GROWTH MONITORING - SOME BASIC ISSUES.

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In most discussions on growth monitoring, it is the technical details of actual growth measurement and growth charting that generally claim central attention. The more fundamental issues regarding the basic objective of growth monitoring, and its feasibility and relevance in the prevailing total context of primary health care in developing countries, are hardly addressed adequately. In an earlier communication, the global experience with regard to growth monitoring had been critically reviewed (Gopalan, C. and Chatterjee, M. Nutr. Found. India, Spl. Publ. Series 2, 1984.)

Growth monitoring is by no means a new discovery. Paediatricians and nutrition scientists have long relied heavily on growth measurements for assessments of health and nutritional status of children. Anthropometry has always been a widely used tool in nutrition surveys of communities. What is relatively new is the attempt to introduce a system of periodic (longitudinal) growth measurements of individual children in a community and charting their growth as an integral part of routine primary health/nutrition care at the community level.

At the risk of stating the obvious, it must be emphasised that growth monitoring is no more than a diagnostic and (possibly) educational tool. If wisely used, it could guide and facilitate action on the part of the health worker and the mother. Growth monitoring by itself, however efficiently executed, cannot bring about nutritional improvement; it must always be followed by action on the part of the health worker and the mother - the action consisting of appropriate and necessary improvements in child-feeding and child-rearing practices. Thus, growth monitoring is not even a means to an end; it is only a means to the means. In this respect, it stands on an entirely different footing from the rest of the items in GOBI. It is necessary to emphasise this in view of the fact that growth monitoring is some times being pursued as an end in itself with no adequate thought and preparation for the follow-up action.

If the necessary conditions exist - and only if they do- growth monitoring could become a suseful adjunct to primary health and nutrition care. Two important conditions stand out in this connection.

In the first place, it is important to be clear about the basic objective of growth monitoring. Secondly, it is important to ensure that we have a health system and health infrastructure which can effectively apply and utilise growth monitoring technology in a meaningfulmanner consistent with the realisation of the objective.

THE BASIC OBJECTIVE.

The objective of growth monitoring, as originally envisaged by Morley and others, is prevention of growth retardation through timely and early detection of growth faltering. Indeed, promotion of growth monitoring as an integral part of preventive and promotive health care can only be justified if this is the objective. This makes sense for two good reasons.

1) Early stages of growth faltering may be missed by the health worker and mother, not being obvious to the naked eye; and it is here that weighing scales can help. Growth monitoring could help in timely detection of growth failure and in alerting the health worker and mother to take immediate appropri ate remedial measures. On the other hand, weighing scales are hardly necessary to detect growth retardation in children who are already so undernourished that they are only 70 per- cent or 60 percent of their expected body weight. Even the illiterate gradmother in the village could identify these children as malnourished. Weightment exercises resorted to for the purpose of arriving at administrative decisions as to which malnourished children should be included in feeding operations and which should be excluded, and when, can hardly be claimed to be part of preventive and promotive health care; they are no more than screening procedures for a rehabilitation and relief programme.

2) In the early stages of growth faltering in late infancy and early childhood, marginal changes in child feeding and rearing practices, which are feasible and within the means and

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resources of poorfamilies, might suffice to arrest growth retardation as Cowan and co-workers in Punjab have ably demonstrated (Das, D., Dhanoa, J. and Cowan, B. Bull.Nutr. Found. India, 3.2.1982). In laterstages, where growth retardation has already proceeded to any significant degree, the inputs needed for tis reversal will be clearly well beyond the resources of poor families; and such children are bound to end up as stunted adults. Atthis late stage, education of the mother may not be of much avail in reversing the child's undernutrition; what the child would then need is intensive rehabilitation. Hence it is good strategy to help poor families to prevent growth e retardation in their children through timely action at the early stages of growth faltering when effective and successful action by the mother in her own home is still possible. In short, the battle against growth retardation must be fought, and can possibly be won, by even poor families at the very early stages of childhood; what can be accomplished at latestages is at best a relief operation limitedto ensuring "survival". Herein lies the strong case for growth monitoring.

RECENT MISLEADING POSTULATES:

Unfortunately, however, today there seems to be considerable confusion with regard to the basic objective of growth monitoring. Though lip service is still being paid to early detection of growth faltering as being the objective, in actual practice this is apparently not being taken seriously.

Several recent pronouncements by noted experts have served to generate confusion and doubts as to the real purpose of growth monitoring. The messages which boradly stand out from these pronouncements are: (i) it is not all that important for developing countries to be concerned about the "less severe" forms of growth retardation in their children; (ii) growth retardation, other than that of the so-called "severe" degree, would no doubt result in "stunting", but such stunting should not matter as this would still not unduly compromise "function" and jeopardise "survival"; indeed, such growth retardation could be no more than "adaptation" to the prevailing ~~eva~~ environmental and eccnomic situation.

