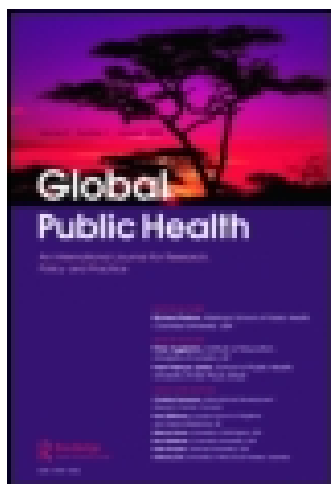


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### E-mentoring for violence and injury prevention: Early lessons from a global programme

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## E-mentoring for violence and injury prevention: Early lessons from a global programme

Shirin Wadhvaniya<sup>a</sup>, David Meddings<sup>b</sup>, Gopalkrishna Gururaj<sup>c</sup>, Joan Ozanne-Smith<sup>d</sup>, Shanthi Ameratunga<sup>c</sup> and Adnan A. Hyder<sup>a\*</sup>

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To address the growing burden of violence and injuries, especially in low- and middle-income countries, in 2007 the World Health Organization launched MENTOR-VIP, a global violence and injury prevention (VIP)-mentoring programme. The programme aims to develop human resource capacity through 12-month mentoring arrangements between individual VIP experts (mentors) and less-experienced injury practitioners (mentees). In this paper, we review the first five years of the programme (2007–2011) using a systems analysis and SWOT (Strengths, Weaknesses, Opportunities and Threats) frameworks, discuss programme findings and make recommendations. A well-defined programme with clear instructions, successful matching of mentorship pairs with similar interests and language, a formal accord agreement, institutional support and effective communication were identified as programme strengths. Over-ambitious projects, lack of funds and difficulties with communications were identified as programme weaknesses. Mentorship projects that require institutional permissions or resources could be potential threats to the success of mentorship. The study resulted in the four following recommendations to strengthen the programme: (1) institute additional steps in selection and matching mentor-mentee pair; (2) train mentors on e-mentoring; (3) conduct special orientation for mentees to the programme; and (4) maintain effective and open communication throughout the programme.

**Keywords:** violence prevention; injury prevention; skill development; capacity building; mentoring

### Introduction

Globally every year, about 5.8 million deaths are caused by intentional and unintentional injuries, including road traffic injuries (RTIs), burns, drowning, falls, poisonings, suicides and homicides (WHO, 2010). Together these account for about 10% of global deaths, 15% of global burden of disability and significant socio-economic losses (WHO, 2010, 2012b). The burden of injuries is increasing, and unless addressed, RTIs, suicides and homicides are projected to be among the leading causes of global death by the year 2030 (WHO, 2010). Violence and injury deaths are unequally distributed, affecting men, youth

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and residents of low- and middle-income countries (LMICs) disproportionately; for example, about 92% of the global RTI deaths occur in LMICs (WHO, 2010, 2013).

Despite the enormity of the problem and the fact that violence and injury deaths are preventable, this area of public health has not received adequate attention from policy-makers, programme planners and donors (WHO, 2010). This might explain the shortage of human resource capacity to implement violence and injury prevention (VIP) interventions and programmes in LMICs (Hyder, Meddings, & Bachani, 2009; Mock, Kobusingye, Anh, Afukaar, & Arreola-Risa, 2005; WHO, 2007). In LMICs, even the limited numbers of VIP professionals are often inadequately trained, and there are constraints with regard to their retention and long-term involvement in the field (Hyder et al., 2009; Mock et al., 2005; WHO, 2007).

To respond to this scarcity of VIP capacity in LMICs, the World Health Organization (WHO) implemented TEACH-VIP and MENTOR-VIP programmes (Meddings, 2009). TEACH-VIP (now in version two, and known as TEACH-VIP 2) is a modular VIP curriculum that aims to enhance VIP-related knowledge, including presentations, notes and exercises on various VIP topics that are delivered by TEACH-VIP trainers (WHO, 2012a). MENTOR-VIP aims to develop VIP-related skills and involves a one-on-one mentoring arrangement between mentor and mentee (Meddings, 2009; WHO, 2012a).

The objective of this paper is to review five years (2007–2011) of the MENTOR-VIP programme and to discuss early lessons from programme implementation with the aim of providing valuable insights into strengthening the programme and planning future VIP capacity development programmes.

## **The MENTOR-VIP programme**

### ***Programme description***

MENTOR-VIP is a 12-month individual-to-individual mentoring programme between a VIP expert (mentor) and a less-experienced injury practitioner (mentee) usually from an LMIC (Meddings, 2009; WHO, 2007). The mentorship pair does not receive any funds and mentoring is mostly virtual, using telephonic or electronic communications commonly employed in e-mentoring programmes (WHO, 2007). MENTOR-VIP focuses on eight development areas: (1) planning and conducting research, (2) evidence-based programme design and planning, (3) programme implementation and management, (4) programme monitoring and evaluation, (5) policy analysis and development, (6) imparting knowledge and skills, (7) advocacy and communication and (8) assuring funding support (WHO, 2007).

