

## April 28: COVID-19 Clinical Update

### Leveraging EHR Data and Clinical Outcomes

*This daily communication is intended to facilitate the sharing of important clinical information during the COVID-19 healthcare crisis and to help respond to questions from physicians across Northwestern Medicine.*

In today's issue, Internal Medicine physician and Associate Vice Chair for Clinical Informatics, Department of Medicine, David Liebovitz, MD, explains how to leverage data from the electronic health record (EHR) and enterprise data warehouse (EDW) for real-time reporting and sophisticated analysis to identify patients who need intervention before their conditions worsen. Also, a closer look at a recent EDW report shows that outcomes for NM COVID-19 patients are better than national averages.

#### LEVERAGING EHR DATA FOR COVID-19 CARE

The collaboration among IS, Health Informatics and clinical leaders has been phenomenal to rapidly design and implement many EHR changes. These modifications were designed to promote safe and efficient workflows during the COVID-19 pandemic. Clinical data collected from Epic and the EDW offers the ability to analyze and report real-time care trends and identify patients who need intervention before their conditions worsen.

For inpatient care, Epic offers a predictive model that helps physicians intervene with life-saving care before patients' conditions worsen. The Deterioration Index (DI) combines multiple data points (such as age, vitals and lab results) to create a score that predicts which patients require additional monitoring and care. You can "wrench in" the DI column to patient lists by searching for the keyword "deterioration." Currently there are no alerts or notifications tied to the DI score.

Once you add the score to your patient lists, you'll see a color-coded visual and a score between zero and 100. Suggested clinical guidance:

1. **Red:** Patients have a high risk for adverse outcomes based on worsening trends. Review this list at the start and end of shifts to note unexpected additions.
2. **Yellow:** Patients show increased risk for adverse outcomes. Review this list at the start and end of shifts to investigate and address underlying causes of deterioration.

3. **Green:** When considering a reduction in level of care or discharge, perform additional clinical review if a patient is not in this zone.

With false negative results possible from SARS-CoV-2 testing, an important safety layer prompts inpatient clinical teams to assess patients when negative results post to charts. If appropriate, a COVID-19 (Presumptive Positive) option is selected in these instances.

For outpatients, the COVID-19 Patient Monitoring Program, directed by Chief of Internal Medicine Jeffrey Linder, MD, MPH, taps the expertise of 250 nurses, 150 medical students and 100 attending physicians. This team is monitoring more than 1,100 patients at home who are experiencing symptoms of or recovering from COVID-19. Patients complete daily online surveys via NM MyChart, or they can report daily symptoms via phone calls; clinical escalation is based on responses.

#### **HIGHER SURVIVAL RATE FOR NM COVID-19 PATIENTS**

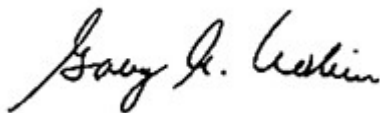
The EDW team has created dashboards, populated by Epic and non-Epic data, that are critically important for complex logistics planning, clinical insights and research initiatives. A look at a summary of all COVID-19 encounters shows that the mortality rate for NM COVID-19 patients is significantly lower than the 21% mortality rate of patients in the New York City area, a figure reported in a *Journal of the American Medical Association* [article](#). Italy reports a COVID-19 mortality rate of 13.5%. A national U.S. average mortality rate is difficult to determine due to a lack of testing. View a [map](#) of mortality rates in cities across the country.

Hospitalized COVID-19 patients at NM facilities through April 25 are 50.9% female with an average age of 59. NM COVID-19 encounters demonstrate the following mortality rates:

- 5.4% for 1,380 total NM lab-confirmed patients who were hospitalized
- 10.8% for 360 NM lab-confirmed patients who required ICU care
- 13.3% for 241 total NM lab-confirmed patients who required ventilator support

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Thank you for your extraordinary dedication and collaboration in providing exceptional care to our patients and supporting one another during this unprecedented crisis. If you have questions or would like to share the story of an NM hero, please email us at [covid-19md@nm.org](mailto:covid-19md@nm.org).



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