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Thus, in a recent publication (Pacey, A. and Payne, P. Agr. Dev. and Nutrition, Hutchinson Press, London 1985), it has been suggested that "even if all human groups have basically the same genetic potential", national standards for growth norms should "take into account environmental and economic status", and, further, that the utilisation of the international standard of growth by developing countries will "overstate the case concerning malnutrition" among their child population.

The clear message here is that, even though all recent studies have clearly demonstrated that differences in current levels of growth and physical development as between children of developed and developing countries are attributable to environmental and not to genetic factors, developing countries need not strive to improve growth and development of their children to levels which will allow them to express their genetic potential but could settle for lower levels of growth in consonance with their "environment and economic status" - a euphemism for poverty. This is a plea for acquiescence in growth retardation up to a point, which runs clearly counter to the professed goals of growth monitoring and has rightly been rejected (Rao, Kamala S. Jaya; Economic & Political Weekly, 21. 24, 1986) as an exercise in "perpetuation of undernutrition."

Secler (Secler, D: Newer Concepts in Nutrition and their Implication for Policy: Ed. Sukhatme, P.V.Maharashtra Assocn. for cultivation of Science,1982, p. 27) had earlier been equally forthright and had argued that "smallness" is an appropriate and welcome attribute of poor people consistent with their good health. He had advised Indian nutrition scientists not only not to use "international standards" of growth (as this would yield "overestimation" of undernutrition) but also not to use the "best indigenous standard" of the Indian high socio-economic group because even these will be "abnormally large" for the majority of Indians who are poor. We had dealt with Secler's hypothesis earlier in this Bulletin (Gopalan C,: Bull. Nut. Found. Indian, October 1983).

Waterlow's otherwise useful classification of growth retardation is often being mistakenly invested with functional significance. Itis being assumed that "stunted" children with

weights appropriate to their height are functionally normal despite clear evidence pointing to the contrary from the extensive and fascinating studies of Spurr and colleagues (Spurr et al: Am. J. Clin. Nutr. 39. 452-459, 1984; 37, 834-847, 1983 M Parac-Nieto World Review of Nutrition and Dietetics, 49.22, 59, 1987.

Chen's observations based on his studies in Bangladesh (Chen, L., et al, Am. J. Clin. Nutr. 33. 1836-1845, 1980) that risks of mortality in "mild" and "moderately" growth-retarded children were no greater than in normal children, but were significantly increased only in "severely" malnourished children with weights for age less than 60 percent of the standard, have been widely interpreted to mean that the goal of "child survival" (which now seems to have replaced old-fashioned "maternal and child health" as the target of international agencies) is quite consistent with, and is not compromised by, mild and moderate degrees of growth retardation. Chen's subsequent clarification of his earlier observations in a later publication rebutting such inference (Chen, L: Bull. Nutr. Found. India, October 1982) has unfortunately not received the same hearing as his earlier communication.

The confusion with regard to the real objective of growth monitoring is being reflected in the use (misuse) to which growth monitoring operations are being put. While lip service is still being paid to "education of the mother", the emphasis seems to have clearly shifted from early detection of growth faltering to the identification of children who have drifted far enough away from normalcy, and whose retardation has become sufficiently "severe" to merit relief and rehabilitation through feeding programmes.

Growth monitoring has thus been used extensively as a screening procedure to choose beneficiaries for supplementary feeding operations in ICDS (Integrated Child Development Service) and the World Bank-assisted Tamil Nadu project, and to carefully exclude the so-called mild and moderately growth retarded children from supplementary feeding. This is in consonance with the advice of Payne (referred to above) who has warned developing countries against "diversion of resources" to children who are not as yet severely growth retarded. Growth monitoring, under the

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circumstances, instead of being used as an instrument for preventive and promotive health care, is becoming a tool for the implementation of a nutrition policy of brinkmanship and as an adjunct to supplementary feeding programmes which, in any case, are of doubtful value.

To be sure, it being claimed with respect to both ICDS and the World Bank-assisted Tamil Nadu project that growth monitoring in these programmes is also being used to "educate" the mothers of less severely malnourished children as well. But the cursory manner is which such "education" is now being conducted in ICDS, and the great emphasis on the elaborate and time-consuming so-called "no-weight-Gain strategy" employed just for selection of beneficiaries for feeding operations in the World Bank project, would indicate that the choice of beneficiaries for feeding programmes, rather than early detection of growth faltering has now become the central purpose.

