Adolescent Health Research Priorities: Report of a Technical Consultation

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This publication contains the report of the Technical Consultation on Adolescent Health Research Priorities that was held in WHO Geneva on 13th and 14th October 2015 and does not necessarily represent the decisions or policies of the World Health Organization.
Adolescent Health Research Priorities: Report of a Technical Consultation

13th and 14th October 2015, Geneva, Switzerland

1. Purpose of the meeting
The purpose of the meeting was to contribute to defining global adolescent health research priorities and the role that WHO might play in these. The meeting had a particular focus on the health of adolescents, young people, and youth in low and middle-income countries.

2. Background and Rationale
During 2015, the Department of Maternal, Newborn, Child and Adolescent Health (MCA) at WHO Headquarters in Geneva conducted an exercise to establish global research priorities in adolescent health, which used the Child Health and Nutrition Research Initiative (CHNRI) methodology. This exercise built on earlier work using a similar CHNRI methodology that established research priorities in adolescent sexual and reproductive health and HIV that was published in 2013, but extended it to cover eight additional areas: communicable diseases, health systems, injuries and violence, management of NCDs, mental health, nutrition, physical activity, and substance use.

There are approximately 1.2 billion adolescents (10-19 years) globally, roughly 90% of whom live in low and middle-income countries. The relative importance of both mortality and morbidity among adolescents is increasing as the burden of disease among young children has fallen rapidly over the past two decades. However, the importance of the health of adolescents far exceeds immediate mortality and morbidity as many risk or protective factors for future adult disease either start or are consolidated during the second decade of life. Although much is known about what should be done to improve adolescent health, research on adolescent health has tended to lag behind research in both child and adult health.

WHO convened a technical consultation with experts on 13th and 14th October 2015 to review the findings from the adolescent health research priorities exercise, which had used a modification of the Child Health and Nutrition Research Initiative (CHNRI) approach,¹ and to advise on how best to disseminate its results. This was done on Day 1 of the consultation. In addition, on Day 2, three specific research areas were discussed in more detail in groups. These are potential issues that might be taken forward by WHO.

All three areas had been confirmed as being important during the research prioritization exercise. Within each research area, expert advice was sought on the most appropriate settings and study design for each of these.

3. Specific meeting objectives
1. To review the findings from the Adolescent Health Research Priorities exercise that had been carried out by WHO using the Child Health and Nutrition Research Initiative (CHNRI) methodology, and to advise on how best to disseminate and use these findings.
2. To define three specific research questions related to adolescent health services, parenting interventions for adult carers of adolescents, and virtual (internet, social media, mobile phones, etc) interventions to promote adolescent health and wellbeing, and to advise on the most appropriate settings and study designs to answer these questions.
The concept note for the consultation is at Annex 1, and the meeting agenda at Annex 2.

4. Participants
A total of 17 external experts attended the meeting, along with members of WHO staff (see Annex 3).

5. Research Priorities Exercise

5.1 Overall issues
- Participants suggested that it would be useful to distinguish between questions that are adolescent-specific and those that are relevant across the life course. For instance, some questions may have outcomes best measured in adolescence and some questions may have outcomes best measured in adulthood, or even in the next generation. Also, some interventions may need to take place in childhood to affect adolescent outcomes.
- The proposed research questions varied substantially in specificity. Both types were thought to be useful for different purposes. For instance, some of the broad, cross-cutting questions may be of particular interest to donors, whereas some of the very specific questions may be of particular interest to researchers. The Child Health and Nutrition Research Initiative (CHNRI) methodology allows for a large group of experts to propose all types of questions, general or specific.
- It was agreed that, once the primary analysis of the scoring has been agreed (see below), the scores (and hence the rankings) themselves should not be changed. Discussion of any results that the research team found surprising could be illuminating. For example, some participants thought it surprising that the top-ranked research question related to injuries and violence was “What are the barriers and facilitators to increasing compliance with motorcycle helmet legislation?”

