Record of discussion of the Technical Appraisal Committee meeting held on 4th July, 2019, 10.00 AM in the Department of Health Research (DHR), MoHFW, New Delhi under the Chairmanship of Prof. T. Sundararaman.

1. The 14th TAC meeting was held on 4th July, 2019, 10.00 AM in the Committee Room, DHR, MoHFW, 2nd Floor, IRCS Building, New Delhi, under the Chairmanship of Prof. T. Sundararaman, Ex. Dean, School of Health Systems Studies, TISS & Former ED, NHSRC in presence of Smt. Anu Nagar, Joint Secretary, DHR, MoHFW.
2. The purpose of the meeting was to discuss the following:
   i. **HTA Outcome report on Bempu hypothermia alert device by IIPH, Shillong.**
   ii. **HTA Proposal on Intravenous Iron-Sucrose intervention to treat anemia in pregnant women by IIPH Gujarat.**
   iii. **HTA proposal on implementation of Blood Counters for Diagnosis of Dengue at Primary Healthcare Settings in Tamil Nadu State by, NIRT, Chennai.**
   iv. **HTA proposal on Low Cost Ventilator by KIHT, Visakhapatnam.**
   v. **HTA Outcome Report of Breast Cancer Screening by NHSRC, New Delhi.**
3. List of participants is enclosed as annexure.
4. The Chairman welcomed all the participants and briefed the agenda of the meeting.
5. JS, DHR also addressed the participants, explained about HTA and emphasized on the need to sensitize the State Governments about HTA and inform them about the activities of HTAIn.
6. After a brief round of introduction, the chair opened the session for discussion.

A. <u>HTAIn Updates</u>

1. A brief presentation was made by the HTAIn Secretariat regarding the progress of all the activities of HTAIn done so far. Brief summary of studies completed till date and ongoing, new topics received and approved, data repository, HTAIn Website., and nationwide costing study. TAC was informed that in the National Costing Study the district and the private hospital cost data collection is ongoing. HTAIn informed that the tertiary hospital cost data collection from all the States was completed and cost of healthcare packages was derived, as was presented in the last TAC meeting and that a total of cost of ~850 healthcare packages was calculated from tertiary cost data collected from different participating States.
2. Five HTA studies were approved and eight are ongoing and among them, four are near completion stage, six new topics are at proposal development stage. Besides that, two Multi-centric studies are also going on.
3. The chair proposed to hold a two-day meeting in the month of August, 2019, of which one day would be a review meetings including some Board members as invitees, to reflect on HTAIn activities and review of the procedure/ methodologies followed and some methodological issues that need further discussion. The first day could be the usual TAC meeting considering new proposals as well as completed reports.

4. TAC suggested acknowledging as appropriate the contribution of TAC members in outputs/ publications/guidelines which are based on the work/contributions of TAC.

B. HTA Outcome Report on Bempu, IIPH - Shillong

1. IIPH Shillong team presented the Background, Rationale, Policy question, Research question and Objectives, Methodology and Results.
2. The results showed that management of hypothermia with Bempu costed 8,810 INR less than that of management of hypothermia with thermometer. However, management of hypothermia with Thermospot was 3913 INR less than thermometer and the Life years gained in case of Bempu was 0.1258, and in case of Thermospot it was 0.0569. Concern were raised that 1 Bempu device is being used per baby whereas thermometer is used for many babies and therefore has lesser cost, which should be considered in the study. IIPH team is advised to make the costing estimations clear in their report.
3. It has been appreciated and considered that merely distributing the hypothermia alert devices will not solve the problem of hypothermia in the community. Therefore, there should be proper measures for counselling and awareness to the device users be it mothers, or other family members who are taking care of the neonates at home. It is therefore suggested that the component of counselling and awareness should be there in the report's recommendation.
4. The User Department i.e. the Child Healthcare Division, MoHFW put forward following points:
    - What happens after detections is very critical.
    - Moreover, who is using it is also very important – In hospitals mainly nurses. However, the User Department is interested to introduce it in community settings, household monitor and referral systems.
5. With regard to the first point, it was agreed that if hypothermia is detected early but if no timely action is taken, it would not solve the problem. Therefore, the team suggested factoring in the response rate also. That means how much the devices are cost effective if we consider the response rate as 100%, 50%, 25%.
6. With regard to the second point, it was observed that though these alert devices are meant to be used in home settings, the data shown by IIPH team is based on hospital settings. IIPH team answered that there were very few studies available on these devices and even lesser in community settings. Due to unavailability of data, hospital settings were used in the report. Dr Siddhartha Ramji, Ex –Dean Maulana Azad Medical College, informed the committee that this is actually the case and therefore a team under his supervision is conducting a primary study, where effectiveness of these devices are being assessed in home settings.
7. TAC chairman suggested that the protocol of the study being conducted by Dr Siddhartha Ramji could be shared with the IIPH team to guide them for report revision, and if feasible they could replicate the study

