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Regional Snake-bite Prevention and Control Plan of Action

Snake-bites are well known medical emergencies and a cause of hospital admission in many countries. The magnitude of this problem is underestimated because of its occurrence in rural and hard-to-reach areas. The South-East Asia Region is one of the world's most affected regions due to the widespread agricultural activities in this Region, the presence of numerous venomous snakes, and lack of community awareness to address this problem.

The WHO South-East Asia Region has spearheaded several initiatives on snake-bite prevention and control in the past. Work in this area in the Region began in 1999 with the publication of a special issue of the "Southeast Asian Journal of Tropical Medicine and Public Health" on "Clinical Management of snake bites in the Southeast Asian Region". Later this was published as an independent document in 2011 and was revised in 2016 with new technical advances in this area of work. Recently, WHO added snake-bites to its list of neglected diseases to enhance advocacy on this issue and request Member States to initiate appropriate steps to mitigate the impact of this preventable condition which is an important medical emergency and cause of hospital admission.

In 2018, the Seventy-first World Health Assembly adopted a resolution (WHA71.5) on "Addressing the burden of snake-bite envenoming". A progress report on this resolution will be presented to the Seventy-third World Health Assembly. WHO launched the Global Strategy for the Prevention and Control of Snake-bite envenoming at the Seventy-second World Health Assembly in May 2019.

At the High-Level Preparatory Meeting Member States requested the Regional Office to develop a Regional Snake-bite Prevention and Control Plan of Action to help Member States strengthen their capacity to prevent, control and effectively manage snake-bites.

This Working Paper is submitted to the Seventy-second Session of the WHO Regional Committee for South-East Asia for its consideration and guidance.

Introduction

1. Snake-bites are a significant risk to health and well-being for 5.8 billion people around the world, and carry a high financial burden for those affected that often cannot be met. Though just 250 of the 3000-odd species of snakes are medically important, their impact can be devastating. Across the globe, snake-bite envenoming is reported to cause death of up to 138 000 people annually, while up to three times that number are estimated to suffer amputation, and physical or psychological disability. This serious public health problem remained almost invisible on the health radar of many countries because more than 97% of the mortality occurred in rural areas among the poor.

2. Snake-bites are responsible for substantial mortality and morbidity in developing countries, including Member States of the WHO South-East Asia Region. Recently, WHO added snake-bites to its list of neglected diseases to enhance its advocacy and request Member States to initiate appropriate steps to mitigate the impact of this preventable condition which is an important medical emergency and cause of hospital admission.

3. The Seventy-first World Health Assembly adopted a resolution calling for a coordinated response to address the global burden of snake-bite envenoming. In May 2019, WHO has released a comprehensive Global Strategy titled “Snake-bite Envenoming – A strategy for prevention and control”. The Strategy will be tested in 2019–2020 in about 10 to 12 countries with high burden of snake-bite envenoming and in urgent need of a solution. Countries will be supported in designing and implementing locally relevant plans and in participating in regional initiatives. During the scaling-up phase in 2021–2024, a further 35 to 40 countries will be involved, as resources increase and experience demonstrates the effectiveness of the Strategy. During full roll-out in 2025–2030, all countries will be able to integrate the Strategy into their public health agendas.

4. It was proposed to develop an evidence-based Regional Snake-Bite Prevention and Control Plan of Action based on the Global Strategy but emphasizing on regional needs.

Regional situation

5. The WHO South-East Asia Region is particularly affected by snake-bite envenoming. Owing to the Region’s large population, (around 1.8 billion, or a little over a quarter of the world’s population), its many farming communities and the presence of many venomous snakes, communities regionwide have long been vulnerable, with snake-bite envenoming being the cause of tens of thousands of deaths every year. A variety of venomous snake species inhabit South-East Asia. Important species include *Naja naja*, *N. kouthia*, *N. oxiana*, *Bungarus caeruleus*, *Echis carinatus*, *Calloselasma rhodostoma*, *Hypnale hypnale*, *Trimeresurus albolabris*, etc. In simpler terms, the South-East Asia Region has plenty of cobras and vipers.