The implementation of the MENTOR-VIP programme involves four entities: (1) WHO, (2) Core Group, (3) mentors and (4) mentees (Figure 1; Hyder et al., 2009). WHO coordinates and helps implement the programme by mobilising core funds, increasing recognition of the programme and disseminating programme results (WHO, 2007). The Core Group, a five to seven member committee, consists of one WHO member; mentor and mentee representatives (who cannot simultaneously be either a mentor or mentee and serve on the Core Group member); and representatives from non-governmental organisations, academia, public sector agencies and injury networks (WHO, 2007). Potential mentors and mentees are included in the Core Group as they are representatives of the types of people who would become mentors and mentees in the programme and would be able to put forth their needs and expectations. The Core Group supports WHO by approaching potential mentors, reviewing applications and awarding mentorships, as well as supporting programme evaluation (WHO, 2007).

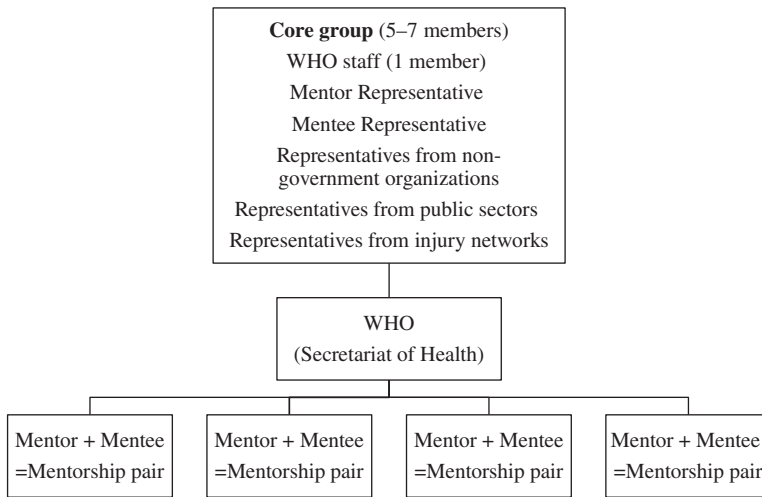


Figure 1. Constituents of MENTOR-VIP programme.

Mentors are VIP professionals volunteering their time to provide mentorship to less-experienced VIP practitioners (mentees; WHO, 2007). While there are no financial incentives for mentors, they have reported benefits from this arrangement (discussed in this paper). In contrast, for the mentees, the mentorship itself is an incentive as it provides junior injury prevention professionals an opportunity for skill development through a structured and no-cost programme. The mentor and mentee sign an 'accord', a document that describes the mentoring relationship, clarifies important issues such as communication frequency and modality as well as mutual expectations, sets the time frame and binds both parties to progressing further.

### *Programme review*

An evaluation component was built into MENTOR-VIP that included follow-up with mentor-mentee pairs at three and nine months, mid-cycle evaluation at six months and end-cycle evaluation at 12 months (WHO, 2007). The mid-cycle evaluation was a self-administered, online, structured survey; the Core group members conducted structured telephone interviews with mentees and mentors for the end-cycle evaluation (WHO, 2007). All mentors and mentees in the programme were invited to participate in these evaluations and no sampling was conducted from those in the programme. The participants were all made aware that evaluation data were being collected with the intention of evaluating the programme and they were explicitly told that the data would not be used to identify them in any way. The mentees' responses were not directly reported to mentors and only group results were reported.

The evaluations focused on three major programme areas: processes, outcomes and recommendations. The process evaluation focused on planning and execution of the mentoring accord; outcomes focused on involvement of colleagues, institutions, skill development and satisfaction with the programme; and recommendations focused on continuity of the programme and suggestions for improvement (Box 1).

Mid-cycle evaluations for five cycles (2007–2011) and end-cycle evaluations for three mentoring cycles (2007–2009) are included in this review (end-cycle data for 2010–2011 were lost due to server problem). These evaluations contributed to the systems analysis and SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis presented in this

Box 1. Sample questions from evaluation instruments for MENTOR-VIP.

