Revisiting Growth Monitoring and its Evolution to Promoting Growth as a Strategic Program Approach: Building Consensus for Future Program Guidance

Report of a Technical Consultation
UNICEF Headquarters New York, USA
September 25-26, 2007
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Report of the Technical Consultation on Growth Monitoring and Promotion

Introduction

Starting in the 1980s Growth Monitoring (GM) was promoted as one of the key components of critical preventive care for young children (GOBI-FFF)\(^1\), and for the two decades since, Growth Monitoring and Promotion (GMP) has been implemented in a variety of contexts as an element of nutrition and health programs. In 1990 the effectiveness of GMP was beginning to be questioned largely due to implementation issues (low coverage, poor linkage between growth monitoring and promotion activities) which led to a number of program reviews and analyses.

UNICEF conducted a thematic evaluation of growth monitoring in 1995\(^2\) which reported on programmatic lessons learnt, conclusions, and recommendations for future. Despite these efforts, more than a decade since then, an understanding of the place and value of GMP within the larger framework of programs aimed at addressing under-nutrition is still lacking.

The recent launching of the new WHO growth standards and several commissioned review papers have re-focused attention on Growth Monitoring and Promotion. Given the increasing importance of a fresh look at GMP, in 2006-2007 UNICEF conducted a comprehensive review of literature and program experience. In follow up to the review, in order to consider the evidence as well as the accumulated knowledge and experience in the field of GMP, UNICEF organized a two-day consultative meeting (New York, September 25-26, 2007). A group of researchers, practitioners and program managers (Annex 1: list of participants) was brought together to assess the available information and to develop a consensus on the definition, objectives and expected outcomes of GMP as well as the expectations for the effective use of GMP within the context of efforts to prevent under-nutrition and help meet the Millennium Development goals. (Annex 2: meeting agenda).

This report presents a summary of the proceedings of this consultative meeting and the major points of consensus from the meeting. The conclusions and recommendations in this report are meant to provide a starting point for determining the next actions to refine our understanding of GMP and its uses and to provide more clarity for future programmatic guidance on GMP to the field.

Meeting Objectives

The objectives of the meeting were to:

- Agree on definitions (conceptualizations) for GM and GMP
- Clarify the objectives and expected outcomes/programmatic benefits of GMP
- Revisit the evidence from GMP experiences and develop a common understanding of the interpretation of the findings

\(^1\) GOBI-FFF: growth monitoring, oral rehydration, breastfeeding, immunization, family planning, food supplementation and female literacy.

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- Develop a consensus on where (countries/regional scenarios, situations) and when (conditions, pre-requisites for quality) GMP could be effective
- Begin the discussion to make recommendations on the design and implementation of quality GMP
Consensus Points

Definitions
Growth monitoring (GM) is the process of following the growth rate of a child in comparison to a standard by periodic anthropometric measurements in order to assess growth adequacy and identify faltering at early stages. Assessing growth allows capturing growth faltering before the child reaches the status of under-nutrition.

In addition to prevention of under-nutrition, the role of GMP in capturing over-nutrition especially in light of growing problem of obesity needs to be further explored.

Growth monitoring and promotion (GMP) is a prevention activity that uses growth monitoring (GM), i.e. measuring and interpreting growth, to facilitate communication and interaction with caregiver and to generate adequate action to promote child growth through:

- Increased caregiver’s awareness about child growth
- Improved caring practices
- Increased demand for other services, as needed

Process
The GMP process includes three stages: i) measuring and interpreting growth adequacy, ii) analysis of the reasons for adequate or inadequate growth, and iii) counseling; which corresponds to the triple-A approach (Assessment, Analysis, Action). This process must include the active engagement of the caregiver in problem-solving about the child’s growth. These conditions can best be met in the community setting, and have the best opportunity for producing results on a public health level if they reach all children 0-24 months in a defined catchment area. GMP sessions should be linked to other health services in community and be designed to have an effective system in place to refer children to health services when needed. The GMP process may also be possible in a clinic setting.

Objective
The objective of GMP is to determine inadequate growth early enough and undertake actions to prevent further faltering before the child reaches a status of under-nutrition; hence it is primarily a preventive and promotive activity.
GMP alone is not sufficient to address under-nutrition at the community level, and it addresses only a narrow range of the causes of under-nutrition. To address the problem of under-nutrition, comprehensive nutrition programs should be implemented based on causal analysis within the nutrition conceptual framework, where GMP can serve as a platform for these programs.

