMIA Journal Club has now concluded.

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