6. The Region spearheaded the initiative and started working in this area since 1999, when a special issue of the South-East Asian Journal of Tropical Medicine was published on “Management of Snake-bites”. Later this was published as an independent document in 2011 and was revised in 2016 with new technical advances in this area of work. The Queen Saovabha Memorial Institute (QSMI) in Thailand is the WHO collaborating centre on snake venom and toxicology.

7. The Regional Office has supported Member States in strengthening their capacity (viz. snake husbandry, handling, providing standard snake venom, antivenom, characterization of biological products, molecular cloning of venom, comparative studies on haematology, biochemistry of cases, snake-bite management services) in this area of work with help of the WHO collaborating centre.

Development of Regional Plan of Action

8. To implement the WHO Global Strategy effectively, the Region proposes to develop a Regional Plan of Action in line with the Global Strategy. It is important to note that many experts from the Region had participated in the development of the Global Strategy that was released in May 2019. The Global Strategy also covered information from the regions. The South-East Asia Regional Plan of Action will be comprehensive, specific and evidence-based and will address problems related to this public health concern that are more prevalent in this Region. It will be developed with the help of regional and global experts. To develop a Regional Plan of Action that will encompass all aspects of snake-bite envenoming, it is proposed to hold an informal consultation of experts to formulate the draft by mid-2020.

9. The process of formulation of the Regional Plan of Action will include informal consultations of experts to discuss the contents of the document and timelines to complete it. The informal consultations will be followed by the start of the drafting of the Regional Plan of Action in line with the Global Strategy and taking into consideration the regional situation.

10. The Regional Snake-bite Prevention and Control Plan of Action will be an adaptation of the Global Strategy released in May 2019 and tailored to regional conditions by regional/global experts. If deemed appropriate, a baseline regional survey (desk work-literature review/onsite) will be conducted. The regional publications will inform and help in contextualizing the Regional Plan of Action. The Regional Plan of Action will cover all four objectives as stated below:

- (i) *empower and change communities*: the Region needs advocacy and awareness of health-care providers, policy-makers and communities in order to combat the problem of snake-bites;
- (ii) *ensure safe, effective treatments*: capacity of health-care workers will be strengthened to provide snake-bite-specific management and appropriate treatment;
- (iii) *strengthen health systems and increase partnerships*: it is important to strengthen health-care systems for extending services for the management of snake-bites at each level of health services including access to antivenom; and
- (iv) *ensure coordination and resources*: it is important to identify all stakeholders who would be willing to invest and support the cause.

11. It is anticipated that the first draft of the Regional Plan of Action will be ready by March 2020 and will be peer-reviewed by at least two experts in this field. The peer-reviewed draft will be discussed and finalized during a second informal consultation of experts who would also contribute to the document. The final draft of the Regional Plan of Action is expected to be ready by mid-2020.

Challenges and strategic issues

12. Snake-bite remains an underestimated cause of death in South East Asia region. Snake-bites and associated mortality has been on the increase. As agricultural activity expands, deforestation continues unabated and responses of health systems remain weak, this is likely to increase further.

13. Being a neglected disease, several aspects of snake-bites remain unaddressed. The consequences of being bitten by a snake extend beyond the impact on health and drive families further into poverty, undermining their futures and trapping them in debt.

14. It is important to bring this under the consideration of policy-makers and make the reporting of this condition and related mortality and morbidity compulsory

The way forward

15. The people most affected by snake-bites are often those with the least access to services and medicines. The most powerful means of reducing the impact of snake-bite envenoming is therefore for countries to commit to universal health coverage, based on strong health systems and people-centred primary health care. Engaging communities and national and international partners is also essential.

16. It is important to urge all policy-makers and managers in countries, as well as international partners, to work with WHO to achieve sustained prevention and control of this disease that affects many of the world's most vulnerable people.

17. The Regional Office will work closely with Member States in preparation of the Regional Snake-bite Prevention and Control Plan of Action. WHO will also support Member States in building capacity to address this issue.