	Online survey (mid-cycle evaluation)	Interview (end-cycle evaluation)
General	How did you come to know about MENTOR-VIP? Were the objectives and purpose of the programme clear at the beginning?	Apart from providing funding to support mentor and mentee to physically meet during the mentorship, do you feel there is anything the MENTOR-VIP programme can do which would increase the sense of connectedness between the mentor and the mentee?
Attitude	Do you feel that you/your mentee had a realistic expectation of the level and quality of support that you could receive/provide? Do you feel that this programme has helped you/your mentee to develop skills that are useful to injury and violence prevention?	Has this mentorship experience changed you and if so, how? Will you recommend MENTOR-VIP to any of your colleague?
Experience	Please indicate your satisfaction/dissatisfaction with the degree of mutual consultation that took place between you and your mentee/mentor during the development of the mentorship accord. How satisfied were you with the frequency of communications with your mentee/mentors?	Looking back at the planning process of your mentorship accord, were there any things that you found particularly helpful/difficult? Were there any particular difficulties or barriers you faced that hindered the mentorship?

paper. The average response rates for mid-cycle evaluations for mentors and mentees were 80.8% ( $n = 42$ ) and 84.6% ( $n = 44$ ), respectively. For end-cycle evaluations the response rates for mentors and mentees were 88.6% ( $n = 31$ ) and 77.8% ( $n = 28$ ), respectively. This review also includes data from the application and planning phases of the programme, namely applicant details, mentees' profiles, mentors' profiles and accord agreements. This programme review was determined to be not human subject research by the Institutional Review Board of the Johns Hopkins Bloomberg School of Public Health.

### **MENTOR-VIP: A systems analysis**

A simple systems analysis assesses a programme at four levels – inputs, processes, outputs and outcomes. We analysed these components across time in three phases – pre-mentorship, mentorship and post-mentorship (Table 1; Hyder, Harrison, Kass, & Maman, 2007; Hyder et al., 2009). This useful framework has been applied in evaluating other public health capacity development programmes (Ali, Hyder, & Kass, 2012; Hyder et al., 2007), and our analysis is presented below.

#### ***Pre-mentorship phase***

As noted in the WHO programme document, the formation of the Core Group in the pre-mentorship phase was critical to provide direction, develop strategic approaches and

Table 1. Review of MENTOR-VIP programme using systems analysis.

Systems component	Pre-mentorship	Intra-mentorship	Post-mentorship (expected) <sup>a</sup>
Inputs	<ul style="list-style-type: none"> <li>● Constitute Core Group</li> <li>● Advertisement/programme announcement</li> <li>● Mentee profiles</li> <li>● Mentor profile</li> </ul>	<ul style="list-style-type: none"> <li>● Communication – electronic or in-person</li> <li>● Mentorship accord</li> <li>● WHO coordinator</li> </ul>	<ul style="list-style-type: none"> <li>● Skilled VIP practitioner</li> </ul>
Process	<ul style="list-style-type: none"> <li>● Review applications</li> <li>● Complete supplementary information form</li> <li>● Selection, matching and awarding of mentorship</li> </ul>	<ul style="list-style-type: none"> <li>● Mentoring</li> <li>● Execute mentorship accord</li> <li>● Networking</li> <li>● Follow-up</li> </ul>	<ul style="list-style-type: none"> <li>● Explore opportunities for applying VIP skills</li> <li>● Mentoring of others</li> <li>● Teaching</li> <li>● Research</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>● Matched mentor-mentee</li> </ul>	<ul style="list-style-type: none"> <li>● Increased VIP knowledge</li> <li>● Skill development</li> </ul>	<ul style="list-style-type: none"> <li>● Publications</li> <li>● Grants</li> <li>● Programme engagement</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>● Signed accord agreement</li> </ul>	<ul style="list-style-type: none"> <li>● Skilled VIP practitioner</li> </ul>	<ul style="list-style-type: none"> <li>● Professional awards</li> <li>● Increased VIP capacities in LMICs</li> </ul>

<sup>a</sup>The grey area indicates the post-mentorship phase of the programme that could not be assessed in this review and is expected in the future.

ensure smooth functioning of the programme (WHO, 2007). Every year, applications are invited through announcements on the WHO website, injury journals, relevant conferences and other channels. Potential mentees complete an online profile providing demographic information, qualifications, language preferences, VIP-related achievements, interests and skill categories that they would like to develop ([http://www.who.int/violence\\_injury\\_prevention/capacitybuilding/mentor\\_vip/en/](http://www.who.int/violence_injury_prevention/capacitybuilding/mentor_vip/en/)). To develop a pool of mentors, the Core Group approaches VIP experts and those interested also complete a similar online profile providing additional details on past mentoring experience and skill categories that they could help a mentee to develop.

In the five mentoring cycles (2007–2011), a total of 234 applications by potential mentees were received. Following receipt of applications, the major processes of this phase were review and shortlisting of mentees and matching them to potential mentors. During the review, all core group members independently went through applicant's profile and ranked them (WHO, 2007). All applications were then reviewed as a group during the Core Group's meeting and candidates were shortlisted (WHO, 2007). Some of the criteria that were considered during shortlisting of mentees included unmet need for skill development, basic knowledge of VIP and commitment to the field (WHO, 2007). Applicants with strong institutional affiliations and those from LMIC were also given preference (WHO, 2007). In the first two years of the programme, the Core Group selected mentees on the basis of their candidate profile only. Beginning in year three (2009), an additional step was integrated whereby shortlisted candidates were asked to complete a supplemental form providing specific information on how and on what they would like to be mentored. These forms and candidate profiles were then sent to a pool of mentors to rank their preferred candidates.

