USPHAU Learning Collaborative

# Contact Tracing as Cases Surge:
## How We Can and Why We Must

24 November 2020

STOP COVID

Partners In Health

# Background: PIH Response to COVID-19

## A global public health crisis demands a global response in every country, every community, and every home.

Partners In Health (PIH) works in 11 countries around the world and supports COVID-19 response in each. Starting in March 2020, PIH partnered with the Commonwealth of Massachusetts, under the leadership of Governor Charlie Baker, to launch the Massachusetts COVID-19 Community Tracing Collaborative (CTC). Dr. Shefali Oza and Dr. Emily Wroe join us from the CTC in this session to share early innovations and ongoing challenges the CTC has faced in operationalizing surge protocols as cases reach unprecedented levels across the nation.

The US Public Health Accompaniment Unit (USPHAU) grew out of this effort to engage U.S. government agencies, local jurisdictions, and their implementing partners with technical advisory services and a Learning Collaborative, the host of this timely session.

To learn more about PIH's global response to COVID-19, visit https://www.pih.org/coronavirus-response.

# CT as Cases Surge

Experiences of the Massachusetts Community Tracing Collaborative

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Dr. Emily Wroe
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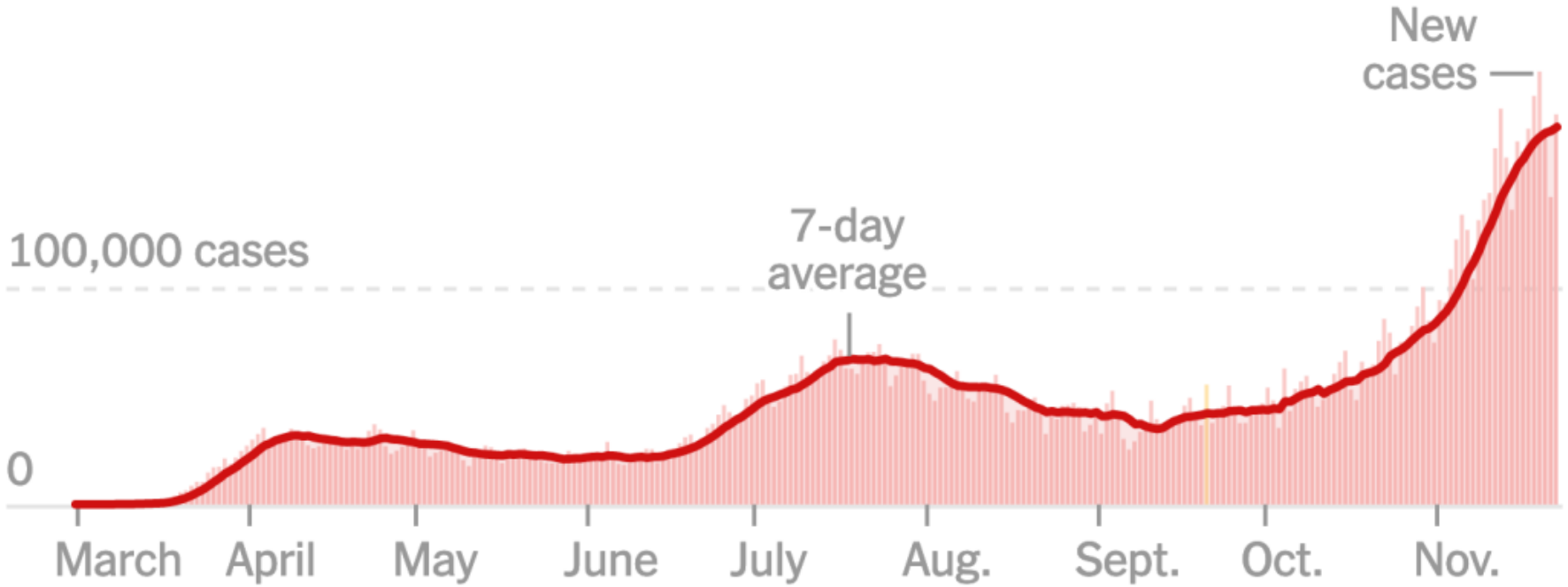
# Topics

- How to identify the surge
- The value of contact tracing during a surge
- How epidemiology informs decisions
- Operationalizing a ‘surge protocol’