5.2 Specific Health Areas
- In the communicable diseases health area, the predominance of tuberculosis and HIV-related questions was noted. By contrast, there were very few questions related to malaria, diarrhoeal diseases, respiratory infections, or neglected tropical diseases. It was suggested that, although this may partly be due to selection bias in which experts participated, currently there is a major interest in tuberculosis in adolescents. Most routine monitoring data on tuberculosis is not age disaggregated in a way that would allow specific examination of adolescents, so additional research in this specific population is needed.
- Though gender-based violence was included in questions that were submitted in the injuries and violence health area, and was also included in the previous adolescent sexual and reproductive health priorities exercise, there was some concern that it may still not feature adequately, and that in the questions there was little focus on young men in relation to gender-based violence.
- Participants noted that ‘injuries’ and ‘violence’ are very different phenomena, with largely different aetiology, so it might have been better for them to have been disaggregated.
- Participants noted that cancer and palliative care were not represented in the top-ranked questions in the non-communicable diseases health area, though experts in these areas had been invited to participate in the exercise.
- It was also noted that in the substance use health area, none of the questions specifically mentioned inhalants and glue, despite these being commonly-used by adolescents in many settings. It was also suggested that, in the analysis and interpretation of the results, a distinction should be noted between illicit substances
and other, licit substances (though this may vary between countries, with alcohol being a notable example).

- In the adolescent health: policy, health and social systems area, it was noted that there was much thematic overlap with health systems and policy questions in the mental health area, with such questions mainly relating to integration of health packages.

5.3 Strengths and Limitations

- Key strengths of the methodology used were noted. These include the transparent process for identifying experts; the large and diverse group of experts who were invited to submit and then score questions; and the wide range of areas relevant to adolescent health that were included.

- On the other hand, some of the submitted questions related to more than one question type (e.g. both “intervention: development” and “intervention: delivery”). Where this occurred, the question was only included in one “type”.

- It was noted that some of the submitted questions were, in fact, sub-questions of other more generic questions, and there might have been scope for further editing of some of these questions before the scoring stage.

- Gaps or low representation of some diseases that are responsible for a significant burden of disease either in adolescents or where preventive interventions might be important during adolescence, such as cancer, malaria, diarrheal diseases, respiratory infections, neglected tropical diseases, and epilepsy, may have been at least partly due to selection bias in the experts who submitted questions and who scored the questions. This may have occurred despite efforts to include experts in these fields.

- Related to this, participants commented that rankings may reinforce pre-existing biases and established structures in funding and interest (for instance, TB and HIV have the most research and funding among communicable diseases).

- Participants advocated that caution should be used in interpreting the ranking of research priorities, and small differences in the ranking should be de-emphasized. For example, all of the highly-ranked questions should be considered important. However, it was accepted that it would not be possible to avoid threshold effects completely as the large number of questions would require some discussion of the top ten or top five questions, for example. This will be mitigated somewhat by making an online annex available that has the scores for all the questions, and by some of the “horizontal” analyses planned (see below).

- A further suggestion was to consider reporting the scores by percentiles (e.g. top 10%); however, there will always be some arbitrary cut-off.

- It was noted that the selection of the specific health areas would, inevitably, lead to issues of “merging/lumping” (such as combining injuries and violence) and “separation/splitting” (such as the separation of mental health and substance use, or of nutrition and physical activity). This may have led to lower representation of questions in areas that had been merged and greater representation in areas that had been separated. However, it was noted that separation into health areas, rather than asking all the experts to suggest questions in any area of adolescent health was useful.

- It was suggested that some of the criteria that were scored were problematic. Specifically:
  - The usefulness of the clarity criterion was questioned. Many participants felt that it was unfair to penalise questions where the question had not been phrased as well as others.
  - The answerability scoring criterion (“Can the question generate important new knowledge in an ethical way?”) had three components: 1) important 2) new and 3) ethical.
It was noted that an error had occurred in the wording of the equity criterion for the scoring of intervention and health and social systems research questions. For all the types of question, the experts were asked to score “Would the answer to this question help to identify inequities (e.g. in disease burden, access to and/or utilization of services)?” The words “identify inequities” should have only applied to description type of questions, and should have been changed to “reduce inequities” for the other types of questions.

- There was a suggestion that in future exercises it would be good to consider a criterion for “innovation/novelty” that would be scored, but others thought that this should already be considered in all of the criteria.
- It was also noted that there was no criterion for scoring fundability. For instance, “Is this question likely to be fundable?” However, it was noted that the submitted questions were not actually project proposals, and that one of the purposes of a prioritization exercise is to influence the fundability of research questions are considered a high priority.
- It was observed that the CHNRI process does not have a specific step to validate whether or not research questions have, in fact, already been answered. However, the assumption in the process is that the experts who are being asked to score the questions should know this.