Over a five-year period, 52 matched mentor-mentee pairs resulted from the pre-mentoring phase, an output of this phase (Table 2). As the number of mentor-mentee pairs accepted each year is limited, the acceptance rate of mentees into the programme was 22.2%. The mentors and mentees included nearly equal numbers of men and women. As expected, the mentors were relatively older (mean age 51.3) compared to mentees (mean age 37.4); and most mentors (62.8%,  $n = 32$ ) had a doctoral degree (with or without a medical degree), whereas most mentees (62.7%,  $n = 32$ ) had a medical qualification (with or without a master's degree; Table 2). All mentors (100%) and most mentees (92.3%) were open to having mentorship colleagues from another country. Consistent with the aims of MENTOR-VIP, 62.7% of mentors were from high-income countries while 84.6% mentees were from LMICs. English was the preferred language for mentorship for most pairs.

In the mid-cycle evaluation, mentees and mentors evaluated activities undertaken during the pre-mentoring phase (Table 3). Most mentors and mentees found the programme objectives, the application procedure and the skills categories to be clearly explained in the programme document. From the skill categories described in the WHO programme document, 93.2% of mentees could easily define their skill development needs and 90.5% of mentors could easily identify skills that they could help develop. The pairs felt that they had enough time to plan their mentorship accord and were satisfied with the consultations that took place with their mentoring partner (Table 3). The signed mentorship accord was the primary outcome of this phase and signalled the beginning of the mentorship phase of the programme.



Table 2. Profile of MENTOR-VIP mentor and mentee (2007–2011).

Characteristics	Mentors <i>n</i> (%)	Mentees <i>n</i> (%)
Gender		
Male	23 (45.1)	23 (44.2)
Female	28 (54.9)	29 (55.8)
Mean age	51.3 (95% CI 49–53.5)	37.4 (95% CI 35.5–39.3)
Age group		
<30 years		12 (23.1)
31–40 years	5 (9.8)	23 (44.2)
41–50 years	16 (31.4)	15 (28.9)
>51 years	30 (58.8)	2 (3.6)
Qualification		
Medical degree (e.g. MD, MBBS, MChB, BDS)	5 (9.8)	20 (39.2)
Doctoral degree (e.g. Ph.D.)	19 (37.3)	5 (9.8)
Medical degree with doctoral degree (e.g. MD/Ph.D., MBBS/Ph.D.)	13 (25.5)	4 (7.8)
Medical degree with masters degree (e.g. MD/MPH, MD/M.Sc.)	10 (19.6)	12 (23.5)
Masters degree (e.g. M.Sc., MSW, MSN, MPH)	4 (7.8)	7 (13.7)
Bachelors degree (e.g. B.Sc., BSN)		3 (5.9)
Preferred language of mentorship		
English	43 (84.3)	44 (86.3)
Other language	8 (15.7)	7 (13.7)
Income of country of residence <sup>a</sup>		
High	32 (62.7)	8 (15.4)
Middle	17 (33.3)	39 (75.0)
Low	2 (3.9)	5 (9.6)

<sup>a</sup>Source: World Development Indicator Database, World Bank (2012).

### ***Mentorship phase***

In this phase, the major inputs were communication between mentorship pairs, implementation of accord and follow-up by the Core Group (Table 1). Over half of the pairs reported that they had developed a schedule for voice communication (57.7% of mentors and 52.3% of mentees) and 57.7% of mentors and 86.4% of mentees reported that they followed this schedule (Table 3). About one-third of the pairs reported having some form of communication, either verbal or non-verbal, at least once every two weeks or more. On average, mentors spent 2.1 hours per month (median 2.0 hours) on communication while mentees reported spending 2.4 hours per month (median 2.0 hours). The mentees were generally more satisfied with the frequency and quality of communication than the mentors (Table 3).

Through these communication inputs, the pair networked and executed the mentorship accord and associated work plans. While minor changes to these plans were expected, about 20.5% of mentees reported that their accord changed substantially during the mentorship period (Table 3) and some of the reasons for this are discussed in the SWOT analysis presented in this paper. Most (81.8%) mentees felt they had a realistic expectation of the support that they would receive during their mentorship; however, only

Table 3. Results from five mid-cycle evaluations of MENTOR-VIP Programme (2007–2011).

