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The Ongoing Nutrition Transition in India: Policies, Programmes, and People's Responses

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India is a vast, varied, and densely-populated country; the subcontinent has 2.4% of the world's land area and supports more than 16% of the world's population. At the time of Independence, there was the recurrent threat of famine and resultant acute starvation due to low agricultural production and the lack of an appropriate food distribution system. The less-dramatic chronic energy deficiency (CED) and micronutrient deficiencies such as goitre, beriberi, blindness due to Vitamin A deficiency, and anaemia were very widespread and took perhaps a higher toll in terms of both morbidity and mortality than famines did. Major factors responsible for chronic macro and micronutrient deficiencies were:

- low dietary intake because of poverty and low purchasing power;
- high prevalence of infection because of poor access to safe drinking water, sanitation and health care;
- poor utilisation of available facilities due to low literacy and lack of awareness.

Right from the time of Independence, India's planners recognized the importance of human resources as drivers of growth and realised that optimal nutrition and health are prerequisites for human resource development. They reviewed the national and state scenario, enunciated appropriate policies, laid down multi-pronged strategies, outlined multi-sectoral programmes for combating undernutrition and micronutrient deficiencies, allocated the funds needed to implement intervention programmes, and laid down the goals to be achieved in specified time frame.

A review of the trends in the past six decades indicates that the country is

undergoing rapid socioeconomic, demographic, nutrition and health transitions. Progress on some fronts has been encouraging. There are no more famines – the country is self-sufficient in food production since 1970, and will remain self-sufficient in cereal production in the foreseeable future. There have been fair growth of Gross Development Product (GDP) and poverty reduction; poverty and inability to purchase food are no longer the major factors responsible for undernutrition. The country has been able to put in place a nationwide

- Public Distribution System for providing subsidized food grains to the poor,
- Integrated Child Development Services (ICDS) and Midday meal programmes for providing food supplements to vulnerable groups such as preschool and school children, pregnant and lactating women and
- health care systems to provide essential health care for all.

But the coverage, content and quality of the services provided are suboptimal, and the neediest have the poorest access to these services.

All developing countries undergoing socioeconomic development see some benefits such as reduction in the prevalence of poverty, undernutrition, and infectious diseases. The flip side of prosperity is increased dietary intake in some segments of population, steep reduction in physical activity, sedentary life style, with resultant increase in overnutrition and associated noncommunicable diseases. Appropriate policies, programmes and peoples' response can maximize the beneficial impact and minimize the

adverse consequences on health and nutritional status associated with socioeconomic development. This article gives an overview of India's ongoing socioeconomic, nutrition and health transitions, the policy and programme responses, and the way forward.

Food production

In the 1950s and 1960s, dependency on imported food and the so called ship-to-mouth existence was a nightmare; there were serious doubts whether the country would be able to produce enough food to meet the needs of the rapidly growing population. The Green Revolution ensured that the country became self sufficient in food production within a decade and growth in food production kept ahead of population growth. The development of high-yielding strains of cereals was the major contributor to green revolution. However, the rapid increase in food production could be achieved only because of accelerated convergence of several government initiatives including:

- investments in irrigation
- investment in fertilizer production and subsidy
- implementation of land reforms
- emphasis on lab-to-land extension education, and
- farm-level procurement of food grains by the government at a guaranteed minimum support price.

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In India, land was and is predominantly privately owned, and agriculture is a private sector operation; the policy and programme initiatives were essentially by the public sector (government). In this sense, the green revolution-associated increase in food production could be viewed as a mission-mode public-private partnership to achieve a national goal in record time, long before the terms "mission mode" and "public-private partnership" came into vogue. Dire situations call for unique and novel responses, and India rose to the occasion.

Pulse production

Pulses are the major source of protein in Indian diets, particularly for vegetarians. One major adverse side-effect of the green revolution was that the focus of farming was on mono-cropping with rice and wheat; consequently pulse production had been stagnant for five decades and there was steep fall in per capita availability of pulses. The gap between demand and supply necessitated the import of pulses, and the cost soared. Although household expenditure on pulses has been maintained, there has been a decline in pulse consumption. Reduction in pulse consumption will have adverse effects on nutrient intake and nutritional status of the population.

Pulse production is less labour-intensive and requires much less water as compared to rice or wheat production. Soil in which pulses are grown becomes enriched. Pulses command a reasonable price in the market. Government of India has announced several incentives for pulse growers including procurement at fixed price. India's Food Security Mission¹ had set the goal of increasing pulse production by 2 million tonnes by 2011-12. It is noteworthy that, in 2011, there has been a 2-million-tonne increase in pulse production². It is to be hoped that improvement in pulse production will continue, until the need and demand for pulses are met by domestic production, and cost of pulses can be avoided.

Horticultural Mission

Vegetables and fruits provide micronutrients and phytonutrients, and are essential for optimal nutrition and health. Today, India is among the top two countries worldwide in the production of vegetables. Export earnings from fruits and vegetables are growing. India has a Horticultural Mission³, but it has not concentrated on production of micronutrient-rich inexpensive vegetables, processing them to reduce wastage, and making them available at affordable cost throughout the year both in urban and rural areas. As a result, per capita vegetable and fruit consumption continues to be low and this is a major factor responsible for widespread

micronutrient deficiencies in the Indian population. In the past two years the cost of vegetables has soared well beyond levels affordable even by middle-class families. Nutrition education calling for an increase in vegetable consumption will succeed only when vegetables are available throughout the year at an affordable cost.