### 5.4 Suggestions for Further Analyses

- Participants suggested several options for further analysis. Either at the consultation or soon after it, the research group decided to accept the following three suggestions:
  1. Rather than weight all criteria equally, it was suggested to use the weighting system recommended by CHNRI stakeholders as described in Kapiri et al 2007, after removing the clarity criterion. This CHNRI-suggested weighting will be used as the primary analysis. However, the team will also report how this affects the Research Priority Scores and the rankings relative to the weighting system that was used in the preliminary analyses prepared for the meeting (where all five criteria, including clarity, were given equal weight).
  2. An additional analysis will be the ranking of questions by research type (i.e. top “intervention: discovery” questions). The results of this analysis will be reported in an online annex.
  3. The scores will be analysed by themes (e.g. developmental stage, risk behaviours) and by platforms (e.g. family, community, schools, clinics, policy, mass media, virtual, etc.) to look for trends horizontally across health areas.
- In addition, some participants discussed the possibility of analysing results of the scores submitted by researchers vs. non-researchers, by high-income countries of residence versus low- or middle-income countries of residence, and by region where the experts worked. After the consultation, the decision was made not to do these sub-analyses because information that would be required for these sub-analyses were not available. Demographic information (such as researcher vs. non-researcher, nationality, and country of work) was only collected for experts who submitted questions and not for those who scored questions. Although there was overlap in those who submitted and scored questions, the groups were not identical so there would be missing demographic data for experts who scored the questions. Using multiple imputation to allow for this would be possible.
- There was also discussion about whether or not to compare scores across all the health areas included in the current exercise, and potentially also to add the areas covered in the previous adolescent sexual and reproductive health exercise. The consensus among the group was not to do this. This was for both technical reasons (different scorers, slightly different criteria) but also in order to avoid appearing to pit one health area against another.
5.5 Dissemination

- Participants agreed that the project should be disseminated in the following ways:
  - Through making this report of the consultation available on the WHO website.
  - Through preparing an article for submission to an international journal.
  - Through preparing a summary brief of the results (2-4 pages highlighting the top-ranked research priority questions).
  - Through presentations at international conferences such as at the International Association for Adolescent Health (IAAH) conference, the Society for Adolescent Health and Medicine (SAHM) Annual Meeting, the Society for Research on Adolescence (SRA) Annual Meeting, and by using these networks to disseminate the findings in other ways.
  - Participants also suggested that strategies should be explored to specifically reach universities/researchers in low- and middle-income countries, young people, programme managers, national science councils, national medical associations, and junior doctor networks.
  - A final avenue for dissemination included presenting the results for the donor and policy community, and particularly for funding agencies.

- It was stressed that reports of the findings should specifically relate the findings to the Sustainable Development Goals and the Global Strategy for Women’s, Children’s, and Adolescents’ Health.
- Countries and regions should be encouraged to conduct similar research prioritization exercises, though these might be most useful if they focus primarily on description and, especially, intervention delivery questions.

6. Three specific research topics

- On the second day of the consultation, after a preliminary discussion of suggestions that had been made by WHO, participants divided themselves into three groups to discuss three specific research topics:
  1. What parenting intervention(s) for adult carers of high-risk adolescents should be tested in a multi-country study in LMICs?
  2. What novel adolescent health services intervention(s) should be tested in a multi-country study in LMICs?
  3. What interventions to promote adolescent health and wellbeing delivered through virtual channels (internet, social media, mobile phones, etc.) should be tested in a multi-country study in LMICs?

- The groups were asked to apply the following criteria for selection of the specific study question they would propose:
  1. The study question addresses one of the questions that was rated a high priority in the research prioritization exercise
  2. The study is unlikely to be done unless WHO helps to raise money and coordinate the study
  3. The question requires a multi-country study
  4. The study is likely to have a substantial impact on programmes globally (or at least in low and middle-income countries)
  5. The question is likely to be answerable in LMICs (e.g. There is the potential to do this type of research in LMICs)

- The task given to each group was:
  Given the priorities identified in the research priority setting exercise, and the criteria above:
  o What one multi-country research study in the group’s topic area (see above) should WHO aim to raise funds for and then coordinate?
  o Why is this question a top priority for adolescent health research?
  o Why should this study be coordinated by WHO rather than by another
6.1 Parenting interventions

The group were:
External participants: Margit Averdijk, Anne Buvé, Jane Ferguson (Facilitator), Mark Jordans, Mahmood Nazar Mohammed, Vikram Patel, Danny Wight (Rapporteur)
WHO participants: Chiara Servili

- What one multi-country research study should WHO aim to raise funds for and then coordinate?
  - The group suggested the following question: What are the components of a universal (i.e. both with the adolescent themself and with their adult kin) intervention with families that include at least one adolescent aged 10-14 years, and how can they be delivered with potential for scale across diverse low and middle-income countries, in order to improve the adolescents’ emotional health, health related behaviours, and social functioning?