Indicators	Mentors ( <i>N</i> = 42) <i>n</i> (%)	Mentees ( <i>N</i> = 44) <i>n</i> (%)	Statistical tests
<i>Pre-mentoring phase</i>			
Objectives and purpose of the programme clear at the beginning	42 (100)	43 (97.7)	
Steps needed for application were clear	39 (92.9)	44 (100)	
Skills that mentorship addresses were clearly explained in programme document	41 (97.6)	44 (100)	
Easy to define own skill development needs/skills that they could help a mentee develop	38 (90.5)	41 (93.2)	
Had enough time to plan mentorship accord	40 (95.2)	44 (100)	
Satisfied with the mutual consultation that took place between mentorship pair during development of mentorship accord	33 (78.6)	37 (84.1)	
<i>Mentoring phase</i>			
Mentorship accord changed substantially over time	6 (14.3)	9 (20.5)	
Other individuals or institutions were involved	12 (28.6)	22 (50.0)	
Had realistic expectation of the level of support that could be provided during mentorship	29 (69.1)	36 (81.8)	
Mean number of hours per month spent on mentorship project	3.7 (95% CI 1.7–5.7)	18.4 (95% CI 12.0–24.7)	<i>t</i> test <i>p</i> -value = 0.000*
Satisfied with the progress of mentorship	25 (59.5)	28 (63.6)	
Programme helped mentee develop skills that are useful to VIP	29 (69.1)	36 (81.8)	
Programme responds to an important unmet need in the area of VIP	38 (90.5)	41 (93.2)	
The relationship will carry beyond the 12 month period	25 (83.3)	40 (90.9)	
Nature of work takes longer than 12 months to achieve	25 (71.4)	33 (75.0)	
Would recommend this programme to other colleagues	42 (100)	44 (100)	
Expect that mentorship would result in a concrete output	21 (70.0)	29 (90.6)	

Table 3 (Continued)

Indicators	Mentors ( <i>N</i> = 42) <i>n</i> (%)	Mentees ( <i>N</i> = 44) <i>n</i> (%)	Statistical tests
<i>Communication</i>			
Mean number of hours per month spent on communication	2.1 (95% CI 1.5–2.7)	2.4 (95% CI 1.7–3.1)	<i>t</i> test <i>p</i> -value = 0.616
Frequency of any communication (once every two weeks or often)	14 (33.3)	15 (34.1)	
Satisfied with frequency of communication	20 (47.6)	30 (68.2)	
Satisfied with quality of communication	27 (64.3)	36 (81.8)	
Developed schedule for voice communication	25 (59.5)	23 (52.3)	
Schedule developed for voice communication was followed	15 (57.7)	19 (86.4)	
Mean number of non-verbal communication in past three months	6.7 (95% CI 4.5–8.9)	8.9 (95% CI 4.8–13.0)	<i>t</i> test <i>p</i> -value = 0.349
Mean number of verbal communication in past three months	1.6 (95% CI 0.9–2.2)	2.0 (95% CI 1.2–2.7)	<i>t</i> test <i>p</i> -value = 0.412

\*Statistically significant *p*-value (<0.05).

69.1% of mentors thought that their mentee had realistic expectation of the support that could be provided.

The pair could also seek involvement of other colleagues or their institutions within the mentorship project, and about half of the mentees reported that either they or their mentor had involved other individuals or institutions to assist with the project. On average, the mentees spent about 18.4 hours per month (median 12 hours) on the project while mentors reported spending an average 3.7 hours per month (median 2.0 hours).

The follow-ups at three and nine months were integrated within the programme to provide feedback to the Core Group on the progress of each mentorship. Also, early on in the programme overambitious projects – projects that require permission from government or additional funding – were identified as barriers to successful mentoring. A large portion of time was spent on administrative processes and the mentees did not get adequate time for project implementation. Subsequently, from year three onwards all shortlisted candidates were specifically asked in the supplemental form whether institutional approval would be required, and project feasibility was stressed in the accord planning guidelines.

These inputs and processes were expected to allow the mentees to develop VIP-related skills as an output of this phase of the programme. At the mid-cycle evaluation, nearly equal proportions of mentees and mentors were satisfied with the progress of mentorship and all (100%) reported that they would recommend the programme to other colleagues. Most (81.8%) mentees felt that the programme helped them develop VIP-related skills and most pairs felt that the programme responded to an unmet need in the VIP field (Table 3).

In end-cycle evaluations, both mentors and mentees reported enhanced skills of mentees in areas such as research, networking, advocacy, developing research proposals, programme designing and manuscript writing.

### ***Post-mentorship phase***

To-date no long-term follow-up has been conducted other than the end-cycle evaluation and therefore it is difficult to describe the post-mentorship phase. However, one expected input for this phase would be enhanced VIP-related mentee skills (Table 1). Processes in this phase may include mentees networking and applying their VIP-related skills. In mid-cycle evaluations, most pairs felt that the relationship established with the mentors would continue beyond MENTOR-VIP programme (Table 3). Peer-reviewed publications, funded grants and VIP-projects are some outputs expected from this phase. Expected outcomes of this phase would be increased VIP capacity to respond to the growing burden of violence and injuries, especially in LMICs.