# Identifying the Surge

# Nationwide Surge

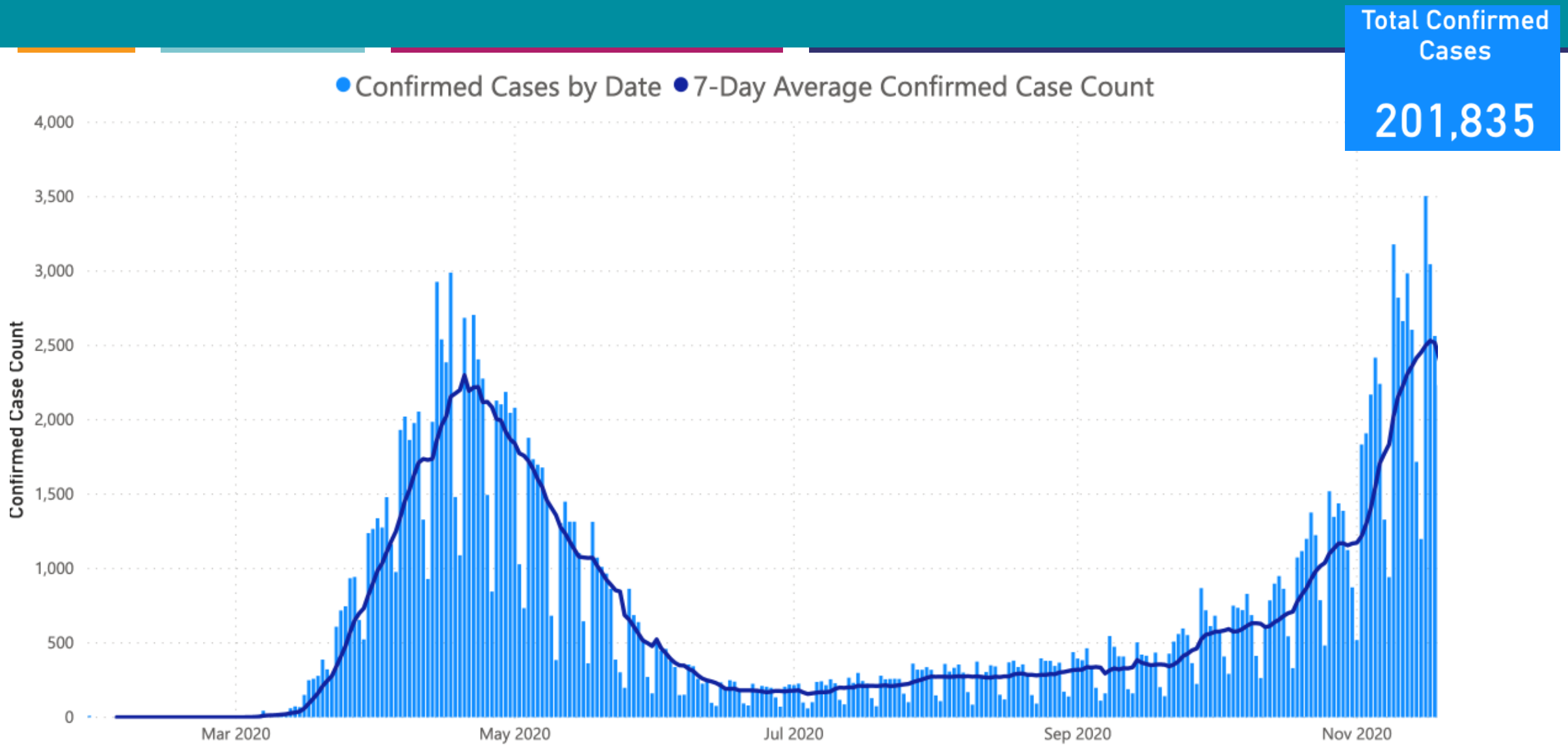



| | TOTAL REPORTED | ON NOV. 23 | 14-DAY CHANGE |
|---|---|---|---|
| Cases | 12.4 million+ | 178,945 | +49% → |



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

# What is Happening in Massachusetts?




https://www.mass.gov/doc/covid-19-dashboard-november-23-2020/download

# Doubling Time: A Simple Outbreak Measure

Infectious diseases have exponential growth (and decay)