If it is the intention that growth monitoring need be used mainly for categorisation of established cases of undernutrition into different grades for the purpose of screening children for relief operations, then such weighment operations should not be glorified as an integral part of preventive and promotive primary health care but must be restructured and limited to rehabilitation centres and clinics and made much less elaborate and less expensive than at present for this restricted purpose.

FEASIBILITY AND RELEVANCE

It was earlier pointed out that meaningful growth monitoring implies the fulfilment of two basic conditions - a clear understanding of the objective, and a health infrastructure which is capable of effectively utilising the technology. We have discussed the first; we will now consider the second.

Even very heavy investments on growth monitoring will fail to yield expected results if the health system as a whole is not adequately geared to utilise the technology. For any meaningful growth monitoring to take place, the out-reach of the health system must be such that a reasonable proportion of pregnant women and children under three years

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in the community are covered. In indiaa for example, nearly a third of infants start their lives with the initial disadvantage of low birth weight. The elegant and pioneering longitudinal studies of Shanti Ghosh and her colleagues (Ghosh, S. and Bhargava, S.K.: Twenty Year Longitudinal Studies on Growth and Development of a Birth Cohort, to be published) demonstrated that these low-birth-weight babies continue to grow and develop in a developmental trajectory which is significantly and consistently poorer than that of babies of the same socio-economic group who did not start with such initial disadvantage. Proper antenatal care and improved diets during pregnancy could serve to reduce the incidence of "small-for-date" births and enable a larger number of infants in the community to start their journey without this initial handicap; and growth monitoring will then become a far less frustrating operation. If the mother had been contacted even during her pregnancy and rapport had already been thus established between her and the health worker, the follow-up after delivery and monitoring the growth of her infant would be easy. It is absolutely essential for successful growth monitoring that a significant proportion of under-threes is thus captured.

Unfortunately, however, in India, at present, according to some estimates, on an average only less than 10 percent of pregnant women in rural areas are reached through the health centres and in the backward states the proportion is even less. Health clinics and even the anganwadis of the ICDS system attract only a small proportion of children under three in the community; a large number of children visiting them are older children.

Under the circumstances, the only way that pregnant women and under-threes can be reached is through a well-structured system of home visits by health workers. Unfortunately, this is perhaps currently the weakest link in the health care system. Home visits by auxiliary nurse midwives of the health system are too few and far between to make any significant impact. Simple and relatively inexpensive inputs like bicycles which could improve their mobility are often not provided; also they are not supported by a sensible record and management system which would help to identify in advance the "households ar risk"

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the homes which need to be visited as a priority - with the result thateven the all-too-short precious time during their infrequent visits is not used wisely and purposefully to derive maximal benefit. Under the circumstances, it will be neither feasible nor desirable to consider home-based growth monitoring.

Effective functional linkage between the anganwadi worker (of the Social Welfare sector) who is expected to re-side in the village and the visiting auxiliary nurse midwives could contribute greatly to the development and implementation of a meaningful programme of domiciliary visits, but this functional linkage is not evident in may cases. The intersectoral linkage implicit in the creation of the Human Resources Development Ministry at the Centre embracing health, social welfare and education, is not being reflected at the village level - the level which matters most.

The anganwadi worker herself could do a great deal on her own through home visits; but being rooted to the anganwadi (day care centre) most of the time, having to implement the feeding programme and maintain a multiplicity of records, she has little time; and moreover she is cramped by lack of effective referral service facilities - which require the cooperation of the health sector.

Furthermore, there is considerable scope for improvement in the training of the health worker and the anganwadi worker with respect to infant and child nutrition. What they need to know is what concrete and feaible steps they can suggest for the improvement of diets of young children (between six months and two years) in the poorest households - steps which the mother could implement within the time and resource constraints to which she is a subject. If growth monitoring does reveal growth faltering, what precise advice to the mother are they going to render? This implies that the training must be specifically tailored to suit local conditions and traditions. Not much thought is going into this, at least not as much thought as has gone into the training of the workers on the techniques of growth measurement and growth charting. And perhaps

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there are also not many trainers who can provide such very practical training.

Pushing elaborate and expensive growth monitoring into a health system which suffers from such major weaknesses is bound to lead to aberrations. If the children that are "available" for growth monitoring are well over three years, with a majority already in the socalled moderate and severe grades of malnutrition, growth monitoring could turn out to be a frustrating exercise for both health worker and mother and education to the mother at that stage could not be of much avail. Under the circumstances, it should not be surprising if both the mother and the health worker turn to a tangible item on the anganwadi agenda, namely supplementary feeding, which can at least provide some immediate relief. Supplementary feeding thus becomes the centrepiece and growth monitoring comes in handy to decide which children should get single ration ("moderate malnutrition") and which should get double ration ("severe malnutrition"). Indeed, the weaknesses in our health system thus actually favour the observance of the policy of brinkmanship mentioned earlier.

