Newborn health agenda: Do we need another worker?

We read with keen interest the editorial by Dr Paul on the newborn health agenda.1 We share his concern about the status of neonatal mortality in India, and agree that it is unacceptably high. We agree with his analysis of the problem and its causes, namely, a low proportion of institutional deliveries and poor neonatal care at the domiciliary level. However, we strongly disagree with the proposed solution. Our objections are categorized into three areas: technical, logistic and administrative.

TECHNICAL

The major causes of neonatal mortality in India are low birth-weight/ prematurity, birth asphyxia and infections.2 We do not think that by training the proposed mother and child workers for three months we would greatly enhance the neonatal care of domiciliary deliveries. At the secondary level hospital [a first referral unit (FRU)] at Ballabgarh, we come across many neonates referred by private practitioners. Our observation is that many trained doctors feel that they are not fully equipped to handle newborns, so it is hardly likely that workers after only three months of training will feel confident to handle newborns. Even trained paediatricians are likely to refer such cases to higher centres than manage them at a reasonably adequate level. We feel that this is what is required at the national level.

LOGISTICS

We never seem to learn from our mistakes. We have created many cadres of workers in the past with noble intentions. The list is long and includes village health guides (VHGs), traditional birth attendants (TBAs), Anganwadi workers (AWWs) and multipurpose workers (MPWs) with a variable degree of success. It is not clear why we need a new cadre.

The main rationale for creating the new cadre seems to be that workers who have midwifery skills do not stay in the village and the workers available in the village do not have sufficient midwifery skills. As TBAs do not have the educational skills to be trained in midwifery, the obvious alternative is the AWWs. The problem of caste emerges here, as the AWWs are mainly from the higher castes and includes village health guides (VHGs), traditional birth attendants (TBAs), and village health workers (VHWs) who traditionally belong to the lower castes.

For various reasons related mainly to implementation, the VHGs scheme was a failure and has been abandoned. Though training of TBAs is continuing, it is not popular at all due to the fact that the TBA profession itself is dying out. Even among the rural community, the trend is to go for institutional deliveries. Our data from Ballabgarh show that the proportion of deliveries occurring in the FRU from the project villages has increased from 3% to 6%. While the proportion of institutional deliveries has increased from 11% to 17% during the same period, the rise is slow and still far from satisfactory. The TBAs do not seem to have any potential benefits of this training and as the ‘lower’ castes move up economically, this profession is likely to die a natural death. For social reasons, other castes are unlikely to take up this vocation.

ADMINISTRATIVE

Dr Paul’s suggestions on the proposed cadre are worth discussing. He suggests that they need not be full-time government workers supported by the community or the panchayat; their remuneration should be performance linked; they should be accountable to the government and under supervision; and quality assurance and continuing education built in the proposed cadre. All these are good suggestions debunked by practice.

VHGs, AWWs, TBAs are all non-full-time government workers. This is precisely the reason for their failure. The main complaint of all of these workers has been that they should be incorporated into the government set-up. Witness to this are the frequent strikes by AWWs demanding that they be made full-time workers or asking for an increase in their ‘honorarium’.

Community participation in health is indeed a desirable goal. However, we do not think that the country has progressed towards it. In fact, the neonatal mortality rate (NNMR) is the highest in regions where the political system is still feudal. Health is a low priority of these panchayats and will, therefore, be neglected. Their involvement will result in politicization of the cadre and introduce distortions into the system.

While we as a nation have still not been able to link the remuneration of government workers to their performance in spite of complete administrative control, it is naive to think that this can be achieved with people on whom we have little control. The same applies to accountability and supervision. It is well known that the MPWs are poorly supervised by the doctors at the Primary Health Centres (PHC). We have not yet created a system for continuing education of government doctors, leave aside paramedical workers!

Dr Paul quotes the low NNMR in Kerala, where almost 90% of deliveries are institutional. He forgets that in Ballabgarh the NNMR is equally low but only 15% of deliveries are institutional. The mean birth-weight in this region is similar to that in other places at 2846 g. The probable reasons for this low NNMR are not clear but we think it is due to the high antenatal coverage, a good referral system, quality neonatal care at the FRU well supported by neonatologists, and good health-seeking behaviour coupled with a good transportation network. This means that the chain of health services is in working condition. We feel that this is what is required at the national level. We are indeed aware that demonstrating this in a small population is easier than achieving the same at the national level.