### ***MENTOR-VIP SWOT analysis***

SWOT analysis (Table 4) is a popular framework in management and business and has been applied in planning and evaluating public health programmes and policies (Uscher-Pines, Barnett, Sapsin, Bishai, & Balicer, 2008). In this analysis, programme strengths and weaknesses were identified from the evaluations (especially end-cycle) that were administered to mentors and mentees while the programme opportunities and threats were identified by authors based on their understanding of the external environment in which the MENTOR-VIP programme is implemented (Edwards et al., 1999; Huerta, Balicer, & Leventhal, 2003; Kahveci & Meads, 2008; Mooney, 2002; Uscher-Pines et al., 2008;

Table 4. Summary of MENTOR-VIP programme SWOT analysis.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>● Clear programme objectives and application procedure</li> <li>● Clearly defined and explained skill set</li> <li>● Adequate time to develop accord</li> <li>● Enthusiasm and commitment of mentor and mentee</li> <li>● Informed and experienced mentor</li> <li>● Attributes of mentor – understanding, considerate, knowledgeable, supportive and helpful</li> </ul>	<ul style="list-style-type: none"> <li>● Communication problems: different time zones, poor access to Internet, non-responsive mentor/mentee, language problems</li> <li>● Other commitments (personal/professional) of mentor/mentees</li> <li>● Different cultural backgrounds and ethnicity</li> <li>● Overambitious goals</li> <li>● Lack of access to literature, journals and other materials</li> <li>● Lack of funds/resources to undertake mentorship project</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>● Only VIP mentoring programme in the world</li> <li>● High demand for the programme</li> </ul>	<ul style="list-style-type: none"> <li>● Permission required from government or authorities</li> <li>● Institutional barriers</li> <li>● External environment – political situation, conflict, epidemic outbreak, election</li> </ul>

SWOT, Strengths, Weaknesses, Opportunities, Threats; conducted by authors.

Wazir, Shaikh, & Ahmed, 2013). We considered both frequency and diversity of responses in the SWOT analysis presented below, since the idea was to showcase the breadth of issues and also those mentioned repeatedly. Selected quotes from the structured telephonic interviews conducted with the mentors and mentees for end-cycle evaluation are presented in Table 5, and inform the analysis presented below.

### *Strengths*

Both mentors and mentees found the programme objectives, the application procedure and the skills categories to be clearly explained in the programme document. Adequate time to plan a mentorship accord, and matching of mentor and mentee with similar areas of interest – preferably from the same region and language skills – were identified to be helpful, as pointed out by a mentor:

Yes, both I and my mentee are from developing countries and our problems are similar. Hence, I could be more practical in explaining things to her

The mentors who had either worked in the mentees' region/country or with the mentees' institution felt they had an added advantage, as these mentors understood the local context.

The involvement of other colleagues or institutions and support from the mentees' institution were considered strengths by some participants. Participants identified enthusiasm, mutual respect, provision of time and expertise and commitment as attributes of successful mentorship. Considerate, knowledgeable, supportive and helpful were identified by mentees as qualities of good mentors. Frequent and regular communication, in-person meetings and the use of an accord template helped in the planning process as describe by a mentee:

We met physically once, and we took advantage from this opportunity to go over my mentorship accord, review the process and go over the outcomes. I think, the level of connectedness was very appropriate.

Programme benefits identified by mentees included VIP skill development and enhancement of underpinning skills such as communication and writing. Mentors also reported benefits form this experience:

The learning is bidirectional – it's 'enriching' and 'stimulating' to have contact with someone from a different part of the world who shares your professional interests.

Some pairs were able to develop research proposals to continue work on VIP post-programme. Setting realistic and achievable goals was a key factor for success of the mentorship.

### *Weaknesses*

Mentees with goals that were deemed too ambitious by their mentors was an issue and this led to substantive changes to the accord. In some cases changes in the accord were incorporated to meet the needs of institutions/partners involved while in other cases as work progressed additional components were added or plans got refined. In most cases, the mentors were able to help their mentee streamline these plans, but plans that were not achievable during the programme duration led to reduced participation. Lack of funds or

Table 5. Selected themes and quotes from structured interview with mentors and mentees for end-cycle evaluation (2007–2009).

	Theme	Selected quotes	
		Mentor	Mentees
Strengths	Similar background	The language, having the same language help to built the mentorship programme	I loved being able to benefit of a relationship with an expert having an interest in my area.
	Communication	On a scale of 1–5, I would give it a 4. ... Finding each other's convenient time was the only problem amidst our work schedules and other activities. But, once it was set, it was not a problem	Communication between me and my mentor was quite good and systematic. The fortnightly and monthly exchanges with working and sharing were a good aspect.
	In-person meetings	A trip to XX coincided with the assignment to a mentee in XX, which facilitated a face-to-face meeting (mentee paid his own way to assignment location of mentor) and was immensely helpful in getting started with the accord	Telephone and two face-to-face meetings allowed exchange of information.
	Planning	Requiring development of a written accord was very helpful.	I felt fully satisfied. I wrote the first draft, and we discussed it during a virtual conversation using Skype. We adjust my draft by consensus, in that way we built and agree my mentorship accord.
	Programme benefits	It is a wonderful programme; the opportunity to communicate and interact with other people working in your field is fantastic. As a mentor you also feel that you are benefited by this interaction.	Mentor and I still work together. We have written two co-authored papers to be jointly published.
Weaknesses	Overambitious goals	It took some time to get started as my mentee had difficulties to narrow down her focus and focusing on only one viable work plan for the year	As per my accord, I could develop limited skills due to shortage of time. I feel we had set high goals and could not achieve the same. It is important to be realistic. ... It is a good programme, but there are difficulties.
	Lack of funds/resources	The limitation of no funding is an issue we have to deal with especially for the mentee as they cannot buyout their time or pay for their research.	Theory to practical implementation was a bit of a struggle as resources were needed.

