MICHIGAN DEPARTMENT OF HEALTH & HUMAN SERVICES

COVID-19

Vulnerabilities and Lessons Learned

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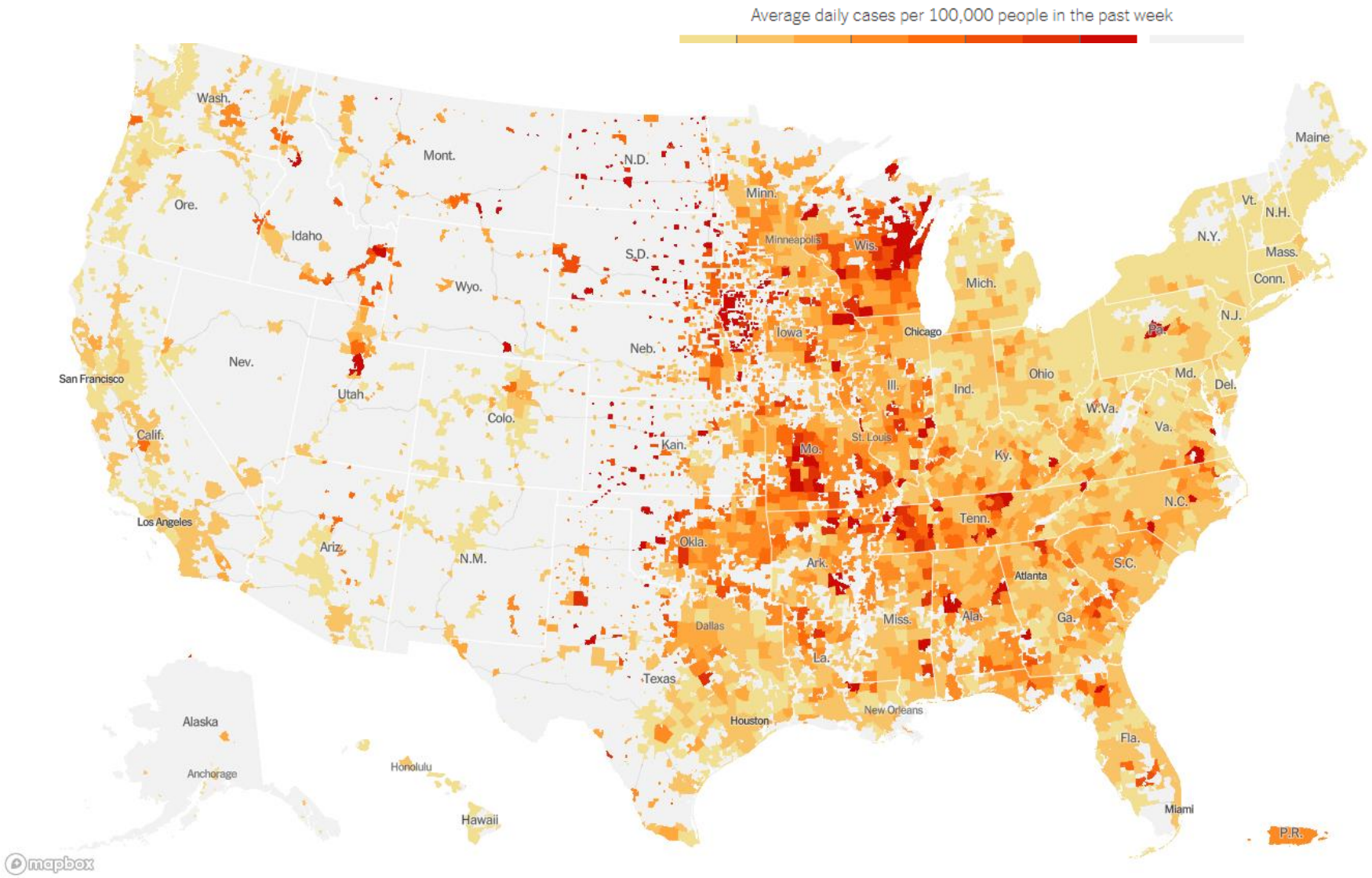
Hotspots in the prior week



https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html

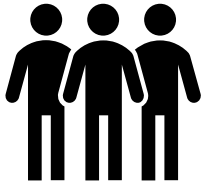
Prevent COVID-19 Spread:

Robust Testing in Communities and High-Risk Settings

Michigan has reached 30,000 tests per day, the Governor's ambitious goal for testing level

Community Testing

- Testing access statewide
- Free & asymptomatic testing
- Marginalized communities



Vulnerable Populations

- Nursing homes
- Prisons & jails
- Agricultural settings
- Outbreak response
- Others

Supply Chain

- Laboratory capacity
- Supplies: test kits, swabs, transport media
- Connecting labs with test sites