- Why is this question a top priority for adolescent health research?
  - There is strong observational evidence of associations between parenting practices and multiple health-related outcomes in early adolescence, and that parents remain very influential for young adolescents.
  - There is also strong evidence from high-income countries that interventions with the parents of young children can improve adolescent health (and other social outcomes), and can be highly cost-effective in the long-term.
  - However, there have been few studies evaluating the effectiveness of interventions with parents of adolescents, even in high-income countries, and very few studies of any parenting interventions in low-income countries.
  - Parenting interventions have the potential to break the cycle of intergenerational transfer of disadvantage.

- Why should this study be coordinated by WHO rather than by another organization?
  - The research would build on existing work within the Organization on helping parents in developing countries improve adolescents’ health, interventions to prevent violence and injuries, and to improve mental health, and the current Global Early Adolescent Study.
  - The question would require a programme of research with several, coordinated phases.
  - The study would benefit from being multi-country because parenting is very context-specific. There is both evidence that parental influences on children may vary between cultures (for example, authoritarian parenting styles may have different effects on adolescents living in an authoritarian environment compared to those living in a more permissive environment), and that the problems and vulnerabilities that adolescents face vary between countries (e.g. sexual health, HIV, violence, substance use).

- How best should this question be addressed (study design, type of setting, target group, outcomes, intervention (if any))?
  - The group did not think that there is an intervention that is ready to be tested in a multi-country trial. Rather they proposed a series of steps to reach that stage:
    - Reviewing published evidence related to this question
- Design an intervention
- Conduct formative research to establish: the best setting for the intervention; which participants to include in the intervention (fathers, mothers, and/or adolescents themselves); which components to include in the intervention (e.g. Mass media, leaflets, group sessions); intervention duration/dose; who should deliver it, and how should they be trained; how best to gain access to the parents/adult carers; how to retain the parents and the adolescents in the programme; who tends to be missed out; and which components of the intervention link to which outcomes?
- Pilot testing on a small scale with a before-after evaluation, and/or an exploratory small trial.
- The subsequent randomised controlled trials should have both short-term (e.g. immediately and 6 months after the end of the intervention), and long-term outcomes (e.g. obesity, hypertension, educational attainment, employment, etc.). They should also include a detailed process evaluation that explores the quality/fidelity and quantity of intervention delivered, the mechanism of effect, and contextual factors.
- A key question will be whether to include all young adolescents, or to exclude or specifically focus on certain groups of adolescents, such as adolescents who have already been identified as having problems, adolescents who are parents themselves, and/or adolescents who are carers. Such groups may require specifically targeted interventions.
- Roughly what might it cost (for the intervention (if any); for the evaluation)?
  - This was not discussed by the group.
- Why should a research funder support it?
  - The question is important (see above).

6.2 Adolescent health services interventions
The group were:
External participants: Sulafa Ali, Aoife Doyle (Rapporteur), Adesegun Fatusi, Rashida Ferrand, Gwyn Hainsworth
WHO participants: Annabel Baddeley, Valentina Baltag (Facilitator), David Ross

- What one multi-country research study should WHO aim to raise funds for and then coordinate?
  - What is the impact on adolescent health of a minimum healthcare package delivered by primary health care workers in schools and through adolescent health days in the community, with strengthened links to primary health care facilities?
  - The group felt that the key problem related to the provision of adolescent health services for adolescents related to their access to and the acceptability of the services. In some settings, considerable efforts had been put into making adolescent health services in health facilities more "adolescent-friendly". But attendance rates had usually remained quite low. The group therefore thought that the key programmatic question was how best to bring the services to the adolescents where they are rather than expecting them to come to the health facilities to receive them.
  - Since context will be very important, both in terms of a locally-adapted intervention, and also potentially in terms of the intervention’s effectiveness, a multi-country study that evaluates the effectiveness of an intervention that uses comparable but locally-adapted interventions, and comparable outcomes is needed.
  - This should not be a boutique research project, but should be delivered in a
way that is potentially scalable, using existing health structures

**Why is this question a top priority for adolescent health research?**
- In the “Adolescent health: policy, health and social systems” area, two closely-related questions featured in the ten top-ranked questions:
  - Rank 3: How can primary health care services be designed to most effectively meet the unique health needs of adolescents?
  - Rank 10: What is the effectiveness of different models of provision of primary care by community health workers in settings that are accessible and acceptable to adolescents?
- Several countries are designing and introducing adolescent health packages, but are requesting guidance, and evidence on what works.
- Also, countries are looking for guidance on how best to provide effective mental health services to adolescents.