Currently, efforts are underway to make horticulture more remunerative for the farmer, and increase availability of vegetables at affordable cost throughout the year to improve vegetable consumption by all segments of the population. The interventions include investing in

- creation of essential infrastructure for preservation of vegetables and preventing distress sale (including cold storage and rapid refrigerated transportation)
- appropriate technology for food processing to reduce wastage and transport costs of vegetables and
- ensure quality control in processing, grading and packaging of fruits and vegetables.

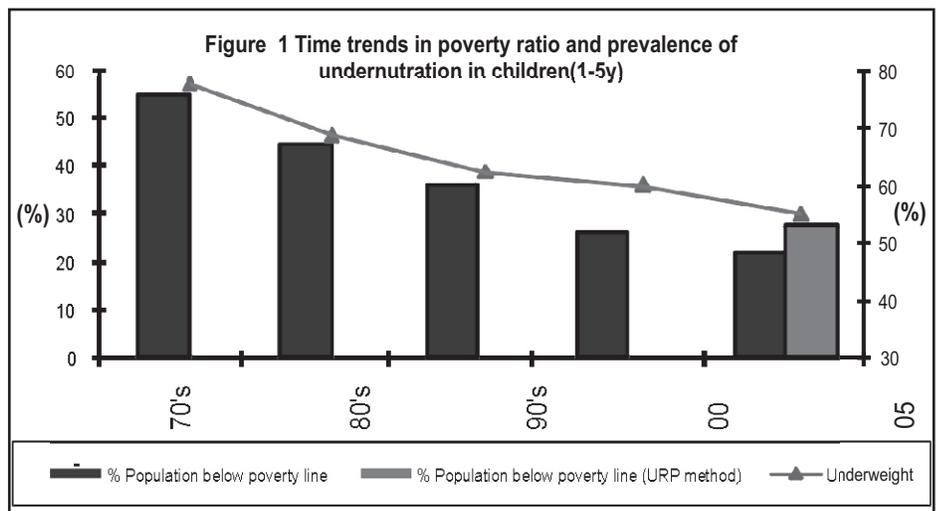
Holistic policy for improving food security among the poor

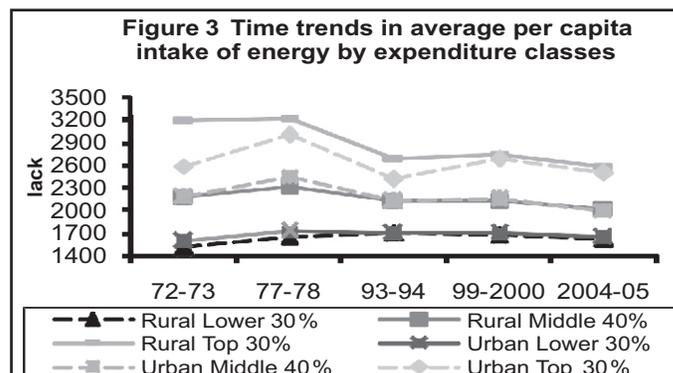
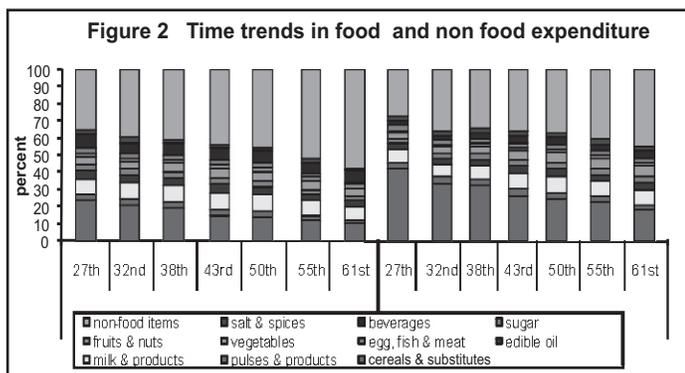
In the 1970s, income was one of the major determinants of food security: more than 70% of households were food-insecure, in spite of spending over 70% of the household expenditure on food; over 70% of children and majority of the adults were undernourished. As poverty was the major factor responsible for low dietary intake, the Poverty Line was defined in terms of per capita total consumer expenditure required for providing 2400 (rural) and 2100 (urban) kcal per adult per day. As people below the poverty line have poor access to all essential goods and services, India adopted a holistic strategy of identifying people living below the poverty line and providing them with all essential goods (food

grains through PDS, food supplementation to vulnerable groups) and services (water supply, sanitation, education, and health care) at highly subsidised costs. The fact that, at the national level, the rates of reduction in poverty and reduction in undernutrition run parallel (Figure 1), suggest that the strategy of providing a package of essential goods and services to those below the poverty line was an appropriate policy⁴. The policy was developed in the 1970s, and preceded by quarter century the 1996 World Food Summit redefinition of food security as a situation in which "all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