Expected outcomes
The expected outcomes of GMP are:

- Heightened awareness of the importance of caregiver practices for adequate growth and the link between adequate growth and child health
- Increased knowledge and skills and subsequent improved child feeding and health care practices by caregivers
- Increased coverage of particular health services, if they are offered along with GMP
• Improved care-seeking/utilization of services when these are promoted/supported through the GMP counseling.

Functions

Growth monitoring and promotion can have multiple functions:

• As a screening process, it informs caregivers of the child’s growth rate and motivates them to take action to promote child growth.
• As an educational and promotional activity, it provides the opportunity to counsel about childcare, feeding, and other topics as needed. The major promotional component of GMP, however, is individual counseling; additional promotional activities are usually designed to link with and benefit from it.
• As a platform for building comprehensive community nutrition and health programs, GMP serves as an entry point to motivating communities to take action to improve child growth when the community is informed of the results of GM and involved in the process of GMP.
• As a contact point, it allows for delivering other essential health and nutrition services and/or promoting the coverage and utilization of services.

These services vary by program and setting, and the outcomes from these actions need to be considered separately in evaluation of GMP outcomes.

What can not be categorized as GMP

Child anthropometric measurements for assessing nutritional status are not GM or GMP. Periodic measurements at appropriate intervals are crucial to the GMP concept and assessment of nutritional status even at a quarterly or biannual rate does not have the ability to capture growth faltering and prevent under-nutrition.

GM and GMP thus should not be considered a surveillance, or just to be merely used to determine levels of under-nutrition to decide on eligibility for the correction of poor nutritional status (e.g. food supplementation, therapeutic feeding, etc). When GM information is not used to inform the education and promotion element of an intervention then it is not GMP; both the monitoring of growth and using that growth information in counseling are essential to GMP.

It is important to emphasize that the GMP periodic measurements and counseling are primarily considered as preventive activity ensuring that the growth faltering is caught early enough so as not to reach the status of under-nutrition. However, the framework of GMP may catch also children at different stages of under-nutrition and refer to relevant services for additional interventions.

GMP and reduction of malnutrition

GMP alone is not a program or comprehensive intervention per se to address established under-nutrition, but is an important activity that can be built on to become a basis for comprehensive community nutrition interventions and programs based on thorough causal analysis of under-nutrition.

In order to reduce under-nutrition rates in the community, these community nutrition programs could be designed with GMP as an entry-point or platform and as a continuous monitoring tool. Thus, GMP will continue to serve as a preventive and promotional measure, and will facilitate the building of a community nutrition program.
In addressing the full spectrum of malnutrition (i.e. under- and over-nutrition), the role of GMP in capturing over-nutrition especially through the use of new WHO standards needs to be further explored.

**Important design factors associated with quality GMP include:**

- Coverage of GMP and participation of all the children in the age-range targeted must be high.
- GMP should cover children from birth to 18 to 24 months (depending upon local patterns of growth and faltering).
- Growth monitoring and promotion should be conducted monthly from birth to 12 months of age.
- GMP activities must be linked to health services in community and have an effective system in place to refer children to health services when needed.
- Weight is the preferable indicator for measuring growth rates by community health workers. Length/height measurement can be included if quality of its measurements can be assured in the field setting. For health facility-based growth monitoring, both would be possible options. If a decision on including height measurements is made, the appropriate frequency of measurements needs to be clarified. The upcoming WHO growth tables can be a useful tool.

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**Major Conclusions and Other Points of Discussion**

**Definitions and Expected Outcomes of GMP**

The first session of the meeting focused on the following questions:

- What is GM (tool, methodology, platform, entry point, intervention, strategy, or program)?
- What is the difference between GM, periodic assessment of nutrition status and assessment for impact evaluation, targeting, etc.?
- What is GMP (tool, methodology, platform, entry point, intervention, strategy, or program)?
- What are the expected outcomes from GMP?

The following points provide an overview of the discussions at the outset of the meeting.