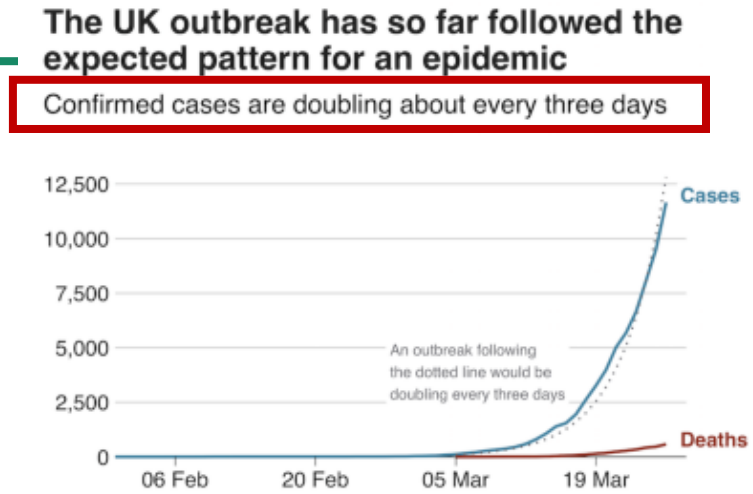
1st square: 1 grain of rice
64th square: 18,446,744,073,709,551,615 grains

**Doubling time -** straightforward measure useful for:

- Identifying recent accelerations/decelerations
- Making <u>short-term</u> predictions

## 'Cases doubling every X [weeks/days]'

- Outbreak is accelerating when doubling time decreases; decelerating when it increases



# Calculating Doubling Time

$$N_t = N_o * 2^{t/t_d}$$

$N_t$ = cases at time t
$N_o$ = cases at time 0
t = time t
$t_d$ = doubling time

COVID-19 outbreak detection tool uses doubling time (by county in the US):
https://analytics-modeling.shinyapps.io/outbreakdetection/

| County | State | Population | Total new cases in the past week | Average daily cases in the past week | Average daily cases in the past week (per 100K) | 14-day incident case trend | COVID-19 Doubling Weeks |
|---|---|---|---|---|---|---|---|
| Nantucket | Massachusetts | 11399 | 48 | 7 | 60 | | 1 to 2 weeks |
| Hampden | Massachusetts | 466372 | 1567 | 224 | 48 | | 1 to 2 weeks |
| Dukes | Massachusetts | 17332 | 57 | 8 | 47 | | 0 to 1 week |
| Bristol | Massachusetts | 565217 | 1854 | 265 | 47 | | 2 to 3 weeks |
| Essex | Massachusetts | 789034 | 2475 | 354 | 45 | | 2 to 3 weeks |
| Suffolk | Massachusetts | 803907 | 2115 | 302 | 38 | | 2 to 3 weeks |
| Worcester | Massachusetts | 830622 | 2041 | 292 | 35 | | 1 to 2 weeks |
| Middlesex | Massachusetts | 1611699 | 3267 | 467 | 29 | | 2 to 3 weeks |
| Berkshire | Massachusetts | 124944 | 182 | 26 | 21 | | 0 to 1 week |
| Norfolk | Massachusetts | 706775 | 1007 | 144 | 20 | | 2 to 3 weeks |
| Hampshire | Massachusetts | 160830 | 215 | 31 | 19 | | 1 to 2 weeks |
| Plymouth | Massachusetts | 521202 | 705 | 101 | 19 | | 4 to 5 weeks |
| Barnstable | Massachusetts | 212990 | 148 | 21 | 10 | | 1 to 2 weeks |
| Franklin | Massachusetts | 70180 | 43 | 6 | 9 | | 2 to 3 weeks |

# The Value of Contact Tracing During a Surge

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# The Role of Contact Tracing

