THE NEED

- **138,000 global deaths/year** for snake bites (figure 1); over half in India
- Neurotoxins in snake venom cause **reduced muscle function** and paralysis, leading to death
- Average time to antivenom administration **3.2 hours**, allowing toxins sufficient time to cause irreparable damage
- Delaying neurotoxic effects will prevent life threatening damage and allow patients additional time to seek medical care
- *Neurotoxins in snake venom cause paralysis, leading to death. Average time to antivenom administration 3.2 hours, allowing toxins sufficient time to cause irreparable damage. Delaying neurotoxic effects will prevent life threatening damage and allow patients additional time to seek medical care.*

**NEED STATEMENT**

A way to address the lack of accessible snake bite specific medical tools for envenomed victims in rural communities of India, so that neurotoxic disorders are temporarily stabilized within the body.

**THE MARKET**

- Disposable syringe industry is valued at **$13.5B** in 2021 with a projected 6% growth rate through 2030*
- *Disposable syringe industry is valued at $13.5B in 2021 with a projected 6% growth rate through 2030.*

**BENCHMARKING**

<table>
<thead>
<tr>
<th>Primary Needs</th>
<th>Existing Solutions</th>
<th>Our Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use via untrained personnel</td>
<td>BD SoloShot mini syringe</td>
<td>✓</td>
</tr>
<tr>
<td>Administers two drugs intramuscularly</td>
<td>Epoxy Syringe - dual chambers</td>
<td>✗</td>
</tr>
<tr>
<td>Auto-disable mechanism</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Drugs are stored separately prior to injection</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Maintain low moisture and light exposure</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Orientation Independent</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*No in-the-field injection device currently available in the market for snakebite treatment

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5. Department of Mechanical Engineering, PATH (global health organization)
6. Parth Chandna, Ethan Goldner, Eric Seibel
7. Soloshot BD
8. Epoxy Syringe - dual chambers