

# Advocating global usage of “smart” syringes in healthcare

Sir,

Worldwide, in the health care industry, administration of injections is one of the most frequently performed procedures.<sup>[1]</sup> The World Health Organization has defined “safe injection” as one which is not only harmless to the recipient, but even does not expose the provider to any risk and does not produce any waste which can be hazardous for the society.<sup>[2]</sup> In-fact, on an annual basis, at least 16 billion injections are administered worldwide, of which immunization related injections account for only five percent of them, while the rest being employed for various other indications (like transfusion of blood and blood products, drug/fluid administration, etc.).<sup>[1,3]</sup> As administration of an injection is an invasive procedure, thus it is crucial to maintain safety standards so as to prevent the transmission of disease or injuries.<sup>[1]</sup>

The practice of administration of unsafe injections has resulted in an extensive transmission of blood-borne infections among patients, health professionals and the community, especially in low/middle income nations.<sup>[1,2]</sup> Findings of a study revealed that in the year 2010, almost 1.7 million, 0.3 million, 0.03 million people were infected with hepatitis B virus, hepatitis C virus, and HIV respectively because of usage of unsafe injection.<sup>[4]</sup> Furthermore, in a very recent incident in Cambodia, more than 200 people were found to be HIV positive after a doctor used unsterilized needles for giving injections.<sup>[5]</sup> Similar sorts of disasters have been reported in Nevada (United States of America), Egypt, Gujarat (India), Kyrgyzstan, and various other settings across the world.<sup>[4]</sup> In general, unsafe injection practices include, reusing injection equipment to give injections; administering unnecessary injections for those conditions for which oral medications are available and recommended; accidental needle-stick injuries among health professionals while giving an injection or after the injection; and improper handling and management of the sharp wastes.<sup>[1,6]</sup>

Acknowledging, the global magnitude of the problem, the WHO has advocated for the exclusive usage of “smart” syringes worldwide by the year 2020 in order to assist all the nations to tackle the widespread issue of unsafe injections.<sup>[1]</sup> The objective of this initiative is to prevent the re-usage of injections/reduce the

prevalence of needle-stick injuries through global communication and training of health workers, and to ensure better injection safety by facilitating use of engineered injection devices.<sup>[2,6]</sup> These “smart” syringes have been designed in such a way that its re-usage can be prevented (*viz.* breakage of plunger on its own if attempted to pull back or retraction of the needle inside the syringe barrel at the end of injection). In addition, these syringes have been designed in such a way that a sheath slides over the needle after the completion of the injection so that providers can avoid needle stick injuries.<sup>[6]</sup>

At the same time, there is a great need to reduce the number of unnecessary injections (attributed to both community - preference for injections as the preferred line of treatment, and health providers – administration of injections in private practice can be a source of extra income to support their families) administered to people as it is an indirect way to reduce the risk.<sup>[6]</sup> Furthermore, it has been re-emphasized to ensure the safe disposal of syringes and to impart periodic training sessions for the health providers on injection safety.<sup>[1,4]</sup> However, to meet the projected targets, the main challenge is to ensure adequate production of “smart” syringes at an affordable cost, especially in low resource settings. Thus, developed nations and other donors should support this initiative to achieve the desired targets.<sup>[1,2]</sup>

To conclude, the use of the same syringe or needle to give injections to more than one person is significantly contributing towards the spread of infectious diseases worldwide. Hence, the policy makers from all the nations should advocate the usage of “smart” syringes on a continuous and consistent basis to save the lives of millions of people.

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