COVID-19 Conversations

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COVID19Conversations.org
#COVID19Conversations
COVID-19 Vaccines: The Realities of the Next Steps

Logistics and Supply Chains

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Supply Chain Management

- Interconnected systems with autonomous decision-makers
- System plans and manages flow (of product, information, people)
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Typical goal: Right Product, Right Place, Right Time, Right Customer, Right Cost
Learnings from H1N1 Distribution

- Vaccine coverage higher with
  - Shorter leadtime of “Allocation to Shipment” from DC
  - More vaccine to locations with broad access (e.g., pharmacy, clinics)

- System can also benefit from inventory visibility

Davila-Payan et al. Vaccine

Vaccine Allocation Planning (ACIP, 11/27/2020)

• Principles
  – Maximize benefits and minimize harms
  – Promote justice
  – Mitigate health inequities
  – Promote transparency

• Example groups
  – Health care personnel (21 M)
  – Long-term care residents (3M)
  – Other essential workers (87 M)
  – Adults with high-risk medical conditions (100 M)
  – Adults aged >= 65 years (53 M)
Supply and Demand in Person Coverage (Projections)

• Supply:
  – Vaccine commitments by US, over 6 months, start date estimated
  – Adjusted by coverage doses

• Demand:
  – Priority groups, varying uptake
Logistics and Distribution to Reduce Inequities

- Map shows diabetes prevalence by county
- Wide range of county values
- High rates among communities of color
- Vaccine hesitancy could be high in same areas

# Vaccine Specifications

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Storage Temp (Celsius)</th>
<th>Dosing (preliminary)</th>
<th>Other</th>
<th>Shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer</td>
<td>-70 C; 10 days in box; re-ice every 5 days; total of 30 days</td>
<td>1st to ship; Box holds ~1000 to 5000 doses</td>
<td>Pfizer to providers</td>
<td></td>
</tr>
<tr>
<td>Moderna</td>
<td>-20 C; Min of 100 4-8 C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>4-8 C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>4-8 C</td>
<td>1 dose only</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WSJ, 10/21/2020
Strategies additional to Direct-to-Provider

PUSH supply out to Points of Distribution

Hospital or Regional DC

POD 1

POD 2

POD 3

POD 4

Origin

Walgreens Locations (CVS similar)

PULL people in to central location

County 1

County 2

County 3

County 4

County 5

County 6

Vaccination Clinic

PARTNER with commercial pharmacies
COVID-19 Simulation Integrated Model (CovSim) to Inform State and Local Levels

• Dr. Julie Swann, jlswann@ncsu.edu

• http://go.ncsu.edu/covsim

• Modeling and Public Health Team
  – NC State, UNC-Chapel Hill, Georgia Tech

Modeling team has support from NC TraCS system & NC State ORIED; NSF RAPIDs, CDC/CSTE for state modeling