Commentary

**Chickenpox Outbreak among Rohingya Refugees in Bangladesh: Strategies for Prevention and Control**

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The Rohingya people are one of the most persecuted ethnic minorities and largest stateless population in the world [1,2]. They faced discrimination in their native land in terms of various restrictions and human rights violations due to the effective denial of their citizenship [3].

Since late August 2017, an increase of violence towards the Rohingya in Myanmar caused the mass displacement of 740,476 [4] people from Rakhine State of Myanmar to the southeastern hilly region of Bangladesh and resulted in the fastest growing refugee crisis in the world [5]. The new arrivals have joined with 300,000 Rohingya who fled in earlier waves of violence over the past decades and have put immense strain on infrastructure, services, and the host population, overwhelming existing response capacity [6,7].

Several studies in the last 2 years have reported poor living conditions and other common factors typically seen in the Rohingya refugee settings, such as poor or no access to healthcare services and preventive approaches, low standards of water, sanitation, and hygiene (WASH), overcrowded huts, polluted environment, maltreatment, and malnutrition [6–10]. These conditions have led to the emergence of infectious diseases, such as cholera, diarrhea, dysentery, acute respiratory tract infections, hepatitis, typhoid fever, tuberculosis, measles, malaria, diphtheria, and chickenpox [6–10]. Recently, an outbreak of chickenpox (also known as varicella) among the Rohingya refugees has become a significant public health problem since December 2018 [9–12]. Chickenpox is a highly contagious airborne disease caused by initial infection with varicella zoster virus, which spreads easily through the coughs and sneezes of an infected person [13,14]. Rohingya refugees were vulnerable to the seasonal spread of chickenpox due to denial of childhood vaccination in Rakhine State of Myanmar (their previous habitat), unsanitary living conditions with poor WASH practices, and overcrowded living conditions in the refugee camps [1,7,8].

As of January 13, 2019 832 Rohingya refugees living in Cox’s Bazar District of Bangladesh, had been infected with chickenpox, since December 2018 [11,12]; of whom, 51% were reported from Ukhia (Sub-District) and 49% from Teknaf (Sub-District), with 39% under the age of 5 years [11]. A 3-year-old Rohingya child with chickenpox died during that period [11,12]. The number of cases continued to increase and reached 10,240 at the end of January 2019 Table 1. Up to February 8, 2019 around 20,000 Rohingya people have been infected with chickenpox [15–17].

This alarming situation demands careful attention to chickenpox for several reasons: (1) Rohingya people had limited access to childhood vaccination while living in Myanmar [1]; (2) poor WASH practices with unsanitary living conditions, and overcrowded living accommodation make Rohingya refugees more vulnerable to chickenpox [7]; (3) a significant proportion of children, adolescents, and adults are susceptible to chickenpox in Bangladesh [10]; and (4) the chickenpox outbreak may spread to the neighboring host community as well as to other regions of Bangladesh.

So, effective prevention strategies are critically needed to control the outbreak of chickenpox as soon as possible. Early identification

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Week no.</th>
<th>Varicella cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>December</td>
<td>49</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51</td>
<td>75</td>
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<tr>
<td></td>
<td></td>
<td>52</td>
<td>124</td>
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<tr>
<td>2019</td>
<td>January</td>
<td>1</td>
<td>345</td>
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<tr>
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<td></td>
<td>2</td>
<td>1541</td>
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<td>3</td>
<td>2710</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>5376</td>
</tr>
<tr>
<td>Total no. of chickenpox (varicella) cases</td>
<td>10,240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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of cases by a robust surveillance mechanism and prompt action have shown favorable effects in efforts to control chickenpox outbreaks [11]. To prevent similar situations, extensive chickenpox vaccination programs should be launched pre-emptively to boost immunity among the Rohingya people, along with ancillary preventive measures, such as increasing the awareness among refugees in affected settings, proper management of patients with herpes zoster as potential sources for varicella outbreaks, isolation of varicella cases, and proper quarantine of contacts. Moreover, existing healthcare providers should engage in early identification of cases and need to ensure the proper management of cases and close contacts. Finally, all relevant international agencies should give attention to prevent the negative health consequences of this latent epidemic.

**CONFLICTS OF INTEREST**

The authors have no conflicts of interest to declare.

**REFERENCES**