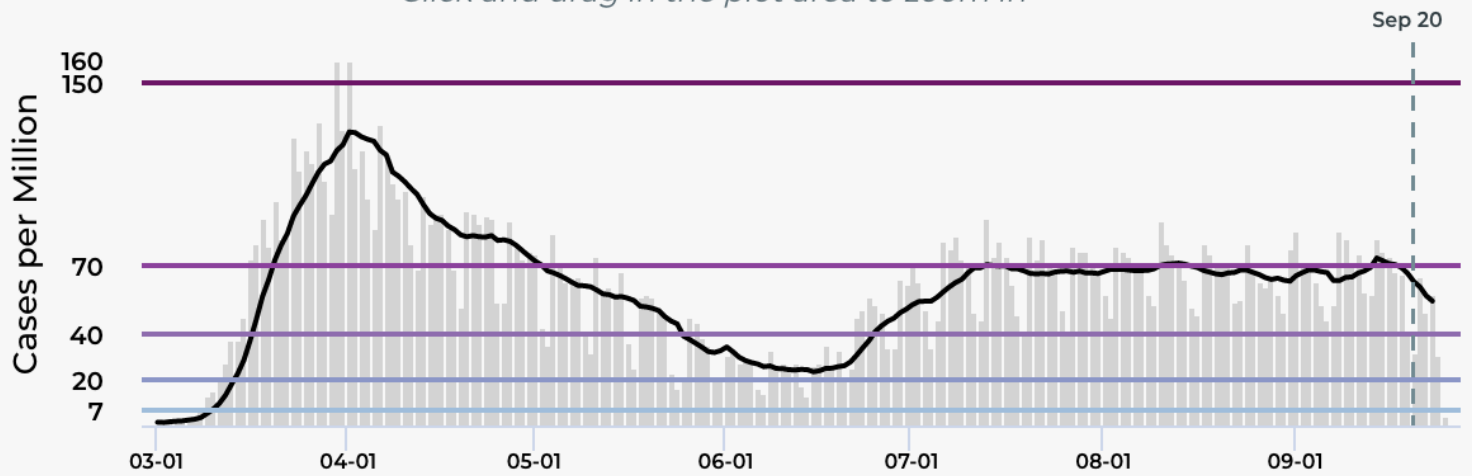
New Cases

63.0
daily/ million *

627.3
daily *

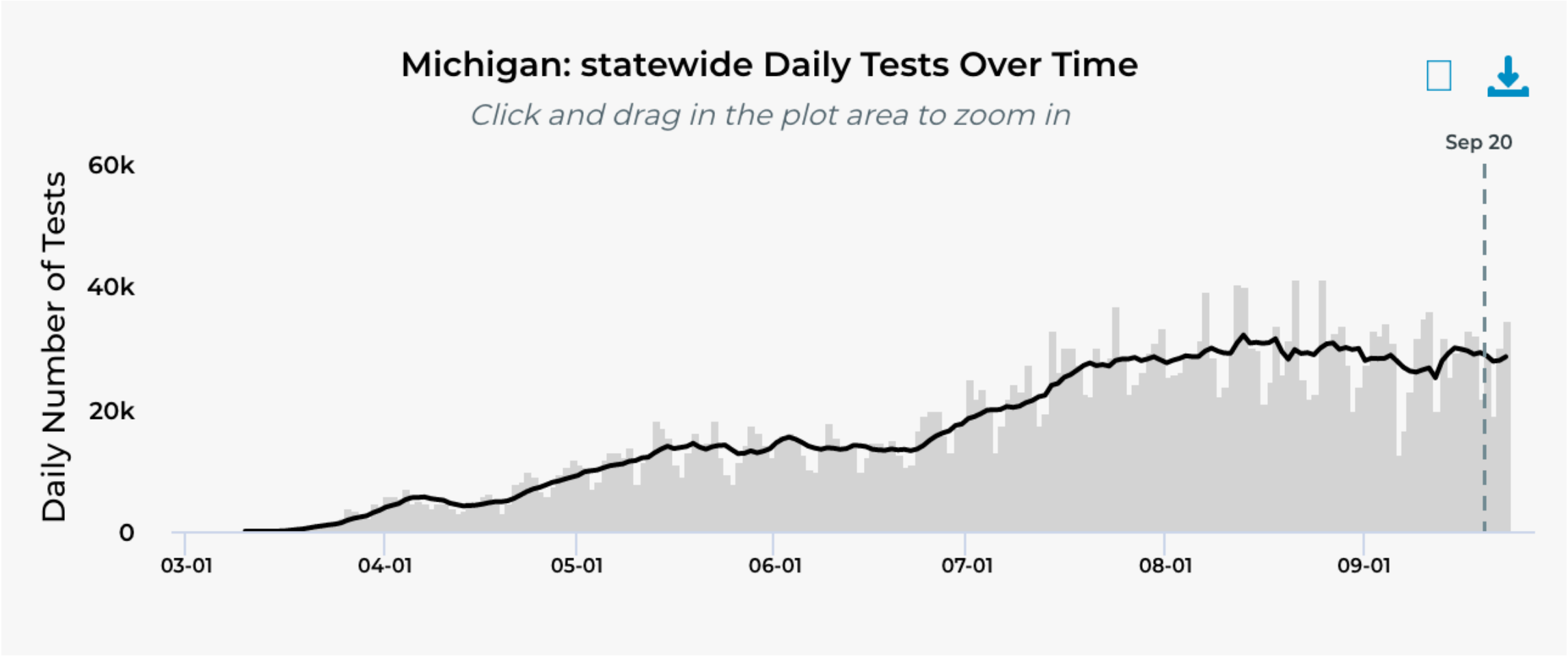
Michigan: statewide Cases Per Million Over Time

