

Critical care in obstetrics: Essentiality, initiatives, and obstacles in Indian scenario

To make the world a better place for reproductive health, World Health Organization (WHO) has set targets to drastically lower the maternal mortality by the year 2015, which has been prioritized as one of the primary eight-millennium development goals formulated in 2000. These measures are principally the brainwork of representatives from developed nations. However, 99% of the total global maternal mortality in developing nations defies the basic fundamentals and approaches adopted by world health bodies. Involvement of representatives from these developing nations seems a justifiable necessity in curbing these menacing statistics. As against 0.2-0.9% of all obstetric admissions to intensive care unit (ICU) in developed nations, the data reporting and auditing is not so uniform in developing nations like India.^[1-4]

In spite of formulating new health policies and designing better reproductive health programs in India, the current status can be termed far from satisfactory as WHO portrays a dismal picture of reproductive health in its report of 2008 [Table 1]. It has been globally stressed to identify all the current and potential future challenges in these nations so as to design and complement effective policies to improve reproductive health. Uniform application of current universal guidelines is not entirely feasible in these nations. Moreover, nonconsensus on any one particular scoring system for critically ill obstetric patient makes the task of intensivist very difficult.^[5-7]

Shortage of quality manpower leads to a disturbingly low doctor to patient ratio. Economic constraints, poverty and poor gross domestic product ratio are deterrents to an early treatment seeking behavior. In a nation where daily bread earning is a challenge, how can one incur expenses on critical care services?

Illiteracy, status of women and a strong desire for male baby chiefly reflects a gender discriminatory attitude. This leads to

a higher incidence of septic abortions and female feticide and pregnancy related complications. Lack of clinical awareness related to various pregnancy ailments can be observed in both the literate and illiterate sections of the society though with widely variable prevalence.^[8] A delay in treatment can lead to catastrophic complications which can progress to an irreversible stage if such patients are treated by quacks, a common scenario in our own nation. Timely transportation of critically ill obstetric patient or for that matter any sick patient is also a tough task as many villages and remote areas are not properly connected with cities.^[9]

It has been rightly quoted by the authors, whose study is being published in this issue, that “admission of pregnant women to an ICU is considered as an objective marker of

Table 1: Maternal mortality rate in 2008 as per WHO report

Developed/nearly developed countries	Maternal mortality rate	Developing nations	Maternal mortality rate
	14		290
Australia	8	Sub-Saharan Africa	640
Austria	5	Asia	190
Bahrain	19	South Asia	280
Belgium	5	Afghanistan	1400
Bosnia and Herzegovnia	9	Angola	610
Brunei Darussalam	21	Bangladesh	340
Bulgaria	13	Burundi	970
Canada	12	Cameroon	600
Chile	26	Chad	1200
Croatia	14	Congo	580
Cyprus	10	Ethiopia	470
Czech Republic	8	Ghana	350
Denmark	5	Guinea-Bissau	1000
Estonia	12	India	230
Finland	8	Indonesia	240
France	8	Kenya	530
Germany	7	Liberia	990
Greece	2	Madagascar	440
Hungary	13	Mali	830
Iceland	5	Mozambique	550
Ireland	3	Nepal	380
Italy	5	Nigeria	840
Japan	6	Pakistan	260
Netherland	9	Rwanda	540
Poland	6	Senegal	410
Singapore	9	Somalia	1200
Spain	6	South Africa	410
Sweden	5	Sudan	750
Switzerland	10	Uganda	430
UK	12	Tanzania	790
USA	24	Zimbabwe	790

WHO = World health organization

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severe maternal morbidity”.^[10] In this study, patients with puerperal sepsis and intrauterine death with coexisting sepsis had higher mortality when compared to women with pregnancy induced hypertension and obstetric hemorrhage. This study has emphasized on the need to focus and curtail the rising incidence of sepsis and maternal mortality. As this study was a retrospective study, the literary and the socioeconomic status of the patients were not acknowledged. It has been well recognized that low socioeconomic status, meager education and poor antenatal care contribute significantly to a higher incidence of obstetric complications.^[2]

Local customs, traditions, and socio-behavioral attitudes vary among different demographic groups of our nation. These factors have at times proved decisive obstacles in nonadoption and implementation of evidence-based approaches for management of diseases during pregnancy. Poor antenatal visit pattern further adds to the management of complicated pregnancies in women with co-morbid diseases. As per the national health and family survey of 2006, only 7% of the females came for the third-trimester antenatal check-ups. Inadequate medical facilities, drugs and equipment besides shortage of skilled manpower particularly in rural areas further compound the problem in managing critically ill obstetric patients. The imbalance and disparity of health infrastructure are reflected in the location of most critical care units and tertiary centers in urban areas, while 65-70% of the population resides in rural areas. This discrepancy can be largely overcome by allowing permission to open new medical colleges in the rural areas only and that too at a particular focal point so as to cater to a large population from adjoining villages. Moreover, civil hospitals and community health centers can be attached to these medical institutions, and exchange of medical education, continuing medical educations and conferences among the medical fraternity can vastly boost the health services. The gross in-coordination among different health providers, both public and private, is notably due to unavailability of clear cut guidelines and protocols related to obstetrical critical care in our country. These subjective therapeutic interventions can prove detrimental in obstetric patients. Under-reporting and nonreporting of critical obstetrical data is another contributory factor in the prevailing poor reproductive health services.^[2]