in Meghalaya. Once the primary study by Dr. Siddhartha Ramji is completed, IIPH Shillong team may consider revising their current report and bringing about the version 2 of it.

8. TAC wished to go through the assumptions and calculations to which IIPH agreed to share the Excel sheets with the TAC. In the graph of PSA majority of points were in the 4rd Quadrant but some also lying in 3rd therefore it seems to be more cost-effective.
9. TAC suggested that the report should clarify that this device is not the substitute for the package of care. Counselling- booklet should be always distributed with the device as what to do after detection. These relevant riders/cautions should be stated. Also they suggested to keep looking for further studies that may be coming in to strengthen the study with those data.
10. TAC suggested the following points to be incorporated:
    - The time limit for observation may be 7 days to 30 days. From all the neonates one may conclude within 48 hours that who among them are the potential targets for critical observation observations further.
    - Define a threshold i.e. what if 100% cases do not go for referral after detection? Frame it like even if less (let's say 30%) cases go for further referral whether it will be cost effective or not? That may address the possible shortcoming that arises due to unavailability of data.
11. The revised proposal to be brought back in the TAC for approval.

C. <u>HTA proposal for implementation of cell counters (Hematology Analyzers) for referral of suspected dengue cases at Primary Health Care settings in Tamil Nadu by, NIRT, Chennai.</u>

1. The topic was received from Tamil Nadu Govt. for assessing whether Automated cell counters at PHC level is cost effective.

2. It was a revised proposal after addressing the comments suggested in the proposal in the previous TAC Meeting.

3. TAC commented that for referring a case, the platelets counts should be below 20,000 instead of 100,000 which was mentioned as symptoms in the proposal.

4. One of the TAC member informed that WHO recommended a limit of 100,000 platelets count for referral.

5. It was also suggested that automated cell counters may also be used for running other tests with platelet count and hematocrit value. Otherwise, the service providers may limit its access for dengue only. Multiple use of automated cell counters may make it more cost-effective.

6. NIRT team informed that handling of the automated blood counter doesn't require any expertise. It is user friendly and require minimum training.

7. One of the participants enquired whether the device requires electricity to which the team replied yes it does. Other participants added that this is for the implementation in Tamil Nadu and electricity may not be a major issue there.

8. User Department's representative participated through Skype call to clarify few concerns of the TAC as follows:

- One of the participants pointed out that since these devices are already in place why did they want a cost study again? The representative from the User Department replied that they wish to assess whether the device is cost-effective at the PHC level.
- Chair again asked the reason for considering platelets counts as 100,000 as the referral value, as it may generate false positive results. Also, the count drops over a period of 24 hours and the proposal has taken it as 7 hours. The representative responded that that considering the platelet counts as 100,000 patients may be identified before being critical due to the referral processes. This largely applies to fever and hemorrhage manifestation.
- Chair asked whether referral would be fine at a lower threshold that would be more meaningful for dengue patients. The representative responded that we are talking about the PHC level referral where medical officer is not available to specifically identify dengue and all suspects may be referred especially during outbreak. It was concluded to fine-tune the wordings that at more local level medical officer not available.
- The cost of cell counter was asked to which response was Rs. 2.92 lakhs per device and the cost per test estimated was Rs. 990 per test. It can run test for 20 parameters.
- One of the TAC member was not fully convinced with the Research Question and suggested that the question should be general for all diseases as the blood counter helps in other diseases The representative responded that the device will be used for other diseases as well but the study will show how dengue is impacted upon its introduction.