Procurement, storage and distribution of food grains

Minimum support prices for food grains, especially, for wheat and rice, have been helpful in giving farmers an incentive to grow these cereals. The food grains are procured at fixed prices right from farm level by the Food Corporation of India, which creates buffer stocks and makes food grains available for distribution through the PDS. Some economists believe that the distortions introduced by this policy have contributed to stagnation in the agriculture sector. Agriculture scientists believe this policy was to a large extent responsible for mono-cropping with cereals, low pulse and vegetable production. As with any other programme, there have been problems in effective implementation of the procurement of food grains and providing subsidised food to the poor. Widespread mismanagement and corruption has been reported in procurement and storage of food grains. Evaluations of PDS showed that there were large diversions and leakages from PDS both during the untargeted period and during the targeted PDS period; often the poorest could not





access the benefits they needed. Over the last five years there has been substantial improvement in the supply of food grains through the PDS; leakages below 10% had been reported in states like Tamil Nadu, Chattisgarh, Himachal Pradesh partly due to the measures initiated by the state government including sending short message service (SMS) to the villages on the dispatch of food grains to the Fair Price Shops and partly due to the increasing participation of people and Panchayati Raj institutions (PRI) in monitoring the performance of PDS. If these initiatives are replicated in all states, it is possible that the subsidized food grains proposed to be provided under Food Security Bill (FSB) may actually reach the needy and reduce hunger, low energy intake and undernutrition.

Data from National Sample Survey Organization (NSSO)⁵ surveys indicate that, over the past three decades, the consumption expenditure on food grains has shown a progressive reduction and is currently well below 50% of the total consumption expenditure even in the poorest households (Figure 2). In spite of this reduction in consumption expenditure on food grains, the energy intake of the poorest tertile has not shown any decline (Figure 3). Policies on administered food grain prices and supply of subsidised food grains through PDS appear to have helped in keeping the food grain prices low for four decades thereby improving food security among the poor.

Policy response to changes in consumption expenditure pattern

After 1973, the all-India rural and urban poverty lines were adjusted over time and across states for changes in prices, but the assumptions regarding consumption expenditure patterns underlying the computation remained unchanged. NSSO survey data clearly indicate that, over the years, there has been a reduction in the proportion of the household expenditure on food and an increase in the proportion of expenditure on transport, education and health. The Recommended Dietary Allowances (RDA) have been revised both by FAO⁶

and by ICMR⁷ Planning Commission constituted an expert group to review the methodology for estimation of poverty⁸. This expert group had recommended that:

- consumption expenditure on food should be brought in line with the current RDA and
- actual private expenditure per capita on food, education and health consistent with optimal nutritional, educational and health outcomes should be used to define the poverty line.

The new definition of poverty is broader in scope and fits well with the current international and national definition of food and nutrition security. The time tested policy of providing both essential goods and services to those below the poverty line is expected to continue in the Twelfth Plan period. It is hoped that the intervention will be effectively implemented and contribute to substantial improvement in nutritional and health status of the population.

People's response to ongoing economic and nutrition transition

Global experience suggests that economic development and rapid growth in GDP are associated with an increase in the consumption of energy-rich food/foods of animal origin, reduction in physical activity, and sedentary life style. India's GDP growth rate accelerated from the mid-1990s, and it has been the second fastest growing economy in the world for over a decade. Data from National Nutrition Monitoring Bureau (NNMB)⁹ and other surveys¹⁰ have shown that both in urban and rural areas, a majority of the women and men are sedentary because of an increase in the use of mechanisation in the transport, occupational and household sectors. Indians have followed the global trend in becoming more sedentary with increasing income. However, in spite of the fact that food prices had remained low and access to food at affordable cost was not a problem, there had been a small but sustained fall in energy intake. The decline in energy intake was maximum in the highest income group which did not have any economic constraints in purchasing food (Figure 3). It is possible that the rational Indians

realised that they require less energy because of their sedentary life style and hence reduced their energy intake. If this were so, it should be relatively easy for the nutrition and health professionals to convince the population that further reduction in energy intake would be harmful for their health; as moderate physical activity is essential for health, they have to take up discretionary physical activity of moderate intensity for at least half to one hour per day. Policy interventions encouraging discretionary physical activity at school, the work place, and during leisure time may go a long way in inculcating the discipline of moderate physical activity. If these efforts succeed and moderate physical activity becomes the routine for a majority of Indians, it is possible that the country can slow, arrest, and perhaps even reverse the rise in overnutrition and associated non communicable diseases.

Policy response to emerging threat of food price inflation in India

Globally, there has been a steep escalation in food prices over the past three years. Although India's food production is adequate to meet the needs of the growing population, the country too witnessed an increase in food prices cutting across the whole spectrum of food stuffs. Food grains are still being provided at a highly subsidised cost, especially to the poor families; therefore cereal needs are still perhaps being met without undue hardship to the low income groups. But the steep rise in the prices of pulses, vegetables, oils and dairy products has resulted in further reduction in the already low consumption of these among low and middle income families. In spite of the annual increase in allocation for the purchase of pulses, vegetables and oil, pulse content of MDM and ICDS food supplements have witnessed a decline. Vegetables are no longer being added in the cooked food in ICDS and MDM programmes in most states. Efforts were made in some of the states to provide pulses at a subsidised cost (Delhi through Mother Dairy outlets), but these were sporadic and not scaled up. When the government is finding it difficult to cope with the outlay on subsidies for food grains, it is not

realistic to expect scaling up of the subsidy for pulses; subsidised supply of highly perishable vegetables is not possible. The Food Security Bill, aimed at ensuring that the minimum needs for food grains for the BPL families are met at subsidised cost, is currently under consideration. It may be worth while to educate the people that if they utilize the savings from purchase of subsidized foodgrains for buying legumes and inexpensive but nutrient-rich vegetables, their meals could become more balanced. This might be one of the strategies for reducing the adverse impact of food price inflation on nutrition security of the population.