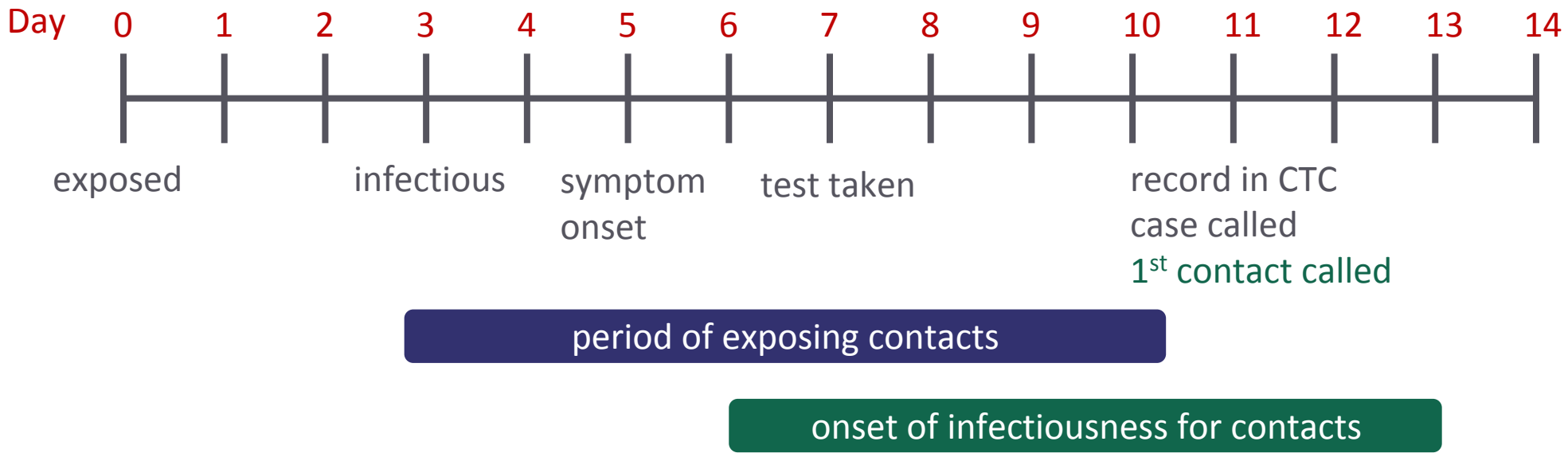
## Pandemic control tools range from refined to blunt


- Contact tracing remains important during a surge
  - Reaching people (even if fewer) → stopping those chains of transmission
  - Supporting cluster investigations and identifying transmission sources (including new patterns) to rapidly inform policies
  - Referring contacts for testing
  - Offering support for safe isolation/quarantine
- Contact tracing is part of a whole pandemic control system

# How Epidemiology Informs Decisions

# Epi-Informed Prioritization During Surge

Surge in cases PLUS inadequate staffing capacity →
need to temporarily prioritize who to call, how often, and when



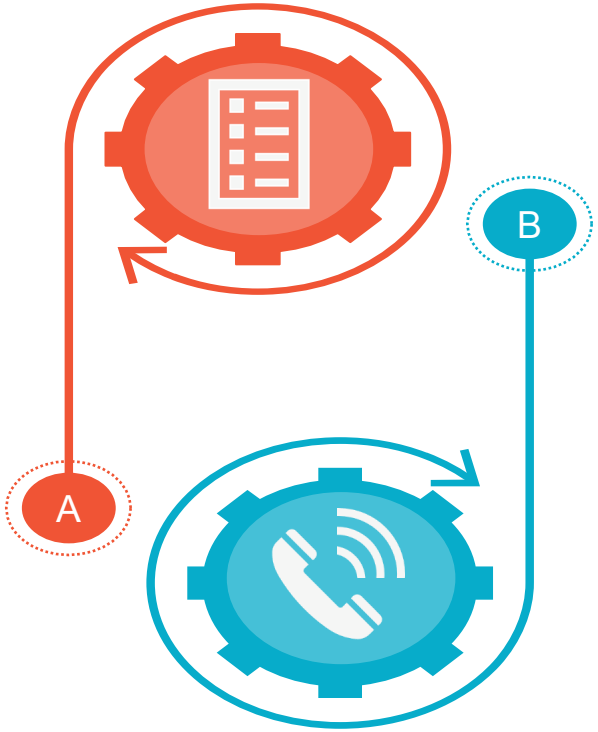

These are typical (median) times using COVID epi (universal) and CTC data (can be adapted with your data)

