MEMORANDUM

Date: April 8, 2021

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

Re: Benefits and Results from Contact Tracing and Case Investigation

Introduction

Case investigation and contact tracing are a critical public health tool for Pima County. The Contact Investigation and Contact Tracing process has allowed the Health Department to recognize clusters of infections occurring in nursing homes, senior housing, prisons, Greek and off-campus student housing, workplaces, churches schools and veteran services organizations. Using this information, the Health Department was able to strategically deploy resources including testing, personal protective equipment (PPE) and technical assistance that in many cases contained or blunted the spread of infection.

Most infections in Pima County, as in the rest of Arizona and U.S., are occurring across a broad range of community household and occupational settings and in small family and social gatherings. So there is not a single hot spot or group of hot spots that can be targeted. It is in these setting where the case investigation/contact tracing process may be most useful in identifying contacts with significant risk exposures requiring notification, referral for testing and quarantine recommendations.

Maximus Contract

Our contractor, Maximus, has been a key element of the Health Department’s case investigation and contact tracing efforts.

It is based on the importance of Maximus to Pima County’s overall case investigation and contact tracing process that I have brought the proposed $5 million amendment to this contract and extends the termination date to January 5, 2022. Especially as vaccine coverage continues to aggressively expand and the number of cases continue to drop, it is critical that that the County not reduce its investment in this critical system. Only continuing to aggressively pursue both vaccination and the contact tracing, can we hope to return to a pre-pandemic social and economic normalcy.

Of the original $10 million contract as of the end of February 2021 approximately $6.52 million had been spent. The three months, December 2020, January and February 2021, averaged an approximate monthly expenditure of $1.04 million; hence, the contract would
be fully expended by the end of May 2021. There is a continuing need for Maximus’ services throughout the remainder of 2021; hence, the additional expenditure authority added to the contract of $5 million.

Case Investigation and Contact Tracing Since the Beginning of January 2021

The process begins with communication attempts made with all COVID cases transmitted from the state to Pima County. These communications include multiple telephone call attempts, text messaging, and even mailings to non-responsive individuals. The primary limitation for these efforts is the willingness of respondents to engage and secondarily the accuracy and quality of the contact information as provided by the state and optimized locally.

To date, more than 35,232 cases have been referred to Maximus by the Health Department for investigation and subsequent contact tracing. Of those, our contractor has been able to successfully engage with 13,562 (38 percent) infected individuals not only to identify possible contacts, but to also provide instruction on the isolation process, and to offer supportive services that will facilitate adherence to the isolation recommendation (e.g. referrals for PPE, food bank, housing). Follow-up monitoring suggests that 76 percent (10,291/13,562) of cases we connect with through this effort are generally compliance with the health department’s isolation recommendations.

By identifying and successfully engaging with COVID cases, those infected individuals have identified 21,701 close contacts. These are individuals who are at risk for COVID infection due to having prolonged (>15-minute duration) contact at close proximity (within 6 feet distance). The goal is to contact each one of these individuals by telephone, text message or mail in order to complete a more thorough telephone risk assessment and to refer for COVID testing. Again, the limiting factor is the quality of the contact information that is provided by the cases at the time of interview and the willingness of the contact to participate in the survey. These high-risk contacts are provided education about the need for testing and the quarantine process and are referred for other supportive services when the need is identified. On follow-up monitoring 38 percent of contacts report substantial adherence quarantine recommendations.

Key Findings Supporting Public Health Advisories

The longitudinal analyses of these data allow us to assess impact of policy actions taken by the Board and others. (Attachment 1) Based on these data for instance we are able discern that the number of cases reporting contact with known cases has remained relatively flat at just under 50 percent, indicating for half of cases occur in settings where individuals know they are coming into contact with potentially infected persons. Likewise, these data suggest that the various actions of the Board specifically those the proclamations (that limited bar and restaurant occupancy and recommended against gathering of ten or greater) were
generally adhered to and likely had a beneficial impact on the trend of infection in this community. This is also the case for the Public Health Advisory issued by the Health Department advising to “shelter in place” and recommending against travel. These self-reported behaviors are now trending in the wrong direction, coinciding temporally with date the Governor lifted occupancy restrictions on businesses.

The important findings of the contact tracing/case investigation data is charted in this attachment and include the number of cases reporting bar or restaurant attendance in the last 14 days. The trend line in this category is down. The two vertical axes relate to the Board of Supervisors proclamation regarding mask wearing and when the Governor lifted occupancy limits. As you can see in the cases for bar and restaurant attendance, there is a relatively sharp decrease in the number of cases post-County mask requirements and an uptick after the Governor lifted occupancy restrictions.