Food supplementation to improve dietary intake in vulnerable groups

It has long been recognised that pregnant and lactating women will have to eat more because they have to provide nutrients for the growth and development of foetus in utero and breast-fed infant. Studies carried out in the 1960s and 70s showed that pregnant and lactating women in India do not eat more than non-pregnant women. Low dietary intake was shown to be associated with adverse effects on the course and outcome of pregnancy and increase in low birth weight. Infants, children and adolescents require extra nutrients for growth; when these needs are not met, growth retardation occurs.

As soon as India became self sufficient in food production, policy makers tried to evolve food supplementation programmes for bridging the gap between nutrient requirement and nutrient intake in these vulnerable groups through the nutrition component of ICDS. From a small beginning of 33 blocks in 1975, the programme expanded to cover most tribal, remote rural drought prone areas and urban slums over the next two decades, and currently covers the entire country. It was assumed that the nutrition component of the programme would be self-targeting, and that the vulnerable segments of the population belonging to food-insecure households would access food supplementation. The ultra-poor, marginalised segments and poor migrants who needed the food supplements were often unable access food supplements from ICDS but, during droughts food insecure families do access the food supplements.

In the last two decades there have been several major evaluations of the nutrition component of the ICDS programme. These evaluations showed that:

- ICDS services were much in demand but there are problems in delivery, quality, and quantity;
- children in the 6-36 months age group and pregnant and lactating women do not come to the

anganwadi and do not get food supplements;

- available food is shared mostly between children in the 3-5 years age group irrespective of their nutritional status;
- the programme might be improving food security at the household level, but does not effectively address the issue of prevention, detection and management of the under-nourished child/mother;
- less than one-third of children are weighed, identification of growth faltering and prevention of deterioration in nutritional status of children are non-existent;
- the children with chronic energy deficiency (CED) are not being identified and offered double the rations as envisaged in the ICDS guidelines;
- health education and nutrition education for the mothers is poor or non-existent;
- there are gaps in the training and knowledge of anganwadi workers; and
- supervision of the programme, community support, and inter-sectoral coordination were poor.

Currently there are intense discussions on how ICDS can be restructured so that it becomes the flagship programme to combat undernutrition. Some of the interventions for improving nutritional status of the vulnerable groups which are being considered include:

- focussing attention on nutrition education and health education to ensure appropriate infant and young child feeding, rearing and caring practices;
- ensuring universal weighing of all children at least once in three months and plotting growth on the WHO growth chart in the Mother Child Protection Card to identify children with growth faltering, providing integrated health and nutritional support and monitoring the improvement during the village health and nutrition days (VHND) so that they recover within the next three months;
- identifying all undernourished children and providing focussed health, nutrition intervention to them and monitoring their improvement; and
- looking for and treating health problems associated with undernutrition.

Health interventions to reduce nutrition toll of ill health

Undernutrition predisposes to immune depression and increased risk of infection. Infections result in nutrient losses and increased requirements of nutrients; unless these are met there is further deterioration in nutritional status. Infections are more common among the poor because of poor environmental

sanitation, lack of access to safe drinking water, pollution and overcrowding. Poor access to health care increases the duration and the nutritional toll of infections. Repeated infections is a major factor responsible for undernutrition.

The need for early detection of infections

Early detection and effective management of infections, appropriate feeding during illness and convalescence can go a long way in reducing the adverse effect of infections on nutritional status. In spite of low dietary intake, the prevalence of severe undernutrition and under-five mortality is lower in Kerala than in other states because of more equitable distribution of food between income groups and within families, and better access to and utilisation of health care facilities. In contrast, in Uttar Pradesh, Madhya Pradesh and Orissa, undernutrition and under-five mortality rates are higher in spite of higher average dietary intake, because of the lack of equitable distribution of food and poor access to health care¹¹.

The need for inter-sectoral synergy

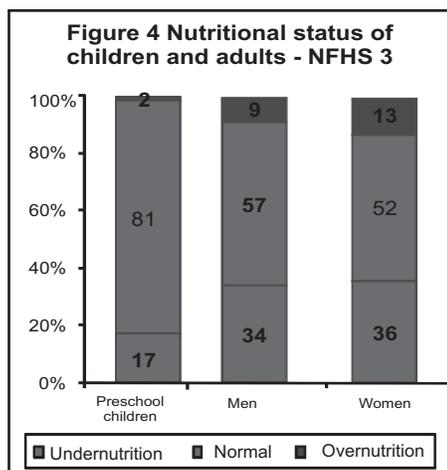
It is imperative that health and nutrition programmes are co-ordinated to achieve optimal synergy between the two interventions. Interventions from related sectors to provide safe drinking water and improve environmental sanitation are equally important for reducing morbidity rates and thereby improving the nutritional and health status, especially of children. Under the National Rural Health Mission, (NRHM) emphasis is on ensuring intersectoral coordination at all levels – the Centre, the states and PRI. Inter-sectoral linkages between the health programmes and the ICDS programmes are getting strengthened. A Mother-Child Protection Card for use both by the health and the ICDS systems has been devised. The NRHM has institutionalised the VHND as an important component; on this day the Anganwadi worker, the Accredited Social Health Activist (ASHA), and the Auxiliary Nurse Midwife (ANM) work together in the anganwadi, screen the vulnerable groups for undernutrition, and provide appropriate management. The ASHAs have been given the responsibility of facilitating referral services. Nearly half of Indian children are short for age and weigh less than the WHO standards. A majority of Indian underweight children have appropriate weight for their current height, and only about 17% are wasted. Focussing attention on these wasted children and providing them with appropriate health and nutrition interventions can result in reversal of wasting and prevent further stunting. The primary health centres (PHCs) and community health centres (CHCs) have been strengthened, and in many states Nutrition Rehabilitation Centres have