**Why should this study be coordinated by WHO rather than by another organization?**
- The question meets the criteria for selection (see above)
- WHO has experience in developing and evaluating health service intervention packages for other groups, such as for the integrated management of childhood illness (IMCI), the integrated management of adolescent and adult illness (IMAI), and Community-Based-New-born-Care (CBNC).

**How best should this question be addressed (study design, type of setting, target group, outcomes, intervention - if any)?**
- The group proposed that the target population should be all adolescents (10-19 years), and that the intervention components should be:
  1. School health services, including screening, provision of services and linkage/referral to other local health and social services where required
  2. Quarterly Youth Health Days held in the community and particularly targeting adolescents and young adults who are not in full-time education
  3. Training and supportive supervision of the staff of local primary health care facilities on the provision of adolescent health services. This should include training in how to provide services in an empathic and respectful way, based on respect for the rights of the adolescent, as well as strengthening their capacity to address the major causes of the burden of disease in this age group, including unipolar depression, anxiety disorders, injuries including self-harm, iron deficiency anaemia, HIV, maternal health, diarrhoeal diseases, lower respiratory infections, asthma, and alcohol use disorders. They should also provide support for the workers delivering the school health services and youth health days.
  - The intervention should be tailored to age and sex, and adapted to the local context
  - The group felt that it was important that any intervention should aim to embrace all three settings of health facilities, schools and communities and foster linkages between them.
- The services provided in schools and during youth health days should focus on a limited number of simple, highly cost-effective interventions/services that target the most important causes of the burden of disease in this age group and that can be implemented at scale even in low-income countries and among the poorest population groups. These include:
  - Screening for common mental health disorders & substance use and provision, where needed, of brief group psychological interventions delivered by trained lay health workers.
  - Provision of sexual and reproductive health services, including
condoms, contraceptives, HIV testing and counselling, referral to voluntary medical male circumcision, and STI screening and treatment

- Provision of immunizations against diphtheria, hepatitis B, human papillomavirus, measles, rubella, and tetanus
- Provision of information on what and where health services are available and when to go to get the health services
- Other potential interventions include screening and treatment for both underweight (food and micronutrient supplements) and overweight (counselling), and for anaemia (iron and folate supplements)

- The proposed study design would be a multi-country series of cluster randomized controlled trials, with the randomization unit being a primary health care facility and its catchment area
- The comparison arm would receive the current standard of care
- Although not considered in detail, the group proposed that the study might focus on urban areas, as these might be the easiest settings in which to initiate such a new intervention.
- The trial outcomes should include both health impact, health outcome and process indicators, including:
  - Health impact indicators
    - Prevalence of common mental disorders (especially depression, anxiety disorders, post-traumatic stress disorders)
    - Adolescent birth rate
    - Prevalence of anaemia
    - Prevalence of low BMI
  - Health outcome indicators
    - No. and proportion of clients completing follow-up care for the brief psychological interventions for common mental health disorders
    - Proportion of sexually active adolescents using contraceptives (Contraceptive Prevalence Rate)
    - Immunization coverage (% with full immunization)
    - Self-reported behaviours (sexual behaviour, substance use)
  - Process indicators
    - New cases of common mental health disorders detected
    - Cases of substance use detected
    - Yield for each of the screening interventions (i.e. cases detected/numbers screened)

- Roughly what might it cost (for the intervention (if any); for the evaluation)?
  - This was not discussed by the group.
- Why should a research funder support it?
  - The question is important (see above). It also includes concrete health interventions.

6.3 Interventions in the virtual space eg. using interactive media

The group were:
External participants: Bruce Dick (Rapporteur), Daniel Tobon Garcia, Dan Hale, Jason Nagata (Facilitator), Ana Menezes
WHO participants: Rajiv Bahl, Raschida Bouhouch

- What one multi-country research study should WHO aim to raise funds for and then coordinate?
  - The group did not propose a specific research study, but suggested that the research team in WHO should do further exploratory work with groups that have
conducted promising interventions in the virtual space, and possibly a systematic review of systematic reviews in terms of content of the intervention design and what is known about the most effective interventions to date to arrive at a specific intervention to test in a multi-country randomized controlled trial.