Clearly, the first priority for developing countries like India, with highly inadequate health systems, is to over come current gross deficiencies with respect to outreach and quality of their maternal and health services. In situations where less than 10 percent of pregnant women are being reached, where health and child welfare clinics fail to attract the bulk of under-fives and where domiciliary visits are cursory, few anffar between, heavy investments on elaborate growth monitoring are likely to prove infructuous. It will be naive to assumethat a liberal supply of weighing scales and growth charts will automatically correct these imbalances. To say this is not to argue against growth monitoring as such but to emphasise that conditions that would permit meaningful growth monitoring must first be created. To concentrate our energies on supplies of weighing scales and growth charts and on training of workers in the techniques of growth measurements without preceding, or at least parallel, intensive efforts to strengthen the health system, is to put the cart before the horse. Indeed, it will be sound and sensible strategy

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on the part of international agencies to support and strengthen the development of integrated programmes of maternal and child health care which include growth monitoring as a part, rather than promoting growth monitoring programmes as such in isolation.

CONCLUDING COMMENTS:

The ideal situation that we must strive for is one in which our health system will be strengthened and geared to effectively utilise the technology of growth monitoring for the purpose of prevention of growth retardation and undernutrition in our children. Despite the several limitations which currently stand in the way of meaningful growth monitoring, growth monitoring programmes have been ~~see~~ successfully carried out in quite a few small scale projects. These have been recently reviewed (Successful growth monitoring - some lessons from India, UNICEF South Asia 1986) and this experience should show that given the right leadership and the proper conditions, growth monitoring will be a useful tool for the promotion of child health and nutrition.

MERITS OF GROWTH-MONITORING:

Growth monitoring, as an integral part of primary health care, is welcome for three reasons, apart from those discussed in the earlier part of this paper.

1) Relative to family planning and immunisation, nutrition currently receives very poor focus in the primary health care package. This is because unlike immunisation and family planning which are well-charted operations, that lend themselves to "achievement audit", nutrition inputs appear vague and have ~~to~~ no immediately demonstrable impact, specially in the context of poverty. Nutrition education is also currently largely a "blind operation", it being impossible to measure its impact. A well-designed growth monitoring programme could provide support and direction to nutrition education efforts, enhance their credibility, enable the measurement of their impact and help build better rapport between the mother and the health worker.

2) The Integrated Child Development Service (ICDS) is a unique input which provides vast opportunities for improvement of child health and nutrition. Unlike the

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conventional health system which is overburdened with curative work load, the programme of ICDS can be wholly oriented towards preventive and promotive health and nutrition care. Through proper training, supportive supervision, and through effective linkage between the health worker (of the health system) and the anganwadi worker (of the ICDS) it w should be possible to provide for each village in the country effective maternal and child health care and nutrition services supported and facilitated by meaningful growth monitoring.

3) It has indeed been demonstrated that with existing resources, when the health system is properly supported and managed, meaningful growth monitoring is possible and could help in preventing growth retardation and improving child nutrition even in the poorest households (Das. D., Dhanoa, J. and Cowan, B. Loc. cit.). Cowan's model involved the employment of facilitators who were not part of the health system. An anganwadi worker of the ICDS system can easily be now trained to play the role of such facilitators, Now that we have opted for the expansion and strengthening of the ICDS system, we may use this valuable input to overcome our deficiencies in primary health care.

MODEL DISTRICTS.

It may notbe possible to overcome overnight the several shortcomings which currently beset our health system. A practical approach could be to take up immediately at least one district in each state for intensive efforts directed to promote the outreach and quality of health services. In such efforts, emphasis must be placed onbringing about close functional linkages between the regular health system and the CIDS. Growth monitoring for the purpose of prevention of undernutrition and early detection of growth faltering could be introduced as part of a comprehensive system ofmaternal and child health/nutrition

care. A well-structured system of regular domiciliary visits could be organised and it could be ensured that all poor households with pregnant women, nursing mothers and children under three are periodically visited, and that the health workers spends sufficient time with the mothers in these critical households not just to carry out weighment and growth-charting but, more importantly, to educate them as to how child feeding and rearing practices could be improved; as was emphasised earlier, intensive practical training will be needed for this latterpurpose. Under such circumstances, meaningful growth monitoring will become possible and will greatly reinforce maternal and child health care services. These model districts could serve as demonstration-cum-training areas for each state. There could be a phased programme for extension of the programme to other districts in the state so that by the turn of the century, we may be able to achieve impressive improvement in maternal health and nutrition services all over the country.

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