Table 5 (Continued)

Theme	Selected quotes	
	Mentor	Mentees
Difficulties with communication	Practical issues got in the way. It was extraordinarily difficult to speak by phone. Dozens of calls were made before getting through, and reached mentee's mobile phone after 25 attempts.	Our major problem was communication. Initially we communicated once a week or every two weeks but this lapsed over time. It was easier for the mentor to call me on my mobile but too expensive. Then we tried Skype and then we still had problems.
Lack of in-person meetings	The lack of face-to-face meetings within the programme is a weakness.	Since we were close, time zones were not a barrier and it was really easy. What could have helped is a face-to-face meeting and availability of some resources.
Language and sociocultural differences	XX, not my first language. But the mentee's project was very close to my expertise, a good match, but not a good language match.	Initially, I had little difficulty in communication due to language and I was able to overcome this aspect.
Personal and professional commitments	Better communication could have occurred, busy schedules for both mentor and mentee challenged the ability to have regular communications. There could have been more communications.	Communication was a problem to some extent due to busy schedule of my mentor. Literature availability and review was also a problem as I could not get required materials. After some time, you tend to get frustrated.
Permissions/ approvals	Beware of issues external to the pair – for example, this mentor-mentee pair identified evaluation of a provincial surveillance system as a project to work on together. However, this needed approval by the government.	Yes, it helped me to some extent. ... However, I could not complete what we had envisaged due to delays in ethical approvals, availability of small sample and paucity of time.



resources for communication, meetings and projects were also identified as weaknesses of the programme as pointed out by a mentor:

But without a budget or funds for the mentee, not sure what to plan or how to meet or ask her to travel or even send her references for papers.

The pairs identified various issues with communication, such as unreliable Internet connections, different time zones, poor phone connections, lack of access to voice-over-Internet facilities at institutions/organisations and non-responsive mentors/mentees. A mentee providing programme recommendations said:

I am not sure if this is relevant to the developing world; the time is too short and if mentors or even mentees do not have time, then it is tough to do this – and the means of communication are too electronic – we need to have face to face meetings.

Language and sociocultural differences were also identified as factors affecting good communication. Lack of access to online journals, literature, data and other materials affected the progress of the mentorship project by delaying the advancement of mentees and their projects. High levels of personal and professional commitments of mentors and mentees posed barriers for participation as described by a mentee:

Next meeting mentor had another commitment but after that the internet dropped out on mentees side ... Emails initially started well but then fell off and in meantime mentee was appointed to XX and had less time and simply did not have time to keep up communications.

### *Threats*

Some mentorship projects required permission from government authorities, while some pairs experienced other institutional barriers, such as difficulty in obtaining resources. In some cases, these barriers posed a challenge to the success of the mentorship project as described by a mentee:

Working with the government has its own challenges. I had a plan with three objectives but could only work with one, but managed to make an impact.

Moreover, the mentorship pairs had little control over the local external environment, and certain events like political instability, conflicts, epidemic outbreaks and elections posed challenges for the mentorship and mentee projects. For instance as described by a mentor:

the election of a new president resulted in numerous political changes and tremendous turnover in key personnel. Many of the relationships developed prior to the election were lost as a result of the transition and new ones needed to be built.

### *Opportunities*

To our knowledge, this is the only mentoring programme in the world that focuses on skill development for VIP professionals. Violence and injuries are increasingly being recognised as a public health problem by many LMICs, but there are few VIP professionals available to respond to this need. Thus, there is both a need and demand for such a programme, as demonstrated by the number of mentee applications that were received by the programme. Additionally, most of the mentors and mentees reported that they

would recommend this programme to other colleagues, indicating that there is a tremendous opportunity for programme scale-up (Table 4).