9. The chair requested Prof Muraleedharan to help in reformulating the study and also look at multifactorial fever as well. He also suggested to look at both threshold i.e. 100,000 and 20,000 and also look at multiple benefits. It was suggested to look at the possibility of platelet count and hematocrit reading taken twice instead of just once, before referring the patient.

10. The proposal was approved with the instructions to incorporate the above points and send to the TAC members through e-mail.

D. <u>HTA Proposal on Intravenous Iron-Sucrose intervention to treat anemia in pregnant women by IIPH Gujarat.</u>

1. The study was proposed by the Gujarat Government and a representative from Government was present in the meeting who was working with the State Govt. as well as Zila Panchayat. He explained the TAC about the problems and the rationale of introducing iron sucrose for pregnant mother. He added that the Govt. is also planning to introduce ferric carboxy–maltose as well.
2. Chair recommended that any last minute additions to the proposal presentation may be avoided as TAC members do background reading before attending the meeting.

3. Policy Question, Objectives and methodologies were explained through a PowerPoint presentation.
4. The TAC commented that mild and severe anemia will have different complications and it will change the outcome. We cannot average out among the two. TAC also suggested to focus on mild and moderate anemia and not to include severe anemia at this stage.
5. Suggestions were made to consider TrueHb for measuring anemia because it gave more precision than HemoCue, as per a recent IIPH-D study on Hemoglobinometer.
6. TAC suggested that according to research data available through RCTs, for mild and moderate anemia, oral IFA tablets are given. It is only severe anemia, where blood transfusion has been replaced by administration of intravenous Iron-Sucrose.
7. Comments were made that in terms of methodologies the study compared the two groups which is not comparable. It could be an effectiveness analysis and not cost effectiveness or it may be forwarded for operational research.
8. The TAC concluded that the question is valid but it may be framed in a proper way that reflects in the methodology, stratify between severe, moderate and mild anemia and also the types of anemia since tribal population of Gujarat State is included.
9. TAC suggested the team to collect the data, we will decide later whether it may come under operational research.
10. The TAC suggested to reframe the proposal and take the help of Dr. Anju Pradhan from ICMR in Systematic Review.
11. The proposal to be brought to the next TAC with suggested revisions.

E. <u>HTA proposal on Low Cost Ventilator by KIHT, Vishakhapatnam.</u>

1. It was a revised proposal to compare the Agva Ventilator with other portable ventilator. Research question, policy question, research question, PICO and expected outcomes were explained through a PowerPoint presentation.
2. TAC asked whether Agva is a brand name and if yes, should we be comparing different brands? TAC then suggested that we should focus on the principles of alternative devices rather than brand. Brand name can be written in the bracket. The team responded that the principle of all the portable ventilators are almost the same. However, Agva is made in India and cheapest ventilator. The TAC responded that if so then it is a question of tendering.
3. One problem was that since the cost of this equipment is much less than comparators, there was an issue of credibility with regard to performance. The team responded that though it is reported as clinically effective from those places where it is already installed, no RCT is done because it is very expensive and time taking and we seldom study performance characteristics of different brands. Also, there is no literature on performance of any brand. Team emphasized that a formal study or official endorsement would add credibility for government to procure this as as there is a huge shortage of ventilators in Govt. hospitals and this device is much cheaper and indigenous. For

the comparable performance of new drugs and their approval, CDSCO has a mandate and there are other agencies to approve and regulate it. But when a new device comes – There is no committee to approve. This is the need of the hour.

4. Finally, TAC concluded that:
   - Clinical effectiveness study is required to see whether it is equally effective than other portable devices. Clinical Effectiveness may include – delivery, functionality, oxygen supply and portability. TAC suggested identifying 3-4 centers and getting the data regarding the clinical effectiveness using an appropriate method. TAC suggested that KIHT can jointly work with Dr. Deepal Aggarwal (AIIMS) to plan for the validation study and method development.
   - A proposal for this could be drafted and brought back to the TAC and meantime TAC may seek general guidelines on such issues with the Board.