For event attendance in cases in the past 14 days with 10 or more people, the trend line is more pronounced in a downward trend. Again, the Board’s mask proclamation and resolution and occupancy limits are shown on this graph, showing a continuing downward trend initially after the mask resolution, but a sharp increase after occupancy limits were lifted by the Governor.

This information is helpful in guiding policy decisions regarding public health strategies to reduce the frequency and probability of continuing COVID-19 infection. Also attached is more detailed analysis (Attachment 2) regarding all contact tracing cases. This data is for the time period of the eight weeks of 2021 showing the number of notifications and positive COVID-19 tests, the number of cases investigated and the number of contacts traced, field investigation completed, referrals to care resource coordinators and the number of school contacts. The data and analysis contained in the contact tracing and case investigation assistance provided by our contactor, Maximus, is essential to containing and minimizing the spread of COVID-19.

CHH/dym

Attachments

c: Jan Lesher, Chief Deputy County Administrator
Francisco Garcia, MD, MPH, Deputy County Administrator & Chief Medical Officer
Health and Community Services
Terry Cullen, MD, MS, Public Health Director, Pima County Health Department
Heather McGovern, Epidemiology Program Manager, Pima County Health Department
Case Investigation Trend Data
% of cases reporting contact with known COVID case in past 14 days (weekly, through 3/20/21)

N = 16,494

*Note that weeks numbers do not precisely match Epi weeks
% of cases reporting bar or restaurant attendance in past 14 days (weekly, through 3/20/21)

N = 16,010

*Note that weeks numbers do not precisely match Epi weeks
% of cases reporting event attendance in past 14 days with 10 or more people (weekly, through 3/20/21)

N = 16,494

*Note that weeks numbers do not precisely match Epi weeks
% of cases reporting travel past 14 days (weekly, through 3/20/21)

*Note that weeks numbers do not precisely match Epi weeks"
Partnering with Pima County to “Slow the Spread”

- **33,194** Notified of Positive Test results
- **28,000** Cases Investigated [69,102 Attempted]
- **17,911** Contacts Traced [45,046 Attempted]
- **442** Field Investigations Completed [3,091 Attempted]
- **8,317** Referrals to Care Resource Coordinators
- **8,754** School Cases/Contacts Supported
- **540** MC3 Notifications Attempted
Over **88,000**

Pima County Citizens

EDUCATED on COVID-19 Protocol

Being part of a greater good is what drives me. I enjoy feeling like I am doing something to help preserve public health. When getting a call from a case just to thank us for all our hard work and to let us know, "we helped her recover and not feel so alone" makes not only my day but also my week. I am so grateful for this opportunity.

- Annie Thomas-McClure (Case Investigator)
PIMA County Staffing

**Case Investigators**
- Staff Total: 45
- Δ +4

**Field Investigators**
- Staff Total: 6
- Δ 0

**Contact Tracers**
- Staff Total: 66
- Δ +7

**Total Staff:** 117
<table>
<thead>
<tr>
<th>Week</th>
<th>Total # of CIs and Average # of CIs Scheduled Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2: 1/10/2021 - 1/16/2021</td>
<td>24 / 21</td>
</tr>
<tr>
<td>Week 3: 1/17/2021 - 1/23/2021</td>
<td>22 / 20</td>
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<tr>
<td>Week 4: 1/24/2021 - 1/30/2021</td>
<td>23 / 21</td>
</tr>
<tr>
<td>Week 5: 1/31/2021 - 2/6/2021</td>
<td>24 / 21</td>
</tr>
<tr>
<td>Week 6: 2/7/2021 - 2/13/2021</td>
<td>26 / 23</td>
</tr>
<tr>
<td>Week 7: 2/14/2021 - 2/20/2021</td>
<td>28 / 26</td>
</tr>
<tr>
<td>Week 8: 2/21/2021 - 2/27/2021</td>
<td>25 / 25</td>
</tr>
<tr>
<td>Week 9: 2/28/2021 - 3/6/2021</td>
<td>25 / 24</td>
</tr>
</tbody>
</table>
Total # of CTs and Average # of CTs Scheduled Daily