been established. These institutions are expected to provide acute care for the severely undernourished children with infections or other complications and refer the children back to the anganwadi for continued care. While many of the states have demonstrated the feasibility and benefits of adopting these strategies, very few have scaled up the programme to cover the entire state. It is also a matter of concern that the efforts towards scaling up these interventions are lowest in states with high current undernutrition rates. It is expected that universal access to these services with improved content and quality will be made available in the country during the Twelfth Five Year Plan so that there will be substantial reduction in the nutrition toll of infections and reduction in undernutrition, especially in children.

Emerging problem of overnutrition

Over the last two decades, there has been a slow but sustained decline in undernutrition and an increase in overnutrition indicating that India has entered the dual nutrition burden era. Data from National Family Health Survey (NFHS) 3 have shown that 1/3rd of the adults are undernourished (BMI<18.5) and about 10% are overnourished. Overnutrition begins right from preschool children about 2% are overnourished (>+2SD of BMI for age). Early detection and effective care for these children can reverse the overnutrition and the potential adverse consequences in later life. Both under and overnutrition rates increase during school age (Figure 4)¹².

In India primary education is nearly universal and all children in government and government aided schools are provided with Mid Day Meal. Until now MDM has been mainly considered a programme to improve school enrolment and retention; its potential for nutrition and health education as well as detection and correction of under and overnutrition in school age children has not been explored. It is imperative to optimally utilise the opportunity provided by the



school system for inculcating in school children the right knowledge, attitude, practices of eating adequate quantities of balanced diet and ensuring moderate physical activity.

India currently has a window of opportunity represented by a relatively young population; undernutrition rates are declining and the overnutrition rates in adults is low. The increase in overnutrition rates is mainly due to steep reduction in physical activity while dietary intake has remained essentially unaltered, resulting in positive energy balance. Programmes to combat the emerging problem of overnutrition include:

- nutrition and health education through all available modes of communication emphasising the need for:
 - eating balanced diets with just adequate energy and plenty of vegetables;
 - adopting healthy lifestyles with at least moderate physical activity;
- screening persons for over-nutrition whenever they access health care;
- use of BMI-for-age for early identification of over-nutrition, especially, in stunted children and adolescents;
- identification of overnourished persons and personalised advice regarding modification of dietary intake and life style;
- monitoring improvement and providing focussed care to those who are facing problems in modifying their lifestyles.

The way forward

Combating the dual nutrition burden is usually considered as a major challenge but India can look at the dual nutrition burden as an opportunity because:

- poverty and undernutrition are declining; and over-nutrition rates are low;
- knowledge that both under- and over-nutrition can be prevented through balanced diets and adequate physical activity can be communicated;
- coverage under health and nutrition services are universal, the content and quality of care are improving, and the needed services for detection and management of under and over nutrition can be provided by the health and nutrition services; and
- an increasingly rational, responsible and responsive population can be expected to utilise their knowledge and access needed services to improve their nutritional and health status.

It is hoped that the country will ensure sustained reduction in undernutrition and prevent the projected increase in over-nutrition and health hazards associated with the dual nutrition burden.

The author is Director, Nutrition Foundation of India. The article is based on a presentation made by her on "Paradigm shift in nutrition policy to combat dual nutrition burden in India" in the session on Nutrition Policy and Plan of Action for Nutrition during the Asian Congress of Nutrition at Singapore

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Ensuring Effective Implementation Of National Health Programmes

C Gopalan

In recent years, the Government of India has launched several massive programmes in health and family welfare, such as the Reproductive and Child Health Programme and the National Rural Health Mission. The Integrated Child Development Services (ICDS), the largest supplementary nutrition programme in the world, has been in operation for over four decades and is currently covering nearly the entire country. The concepts underlying these programmes are sound and the objectives are certainly laudable. If they achieve the results that are intended and expected, the health and nutrition status of vast sections of the Indian population would significantly improve. Unfortunately, however, this expectation has not been borne out. Many of these programmes for which impressive financial allocations have been made have largely failed to yield significant improvements in the health and nutritional status of the citizens.