F. HTA Outcome Report of Breast Cancer Screening by NHSRC, New Delhi.

1. It was a revised proposal for discussion. In the Board meeting the Board agreed with the recommendations but asked if the ICER value is to be made the basis of recommendations then why ICER value was very low for CBE. The team responded that if ICER difference is low we look at other parameters. In this case they had looked at diagnostic sensitivity. The HTAIn Board had also suggested to look at other nations, the strategy what they prefer and the reason why.
2. TAC had agreed to take back the proposal for a) revalidating the ICER values computed, b) looking at the experience/recommendation of other nations and c) checking on the age limits.
3. TAC decided to send the proposal for a peer review in parallel to the team addressing the questions raised by the Board.

G. General Discussions

1. Next TAC Meeting may be planned in the third week of August or, any suitable date may be decided after 15th of August.
2. District and some of the Private Hospitals costing data may be presented in the next TAC.
3. Proposal on HTA of "Lifeline" portable ECG study was initially presented by IIPH Gujarat in 13th TAC meeting. After incorporating the changes suggested by TAC, the revised proposal was sent back on 25.05.2019 via email and has been approved by TAC.
4. There was a direction to secretariat to establish the convention of taking a Conflict of interest declaration from TAC members and requiring experts called on or members working on proposals to do so also. Conflict of interests would not necessarily invalidate their views- but it must be recorded as part of transparency. This was an earlier decision- but needed more vigorous implementation. For TAC members it is adequate to take it once-and ask them if there was a change of status and a need for update annually.

H. After the detailed deliberations following action points emerged:

1. A one days brainstorming meeting involving some Board members may be planned to go through the larger problem with the system and how HTA can address those issues. This could be linked to a regular TAC meeting on the preceding day.
2. With respect to the **Bempu Outcomes Report** following points were made:
   - IIPH, Shillong team is advised to make the costing estimations clear in their report.
   - There recommendations should emphasize proper measures for counselling and awareness to the device users be it mothers, or other family members who are taking care of the neonates at home.
   - The cost effectiveness computation should factor in varying response rate response rates.
   - They could also consider the ongoing study protocols and eventually the report of Siddharth Ramji's research team and modify the report later when the data is availabl- in a version 2 of the report.
   - The Bempu outcome report to be brought to the next TAC meeting with the suggested revisions.
3. With respect to the **HTA proposal on implementation of Blood Counters for Diagnosis of Dengue** following points emerged:
   - TAC instructed the team to take the help of Prof. Muraleedharan in reformulating the study and also look at multifactorial fever as well. Suggestions were also made to look at both the threshold i.e. 100,000 platelet counts and 20,000 platelets counts and also look at testing for multiple conditions along with Dengue may make the automated cell counter more cost effective. The proposal may be modified with minor changes suggested by TAC.
   - The proposal for implementation of cell counters (Hematology Analyzers) for referral of suspected dengue cases at Primary Health Care settings in Tamil Nadu was approved by the TAC with comments to be incorporated and instructions to circulate the revised proposal through e-mail.
   - The proposal was approved with the instructions to incorporate the points suggested and circulate to the TAC members through e-mail.
4. With respect to the **HTA Proposal on Intravenous Iron-Sucrose intervention to treat anemia in pregnant women** following points were made to the team:
   - TAC suggested that according to research data available through RCTs, for mild and moderate anemia, oral IFA tablets are given. It is only severe anemia, where blood transfusion has been replaced by administration of intravenous Iron-Sucrose
   - Look into the comparator as the two groups mentioned are not comparable.

- It could be an effectiveness analysis and not cost effectiveness and it may be forwarded for operational research.
- The team was instructed to reframe the proposal and take the help of Dr. Anju Pradhan from ICMR in Systematic Review and bring back to TAC in the next meeting.

5. With respect to the proposal on **Low Cost Ventilator by KIHT, Vishakhapatnam** following points were suggested:
   - Identify 3-4 centers and do a clinical effectiveness study get the data regarding delivery, functionality, oxygen supply and portability etc. Draft a small proposal for the above study and come back to the TAC/PAC for this purpose.
   - Proposal to be reframed and first circulated to the members and then brought back to TAC. In parallel TAC takes guidance from Board on general policy for addressing such proposals.
6. With respect to the **Breast Cancer Screening Outcome report** following suggestions were made:
   - Look at other nations, the strategy what they prefer and the reason why.
   - The upper age Group could be stretched to higher.
   - It may go for an appropriate peer review.
   - Revised proposal to be shared through e-mail to all the members.