1. UNICEF opened the meeting stating its long-term commitment to and investment in GMP and citing some of the conclusions from the many reviews that had been conducted over the decades, including a comprehensive review conducted by UNICEF in 2007 (Annex 3, background paper 4). UNICEF conveyed its aim in sponsoring this meeting was to have an open and informed discussion to help to clarify GMP conceptually and programmatically to contribute to future policy guidance.
2. The concept of growth velocity as a good proxy for child well-being, and a non-specific marker for deprivation that may be occurring physiologically or in the environment in which the child is being raised, is fundamental to the discussion of GM. The majority of malnourished children become malnourished in the first 12 – 18 months of life. Likewise, during this period children can recuperate from early growth retardation. Monitoring child growth captures how well the child is doing during this dynamic period.

3. GM is not an intervention per se; it is a monitoring process which as a stand-alone activity cannot lead to improved nutritional outcomes. Therefore, GM cannot be de-linked from its follow-up promotional action or actions. If follow-up action of some kind is not possible then GM per se is not recommended.

4. The lack of clarity in the definition of GMP has led people to say that they are implementing GMP, and for research to draw conclusions on the effects of GMP when in fact, in many cases, these efforts/experiences have been misclassified as GMP. This has created confusion and a lack of understanding of the potential role and impact of GMP.

5. Growth promotion (GP=the overarching program goal of promoting the growth of children) is a broader program concept than either GM or GMP because it seeks to address the multiple psychosocial aspects of the child. Growth is the end result of the entire environment of the child. The use of similar terminology and acronyms – GP – for this broader concept has further complicated the discussion; this broader concept is more commonly and correctly called community-based growth promotion (CBGP).

6. One of the most important aspects of GMP is its potential as an entry point for a growth promotion or comprehensive community nutrition and health program. When the growth data from individual GMP are aggregated and used with the community/municipality or health services to assess, analyze and act on the results of the growth assessment, the collective action of the community and the additional actions of the health sector or municipality allow for a more comprehensive program to address the immediate, underlying, and basic factors important for adequate child growth and the reduction of under-nutrition.

7. Growth monitoring can serve as a platform for several related nutrition and health related activities, including immunization, diarrheal disease prevention and education on improving hygiene, dehydration treatment, etc.

8. In addition, a well-functioning system of GMP can be used as a platform for additional cross sectional assessments of the prevalence of stunting (H/A) in the community. These assessments can be done once or twice a year and could provide a more accurate picture of under-nutrition and further motivate community action. Again it should be emphasized that this is not to replace growth monitoring since the measurements are not frequent enough to allow for early detection of growth faltering.

9. Numerous issues have been cited regarding the quality and implementation of GMP. Many of these relate to the monitoring element of GMP – issues with the quality of
measurements, use of growth chart, and the interpretation of growth – but others also were about the counseling aspects of the promotion. Some interpret the experience and evidence to conclude that GMP is most often not implemented well and therefore is not effective. Others cite evidence that it can be “done right” and that when done correctly “it works.” Measuring “how it works”, on its own, has been of controversy as well, with mixing up immediate outcomes of GMP (e.g. knowledge of mothers, improved care and feeding, etc) with more distant outcomes of comprehensive nutrition programs where GMP serves as a basis for contact (e.g. under-nutrition rates). Issues of quality and design were discussed in more detail later in the meeting. (See page 11, Factors in Quality Program Design)

10. Important additional questions raised at the outset of the meeting included:

- Can the promotion aspect of GMP be done effectively without the GMP? GM provides the opportunity for interaction with caregivers and creating the capacity to conduct effective growth promotion. Can it be replaced?
- Can GMP be implemented in the clinic and/or is it a community-based activity?
- Will promoting weight gain backfire in light of the spread of obesity world-wide?
- Is the definitional issue one that might warrant and be helped by creating new names for up-dated concepts, or should we make an effort to distinguish between “growth” and “nutritional status” and better clarify existing definitions?
- How do we know if we are detecting growth faltering with current tools and instruments given the error associated with the measurement of weight?
- How do we deal with changes in weight that are normal fluctuations and do not represent “faltering” in children after 12 months of age? Should we consider doing measurements at larger intervals after this age?
- Are there alternatives to the growth chart; is the growth chart a crucial element in the growth monitoring and promotion process?

**Review of Research and Global Experience**

The second session of the meeting was intended to address the following questions:

- What does the research and program experience tell us about the outcomes that can be expected through GMP?
- What are the major gaps in our knowledge and understanding of GMP?
- What are the most important pending research questions?