# Which Cases/Contacts to Focus on Calling

## PRIORITIZE

**Cases** – those with test dates in the last 3 days of entering the database

**Contacts** – those with exposures within the last 3-6 days




## PERSIST

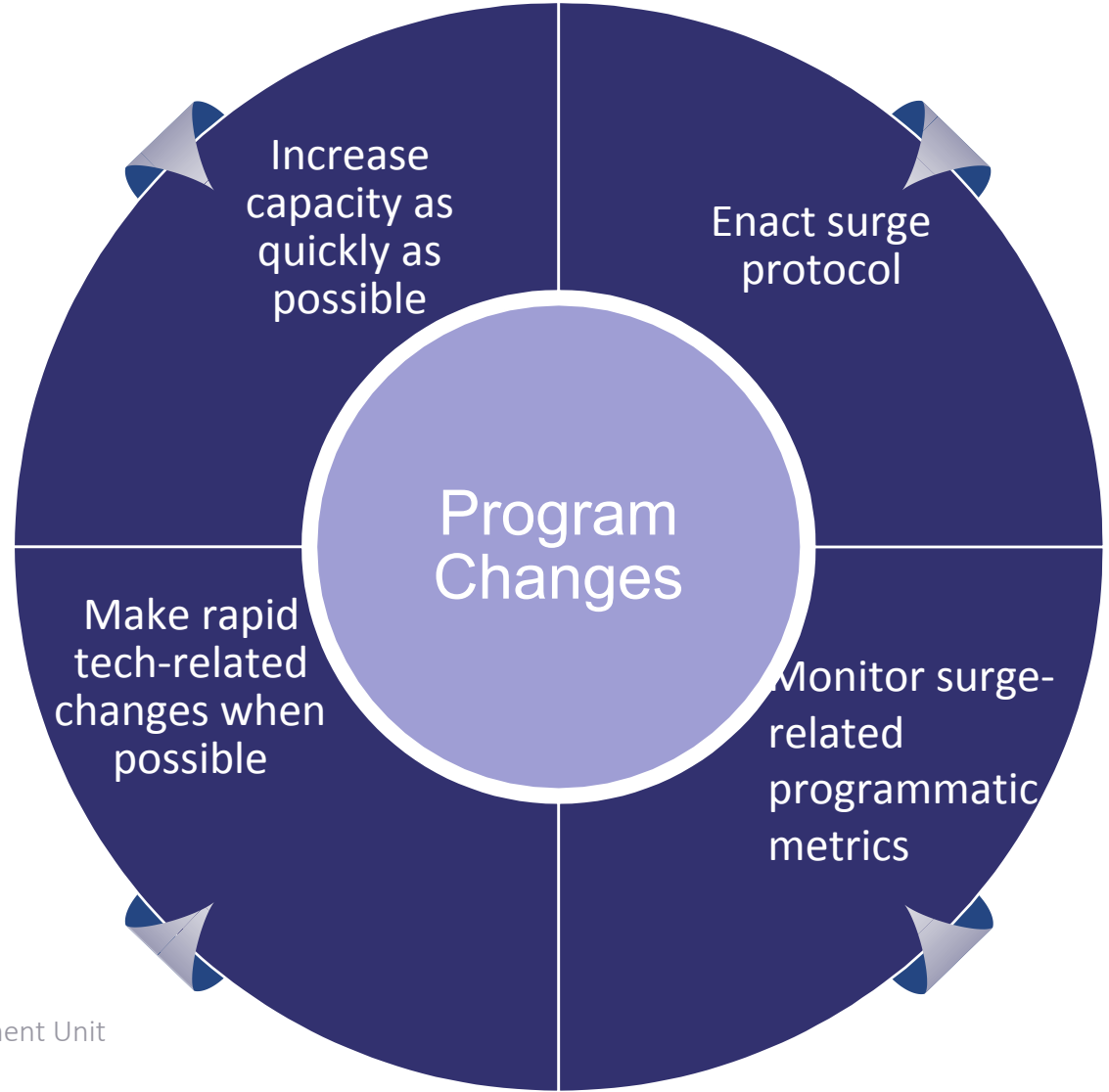
Try to reach everyone once if possible

Cases and contacts are both important!

**The meaning of 'prioritize' has evolved based on staffing and case/contact volumes.**

# How We Operationalize a “Surge Protocol”

# Program Changes During MA Surge



# 1. Increase Capacity

- **Additional budget**
- **Hiring more staff**
  - 300+ new staff currently per week
- **Training new staff**

**Rate-limiting factors**

# 2. Enact Surge Protocol

We are implementing – and learning – as we go.