The meeting ended with a vote of thanks to the chair and all the participants.

T. Sundararaman

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Annexure I

List of Participants

A. Members

1. Prof. T. Sundararaman, Ex-Dean, TISS, Mumbai & Former ED, NHSRC – Chairman
2. Smt. Anu Nagar, Joint Secretary, DHR, New Delhi – Member (*Ex office)*
3. Prof. V.R. Muraleedharan, IIT, Chennai – Member
4. Prof. Indrani Gupta, Institute of Economic Growth, New Delhi – Member
5. Prof. Rama Baru, JNU, New Delhi – Member
6. Dr. Sudha Chandrashekhar, World Bank – Member

B. Participants

1. Shri Daulat Ram Meena, Deputy Secretary, DHR, New Delhi
2. Dr. S. Ramji, Professor, Department of Pediatrics, MAMC, New Delhi
3. Dr. Dinesh Baswal, Deputy Commissoner, NHM, New Delhi
4. Dr. Deepak Agarwal, AIIMS, New Delhi
5. Dr. M.J. Fancy, Gujarat Govt. Representative
6. Dr. Anju Sinha, Scientist F, ICMR Hq., New Delhi
7. Dr. Ashoo Grover, ICMR Hq., New Delhi
8. Dr. Deepika Saraf, Scientist E, ICMR Hq., New Delhi

C. Resource Centre/ Technical Partner Representatives

1. Dr. Sutapa B. Neogi, IIPH, New Delhi
2. Dr. Mathan Kumar, Scientist D, NIRT, Chennai
3. Mohammad Ameel, NHSRC, New Delhi
4. Dr. Rituparna Ghosh, IIPH, Shillong
5. Dr. Ibaplielad Jana, IIPH, SHillong
6. Dr. P. Nagasheshu, Technical Officer, KIHT, Vishakhapatnam
7. Suramya Shukla, Fellow, KIHT, Vishakhapatnam.

D. HTAIn. Sec., DHR

1. Dr. Kavitha Rajshekar, Scientist-D, DHR, MoHFW, New Delhi
2. Dr. Nidhi Singh, Scientist-C, DHR, MoHFW, New Delhi - Participant
3. Dr. Oshima Sachin, Scientist-D, HTAIn Sec., DHR, MoHFW, New Delhi
4. Dr. Aamir Sohail, Health Policy Analyst, HTAIn Sec, DHR, MoHFW, New Delhi
5. Mr Arvind Bhushan, Scientist-C, HTAIn Sec, DHR, MoHFW, New Delhi
6. Dr. Shalu Jain, Scientist-C, HTAIn Sec, DHR, MoHFW, New Delhi
7. Miss Jyotsna Naik, Scientist-C, HTAIn Sec, DHR, MoHFW, New Delhi
8. Dr. Malkeet Singh, Junior Health Economist, HTAIn Sec, DHR, MoHFW, New Delhi
9. Dr. Akshay Chauhan, Junior Health Economist, HTAIn Sec, DHR, MoHFW, New Delhi
10. Dr. K.V. Jagadeesh, Scientist B, HTAIn Sec, DHR, MoHFW, New Delhi
11. Dr. Shivangi Khanna, Scientist B, HTAIn Sec., DHR, MoHFW, New Delhi
12. Mrs. Safia Zaidi, Programme Manager, HTAIn Sec, DHR, MoHFW, New Delhi
13. Mrs. Kirti Tyagi, Scientist-C, HTAIn Sec, DHR, MoHFW, New Delhi
14. Miss Anjana Aggarwal, Scientific Consultant, HTAIn Sec., DHR, New Delhi

15. Miss Himanshi Tomar, Scientific Consultant, HTAIn Sec., DHR, New Delhi
16. Mr. Vipin Kumar, Personal Assistant, HTAIn Sec., DHR, New Delhi