Incidence of COVID-19 Infection in Healthcare, First Responders, and Frontline Workers: The RECOVER COVID-19 Utah Study Site

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Introduction

• Healthcare workers (HCW), first responders (FR), and frontline workers (FW) are at higher risk of SARS-CoV-2 infection [2,3].
• Objective: Describe a large occupational population with COVID-19 exposure and incidence of infection.

Methods

• Prospective cohort study of essential workers.
• Participants completed computerized enrollment surveys, submitted weekly mid-turbinate nasal swabs, received quarterly blood draws, and responded to weekly surveys from October 2020 to May 2021.
• Data analyzed from 701 essential workers from the Utah site of the RECOVER Study [6].
• Incident cases were determined by polymerase chain reaction (PCR)-positive specimen on weekly surveillance.
• Incidence rates were calculated in person-weeks using the following exclusion criteria: confirmed COVID-19 infection prior to the study and/or confirmed COVID-19 vaccination (first dose).

Results

• Majority of the study participants were HCW (53.7%), white (85.9%), and female (61.1%).
• About a quarter (24.6%) reported history of chronic conditions.
  - 449 participants received a double-dose vaccination.
  - The overall incidence rate was 9.1 cases per 1000 person-weeks.
  - FR had the highest incidence rate of 15.5 cases per 1000 person-weeks.
  - All participants with PCR-confirmed infection reported being symptomatic.
  - Median follow up time was 5.6 person-weeks.

Table 1: Demographic Data and Descriptive Statistics

<table>
<thead>
<tr>
<th>Occupation</th>
<th>N (%)</th>
<th>COVID-19 Positive</th>
<th>Surveillance Time (Person-Weeks)</th>
<th>Incidence (Cases per 1000 Person-Weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary HCW</td>
<td>82 (11.5%)</td>
<td>2 (2.4%)</td>
<td>437.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Support HCW</td>
<td>299 (42.1%)</td>
<td>13 (4.3%)</td>
<td>1503.3</td>
<td>8.6</td>
</tr>
<tr>
<td>First Responder</td>
<td>92 (13.0%)</td>
<td>12 (13.0%)</td>
<td>774.4</td>
<td>15.5</td>
</tr>
<tr>
<td>Frontline Worker</td>
<td>228 (32.1%)</td>
<td>6 (2.6%)</td>
<td>929.0</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Table 2: Incidence Rates of PCR Positive COVID-19 Infection Amongst Occupations

Conclusions

• Determining incidence of COVID-19 infection provided insight into frequency and rates of infection in a real world population.
• Data collected from this study can evaluate risk and/or protection factors.
• In addition, results from this study can provide guidance for future policy changes, help better allocate resources for working professionals at risk of becoming infected, and give insight for future pandemics.

Acknowledgements

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