WEEKLY EPIDEMIOLOGICAL REPORT

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Bridge the Implementation or Action Gap– Part II

Knowledge synthesis: formally identifying and assessing relevant evidence

Implementing a policy or intervention that has only been shown to be effective in one research study can be problematic. Few studies by themselves are persuasive enough to change policy or practice; in fact, individual studies may even be misleading due to chance or bias . Therefore, after carrying out the situational analysis and identifying the health need and desired outcomes, implementers need to perform a formal synthesis of evidence on potential policies and interventions termed as knowledge synthesis.

Failure to use such a knowledge synthesis can lead to delays between the generation of research evidence about an intervention and the time when clinical experts make recommendations in line with research findings.

Stages of knowledge synthesis

There is a growing range of methods for knowledge synthesis; most involve an initial review of existing literature. Depending on time, resources available, and other constraints, this literature review can be rapid or involve a lengthier meta-analytical process.

Common stages in knowledge synthesis :

Stage 1- Stating the objectives of the policy or intervention to be implemented

Stage 2 - Defining the eligibility criteria for evidence to be assessed

Stage 3- Defining a search strategy to identify relevant evidence

Stage 4- Searching for relevant evidence

Stage 5 - Assessing the quality of evidence found

Stage 6 - Assembling and analyzing the most complete data set feasible

Stage 7 - Making an informed decision based on a structured report of the research

Stage 1: Stating the objectives of the policy or intervention to be implemented

The first stage in the knowledge synthesis process is to formulate the objectives of the synthesis; this is arguably the most important stage in the process and is partially informed by the situational analysis.

The more explicit the objectives (for example, in terms of how specifically the population or the intervention is defined), the more you will limit available evidence. On the other hand, making the objectives broader is likely to require more resources as there will be more evidence to sift through and assess.

One method for devising objectives is summarized by the acronym PICO:

Population
Intervention
Comparison
Outcome

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For example, your objectives may be to identify evidence on approaches to the prevention of secondary heart attacks (outcome) in elderly men and women who live in rural areas (population). These are very broad objectives, so you may refine these based on information gathered during the situational analysis. For instance, the situational analysis may have revealed that the majority of people in your target population have access to mobile phones; you may therefore want to narrow your objectives by stating that you are seeking evidence on mHealth programmes (interventions) and their effectiveness compared with face-to face secondary prevention services (comparison).

The PICO model is very widely used and it is recommended by Cochrane (previously The Cochrane Collaboration) as a strategy for formulating questions and search strategies and for characterizing clinical studies or meta-analyses.

Stage 2: Defining the eligibility criteria for evidence to be assessed

In the second stage you should set the criteria that will determine whether you retain (and assess) a particular piece of evidence that you identify or whether you should discard it. This stage is partially guided by the objectives outlined earlier.

First, you need to specify the characteristics of the evidence (e.g. research studies) that are to be included in your knowledge synthesis in effect, the 'eligibility criteria'.

The following are typical:

* the nature of what was studied (e.g. specific policies or interventions);
* the context (in other words setting and population – e.g. adults; ethnic groups);
* the date of research (e.g. ever; since 1920; since 1990);
* the research methods (e.g. all methods; only empirical; only certain designs);
* the language of report (e.g. English only; French only; both).

Taking forward the scenario mentioned in stage 1 above, you might want to limit your search to 'evidence on interventions that use information and communication technology for secondary prevention of heart attacks in men and women living in rural areas'. Ideally, you would also limit your search to evidence from your own country, although this may not always be possible as the evidence available may be too limited or non-existent. In that case you may wish to look for evidence from the region (e.g. South Asia if you are based in Bangladesh; sub-Saharan Africa if you are based in Uganda; and so on).

You also have to decide if you only wish to search for recent evidence (often the case, to ensure relevance) and if you want to include peer-reviewed studies that use randomized controlled designs only, or whether you also want to include grey literature.

Stage 3: Defining a search strategy to identify relevant evidence

After you have set the objectives for the knowledge synthesis, and after you have decided which evidence you will assess, you need to prepare the search strategy. This specifies the detailed method for conducting the search; it outlines exactly which terms (in a structured list) you will search for in databases, how these terms will be linked and what databases you will use. The search strategy should be grounded in the research question and should be recorded in detail.

Your choice of key terms will be guided by the objectives. Bear in mind that the same concept may be referred to in a number of ways (e.g. self-esteem might be referred to as self-worth elsewhere). You therefore need to examine each of your concepts and develop a list of the different ways in which they could appear in the literature. You will also need to think about how your search terms may be linked.

Searches are usually conducted online, using existing research literature and/or policy databases. Key databases that are useful in the identification of relevant evidence include:

* **Cochrane Library:** http://www.thecochranelibrary.com
* **The Joanna Briggs Institute Database of Systematic Reviews and Implementation**
* **Reports:** http://joannabriggslibrary.org/index.php/jbisrir/index
* **Database of Abstracts of Reviews of Effects DARE):** http://www.crd.york.ac.uk/CRDWeb/HomePage.asp
* **NICE Evidence Services:** https://ww.evidence.nhs.uk
* **PubMed Health:** https://www.ncbi.nlm.nih.gov/pubmedhealth
* **WHO Library Database (WHOLIS):** http://dosei.who.int

Source: A guide to implementation research in the prevention and control of non-communicable diseases. Geneva: World Health Organization; 2016. Licence: CC BY-NC-SA 3.0 IGO.