- Why is this question a top priority for adolescent health research?
  - The aim of such a study would be to use “interactive media” interventions as a platform to strengthen communication between adolescents and service providers within the health system, and between adolescents themselves, to improve adolescent health outcomes.
  - The potential components that might be central to the intervention include:
    - Increasing the information made available to adolescents by the health system (e.g. about health, health services, health fora, job or other opportunities). For example, it might include the provision of information on self-management of acute and chronic illness and when to seek care (diagnosis, referral, treatment, care/support)
    - Increasing the information provided by adolescents to the health system (e.g. informing health workers about adolescents’ own perceived health needs, providing information for disease surveillance, and grading health workers/facilities)
    - Increasing involvement of adolescents in service provision (e.g. blogs, advice/ideas, demand creation)
  - Potential multiple health outcomes for the intervention to target include:
    - Health related behaviours/conditions (e.g. physical activity, diet, substance use)
    - Health (help)-seeking behaviours (e.g. vaccination) and engagement with the health system
    - Health outcomes (e.g. STIs, pregnancy, BMI, anaemia, depression/anxiety, injuries, violence/bullying)
    - Developmental outcomes (e.g. knowledge, school attendance/achievement, employment)
    - Supportive outcomes (e.g. parents’/carers’ knowledge and support; service providers’ knowledge and attitudes)

- Why is this question a top priority for adolescent health research?
  - 9 of the questions that were scored highly explicitly mentioned the use of “interactive media”, though different terminology was used.
  - 4 of the 80 top-ranked questions mentioned interactive media explicitly, and a further 2 mentioned “communication”, and by implication the use of interactive media.
  - Adolescents and young adults are peak users of interactive media, and their use is increasing exponentially globally and, arguably, this is likely to be most rapid in low and middle-income countries.
  - There is growing evidence that e/m-health interventions can make an important contribution to health outcomes – but studies of specific interventions for adolescents remain under-researched.

- Why should this study be coordinated by WHO rather than by another organization?
  - Globally, the specific patterns of use by adolescents of the various interactive media vary considerably, as do the priority health problems that might be addressed through these channels, so a multi-country study would be appropriate.
  - Potentially, such an intervention could tackle multiple determinants and multiple outcomes of the burden of disease among adolescents.
  - WHO would demonstrate its leadership in an area, which is of rapidly increasing importance.

- How best should this question be addressed (study design, type of setting, target group, outcomes, intervention - if any)?
The primary population to be targeted might include all adolescents, all adolescents with access to interactive media, or particularly vulnerable adolescents.

- If targeting all adolescents, the intervention will need to consider strategies for explicitly increasing adolescents’ access to interactive media, such as providing incentives; “conditional interactive media transfer” (CIMT). This might include incentives to encourage sharing of phones, provision of either basic phones or smart phones, and would require the monitoring of which adolescents do and do not have access to phones.

Secondary populations might include health workers and the parents/adult carers of adolescents.

- The likely best design would be a cluster randomized trial, with the unit of randomization being a well-defined geographical area. The research team will need to address the challenge of potential intervention contamination (spill over to comparison populations).

- An alternative, non-randomized design could be an interrupted time series, but such a study does not have a contemporaneous control.

Roughly what might it cost (for the intervention (if any); for the evaluation)?

- This question will need to await the finalization of the research question and study design.

Why should a research funder support it?

- Many funders have supported interventions in this field, but there are relatively few examples of interventions that have been shown convincingly to be effective, either in adolescents or in adults, and many of these have been quite limited in scope (e.g. text messaging to assist smokers to quit).

- It will therefore be very important that, in any proposal, a convincing argument is made that the intervention stands a good chance of being effective and cost-effective, and yet is innovative. And that the evaluation will measure convincing outcomes.

7. References

8. Acknowledgements
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Technical consultation on Adolescent Health Research Priorities

Room M405, WHO Headquarters,
13th and 14th October 2015, Geneva, Switzerland

Purpose of the meeting:
- The purpose of the meeting is to contribute to defining global adolescent health research priorities and the role that WHO might play in these.