This session included the presentation and discussion of two of the background papers for the meeting (See Annex 3: Background papers). The first presentation was on a review of GMP (Ashworth/ICDDR-B review paper) commissioned by the World Bank in 2006. The second was the paper commissioned by UNICEF (Manoff Group paper) to further explore GMP research and programmatic experience.
11. The Ashworth/ICDDR-B review was undertaken to analyze the evidence that growth monitoring programs are effective in conferring measurable benefits to the children for whom growth charts are kept. The framework for their analysis is:

\[ \text{Potential Effectiveness of GMP} \]

\[ \text{Health worker/Mother} \]

- Early detection of growth faltering
- Counseling
- \text{\uparrow} maternal knowledge
- Motivation to change practices
- Remedial actions
- \text{\uparrow} utilization of health services (ORS, vitamin A, immunization, referral)

\[ \text{Child} \]

- Improved nutrition status
- \text{\downarrow} morbidity
- \text{\downarrow} mortality

12. This review concludes that the effectiveness of GMP in improving nutrition status and decreasing mortality is mixed. Some studies show positive results although all of the study designs are not robust. Little to no rigorous research has been done to determine the impact of growth monitoring and promotion per se as a separate activity; or to determine the added value of monitoring growth as compared to the more distant and combined effects of comprehensive nutrition programs (i.e. child nutritional status, mortality and morbidity). The review also states that the controversy around GMP is not that promoting growth is in question but rather whether monthly growth monitoring is necessary for the effective promotion of growth.

13. The Review also noted that when health service utilization is improved, the nutrition and survival status of children improves. Evidence suggests that growth monitoring can contribute to the utilization of health services. Further, children whose growth is monitored and whose mothers receive education/counseling and have access to basic health care have better nutrition status and survival than children who do not. Programs with weak nutrition counseling do not have a positive impact on nutrition status.

14. Many of the conditions that are necessary for the quality implementation of GMP are not in dispute and are ones that affect many health programs. These include: functional health systems, wide coverage and consistent contact, trained staff with good communication skills, messages that are actionable, feasible and used at all points of contact.

15. The Manoff review indicated that the literature tells us little about the key operational elements of the programs being reviewed (e.g. coverage or frequency of contact), or about the program operations (e.g. how the growth monitoring was used for the counseling/education). Also, it highlighted the fact that the research has not adequately addressed the use of changes in growth rates (e.g. months of consecutive weight gain), that could provide some insight into the program operation. The assessment of the
design (is it truly GMP?) and implementation status of GMP programs is critical to the accurate interpretation of the results/impact of the programs.

16. The Manoff review suggested a broader framework below for the analysis of the effectiveness of GMP. The elements of this framework that correspond to GMP are highlighted. The full framework reflects community-based growth promotion. The patterned boxes indicate expected GMP actions, outcomes and impacts.

17. The review concludes that programs at scale can achieve high coverage and good frequency of participation and that some of these large-scale programs have successfully achieved intermediate outcomes from growth monitoring – improved practices, improved use of services and earlier care-seeking – as well as better growth outcomes, and reductions in under-nutrition. What the reviews do not answer is whether the results would have been achieved without monitoring.

18. These different interpretations of the available literature and research related to GMP led to the following research agenda. Suggestions were identified for further analysis of the readily available research (first two bullets) as well as for new or strengthened areas of research. These included:
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- A comparison of the strength of the evidence of the impact of GMP from the available research – assessment of the effect sizes.
- A compilation of the evidence that GMP has an impact on the intermediate outcomes highlighted in the growth promotion conceptual framework.
- Approaches to isolating the added value of growth monitoring.
- Identification of the best strategies for communicating growth information to caretakers; growth charts with trend plotted, the minimum weight gain table that uses actual weights or another tool.
- Analysis of the impact of GMP, the contribution of GMP to the declining trend in under-nutrition.
- Assessment of the extent to which children’s caretakers value physical growth, GM and GMP.

Factors in Quality Program Design

Implementation and design issues were recurring themes of discussion throughout the course of the meeting. The major points of consensus related to GMP design are presented on page 11 of this report. The following points summarize the major areas of continuing debate.

19. While there was general agreement on monthly monitoring up to 12 months, how frequently to weigh children after 12 months remained in question because of the measurement error associated with weighing children over 12 months on a monthly basis with currently available equipment and normal day to day variations in weight. Small losses in weight (.1 to .2 kg) may not represent faltering but rather normal fluctuations. Therefore, messages to caretakers that their children are not gaining weight based on monthly measurements may not be accurate. In the worst case, these messages may cause caretakers undue worry. Therefore, a different frequency of measurements can be considered for older children.