<table>
<thead>
<tr>
<th>Week</th>
<th>Average CTs Staffed</th>
<th>Average CTs Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2: 1/10/2021 - 1/16/2021</td>
<td>34 32</td>
<td>32 34</td>
</tr>
<tr>
<td>Week 3: 1/17/2021 - 1/23/2021</td>
<td>39 37</td>
<td>37 39</td>
</tr>
<tr>
<td>Week 4: 1/24/2021 - 1/30/2021</td>
<td>39 35</td>
<td>35 39</td>
</tr>
<tr>
<td>Week 5: 1/31/2021 - 2/6/2021</td>
<td>38 35</td>
<td>35 38</td>
</tr>
<tr>
<td>Week 6: 2/7/2021 - 2/13/2021</td>
<td>40 37</td>
<td>37 40</td>
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<td>Week 7: 2/14/2021 - 2/20/2021</td>
<td>41 43</td>
<td>43 41</td>
</tr>
<tr>
<td>Week 8: 2/21/2021 - 2/27/2021</td>
<td>41 39</td>
<td>39 41</td>
</tr>
<tr>
<td>Week 9: 2/28/2021 - 3/6/2021</td>
<td>40 38</td>
<td>38 40</td>
</tr>
</tbody>
</table>
Project Performance
### Positive Notification Outreach

<table>
<thead>
<tr>
<th>Week</th>
<th>Total Cases received</th>
<th>Total Outreach attempts successful</th>
<th>Same day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 2:</strong> 1/10/2021 - 1/16/2021</td>
<td>3391</td>
<td>881</td>
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<tr>
<td><strong>Week 3:</strong> 1/17/2021 - 1/23/2021</td>
<td>3111</td>
<td>925</td>
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</tr>
<tr>
<td><strong>Week 4:</strong> 1/24/2021 - 1/30/2021</td>
<td>2442</td>
<td>772</td>
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<td><strong>Week 5:</strong> 1/31/2021 - 2/6/2021</td>
<td>1426</td>
<td>703</td>
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<td><strong>Week 6:</strong> 2/7/2021 - 2/13/2021</td>
<td>1048</td>
<td>501</td>
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<tr>
<td><strong>Week 7:</strong> 2/14/2021 - 2/20/2021</td>
<td>700</td>
<td>334</td>
<td></td>
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<tr>
<td><strong>Week 8:</strong> 2/21/2021 - 2/27/2021</td>
<td>558</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td><strong>Week 9:</strong> 2/28/2021 - 3/6/2021</td>
<td>322</td>
<td>178</td>
<td></td>
</tr>
</tbody>
</table>
Contacts Traced

Week 2 : 1/10/2021 - 1/16/2021
- Total # of Contacts Assigned: 821
- Total # of Tracing Complete: 306
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 515

Week 3 : 1/17/2021 - 1/23/2021
- Total # of Contacts Assigned: 968
- Total # of Tracing Complete: 476
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 492

Week 4 : 1/24/2021 - 1/30/2021
- Total # of Contacts Assigned: 817
- Total # of Tracing Complete: 431
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 386

Week 5 : 1/31/2021 - 2/6/2021
- Total # of Contacts Assigned: 952
- Total # of Tracing Complete: 505
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 447

Week 6 : 2/7/2021 - 2/13/2021
- Total # of Contacts Assigned: 810
- Total # of Tracing Complete: 387
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 423

Week 7 : 2/14/2021 - 2/20/2021
- Total # of Contacts Assigned: 504
- Total # of Tracing Complete: 297
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 207

Week 8 : 2/21/2021 - 2/27/2021
- Total # of Contacts Assigned: 361
- Total # of Tracing Complete: 194
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 167

Week 9 : 2/28/2021 - 3/6/2021
- Total # of Contacts Assigned: 348
- Total # of Tracing Complete: 168
- Total # of Contacts Left in Qualtrics “New Queue” at EOD: 179
Contact Investigations Completed After Field Investigation

Week 2: 1/10/2021 - 1/16/2021
Week 3: 1/17/2021 - 1/23/2021
Week 4: 1/24/2021 - 1/30/2021
Week 5: 1/31/2021 - 2/6/2021
Week 6: 2/7/2021 - 2/13/2021
Week 7: 2/14/2021 - 2/20/2021
Week 8: 2/21/2021 - 2/27/2021
Week 9: 2/28/2021 - 3/6/2021
Timely Case Investigation

Week 53 & 1: 12/27/20 - 01/09/21
- Already tested: 112
- Willing to test: 42
- Not willing to test: 2
- Investigation Complete within 48 Hours: 1046
- Unwilling to Participate within 48 hours: 192
- Timely Case Investigation %: 51.76%

