COMMENTARY

Adapting maternal health practice to co-morbidities and social inequality: A systematic approach

Aditi Iyer, PhD,[1] V Srinidhi, MBBS,[2] Anuradha Sreevathsa, MBBS, DGO,[3] Gita Sen, PhD[4]

ABSTRACT

The process of adapting universal guidelines to local institutional and cultural settings is recognized as important to their implementation and uptake. However, clarity on what, why and how to adapt in an evidence-based manner is still somewhat elusive. Health providers in low and middle income country contexts often have to deal with widely present co-morbidities and social inequalities among pregnant women. Since neither of these problems finds adequate discussion within the usual guidelines, and given the continual pressures posed by resource scarcity, health providers respond through ad hoc adaptations inimical to maternal safety and equity. We argue for, and describe, a grounded process of systematic adaptation of available guidelines through the example of a handbook on maternal risks for primary care doctors and staff nurses. The systematic adaptation in this practical, action-oriented handbook builds on research for a long-standing community-based project on maternal safety and rights. It takes a case-based problem-solving approach. Reiterating guidelines and best practices in diagnostic decision-making and risk management, it indicates how these can respond to co-morbidities and social inequality via complex clinical cases and new social science information.

KEY WORDS: Maternal health; best practices; guidelines; co-morbidity; social inequality; capacity building

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The process of making universal guidelines (for diagnostic decision-making, drug regimens and patient management) relevant to local institutional and cultural settings is recognized as important to their implementation and uptake.[1] Furthermore, the need to adapt knowledge produced in one setting for use in others is understood to be a key requirement of the knowledge-to-action cycle[2] and of guideline development.[3] Adaptation involves assessing, selecting and/or customizing available guidelines to local needs, priorities, legislation, policies and resources, while staying true to its foundational evidence.[1] However, clarity on what, why and how to adapt in an evidence-based manner is still somewhat elusive. The second edition of WHO's *Manual for Guideline Development* (2014)[3] includes only a very brief paragraph on adaptation, which was even shorter in its first edition in 2012.[4]

Health providers in low and middle income countries (LMICs) often work in resource-constrained environments (whether financial, human, institutional or other) that effectively undermine their ability to implement guidelines.[5] Limited availability of evidence-based adaptations to ground realities can pose a major challenge to clinical and public health practice in such settings. For instance, frontline health providers having to deal with co-morbidities and the adverse outcomes of power dynamics within households or communities tend to find insufficient support in textbooks, guidelines and protocols. In consequence, as we found from our work on maternal safety in Koppal (a poor rural district of Karnataka, India), unsupported providers respond to challenging work situations by tailoring their practices to suit the needs and resource availabilities of the moment. These adaptations are often ad hoc and may not work in the interests of patients.

Ad hoc adaptations are often based on provider predilections or convenience rather than the patient's well-being. More systematic and evidence-based adaptations are needed that grapple rigorously with ground realities while staying focused on the patient's well-being.

We discuss our approach to systematic adaptation through a handbook on maternal risks.[6] The handbook builds on research conducted for the Gender and Health Equity Project ("The Project") in Koppal district: implementation research over 15 years; verbal autopsies of maternal deaths and near misses; a district-wide assessment of the obstetric knowledge of primary care doctors and staff nurses.

Author Affiliations

1. Senior Research Scientist & Adjunct Associate Professor, Ramalingaswami Centre on Equity and Social Determinants of Health, Public Health Foundation of India, Bangalore, India
2. Senior Research Associate, Ramalingaswami Centre on Equity and Social Determinants of Health, Public Health Foundation of India, Bangalore, India
3. Medical Consultant, Ramalingaswami Centre on Equity and Social Determinants of Health, Public Health Foundation of India, Bangalore, India
4. Distinguished Professor & Director, Ramalingaswami Centre on Equity and Social Determinants of Health, Public Health Foundation of India, Bangalore, India

Correspondence: Dr. Aditi Iyer, Ramalingaswami Centre on Equity and Social Determinants of Health, Public Health Foundation of India, Epidemic Diseases Hospital Compound, Near Sw Vivekananda Metro Station, Old Madras Road, Indiranagar, Bangalore 560038, India, Tel: +91-80-29710403, E-mail: aditi.iyer@phfi.org

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HOW AD HOC ADAPTATIONS UNDERMINE MATERNAL SAFETY AND EQUITY

Our research revealed widely prevalent pregnancy and postpartum risks that women and their families did not always recognize or acknowledge.[7–9] Apart from obstetric conditions (e.g., anemia, pre-eclampsia), women often suffered from other morbidities (e.g., malaria, tuberculosis) and/or social vulnerabilities stemming from abuses of gender power (e.g., domestic violence) or from stigma (e.g., postpartum depression/psychosis). Furthermore, cultural norms and traditions around childbearing were often at loggerheads with allopathic advice or treatment (see Table 3).