The present state of maternal and child health in India continues to cause concern. Maternal anaemia is endemic, stunting in children remains at unacceptable levels, and there has been little improvement in low birth weight rates. It is, therefore, obvious that the implementation of our national health programmes has not attained satisfactory levels over large areas of the country. The Millennium Development Goals for India are to reduce the undernutrition rates by one-half, reduce the under-five mortality rates by two-thirds, and reduce the maternal mortality rates by three-fourths by the year 2015. Progress towards these goals has been tardy, and it would appear that the country will not be able to achieve any of the set goals by 2015. This is particularly worrying because other developing countries in India's own neighbourhood have been faring better in this regard. In the ultimate analysis, the success of any development programme must be measured by results on the ground. It is, therefore, useful to analyze how performance levels vary across the various States of India. Under the national-level health programmes, resources are provided on a similar basis to all the States in the country. For this reason, an interstate comparison of performances is valid.

Interstate Comparisons

Pregnancy and early childhood are periods of the greatest vulnerability, and therefore require the greatest focus in health delivery programmes. It is illustrative to examine how various States have fared in respect of just three of the parameters that reflect the effectiveness of health care delivery in a population: **antenatal care for pregnant women, institutional delivery, and child immunisation** (data from DLHS3, K.Kalaivani-personal communication). It is likely that the findings would be similar in respect of other parameters as well.

Some caveats:

In interpreting these interstate comparison data, the following points need to be kept in mind:

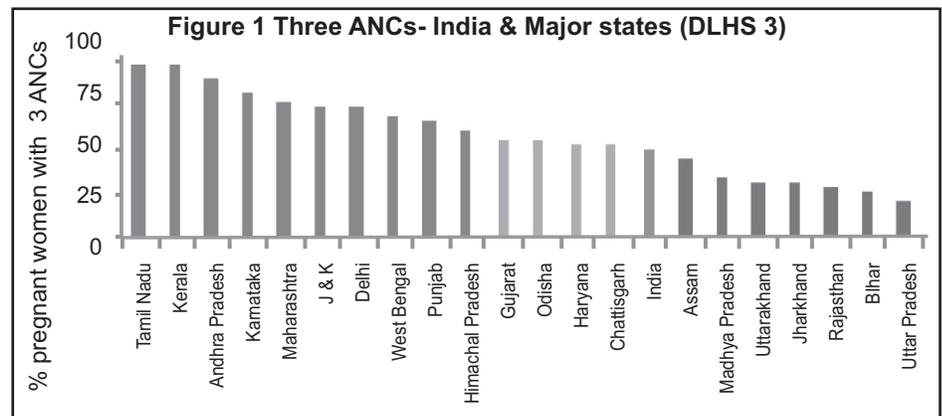
- These are data recorded at a particular point in time. They do not indicate rates of improvement, which again vary widely. It is important to remember that some of the apparently 'poor performers' are those which commenced from a very low base and have been striving to improve the parameters.
- The data, though collected district-wise, have here been aggregated State-wise for simple illustration. In many of the States that are 'good performers' there are still pockets or even whole districts with unsatisfactory parameters. Conversely, there are geographical areas within the 'poor performer' States where health delivery performance has been good.
- The overall literacy and awareness levels of the population vary widely between States. Therefore the receptivity to health interventions is

bound to vary, as will the 'pull' effect of demand for services from the population.

- The geographical terrain in some of the States makes it difficult for health workers to reach some of the remotest habitations. In some States, the weather, especially monsoons or winter snow, make some regions inaccessible.
- All health delivery programmes require a minimum level of infrastructure....roads, electric supply, readily accessible medical care, and trained personnel. Different States are at different levels as regards these essential infrastructural inputs.

Antenatal care

An analysis of data from DLHS 3 with regard to antenatal care, carried out by the National Institute of Health and Family Welfare has brought out several interesting trends. Figure 1 shows the interstate differences with regard to attainment of three antenatal checkups for pregnant women. In Tamil Nadu and Kerala nearly 100% of the pregnant women had accessed three antenatal check ups during pregnancy. At the other end of the spectrum are States like UP, Bihar, Rajasthan, and Jharkhand where only one-fourth of the women had accessed three antenatal visits during pregnancy. It is surprising that even in States with relatively good health infrastructure, such as Gujarat, Haryana, and Punjab, nearly half the pregnant women did not have three antenatal visits. Also, even in States with good antenatal coverage, the content and quality of antenatal care were suboptimal; less than half of the women had their blood pressure checked for detection of pregnancy-induced hypertension and referral for management, and in a majority of the pregnant women no haemoglobin estimation was carried out although anaemia remains the major factor responsible for high maternal morbidity and low birth weight.



Lessons to be learned:

In matters such as antenatal care, the population should be made aware and motivated. Traditional beliefs that prevent young pregnant women from accessing medical care should be countered with appropriate education and counselling. If this is not done, even the presence of good infrastructure will not guarantee results (e.g. Gujarat, Haryana and Punjab).

The States with low antenatal coverage should first focus on improving coverage, while States with high coverage should focus on improving the content of care (blood pressure, haemoglobin estimation, abdominal examination) for early detection of obstetric problems and appropriate management, including referral. These are the inputs that can lead to visible improvements in the course and outcome of pregnancy.

Institutional delivery and neonatal mortality

It is widely recognised that maternal and neonatal mortality rates are largely determined by the quality of care available during delivery. Because the risk of adverse events during labour is higher in women with obstetric problems, all women with complications in pregnancy are routinely advised to deliver their babies only in hospitals. However, even in women who have had apparently normal pregnancies, complications can arise during labour; therefore institutional delivery should be the universal norm.