Week 1 & 2: 01/03/21 - 01/16/21
- Already tested: 138
- Willing to test: 41
- Not willing to test: 6
- Investigation Complete within 48 Hours: 1048
- Unwilling to Participate within 48 hours: 210
- Timely Case Investigation %: 54.27%

Week 2 & 3: 01/10/21 - 01/23/21
- Already tested: 116
- Willing to test: 43
- Not willing to test: 3
- Investigation Complete within 48 Hours: 1145
- Unwilling to Participate within 48 hours: 202
- Timely Case Investigation %: 55.52%

Week 3 & 4: 01/17/21 - 01/30/21
- Already tested: 110
- Willing to test: 46
- Not willing to test: 2
- Investigation Complete within 48 Hours: 1216
- Unwilling to Participate within 48 hours: 208
- Timely Case Investigation %: 51.15%

Week 4 & 5: 01/24/21 - 02/06/21
- Already tested: 70
- Willing to test: 30
- Not willing to test: 1
- Investigation Complete within 48 Hours: 1243
- Unwilling to Participate within 48 hours: 247
- Timely Case Investigation %: 53.27%

Week 5 & 6: 01/31/21 - 02/13/21
- Already tested: 47
- Willing to test: 30
- Not willing to test: 2
- Investigation Complete within 48 Hours: 1286
- Unwilling to Participate within 48 hours: 269
- Timely Case Investigation %: 54.82%

Week 6 & 7: 02/07/21 - 02/20/21
- Already tested: 27
- Willing to test: 21
- Not willing to test: 1
- Investigation Complete within 48 Hours: 1156
- Unwilling to Participate within 48 hours: 249
- Timely Case Investigation %: 58.00%

Week 7 & 8: 02/14/21 - 02/27/21
- Already tested: 31
- Willing to test: 13
- Not willing to test: 1
- Investigation Complete within 48 Hours: 900
- Unwilling to Participate within 48 hours: 212
- Timely Case Investigation %: 53.44%
Inbound Calls Resulting in Completed Interviews
Pima County - Quality Assurance
Trending of Overall Accuracy

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
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<tbody>
<tr>
<td></td>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
</tr>
<tr>
<td>Case Investigation</td>
<td>92.87%</td>
<td>95.70%</td>
<td>96.29%</td>
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<tr>
<td>Contact Tracing</td>
<td>97.06%</td>
<td>97.83%</td>
<td>97.15%</td>
</tr>
<tr>
<td>MC3 Positive</td>
<td>98.80%</td>
<td>98.80%</td>
<td>100.00%</td>
</tr>
<tr>
<td>MC3 Negative</td>
<td>98.86%</td>
<td>97.75%</td>
<td>99.63%</td>
</tr>
</tbody>
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Trending Quality
School Case Investigation/Contact Tracing Report

- **Total Cases Received**
- **Total Contacts Received**
- **Qualtrics Timeliness**
- **School File Timeliness**

<table>
<thead>
<tr>
<th>Week</th>
<th>Total Cases</th>
<th>Total Contacts</th>
<th>Qualtrics Timeliness</th>
<th>School File Timeliness</th>
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</thead>
<tbody>
<tr>
<td>Week 1: 1/3/2021 - 1/9/2021</td>
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<td>297</td>
<td>231</td>
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<td>193</td>
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<td>122</td>
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<td>97</td>
<td>84</td>
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<tr>
<td>Week 8: 2/21/2021 - 2/27/2021</td>
<td>69</td>
<td>61</td>
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</tbody>
</table>
Outreach Efforts for Contacts by MMWR Week

- **Percent of contacts with 1st call attempt made within 24 hours**
  - MMWR Week 1: 76%
  - MMWR Week 2: 84%
  - MMWR Week 3: 80%
  - MMWR Week 4: 52%
  - MMWR Week 5: 54%
  - MMWR Week 6: 51%

- **Percent of total contacts interviewed**
  - MMWR Week 7: 52%
  - MMWR Week 8: 54%
  - MMWR Week 9: 51%

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**Outreach Efforts for Contacts by MMWR Week**
Outreach Efforts for Cases by MMWR Week

- Percent of cases with 1st call attempt made within 24 hours
- Percent of total cases interviewed
Post Call Survey Results for Response 4 & 5
Accomplishments

- ConTESSA Change
- Spanish Translations
- Vaccine Scripting
- MAB Education Addition & Scripting
- Quarantine Guidance
Upcoming Efforts

- DSO Variable Changes
- NCV Outside of Qualtrics
- Additional Follow-up Initiative on MAB
- Continued Attention to TON Efforts