Review of key normal procedures

- Initial outreach call: 8 attempts over 3 days before 'couldn't be reached'
  - Over 90% reached
- Monitoring/support period: call cases every day; contacts every other day

Surge protocol → based on **CTC capacity**

- How often to call for outreach + monitoring and support
- Who to prioritize for outreach
- How to staff various parts of the CTC
- What information is 'essential' to provide and collect
- What non-contact tracing functions at the CTC are essential during the surge

# 2. Enact Surge Protocol: CTC Phase Descriptions

| Phase | Outreach calls | Monitoring & Support calls | EIU (cluster investigations) | Care Resource Coordination |
|---|---|---|---|---|
| **Phase 1a** | •**Business as usual!**<br>•Use what we know works: our 8 attempts over 3 days consistently means we reach 90% of cases and contacts | •Prioritize early M&S<br>•Then spaced out to **every 3 days** | •Continues to engage staff on critical cluster investigations | •If available time, CRCs may help with M&S |
| **Phase 1b** | •**Emphasis on key elements of case investigation and contact interviews** | •M&S call on Day 3<br>•Then spaced out to **every 5 days** | •Cluster investigations stay within EIU<br>•Complex contact tracing calls continue by all | |
| **Phase 2** | •**Business as usual!**<br>•**Plus**<br>•Emphasis on key elements of case investigation and contact interviews<br>•Script addition of letting cases/contacts know when to call the inbound line<br>•Low threshold for CRC referral | •Routine calls **temporarily cancelled**<br>•Call back at end of isolation/quarantine | •Cluster investigations stay within EIU<br>•Complex contact tracing calls continue by all | •Low threshold for CRC referrals<br>•CRCs call every referral to check in |
| **Phase 3** | •Split into two queues (Group A & B)<br>•Prioritize those in most infectious period<br>•And try to call everyone once<br>•Adjusted voicemail<br>•Emphasis on the same items as Phase 2 | •Routine calls **temporarily cancelled**<br>•Call back at end of isolation/quarantine by designated group (Group C) | •Cluster investigations stay within EIU<br>•Complex contact tracing calls continue by all | •Low threshold for CRC referrals<br>•CRCs call every referral to check in |

# 2. Enact Surge Protocol: Phase Groupings

'Group' structure has worked well for operationalizing:

| | GROUP A | GROUP B | GROUP C |
|---|---|---|---|
| **Work from queue** | Group A – AO Surge Cases & Contacts | Group B - AO Surge Cases & Contacts | Group C - M&S Surge Cases & Contacts |
| **Who you will call*** | Cases and contacts outside the priority range | Cases and contacts within the priority range, based on test date (cases) and exposure date (contacts) | Cases and contacts ready for clearing isolation / quarantine |
| **Protocol** | Place outreach call one time with updated voicemail script | Place outreach calls multiple times: 6 attempts over 48 hours | M&S calls to end isolation/quarantine, provide letters if needed, and determine final outcomes |

- ❖ Allows flexibility while minimizing disruption to staff
  - Protocol for each group is based on **calling procedure**
- ❖ Allows backend changes for 'prioritization'

# 2. Enact Surge Protocol: Other Key Changes

**Lower threshold of CRC referrals**

- Previously, ~50% of referrals occurred during monitoring/support calls

**Shift balance of touchpoints**

- Have people call us after initial call attempts and during monitoring/support
- Adjust scripts/voicemails

**Increase staffing on inbound line**

- Trained some outbound teams to ‘flex’ into inbound line

# 3. Monitor Surge-Related Metrics

## TRACK KEY METRICS

- Number/percent called and reached* (e.g. percent never reached doubled from Oct. (~10%) and early Nov. 2020 (~20%)
- Outcomes for initial interview and final outcomes
- CRC referrals
- Suspected cluster escalations

## REVIEW METRICS DAILY & WEEKLY

- Inform choice of surge phase
- Refine/change as needed
- Understand and monitor impact of surge protocol

## *CAREFULLY DEFINE/SELECT WORDS

- Use care in making word choices for all metrics (e.g. called vs. reached)

# 4. Make Tech-Related Changes

**Finding ways to modify technology already in use - prioritize the 'fast and ‘easy’**

| Modify Outreach SMS | Enable SMS During Monitoring | Prioritize Key Languages |
| --- | --- | --- |
| • Emphasize calling inbound line (especially for resource needs) | • Contact every 3 days to remind about inbound line, resource need support, isolation quarantine guidance | • Consider what is possible given low-cost carrier issues with special characters |

# Thank you!

For joining us in this response.

Questions? Email us at **Learningcollab@pih.org**.