Click and drag in the plot area to zoom in



Cases Thresholds
Per Million Per Day

Low: <7 | A: 7-20 | B: 20-40 | C: 40-70 | D: 70-150 | E: >=150


Michigan: statewide Daily Tests Over Time
Click and drag in the plot area to zoom in
Daily Number of Tests
60k
40k
20k
0
Sep 20
03-01
04-01
05-01
06-01
07-01
08-01
09-01

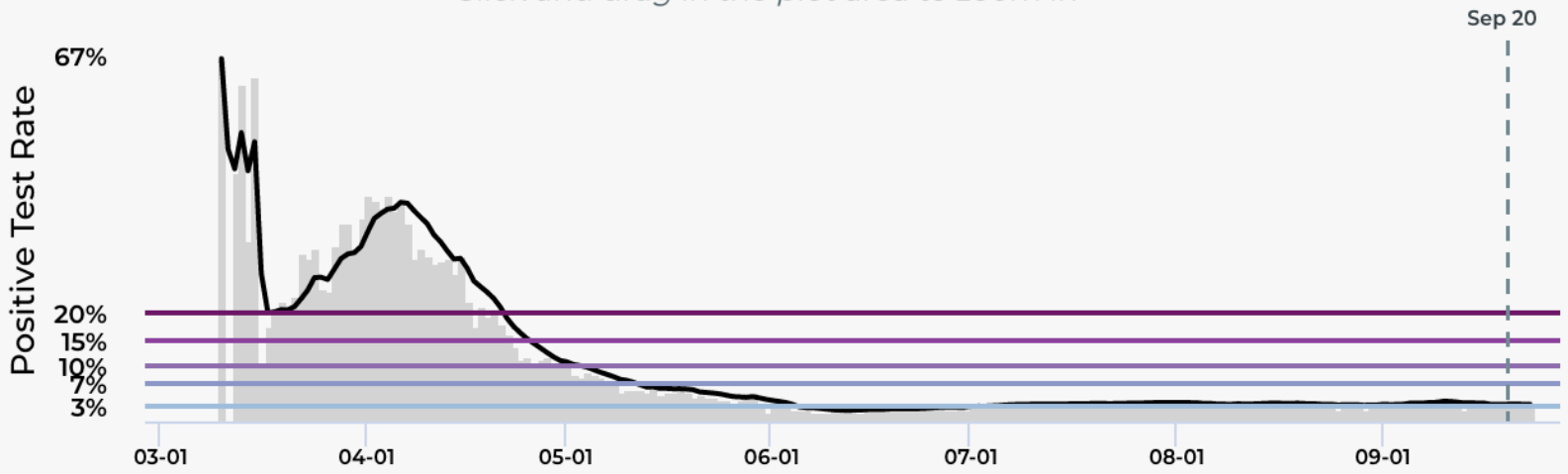
Test Results

3.2%
positive tests *

28.7k
daily tests administered*

Michigan: statewide Positive Test Rate Over Time

Click and drag in the plot area to zoom in



Test Thresholds
Percent Positive

- Low: <3%
- A: 3-7%
- B: 7-10%
- C: 10-15%
- D: 15-20%
- E: >=20%

What types of lab tests are out there?

- Molecular Tests (PCR)
  - Typically the highest sensitivity and specificity
  - Most expensive test
  - Requires well developed labs
- Serology Tests (Antibody)
  - Not currently meant for diagnosis of disease
  - Can provide evidence of exposure
  - Does NOT indicate protective immunity
- Rapid Tests
  - Generally broken into rapid Antigen and rapid Molecular style
  - Typically lowest sensitivity and specificity
  - Rapid results and cost effective
  - Antigen vs Isothermal nucleic acid amplification

Rapid Antigen Tests

- Performed on nasopharyngeal, nasal, or oral swabs either directly or after placing the swab in transport media
- The test targets a specific protein of the virus (nucleocapsid protein)
- Qualitative results (i.e. Positive, Negative) only
- Due to nature of tests false positives and false negatives are more common

Antigen Tests

Pros

- Rapid (results in 15-30 minutes)
- Cost Effective
- Waived testing environment
- Best use is for:
  - symptomatic patients in high prevalence populations,
  - outbreak situations,
  - triaging,
  - congregate care settings with confirmed cases,
  - remote population areas

Cons

- Considerations of confirmatory testing or medical monitoring are essential
- Less sensitivity and specificity compared to molecular tests
- May need to confirm tests in some settings

CONSIDERATIONS FOR INTERPRETING ANTIGEN TEST RESULTS IN NURSING HOMES