We find the proposed solution to be extremely impractical. What is needed is that the facilities at the PHCs and FRUs be upgraded. Though much equipment has been provided under the Child Survival and Safe Motherhood programme, in many places this remains safely locked in the boxes in which it was delivered. In places where the equipment has been put to use, there is no maintenance provided. We suggest that we remedy this situation, make PHCs and FRUs more active and simultaneously strengthen the referral system for antenatal women and neonates. This would require educating the public, re-orienting our MPWs, AWWs, and, finally, providing good support services at PHCs and FRUs but certainly not creating a new cadre of workers!

20 February 2001

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REFERENCES

Dr Paul replies

Drs Kapoor and Anand argue that grassroots workers cannot provide care to newborn infants and well-equipped nurseries need to be built. This is not true. Bang et al. have convincingly shown that it is possible to train health workers to provide preventive and therapeutic care to normal, low birth-weight and sick neonates. 1 I have not specified the duration of training for such workers as three months. The training should be as long as needed to impart the required skills to look after mothers and children.

The Anganwadi workers (AWWs) will not be able to meet the challenge of neonatal care because they cannot be trained to conduct deliveries and to treat sick neonates. The AWWs have a different orientation as nutrition and pre-school education workers.

Drs Kapoor and Anand admit that the profession of traditional birth attendants (TBAs) is 'dying'. This will lead to a further gap in the available expertise to handle deliveries by trained midwives in the villages. We need appropriate replacement for the TBAs, and it is time to initiate action in this regard.

Drs Kapoor and Anand admit slow progress in institutional deliveries (only 17%) even in their own project area, which has been in existence for decades and is located in the relatively progressive state of Haryana. And yet they argue against the need to provide a trained midwife at the village level. How else can one ensure skilled attendance at birth?

My suggestions regarding the administrative aspects of the proposed cadre of midwives have been 'debunked', not because they are not desirable but because they consider them difficult to implement. Does this mean that a new effort, using a new and innovative approach should never be made? Shall we remain where we are? Let us try new models of delivery in the health care system. Let us test innovations in experimental settings before taking them to scale. Let us, therefore, accumulate evidence about the utility of a village-based midwife through pilot projects and not altogether reject the concept.

26 February 2001

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REFERENCE


Spectrum of clinical manifestations in severe falciparum malaria in Koraput district, Orissa

It is well known that Plasmodium falciparum infection in humans has myriad clinical manifestations. The uncomplicated forms can manifest as fever with chills and rigor, body ache, nausea, vomiting, myalgia and diarrhoea. In a study carried out in the Koraput district of Orissa, a state in which falciparum malaria is endemic, with perennial transmission in hill-top and foothill villages it has been observed that about 74% of patients with fever alone have circulating malarial parasites. Inclusion of other symptoms mentioned above marginally increase the efficiency of clinical diagnosis at the field level. 2 Malaria-related mortality and morbidity are major health concerns in this tribal area.

The following observations highlight the wide clinical spectrum of severe falciparum malaria in patients admitted to the district headquarters hospital at Koraput. The diagnosis was confirmed by the results of laboratory investigations for the malarial parasite, response to antimalarial therapy and by methods of exclusion.

Hyperpyrexia accounted for 32.7% of the manifestations, followed by respiratory and central nervous system (CNS) involvement. The hepatobiliary system was involved in only 1%. CNS involvement varied from restlessness to grade III coma. The respiratory system, too, was affected in a variety of ways, the most frequent manifestation being pneumonia. The spectrum of gastrointestinal involvement ranged from the choleric or dysenteric form of diarrhoea to blackwater fever. Hepatosplenic involvement manifested as a tropical splenomegaly-like syndrome and hepatitis. Opportunistic infections, mostly due to non-typhoidal, Gram-negative bacteria, were also observed. Among children with CNS manifestations, the proportion of those below 14 years was higher (Table I). Of the 133 deaths at the hospital during the 9-month period, 12.8% were due to cerebral malaria and 9.8% to respiratory infections.

The clinical assessment of patients suspected to have falciparum malaria should always take into account the presence of CNS manifestations, respiratory distress, anaemia and hyperpyrexia, as well as the hydration status. Cerebral malaria and severe anaemia may lead to rapid deterioration in the absence of early intervention.

Hyperpyrexia, the most common severe manifestation in this study, may lead to convulsions in children and dehydration, if associated with diarrhoea and vomiting.

In children, the overlapping of malaria and respiratory tract infection, especially pneumonia, underscores the need to rationalize antimalarial therapy. Co-trimoxazole can be recommended for the treatment of both pneumonia and malaria, as in other malaria-endemic areas. 3,4 However, pulmonary oedema is a fatal complication and may develop suddenly after 1–2 days of treatment.