Interstate differences in institutional delivery rates (DLHS 3)¹ and neonatal mortality rates (SRS)³ are given in Figure 2. In some States, like Tamil Nadu and Kerala, health care centres generally have the necessary essential infrastructure and personnel, and the percentage of institutional deliveries was high even before the introduction of incentive programmes: not surprisingly, the neonatal mortality rates in these States are relatively low. Currently, nearly 70% of all deliveries in Andhra

Pradesh, Karnataka and Maharashtra occur in hospitals. However, the neonatal mortality rate has not shown a commensurate reduction.

Lessons to be learned:

These data suggest that mere improvement in institutional delivery rates will not automatically translate into commensurate improvements in neonatal mortality rates. There is a need to simultaneously undertake skill upgradation of the staff at these institutions and improve the facilities available.

Institutional delivery rates are low and neonatal mortality rates are high in States like Uttar Pradesh, Bihar, and Chattisgarh. In these States, primary health care institutions are not well geared to cope with the increased number of institutional deliveries. It might therefore be a good strategy for these States to improve the coverage and content under antenatal care, and ensure that at least all the women with complications during pregnancy go to institutions for delivery. This would lead to improvements in neonatal salvage rates in the near term. Simultaneously, the system in the State should progressively gear up the infrastructure and work towards enabling all pregnant women to access institutions for delivery.

Immunisation

Immunisation coverage is an index for assessing the functional status of the primary health care infrastructure. The interstate differences in full immunisation (BCG, 3 doses of OPV, DPT and measles before 12 months of age) rates are shown in Figure 3. Himachal Pradesh, Tamil Nadu, Punjab, Kerala, Karnataka and West Bengal have achieved 75% coverage or more. Immunisation rates are lower in states like Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan. It is noteworthy that, in spite of inhospitable terrain, immunization rates are higher in Uttarakhand as compared to Uttar

Pradesh. Immunisation rates in the Naxalite-affected States of Jharkhand and Chattisgarh are higher than the rates in Uttar Pradesh and Madhya Pradesh, respectively.

Lessons to be learned:

Child immunisation is an aspect of health delivery that is often hindered by lack of awareness and mistaken beliefs on the part of many families, especially in rural areas, and more so in States with low literacy levels (Bihar, Madhya Pradesh and Uttar Pradesh). This leads to reluctance to access immunisation. Motivational programmes and counselling may be necessary to break these barriers. On the other hand, the data also suggest that, if there is adequate commitment on the part of State health authorities, and if the personnel are dedicated and sincere, even the low levels of awareness in the population, difficulties of terrain, and inadequacy of infrastructure and manpower may not pose insuperable obstacles to improved performance.

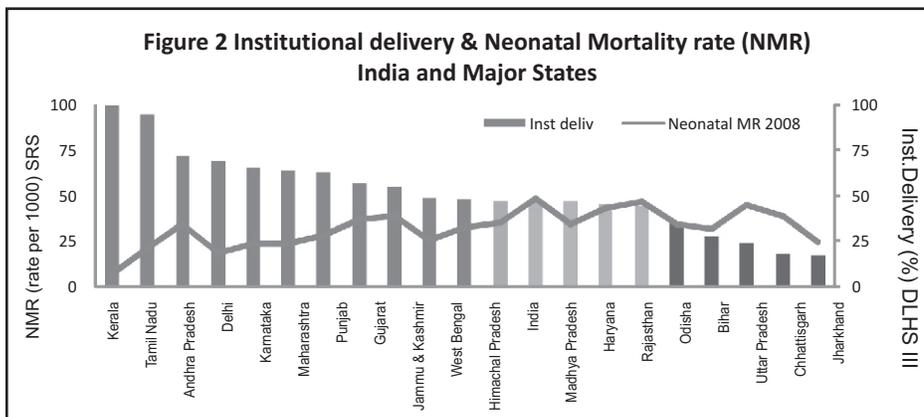
As we have seen, there are lessons to be learned from the data, not only for those who are in charge of implementing the programmes at ground level but also for planners. A one-size-fits-all approach cannot work, given the huge differences in both topography and demography. It is therefore important to decentralise the delivery mechanisms, incorporating methods to suit the local conditions and the awareness levels of the local populations. This calls for continuous ground-level monitoring and quick response mechanisms to address the specific problem areas.