20. Decisions regarding the frequency with which to monitor child growth should take into account more than the technical considerations of measurement. Monitoring children on a monthly basis may have other advantages – systems already are established for monthly contacts through which other information and support can be provided to caretakers. Ultimately the decision regarding how frequently to monitor children should consider both technical and operational factors.

21. Monitoring weight remains the measure of choice particularly in the community. Monitoring length, if possible, is desirable to better track stunting and to assess causes of low weight. However, under current conditions – available equipment, ease of implementation and interpretation of measurements, common practices (tradition of weighing embedded in many cultures) – monitoring height presents significant challenges. More discussion and recommendations are needed on this issue particularly in light of the fact that some countries (e.g., Bolivia) are dropping the measurement of weight and replacing it with length.
22. How best to interpret growth trends either via the growth chart or the adequate weight gain table depends on the cultural context. Both of these tools are affected by the recent work on the velocity of weight gain recommended for healthy growth and these tools need to be modified based on new WHO standards and recommendations and should undergo some testing in program conditions.

23. Making decisions and taking action based on growth information at the individual level is an important GMP quality issue. Enabling health workers and others to make this link between growth status (not nutritional status alone) and action can be aided by tools such as the decision trees or guides.

24. The quality of counseling is universally recognized as a critical element of GMP. Attention to the technical content delivered through counseling as well as the way that the content is delivered affects the quality. Moving from generic to tailored messages and from didactic to dialogue/negotiation mode is needed if behavior change is to be achieved. Counseling skills built on guides and materials that are based on the local context (not standard messages) are essential to quality counseling.

25. Program operational and management practices are also important elements affecting the quality of GMP. The major operational issues include: workers and their workload, training and supportive supervision, and program monitoring and management. The most effective operational and management practices are culture and context specific and therefore best decided locally.

Conditions for Success/Quality Implementation

The final discussion was focused on the following questions:

- What are the criteria to consider in assessing whether growth monitoring and promotion can be improved or is effective within countries with on-going activities or those considering the implementation of GMP?
- What are the minimum pre-requisites for effective GMP?
- Under what scenarios is GMP unlikely to be effective or useful?

26. There is a need for advocacy. Advocacy and support for GMP can be based on a child rights perspective. Serving as a source of information for parents and caregivers, GMP can bring importance to growth as a measure of nutrition and health and make growth faltering visible. This knowledge is a necessary pre-requisite for action on their parts. How can government keep parents responsible as the ultimate “duty-bearers” in ensuring optimal health and nutrition of children, if they do not have the necessary information?

27. The nutrition community, however, appears to be held only to a single standard of program performance – i.e., improvement in nutrition status. Perceptions that things do not work well or are “going wrong” are out of balance with the reality of “nutrition” success compared to other successes.

28. GMP may benefit from the diarrhea disease control model for advocacy. A strong evidence base at the beginning is not always necessarily a pre-requisite to effective
advocacy for ultimately successful programs. Building the evidence base through academic and operational research can go forward concurrently with programmatic actions. In the case of GMP, it may be the program managers and international agencies that have to create enough interest within the academia to provide the evidence base for further advocacy.

29. Criteria to consider in assessing the potential for an effective GMP program included the following:
- Adequate financial and human resources
- Policies that reflect a political commitment to a supportive environment of community self-help
- Strong, structured community involvements, leadership and ownership
- Culture of community volunteers
- Strong partner NGOs or others that can share implementation with government
- A minimum government infrastructure to district/municipal level
- The GM part linked to behavior communications related to caring practices and use of health services

30. Alternatives to monthly growth monitoring at the community level discussed were conducting monitoring by taking advantage of the times that children are seen at the health center, sick child visits, for immunization, or through the delivery of other services, for example vitamin A supplementation. Take advantage of action by the Partnership for Maternal, Newborn and Child Health (PMNCH) to establish a minimum number of visits. It needs to be clarified again, that without regular monitoring of growth, GMP is not possible.

31. In areas experiencing a major emergency due to a natural or man-made cause, initiation of GMP would not be advised. Assessment of nutritional status and relevant actions to correct under-nutrition are the preferred strategy in this case. If already established, the GMP system can be used for this purpose in such circumstances.