The resource-constrained public health system to which women were funnelled for maternal health care was run by ill-supported staff. The few doctors working at the periphery did so with very little peer support. Informal task-shifting by doctors meant that staff nurses and auxiliary staff had to bear major responsibility for obstetric care without adequate training. Diagnostic kits, drugs and other supplies, forever in short supply, were rationed either inequitably or suboptimally. The time available for clinical evaluations in busy antenatal clinics was often seriously limited.

Health providers responded by turning antenatal checkups into a minimal checklist of pre-pregnancy indicators (height, age, parity and birth spacing) and a few laboratory tests of doubtful quality. They paid little attention to co-morbidities, did not respond to domestic violence or postpartum psychosis, and tended to normalize postpartum depression. They complained about families whose cultural beliefs and practices contested their medical advice.

Such ad hoc adaptations were compounded by diagnostic failures resulting from the absence of adequate guidance in situations that were often complex. Primary care doctors and staff nurses tended to identify maternal risks on the basis of pre-pregnancy indicators. Their process of gathering clinical evidence was unsystematic. Their diagnoses were typically based on just one or a minimal set of symptoms, signs or test results, even if there were multiple presentations. Not surprisingly, they were inconsistent in their clinical assessments of risk conditions, obstetric complications and even normal labour. Rarely considering the severity of risks, they were often oblivious to impending emergencies.[10]

The Project sought to address these ad hoc adaptations that undermined maternal safety and reinforced social inequities, through a handbook on maternal risks for doctors and staff nurses. The handbook systematically adapts clinical guidelines and best practices to challenging work environments in settings such as Koppal.*

SYSTEMATIC ADAPTATION: WHY? HOW?

Systematic adaptation meant working out how guidelines and best practices are to be preserved in adverse contexts based on a clear understanding of the challenges that health providers face. This approach led to an output that went beyond standard manuals for primary care practitioners on pregnancy care and the management of obstetric complications.[11–15] Standard manuals tend to consider 1) classical (rather than complex or atypical) presentations of risk conditions; 2) health conditions in isolation and not as co-existing morbidities; 3) the biomedical sphere, ignoring its interface with social relationships. Consequently, domestic violence and adverse cultural norms and practices that seriously compromise women's health find little, if any, mention in these books.†

Table 1. Contents of the handbook

Chapter	Content	Category
	Part 1: The Basic Course	
1	Clinical evaluation: Essential steps & suggested approach	A
2	Risk indications elicited through a clinical evaluation	
	• Predisposing factors	A
	• Antepartum obstetric risks	A
	• Immediate postpartum obstetric risks	A
	• Delayed postpartum obstetric risks (including depression & psychosis)	A, B
	• Co-morbid risks (including domestic violence)	A, B, C
3	How to identify and assess risk conditions: A cluster approach	
	• Obstetric risks (including postpartum depression & psychosis)	A, B
	• Co-morbid risks (including domestic violence)	A, B, C
4	How to analyze overlapping symptoms of risk	A, B
5	Principles of management	
	• Managing risks: Essential steps	A
	• Obstetric risks (including postpartum depression & psychosis)	A, B
	• Co-morbid risks (including domestic violence)	A, B, C
6	How to understand and tackle customary beliefs and practices	C
	Part 2: Illustrative Case Studies	B
	Part 3: Exercises	B

Note: Content categories – A = Reiteration of the fundamentals of good clinical practice; B = How good clinical practice can tackle the presence of co-morbidities; C = New information to support equity-promoting responses.

Our three-part handbook[6] (see Table 1) addresses capacity-building needs that were suggested by our evidence on ad hoc adaptations. Accordingly, it reiterates guidelines and best practices in diagnostic decision-making and treatment. It demonstrates the use of these in LMIC settings, and provides new information to tackle co-morbidities and social vulnerability.

Fundamentals of good clinical practice

The handbook, which defines risk as "any injury or health condition that results in sickness or death for the mother and/or the baby if left untreated" (p. 17) is practical in its approach. Beginning with a clinical evaluation, with which health providers are familiar, it specifies the approach and steps to making the evaluation systematic and woman friendly.‡ It then advocates the use of a cluster approach to assess the symptoms, signs and test results indicative of risks. It provides a typology of severity for each of 15 obstetric risks in order to indicate when prompt action must be taken. Using flow charts, it depicts how symptoms and signs that crosscut different risk conditions are to be analyzed. It also outlines the principles of risk management.