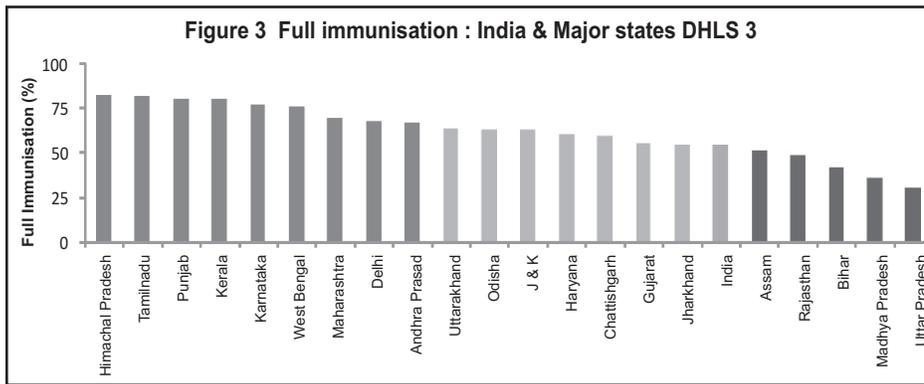
Strategies for improving performance

The need for monitoring at the grassroots level

Though the programmes themselves are well-funded, there is no institutional mechanism for continuous monitoring at the grassroots level. Although India's federal structure of government calls for the States to be responsible for the actual implementation of national programmes, it should be possible for the Government of India, in collaboration with State governments, to ensure the setting up of effective mechanisms for monitoring the implementation of national health programmes. It is true that periodic data collection through national surveys is itself a form of monitoring. However, it is a snap-shot, at a particular time point, and cannot be a continuous exercise.

It is important that the monitoring mechanism should not be merely for fault-finding, but for supportive,





constructive fact-finding and efficiency enhancement. Such a system could help in timely detection of deficiencies and defects in the implementation of the programmes and trigger immediate remedial action. Perhaps a more imaginative approach would be to set up monitoring groups drawn from the faculties of neighbouring medical colleges, particularly from the Departments of Preventive Medicine, Paediatrics, and Obstetrics. Such an arrangement would not only provide much-needed technical help to the workers at the grassroots level but will also be a valuable learning experience for the faculty members of medical colleges, who will be exposed to the actual ground realities in the community. With such supportive monitoring and early detection of lacunae in the delivery system, health programmes that have been lagging in implementation in many States can begin to show substantial improvement.

The need to motivate grassroots health workers

Even the best of health delivery plans made by the best of minds will flounder at the doorstep of the village home if the “last mile” workers are not sufficiently motivated. The village-level health workers form the backbone of all these programmes, and it is crucially important to ensure that they are committed, sincere and enthusiastic. They should be made aware that their service is a truly national service, because there can be nothing more important to a nation than the health of its citizens. There may be many methods to motivate the workers, and each State, district or local body would be able to devise a method that is appropriate and works well.

The need for health education

As important as the need for monitoring and motivation is the need for a continued, sustained health education programme beamed to the community. Currently there is no such sustained education and counselling mechanism to persuade people that they will benefit from accessing health programmes.

Vast sections of the population are illiterate and lack adequate information and awareness. It is therefore necessary to reach out to them and make them receptive to these government programmes. It is only when the people themselves become participants and partners in a national effort to improve health standards that health care can become a “people’s movement”.

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FOUNDATION NEWS

• Annual Foundation Day and C Ramachandran Memorial Lecture

The Annual Foundation Day of NFI will be held on 29th November 2011. On the occasion, Dr Kamala Krishnaswamy (Former Director, National Institute of Nutrition, Hyderabad) will deliver the C. Ramachandran Memorial Lecture.

• Study Circle Lecture

On 27th July 2011 Dr Prema Ramachandran, Director, Nutrition Foundation of India delivered a lecture on: “Policy and programme responses to ongoing nutrition transition in India”.

• Symposium

On 29th August 2011 NFI organized the NAMS Golden Jubilee Northern Region Symposium on “Millennium Development Goals 4 and 5: Concerns, Constraints and Interventions” at the premises of Nutrition Foundation of India. The symposium saw excellent presentations and participation.

Programme:

- Dr. C Gopalan (President, NFI): Welcome address.
- Dr. J.S. Bajaj (NAMS): Inaugural Address
- Dr. C.Chandramouli (RGI): Sex ratio and child sex ratio from Census 2011.
- Shri. R.C. Sethi (Addl. RGI): Maternal and U-5 mortality in India: Past trends and current status.
- Dr. Prema Ramachandran (NFI): Causes of and interventions to reduce MMR.
- Dr. Amarjit Singh (MHRD): Innovative strategies to improve antenatal and intrapartum care in tribal districts of Gujarat.
- Dr. Vinod Paul (AIIMS): Causes of and interventions to reduce U-5 mortality.
- Dr. S Ramji (MAMC): Challenges in operationalising strategies and programmes for reducing U5MR.
- Shri P K Pradhan (Mission Director, NRHM): National Rural Health Mission and maternal and child health.
- Shri K.Chandramouli (Secretary, Health): National Health Mission for improving maternal and child health in the 12th plan period.
- Dr. K K Talwar (President, NAMS): Valedictory Address.

NUTRITION NEWS

National Conference of the Nutrition Society of India

The 43rd National Conference of the Nutrition Society of India will be held at the National Institute of Nutrition, Hyderabad, on 11th and 12th November 2011. The theme of the Conference is “Economic Transition in Nutrition – Life Style Diseases & Health and Nutrition Wellness”.

Gopalan Oration: The Thirty-fifth Gopalan Oration will be delivered by Prof. Barry M. Popkin, Distinguished Professor of Global Nutrition, The Carla Smith Chamblee, North Carolina, USA.

Srikantia Memorial Lecture: The Twenty-third Srikantia Memorial Lecture will be delivered by Dr.B.Sesikeran, Director, National Institute of Nutrition (ICMR), Hyderabad.

Two symposia are also being arranged during the conference:

Symposium I: ICMR Centenary Symposium on “Bone Health and Nutrition”

Symposium II: “Chemical Basis of Nutrient Function”