**Recommendations**

The need for interventions to prevent under-nutrition at the community level is crucial. The attention to nutrition and the recommendations on how best to prevent under-nutrition is the topic of a Lancet series that is in progress. It was agreed that efforts would be made to ensure that the references to GM and GMP were consistent with available knowledge and not dismissive when in fact, definitive statements are likely not possible with the current research base.

To build further consensus and make policies and provide program guidance for GMP the following next steps are recommended:

- Maintain and further develop an Expert Group for GMP and identify and expand the forums for discussion and mobilization of support to increase the momentum for ensuring effective GMP.
• Produce documentation that further clarifies what is known about GMP and that builds consensus and clarity around GMP, particularly for practitioners.

• Develop growth velocity standards for children 0-24 months and try out methods for tracking/using growth velocity in community programs.

• Further develop and implement the research agenda (page 10) to advance the state-of-the-art of GMP.

• Develop a joint statement on GMP among UNICEF, WHO, WB and WFP.
ANNEXES

List of Participants

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Annex 2

Agenda

Revisiting growth monitoring and its evolution to promoting growth as a strategic program approach: Building consensus for future program guidance

Tuesday, September 25

8:30-9:00 AM Registration

Session I: History and background

9:00-9:30 AM Opening remarks (UNICEF-WHO)

9:30-10:30 AM GMP: introduction- Definitions, objectives, expected outcomes, an its place within the nutrition conceptual framework
Nune Mangasaryan- UNICEF

10:30-11:00 AM Coffee break

11:00-11:30 AM Discussion and consensus building
-Definition of GM, GMP, and their expected outcomes
-Place of GMP in broader nutrition programs

11:30-12:30 PM Review of experiences and viewpoints on success and failure
Panel of presenters (approximately 10min each:
Jon Robide- BRAC U., Reynaldo Martorell- Emory U., Kathryn Dewey- UC Davis, and Marie Ruel- IFPRI)

12:30-12:45 PM Conclusions

12:45-1:30 PM Lunch break

Session II: Global experiences with GMP

1:30-2:30 PM Review of evidence presented in the background papers
Tabneed Ahmed-ICDDR, B
(1:30-1:50 Presentation, 1:50-2:00 Discussion)
Marcia Griffiths-Manoff group
(2:00-2:20 Presentation, 2:20-2:30 Discussion)

2:30-3:00 PM Coffee break

3:00-4:30 PM Discussion and consensus building
-Lessons learned from experiences
-Gaps in evaluations based on GMP definition and expected outcomes
-Gaps in program design and difficulties in implementation

4:30-5:00 PM Conclusions
Wednesday, September 26

Session III: Scenarios and situations for prioritization of GMP

9:00-9:30AM Recap of day 1

9:30-10:30AM Benefits and added value of GM and GMP in comprehensive community nutrition programs

José Martines-WHO, Mandana Arabi-UNICEF (15 min)

Paradigm shift for growth promotion, conceptualizing programs using a GP lens

Marcia Griffiths-Manoff group

10:30-11:00AM Coffee break

11:00-11:30 Discussion

11:30-11:45 AM Brief review of background paper, Jean-Pierre Habicht-Cornell U

11:45-12:15 PM Issues of design (Age, periodicity, coverage, growth charts)

Joy Del Rosso

12:15-1:00 PM Best practices in quality implementation of GM and GMP (Brainstorming session)

1:00-2:00 PM Lunch break

Session IV: Future recommendations

2:00-2:30 PM Presentation of conclusions from brainstorming session

2:30-3:00 PM Scenarios and conditions where GMP can be recommended

3:00-3:30 PM Coffee break

3:30-4:30 PM Final recommendations

4:30-5:00 PM Closing remarks
Annex 3

Background Papers

1. **Growth monitoring and promotion: review of evidence of impact**, Ann Ashworth, Emeritus Professor of Community Nutrition, London School of Hygiene and Tropical Medicine


3. **Growth Monitoring: what, why, how, and within what context? A conceptual framework for asking the right research questions about the value of GM**, Katherine L. Dickin, Mduduzi N.N. Mbuya, Jean-Pierre Habicht, Division of Nutritional Sciences, Cornell University

4. **Growth monitoring and promotion from a programmatic perspective: Lessons learned and recommendations to move forward**, UNICEF, New York