Other infectious diseases, such as meningitis, enteric fever, septicaemia, fulminant hepatitis, viral encephalitis (measles, rables, etc.), and even heat stroke, may simulate cerebral malaria. Therefore, for the purpose of case management, any CNS involvement should be considered as cerebral malaria in these areas.

Table I. Manifestations of severe falciparum malaria according to different age-groups

<table>
<thead>
<tr>
<th>Manifestation/organ system involvement</th>
<th>Total no. of patients</th>
<th>Age group (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0–1</td>
<td>1–4</td>
</tr>
<tr>
<td>Hyperpyrexia</td>
<td>238</td>
<td>1</td>
</tr>
<tr>
<td>Central nervous</td>
<td>86</td>
<td>3</td>
</tr>
<tr>
<td>Respiratory</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>91</td>
<td>0</td>
</tr>
<tr>
<td>Renal</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Anaemia</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Sickle-cell disease</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>151</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>727</td>
<td>15</td>
</tr>
</tbody>
</table>

4 Reference Manifestation/organ Total no. Age group
Retinal haemorrhage, which is common and always associated with cerebral malaria in Africa and Thailand, is completely absent in this area. The pattern of severe malaria may be redefined in future, and new clinical syndromes may emerge. For example, researchers have recently recognized a syndrome in which coma is associated with features of respiratory distress, a combination that has a poor prognosis. Considering the magnitude of the problem, it is necessary to develop early warning clinical/biochemical parameter(s) at the hospital level so that medical practitioners can prevent the life-threatening consequences of falciparum malaria.

10 February 2001

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REFERENCES


Nursing personnel and prevention of nosocomial infections

Nosocomial infections continue to be a common complication of hospitalization. Good infection control practices minimize the risk of nosocomial infection. A hospital stay greater than 7 days has been found to be associated with a six-fold increase in the rate of nosocomial infection. Zachariah (unpublished data) has shown that the mortality in a medical intensive care unit was 35%, of which 6.4% was due to nosocomial infections.

Nurses are the key players in the field of infection control and have a professional and legal responsibility to integrate infection control practices into their nursing care. In order to ensure practical and effective infection control measures, nurses must be aware of their responsibility and develop their knowledge base so that their practice is research-based and not merely ritualistic. For improving the quality of patient care, knowledge and practice are often interrelated.

We designed a study to assess the knowledge and practice of nursing personnel (34 staff nurses and 25 nursing students) in the prevention of nosocomial infections in the general medical and surgical wards of Christian Medical College and Hospital, Vellore from 7 June 1999 to 17 July 1999 (6 weeks).

The study population consisted of all infection control nursing measures and nursing personnel performing these measures. The study sample consisted of 514 selected observed infection control nursing measures and 59 nursing personnel who performed these measures during the study period. The infection control nursing measures included were hand washing (179), intravenous injections and infusions (159), urinary catheter care (26), wound dressing (7), tracheostomy suctioning (21), supervision of patient's hygiene (72) and environmental cleanliness (50). Staff nurses with a Degree or Diploma in Nursing or those enrolled for such a course were included. A convenient sampling technique was used to select the sample.

Data were collected on the practice of infection control nursing measures with the use of checklists. A questionnaire on nosocomial infection and selected infection control nursing measures was distributed to 59 nursing personnel and data were collected on knowledge. Date entry and analysis was done using descriptive statistics (percentages) and the Chi-square test was used to determine the relationship of nurses' knowledge with their demographic characteristics and practice. The results are shown in Tables I and II.

There was a significant association between the nurses' knowledge and characteristics such as qualification (p<0.05), area of work (p<0.05) and their awareness regarding the infection control manual available in every ward (p<0.05). However, there was no significant association between knowledge and practice.

The study revealed that the majority of nursing personnel possessed moderately adequate knowledge and the compliance with infection control nursing measures was also moderately adequate. It was found that knowledge was not the only factor responsible for practice. Factors such as hospital policy, nurses' attitude, interest, workload, supervision, motivation, etc. may also be responsible. If these factors are lacking, despite adequate knowledge, practices