Caring of critically ill obstetric patient ideally requires a dedicated obstetric care unit which should be managed by coordinated efforts of a multidisciplinary team consisting of an obstetrician, anesthesiologist, intensivist, and pediatrician who can design various structural and functional aspects of obstetric ICU.^[11]

Similar attempts have been made by Harde *et al.* in their prospective observational study in which besides assessing the factors necessitating admission of 61 parturients in PACU after cesarean section, they also evaluated maternal morbidity and mortality on the basis of intensive care unit interventions based on Acute Physiology and Chronic Health Evaluation (APACHE II) score. They observed a mortality rate of 6.5% among parturients who were mainly admitted to PACU for obstetric indications (67.2%), such as hemorrhage (36.1%), hypertensive disorder of pregnancy (29.5%) and others. Cardiovascular disease (16.4%) was the most common non-obstetric indication which was associated with higher mortality.^[12] The outcome of the study stresses upon the timely intervention during obstetrical complications which can significantly reduce maternal morbidity and mortality.^[12]

India being a land of diversities, health administration and health needs also follow a similar pattern in different states which make health issues primarily a state matter. Kerala and Tamil Nadu states have taken the lead not only in achieving a reduction in maternal mortality rates but have shown positive trends in the majority of other health indicators. This is largely attributed to the stewardship role of successive governments over the years, which is now bearing fruitful results. Surprisingly, the number of critical care and obstetrical ICU's in these states is similar to other Indian states but maternal health portrays positive statistical figures [Table 2]. The government and health administrators have tried from time to time, but impact after implementation of various reproductive health policies can be termed as mild as they have achieved only partial success. The failure can be attributed to various administrative, social, attitudinal, economic, and political factors which cannot be dwelled upon in this short editorial.

Table 2: Comparison of maternal mortality rates in different states of India

States of India	Year 2004-2006	Year 2007-2009
Assam	480	390
Bihar/Jharkhand	312	261
Madhya Pradesh/Chhattisgarh	335	269
Orissa	303	258
Rajasthan	388	318
Uttar Pradesh/Uttarakhand	440	359
Andhra Pradesh	154	134
Karnataka	213	178
Kerala	95	81
Tamil Nadu	111	97
Gujarat	160	148
Haryana	186	153
Maharashtra	130	104
Punjab	192	172
West Bengal	141	145
Other	206	160
India total	254	212

All the above mentioned challenges can possibly be managed by concrete measures involving a multidisciplinary approach, coordinated and dedicated efforts from the government officials, physicians, and paramedical staff and most importantly by an active participation of society and the general public.

Recruitment of new specialists, implementation of rotational policy with compulsory posting in rural areas, giving higher pay scales and incentives to specialists and paramedical staff working in rural areas, providing them accommodation and recreational facilities and monthly posting of postgraduate trainees under supervision can tide over the shortage of manpower demand to a large extent. Newer health policies can be formulated, and funds can be re-allocated which aims at up gradation of the existing ICU's and high-dependency units in these institutions. Setting up of obstetric ICU's besides other critical care units can be incorporated into a newer clause as a mandatory requirement in these newer medical colleges.

In times of economic recession and progressive devaluation of our currency, it has become all the more mandatory to re-allocate the health budget toward primary and critical care health services. Diagnostic needs, prophylactic measures, and therapeutic interventions should be planned preferably during these antenatal visits. The general helpline and contact number of attending physician should be given to all such patients. Literacy drive should be encouraged in a manner that all the customs, traditions and superstitions should be seen from a scientific angle.^[13] Well equipped ambulances should be deployed at focal points which should attend to critically ill obstetric patient in a timely manner. Improving logistical operations by providing facilities for deliveries, neonatal resuscitation, and maternal monitoring during transportation can have a positive outcome for reproductive health.^[2]

Commonly followed guidelines of American College of Critical Care Medicine can be modified as per the circumstances of our health set-ups and national needs as the ICU admission criterion varies significantly from one place to another. Research and data reporting, strengthening of health infrastructure at grass-root level, simple early initiatives, close monitoring, symptomatic care and few other general measures can drastically help in reducing maternal morbidity and mortality.

At global level, planning and formulation of guidelines should involve a representative both from the developed and developing nations. The consensus on the guidelines should be arrived at after considering the prevailing health scenarios, socio-political circumstances and availability of resources in developing nations. The practical and feasible application of universal guidelines thus could be enabled which can go a

long way in aiding the provision of quality care in high-risk obstetrical emergencies.

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