Background and Rationale:
The Department of Maternal, Newborn, Child and Adolescent Health (MCA) at WHO Headquarters in Geneva is currently conducting an exercise to establish global research priorities in adolescent health, which will be used to provide advice to Member States, research funding agencies, and researchers. This builds on earlier work using a similar methodology that established research priorities in adolescent sexual and reproductive health and HIV that was published in 2012, but extends it to cover eight additional areas: communicable diseases, health systems, injuries and violence, management of NCDs, mental health, nutrition, physical activity, and substance use.

There are approximately 1.2 billion adolescents (10-19 years) globally, roughly 90% of whom live in low and middle-income countries. The relative importance of both mortality and morbidity among adolescents is increasing as the burden of disease among young children has fallen rapidly over the past two decades. But the importance of the health of adolescents far exceeds immediate mortality and morbidity as many risk or protective factors for future adult disease either start or are consolidated during the second decade of life. Although much is known about what should be done to improve adolescent health, research on adolescent health has tended to lag behind research in both child and adult health.

WHO is convening a meeting of experts to review the findings from the exercise to establish adolescent health research priorities, and to advise on how best to disseminate its results. In addition, the meeting will discuss in more detail up to four research questions that have been identified during this process. These have been selected as potential issues that might be taken forward by WHO, and we will be seeking expert advice on the most appropriate settings and study design for each of these. This meeting will provide technical input into the finalisation of the findings from the research priorities exercise and support the role that WHO will have in contributing to the research priorities that have been identified within it.

Meeting objectives:
3. To review the findings from the Adolescent Health Research Priorities exercise that has been carried out by WHO recently using the Child Health and Nutrition Research Initiative (CHNRI) method, and to advise on how best to disseminate and use these findings
4. To refine up to four research questions that have been selected as potential questions that might be taken forward by WHO and advise on the most appropriate settings and study designs

Methodology and planned activities:
The meeting will be conducted over two days. The first day will include presentations of the results of the research priorities exercise and the methods used, followed by a critical appraisal of the work done, discussion of the interpretation of the results, and of the proposed methods of dissemination of the findings.

**Background work already conducted:**
- Identification of experts through a systematic review of the published literature on the eight areas of adolescent health (communicable diseases, health systems, injuries and violence, management of NCDs, mental health, nutrition, physical activity, and substance use), supplemented by experts on the editorial advisory boards of two key adolescent health journals, and suggestions from colleagues in the relevant departments of WHO.
- Submission of questions by these experts
- Collation and removal of duplicate questions
- Within each of the eight areas, area-specific experts have scored questions for answerability, effectiveness, deliverability, maximum potential for mortality reduction, and effect on equity
- Computation of the results of this area-specific scoring
- Identification of potential research topics on adolescent health that WHO would be well-placed to take forward over the next 3-5 years

**Background work currently in hand:**
- Scoping literature reviews of these research questions

**Estimated number of participants:**
Approximately 28 persons (18 external experts, 10 WHO staff).

**Dates and venue:**
The meeting is planned for 13th and 14th October 2015, in M405 in WHO’s M building in Geneva, Switzerland.

**Expected outcomes:**
1. Summary of research priorities in each of the eight health areas
2. Outline dissemination plan
3. Identification of up to four priority research topics for WHO to aim to coordinate research studies on, and outlines of their potential study designs
Annex 2. Agenda

Adolescent Health Research Priorities Meeting
Room M405, WHO Headquarters, Geneva, Switzerland
13 to 14 October 2015

Meeting Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Presenters</th>
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<tbody>
<tr>
<td><strong>SESSION 1</strong></td>
<td>Welcome and Introduction</td>
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<tr>
<td>09:00 – 09:30</td>
<td>Welcome &amp; introduction of Co-Chairs</td>
<td>Rajiv Bahl, Coordinator</td>
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<td></td>
<td>Introductions &amp; declarations of interest</td>
<td>Research &amp; Development, MCA</td>
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<td></td>
<td>Background &amp; objectives of the meeting</td>
<td>for Anthony Costello</td>
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<tr>
<td></td>
<td>• Guiding principles</td>
<td>Director, MCA, WHO</td>
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<tr>
<td></td>
<td>• The two main objectives of the meeting</td>
<td>All participants</td>
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<td></td>
<td></td>
<td>David Ross</td>
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<td></td>
<td>WHO</td>
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<tr>
<td><strong>SESSION 2</strong></td>
<td>Adolescent Health Research Priorities Exercise: Methods</td>
<td></td>
</tr>
<tr>
<td>09:30 – 10:45</td>
<td>The CHNRI Method used for the adolescent health research priorities exercise</td>
<td>Jason Nagata</td>
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<tr>
<td></td>
<td>• Discussion</td>
<td>Stanford University</td>
</tr>
<tr>
<td>10:45 – 11:00</td>
<td>Break</td>
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</table>

| **SESSION 3a** | Adolescent Health Research Priorities Exercise: Results (Part 1) |                                 |
| 11:00 – 12:30 | Presentation of the results of the adolescent health research priorities exercise by health area | Jason Nagata                    |
|            | • Discussion                                              | Stanford University             |
| 12:30 – 13:30 | Lunch                                                     |                                 |
### SESSION 3b
Adolescent Health Research Priorities Exercise: Results (Part 2)