<table>
<thead>
<tr>
<th>Item assessed</th>
<th>Adequate</th>
<th>Moderate</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nosocomial infection</td>
<td>2 (3.3)</td>
<td>29 (49.2)</td>
<td>28 (47.5)</td>
</tr>
<tr>
<td>Hand washing</td>
<td>5 (8.5)</td>
<td>21 (35.6)</td>
<td>33 (55.9)</td>
</tr>
<tr>
<td>Intravenous injections/infusions</td>
<td>23 (39.0)</td>
<td>34 (57.6)</td>
<td>2 (3.4)</td>
</tr>
<tr>
<td>Urinary catheter care</td>
<td>3 (5.1)</td>
<td>18 (30.5)</td>
<td>38 (64.4)</td>
</tr>
<tr>
<td>Wound dressing</td>
<td>3 (5.1)</td>
<td>32 (54.2)</td>
<td>24 (40.7)</td>
</tr>
<tr>
<td>Tracheostomy suctioning</td>
<td>14 (23.7)</td>
<td>35 (59.3)</td>
<td>10 (16.9)</td>
</tr>
<tr>
<td>Overall</td>
<td>–</td>
<td>49 (83.1)</td>
<td>10 (16.9)</td>
</tr>
</tbody>
</table>

Figures in parentheses are percentages

<table>
<thead>
<tr>
<th>Infection control measure</th>
<th>Assessment of performance</th>
<th>Total measures assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>Moderate</td>
<td>Inadequate</td>
</tr>
<tr>
<td>Intravenous injections/infusions</td>
<td>29 (18.2)</td>
<td>118 (74.2)</td>
</tr>
<tr>
<td>Urinary catheter care</td>
<td>17 (65.4)</td>
<td>8 (30.8)</td>
</tr>
<tr>
<td>Wound dressing</td>
<td>2 (28.6)</td>
<td>5 (71.4)</td>
</tr>
<tr>
<td>Tracheostomy suctioning</td>
<td>13 (61.9)</td>
<td>6 (28.6)</td>
</tr>
<tr>
<td>Patients' unit cleanliness</td>
<td>26 (36.1)</td>
<td>22 (30.6)</td>
</tr>
<tr>
<td>Supervision of environmental cleanliness</td>
<td>41 (82.0)</td>
<td>9 (18.0)</td>
</tr>
<tr>
<td>Overall</td>
<td>230 (44.7)</td>
<td>204 (39.7)</td>
</tr>
</tbody>
</table>

Figures in parentheses are percentages
will not improve. These results highlight the need for nursing personnel to constantly update their knowledge, through continuing education programmes on nosocomial infections. Nursing administrators can review the policies and procedures regarding infection control measures in hospitals. The establishment of an infection control nurse also needs to be considered.

11 February 2001

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REFERENCES

CORRECTIONS BY AUTHORS
This is with reference to the article: Indrajit IK, Nangpal S, Roy N. Medicine and the internet: A survey of the information highway. Natl Med J India 2000;13:193–201. In this article there are 8 direct quotes, 3 adapted quotes from references and 2 wrongly referenced numbers, necessitating the incorporation of a formal erratum. These have occurred in the article unintentionally and the oversight is deeply regretted.

Direct quotes
11 Wootton R. Information in practice. Telemedicine—a cautious welcome. BMJ 1996;313:1375–7. ‘It is important to understand that Telemedicine is a process not a technology.’
12 McLaren P, Ball CJ. Education and debate. Telemedicine: Lessons remain unheeded. BMJ 1995;310:1390–1. ‘Its driving force has been ... of professional expertise’
16 Eng TR, Maxfield A, Patrick K, Deering MJ, Ratzan SC, Gustafson DH. Access to health information and support: A public highway or a private road? JAMA 1998;280:1371–5. ‘Internet and information... and communication technologies may help reduce health disparities through their potential for promoting health, preventing disease, and supporting clinical care for all.’
19 Eysenbach G, Diepgen TL. Towards quality management of medical information on the internet: Evaluation, labelling, and filtering of information. BMJ 1998;317:1496–500. ‘Quality is defined as “the totality of characteristics of an entity... stated and implied needs”’.

Adapted quotes
3 Eysenbach G, Ryoung Sa E, Diepgen TL. The impact of informatics: Shopping around the internet today and tomorrow—towards the millennium of cybermedicine. BMJ 1999;319:1294. ‘While telemedicine focuses... by patients and medical practitioners.’
11 Wootton R. Telemedicine—a cautious welcome. BMJ 1996;313:1375–7. ‘It is important to understand that Telemedicine is a process not a technology.’
12 McLaren P, Ball CJ. Education and debate. Telemedicine: Lessons remain unheeded. BMJ 1995;310:1390–1. ‘Telemedicine, the delivery of health care... medical activities, including treatment and education.’

Direct quote with wrongly referenced numbers
‘Cybermedicine is distinctive from telemedicine... used as a medium for telemedical applications’; ‘Telemedicine for the most part... preventive medicine and public health.’ Both these are from the reference given below and were wrongly referenced as reference 11.