VIPS Phase I executive summary: Autodisable sharps-injury protection syringes

June 2019
Autodisable (AD) sharps-injury protection (SIP) syringes

About AD SIP syringes

• AD SIP syringes are single-use, disposable syringes with a mechanism that covers the needle after use to reduce the risk of accidental needlestick injury.

• Mechanisms include retraction of the needle into the barrel after injection or a needle shield.

• Some syringes have SIP features that are automatically activated and others require extra activation steps by the end user.

Stage of development

• AD SIP syringes are commercially available.

• A list of the current AD SIP syringes is available on the World Health Organization’s (WHO’s) Performance, Quality, and Safety (PQS) catalogue.\(^\text{b}\)

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\(^\text{a}\) http://apps.who.int/immunization_standards/vaccine_quality/pqs_catalogue/LinkPDF.aspx?UniqueID=fd025136-636d-4139-9773-bg40276e14T&Doc=DataSheet&ID=0

**Autodisable (AD) sharps-injury protection (SIP) syringes scorecard**
Comparator: AD needle and syringe (N&S) without SIP feature

**Quality of evidence:** Moderate

<table>
<thead>
<tr>
<th>VIPS Criteria</th>
<th>Indicators</th>
<th>Priority indicators - Country consultation</th>
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<tbody>
<tr>
<td><strong>Health impact</strong></td>
<td>Ability of the vaccine presentation to withstand heat exposure</td>
<td>RI: Facility: ++</td>
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<td>Ability of the vaccine presentation to withstand freeze exposure</td>
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<td><strong>Coverage &amp; Equity impact</strong></td>
<td>Ease of use</td>
<td>RI: Facility: ++</td>
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<td>Potential to reduce stock outs</td>
<td>RI: Community: ++</td>
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<td></td>
<td>Acceptability of the vaccine presentation to patients/caregivers</td>
<td>RI: Campaigns: ++</td>
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<td><strong>Safety impact</strong></td>
<td>Likelihood of contamination</td>
<td></td>
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<tr>
<td></td>
<td>Likelihood of needle stick injury</td>
<td>Better</td>
</tr>
<tr>
<td><strong>Economic costs</strong></td>
<td>Total economic cost of storage and transportation of commodities per dose</td>
<td>RI: Facility: Neutral</td>
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<td></td>
<td>Total economic cost of the time spent by staff per dose</td>
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<tr>
<td></td>
<td>Total introduction and recurrent costs</td>
<td>RI: Facility: Neutral</td>
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<td><strong>Secondary criteria</strong></td>
<td>Applicability of innovation to one or several types of vaccines</td>
<td>All parenteral vaccines are candidates.</td>
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<tr>
<td>Potential breadth of innovation use</td>
<td>Ability of the technology to facilitate novel vaccine combination</td>
<td>No</td>
</tr>
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*RI*: Routine immunisation

Note:
- Ease of use can prevent missed opportunities and impact ability for lesser trained personnel to administer the vaccine, including self-administration.
- Based on the number of separate components necessary to deliver the vaccine or improved ability to track vaccine commodities.
- Total economic cost of one-time / upfront purchases or investments required to introduce the innovation and of recurrent costs associated with the innovation (not otherwise accounted for).
Autodisable (AD) sharps-injury protection (SIP) syringes: Assessment outcomes

**KEY BENEFITS**

- May improve safety:
  - Since AD SIP syringes either shield or retract the needle after administration, thus they reduce the likelihood of needlestick injury and transfer of bloodborne pathogens to patients, health care workers, and the community after vaccine administration.

- Antigen applicability:
  - Broad applicability as AD SIP syringes can be applied to all parenteral vaccines.

**KEY CHALLENGES**

- Although the volume of AD SIP syringes varies by manufacturer, there is a potential risk that the innovation could have a larger out of cold chain volume than a traditional AD syringe which could increase the overall storage and transport costs.
Autodisable (AD) sharps-injury protection (SIP) syringes: Rationale for prioritisation

- AD SIP syringes are **recommended to be prioritised** for further analysis under Phase II. Although the added benefit of AD SIP syringes is singularly focused on **improving safety**, this is a key feature with high potential public health value.

- Additionally, WHO recommends use of **syringes with SIP features** for health care workers delivering injectable medications to patients and the WHO Performance, Quality, and Safety group plans to **require SIP features on both AD and reuse prevention syringes** by the end of 2020.

**Additional important information to be analysed in phase II (if prioritised for Phase II):**

- How best to align with and provide complementary value to WHO’s evolving recommendations and requirements regarding AD SIP syringes for immunisation.