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Presenters</th>
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</table>
| 13:30 – 14:00 | Presentation of the results of the SRH/HIV adolescent health research priorities exercise  
  - Discussion             | Michelle Hindin  
  WHO                     |
| 14.00 – 15.30 | Discussion of whether there should be an overall adolescent health research priorities scoring exercise  
  - Discussion             | David Ross       
  WHO                     |
| 15:00 – 15:30 | Break                                                                 |                   |

### SESSION 4
Adolescent Health Research Priorities Exercise: Uses of the findings, next steps and dissemination

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<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Presenters</th>
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</table>
| 15:30 – 16:30 | Proposed uses of the findings, next steps and dissemination  
  - Discussion             | David Ross       
  WHO                     |

### SESSION 5
Introduction to Day 2’s tasks

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Presenters</th>
</tr>
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</table>
| 16.30 – 17.00 | Introduction to Day 2’s tasks  
  - Criteria for selection of specific research questions for WHO to take forward & MCA’s initial ideas | David Ross       
  WHO                     |

End of Day 1
<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>SESSION 6</td>
<td>Specific research questions for WHO to take forward: Choice</td>
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<tr>
<td>09:00 – 09:15</td>
<td>Outline for day two</td>
<td>David Ross, WHO</td>
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<tr>
<td>09:15 – 10:30</td>
<td>Discussion of potential specific research questions for WHO to take forward</td>
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<tr>
<td>10:30 – 11:00</td>
<td>Break</td>
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<tr>
<td>SESSION 7</td>
<td>Specific research questions: Group work</td>
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<tr>
<td>11:00 – 13:00</td>
<td>Group Work</td>
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<tr>
<td>13:00 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>SESSION 8</td>
<td>Specific research questions: Feedback and plenary discussion of group work</td>
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<tr>
<td>14:00 – 15:30</td>
<td>Feedback and plenary discussion of group work</td>
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<tr>
<td>15:30 – 16:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>SESSION 9</td>
<td>Review of meeting, next steps and closing</td>
<td>Rajiv Bahl, Coordinator Research &amp; Development, MCA for Anthony Costello</td>
</tr>
<tr>
<td>16:00 – 16:45</td>
<td>Review of meeting and next steps</td>
<td>Director, MCA, WHO</td>
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<tr>
<td>16:45 – 17:00</td>
<td>Closing remarks</td>
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</tbody>
</table>

END OF MEETING
### List of Participants

<table>
<thead>
<tr>
<th>Meeting Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sulafa Ali</strong>&lt;br&gt;Sudan Heart Institute, Khartoum&lt;br&gt;Sudan&lt;br&gt;<a href="mailto:sulafaali2000@gmail.com">sulafaali2000@gmail.com</a></td>
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Departments:
GER: Gender, Equity & Human Rights
Theadora Koller (Unable to attend)

GTB: Global TB Programme
Annabel Baddeley

HIV: HIV/AIDS
Rachel Baggaley (Unable to attend)

IVB: Immunizations, Vaccines & Biologicals Department
Paul Bloem

MCA: Maternal, Newborn, Child & Adolescent Health
R Bahl, R Bouhouch, A Costello (Unable to attend), A Manu, A Portela, D Ross, S Qazi (Unable to attend), N Rollins, S Yoshida

MSD: Mental Health & Substance Abuse
Chiara Servili

NHD: Nutrition for Health & Development
(Unable to attend)

NVI: Management of NCDs, Disability, Violence & Injuries
David Meddings (Unable to attend)

PHE: Public Health, Environmental & Social Determinants
Marie Brune Drisse (Unable to attend)

PNP: Prevention of NCDs
Temo Waqanivalu (Unable to attend)

RHR: Reproductive Health & Research
V Chandramouli (Unable to attend), M Hindin, L Say (Unable to attend)

PARTNER ORGANIZATIONS
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