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to be continued ...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 30th – 06th July 2018 (27th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmania-sis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	449	5033	5	49	0	5	2	32	2	25	7	111	0	6	0	3	0	0	9	412	2	28	0	2	**62**	**100**
paha	235	2665	2	37	0	5	1	13	0	14	5	131	0	4	0	10	0	0	22	445	2	25	3	22	**67**	**100**
Kalutara	126	1808	3	43	0	3	0	5	1	37	25	323	0	5	1	7	0	0	14	351	10	49	0	9	**52**	**100**
Kandy	140	1920	4	47	0	4	0	3	0	9	3	34	3	67	0	15	0	0	8	192	1	18	0	14	**60**	**100**
Matale	33	585	1	9	0	1	1	2	0	31	5	54	0	2	0	3	0	0	0	21	2	9	8	64	**59**	**100**
NuwaraEliya	9	103	3	36	0	3	0	9	38	47	3	19	7	91	2	19	0	0	1	138	0	23	0	0	**31**	**100**
Galle	47	611	0	28	0	7	0	0	1	3	10	244	3	20	0	2	0	1	8	183	2	33	0	5	**13**	**100**
Hambantota	26	537	1	11	1	4	0	2	0	4	2	32	4	27	0	2	0	1	13	169	1	3	61	410	**73**	**100**
Matara	22	507	0	25	0	5	0	4	0	21	9	134	1	23	0	6	0	0	8	173	1	6	7	220	**53**	**100**
Jaffna	93	1875	4	97	1	2	2	33	1	209	0	8	3	237	0	1	0	2	4	192	0	9	0	3	**37**	**93**
Kilinochchi	13	193	1	20	0	1	0	8	1	2	0	2	3	11	0	0	0	1	0	28	0	2	0	1	**50**	**100**
Mannar	16	52	2	17	0	0	0	2	0	2	0	1	0	0	0	0	0	0	1	27	0	1	0	2	**37**	**100**
Vavuniya	24	328	0	14	0	3	0	30	0	11	2	26	0	7	0	0	0	1	1	38	0	3	1	4	**57**	**100**
Mullaitivu	8	59	0	5	0	0	0	8	0	10	0	8	0	3	0	0	0	0	0	6	0	1	0	1	**20**	**100**
Batticaloa	120	3836	5	100	0	5	1	3	0	20	4	33	0	1	0	2	0	2	5	89	1	12	0	0	**65**	**100**
Ampara	32	145	5	35	2	3	0	1	2	4	2	32	0	0	0	4	0	1	4	136	2	14	0	1	**66**	**100**
Trincomalee	52	708	1	34	0	1	0	4	3	13	1	38	0	17	0	1	0	0	8	145	2	6	0	18	**28**	**100**
Kurunegala	89	1483	7	82	0	8	0	10	0	3	15	88	2	13	1	12	0	1	17	314	10	58	41	167	**67**	**100**
Puttalam	61	1252	1	24	1	5	1	4	0	4	5	26	2	8	0	2	0	0	0	88	6	49	0	1	**71**	**100**
Anuradhapura	45	545	0	28	0	6	0	2	0	38	4	88	1	15	0	4	0	1	13	264	4	26	14	217	**43**	**95**
Polonnaruwa	28	192	1	16	0	2	0	0	0	12	10	80	0	0	0	3	1	1	8	146	4	12	9	130	**60**	**88**
Badulla	20	281	5	72	0	5	0	6	0	10	2	95	1	40	1	19	0	0	9	291	4	67	0	5	**46**	**100**
Monaragala	17	579	1	47	0	2	0	1	0	2	3	200	3	79	0	15	0	0	2	99	9	54	1	23	**65**	**100**
Ratnapura	148	1336	11	104	2	28	2	17	0	4	40	343	1	22	1	13	1	2	8	193	6	68	5	140	**45**	**100**
Kegalle	52	793	0	37	0	7	1	5	0	71	8	128	2	51	2	10	0	0	4	218	3	29	1	6	**65**	**100**
Kalmune	37	1355	1	25	1	1	0	1	7	27	1	4	0	0	0	1	0	0	5	122	0	7	0	1	**50**	**100**
SRILANKA	**1942**	**28781**	**64**	**1042**	**8**	**116**	**11**	**205**	**56**	**633**	**16**	**2282**	**36**	**749**	**8**	**154**	**2**	**14**	**172**	**4480**	**72**	**612**	**15**	**1466**	**53**	**99**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 06th July , 2018 Total number of reporting units 353 Number of reporting units data provided for the current week: 351 C**-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

30th – 06th July 2018 (27th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2018	Number of cases during same week in 2017	Total number of cases to date in 2018	Total number of cases to date in 2017	Difference between the number of cases to date in 2018 & 2017
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	01	00	00	01	00	00	01	03	00	35	40	- 12.5 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	01	00	00	01	00	01	01	00	04	11	190	190	0 %
Measles	02	01	00	01	00	00	01	00	00	05	06	72	132	-45.45 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	04	06	-33.3%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	01	00	00	00	00	00	00	00	01	02	00	13	08	62.5 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	01	00	00	00	00	00	00	01	00	17	21	- 19 %
Whooping Cough	00	00	00	00	00	01	00	00	00	01	00	30	09	233.3 %
Tuberculosis	68	36	33	27	30	09	11	22	57	293	310	4271	4259	0.2 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them free of water collection.

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ON STATE SERVICE

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