## **Discussion**

MENTOR-VIP is an innovative mentoring programme that has successfully matched 52 junior VIP professionals in the past five years with experts, thereby contributing to VIP capacity development. A first of its kind, this programme, through its innovative design and e-mentoring approach, has shown the promise of scalability and sustainability. Although e-mentoring differs from traditional forms of mentoring, it has the capacity to respond to the unmet VIP-related skill development needs in LMICs. For example, a randomised study conducted in India found knowledge gains from e-learning and traditional classroom learning to be similar, highlighting the importance of distance education in public health (Aggarwal et al., 2011). E-mentoring programmes are also cost-effective compared to other forms of mentoring. For instance, a health leadership e-mentoring programme implemented by the National Health Service found per-trainee cost to be 75% less compared to traditional mentoring (Bamford, 2011). With a very simple design of a parent institution (WHO), Core Group and voluntary mentors, the MENTOR-VIP programme has displayed the potential to sustain and succeed.

The MENTOR-VIP programme provides an opportunity for both mentors and mentees to expand their professional networks and explore effective solutions to tackle VIP issues in LMICs. A recent meta-analysis also indicated that mentoring helps advance the mentor's career and increases their professional satisfaction (Ghosh & Reio, 2013). In the MENTOR-VIP programme, many mentors found the experience to be enjoyable and stimulating, which can be an important message to motivate and recruit potential mentors.

The MENTOR-VIP programme has been responsive to feedback and has evolved over time. For instance, to better manage the expectations, changes were incorporated in the guidelines on developing the accord and supplemental information form was introduced to assist with the matching process.

This programme review is based on available evaluations. Although mid-term and end-term evaluations were conducted to assess MENTOR-VIP, these do not provide information on the overall impact of the programme on the mentees and the field of VIP. There is room to explore the post-mentorship phase through a follow-up survey, which could be administered to all pairs one year and three to five years after completion of mentorship. Important questions of past mentees would include whether they still work in the VIP field, and how and in what ways they have used their acquired VIP skills. This could help assess the impact and provide input for continuation and scaling up of the programme. Moreover at this point only five years have passed and only 52 pairs were analysed. This programme review helps us develop the following recommendations that may further strengthen the programme.

### ***Instituting additional steps in selection and matching***

A great deal of effort was directed towards effectively matching mentorship pairs with similar interests and language. However, different time zones and cultural differences were identified as barriers for communication. Based on feedback, it is suggested to match the pairs on these parameters as well, if possible. Also, since, competing professional and personal commitments of mentors and mentees were also identified as barriers to the advancement of mentorship, it is recommended that a short telephone

interview by the Core Group could be instituted in the selection process in order to have a better understanding of each potential mentee's situation and commitment and this could determine their selection into the programme.

### ***Training of mentors on e-mentoring***

Mentorship for this programme differs from teaching in that the focus is skill development. This extends to mentors contributing to mentee's professional development (Lee, Dennis, & Campbell, 2007). Lee et al. identified several characteristics of good mentors, namely that they are understanding, respectful, inspiring and approachable, amongst others (2007). The MENTOR-VIP mentees concurred with these characteristics when identifying attributes of good mentors. It is therefore important to sensitise mentors towards these attributes so that their focus is the broader skill- and career-development of the mentee, rather than just on the implementation of the mentorship project. Orienting mentors on rapport-building, skills and other attributes of e-mentors could guide them on how to approach mentorship (Bamford, 2011; Jeste, Twamley, Cardenas, Lebowitz, & Reynolds III, 2009). Instruction could address topics such as various available communication options, effective communication, planning and managing expectations, and help them to develop effective mentoring relationships. An online training module could be developed and offered to all mentors before the start of the programme (Bamford, 2011).

### ***Orienting mentees to the programme***

Currently, the programme does not offer formal orientation to mentees other than the programme document. Thus, following selection of mentees, a webinar could be conducted to orient them on their role and responsibilities, rapport-building and planning and maintaining effective communication (Bamford, 2011). More than one session may be required because of different time zones. The function of this orientation would be twofold. First, it would bring mentees together on a common platform where they could discuss and clarify programme-related expectations and doubts, thereby possibly avoiding some programme-related disappointments because of unclear expectations. Second, a webinar would allow mentees to test their Internet and computer facilities. This is important in a programme that relies mostly on virtual communication.

### ***Maintaining effective and open communication***

In any mentoring relationship, maintaining effective communication is vital; this is even more crucial in an e-mentoring programme like MENTOR-VIP. Effective communication includes relationship-building while accommodating for differences, listening and providing feedback in an effort to constantly improve communication (Fleming et al., 2013). Differences related to ethnicity, language, gender and age may prevent development of effective mentoring relationships (Bickel & Rosenthal, 2011). Non-responses or delayed responses can also cause the other colleague to lose interest. Thus, responsiveness of both parties is an important attribute that needs to be stressed. In addition, it is important to encourage the mentorship pair to provide regular feedback to each other. Since the Core Group conducts regular follow-ups with the pair, one Core Group member could be assigned to facilitate discussions and resolve any issues/misunderstandings that may arise during the mentorship process. Other communication

platforms like online discussion boards could also be started where pairs can share their experiences, best practices, post-questions and have discussions. This may help engage both in the mentorship process and allow cross learning between pairs.

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