* The handbook per se cannot reduce the resource scarcity and social inequities that drive ad hoc adaptations.

† The second edition of the WHO manual[3] has substantial new discussion on integrating gender, equity and human rights into the process of guideline development. But this is recent and has not yet made its way into many actual guidelines. Our handbook attempts to fill this gap in a small way.

‡ This evaluation includes 1) history taking, 2) asking about symptoms after building rapport, 3) checking vitals, 4) conducting a respectful physical examination, and 5) ordering relevant tests.

Table 2. Risks discussed in the handbook

	Obstetric risks		Co-morbid risks
1	Hyperemesis gravidarum		**Social vulnerability**
2	Threatened abortion/miscarriage	1	Domestic violence
3	Ectopic pregnancy		**Infectious conditions**
4	Anaemia	2	Urinary tract infection
5	Pregnancy-induced hypertension	3	Malaria
6	Intrauterine death	4	Tuberculosis
7	Abruptio placentae	5	Sexually transmitted infections
8	Placenta previa	6	Human immunodeficiency virus infection
9	Premature rupture of membranes	7	Hepatitis B and C
10	Postpartum haemorrhage	8	TORCH infections
11	Puerperal sepsis		**Non-infectious conditions**
12	Cerebral (cortical) venous thrombosis	9	Thyroid problems
13	Mastitis	10	Diabetes
14	Postpartum depression	11	Chronic hypertension
15	Postpartum psychosis	12	Heart disease

Clinical practice in the presence of co-morbidities

The handbook acknowledges the possibility of women suffering from multiple obstetric morbidities (e.g., anemia and hypertension) or a combination of obstetric and non-obstetric morbidities (e.g., anemia and malaria). Postpartum depression and psychosis feature in the list of 12 non-obstetric risk conditions (see Table 2) because these stigmatized conditions are typically normalized or ignored.

A case-based problem-solving approach helps a reader grapple with the complexity of risk assessment. Twenty-three cases drawing upon the clinical histories of women in Koppal consider multiple scenarios: women presenting with atypical symptoms or multiple morbidities; women reporting ailments unconnected with pregnancy (e.g., viral fever, diarrhea) but not co-existing obstetric morbidities. Starting with a set of initial symptoms, each case is differentially diagnosed by applying a systematic clinical evaluation.

Table 3. Assessment of cultural beliefs and practices

	Cultural belief or practice	Assessment
1	Physical work during pregnancy facilitates easy delivery.	Helpful
2	Pregnant woman must stay at home during an eclipse, as it can create problems for both mother and child.	Neither helpful nor harmful
3	Pregnant women must avoid bananas, sesame seeds, coconut, guava, pumpkin, papaya, sweet potato and the cow's colostrum, as these can induce an abortion.	Neither helpful nor harmful
4	A woman who has had a Caesarean section once will need to undergo Caesarean sections in subsequent deliveries.	Neither helpful nor harmful
5	Postpartum women must be kept warm so that they lose the water that accumulated during pregnancy.	Neither helpful nor harmful
6	IFA tablets make the baby grow too big for normal delivery, and should therefore be avoided.	Harmful
7	Headaches during pregnancy are not a problem. They go away after applying balm/lodex.	Harmful
8	Heavy bleeding after delivery is good for the mother's health.	Harmful
9	After delivery, a woman must be given little-to-no water, as her breast milk will get diluted and the baby can develop diarrhoea.	Harmful
10	Swelling of the feet is normal during pregnancy and will reduce on walking.	Harmful
11	A postpartum woman who talks irrelevantly is possessed. She must be taken to a temple or spiritual healer for treatment.	Harmful
12	A newborn should not be breastfed for three days after birth. That milk is bad.	Harmful

Equity-promoting responses to social vulnerability

The handbook is action-oriented. It provides new content to help health providers deal with the adverse consequences of social inequities and entrenched cultural practices. Domestic violence is included among 12 co-morbid conditions. An entire chapter also assesses some common beliefs and practices that contribute to obstetric risks (Table 3), offering suggestions for how these can be tackled.

CONCLUSION

We have argued that a grounded process of systematic adaptation can bridge the gap between guidelines or best practices and the ad hoc adaptations that characterize clinical practice in LMIC settings. The handbook contextualizes the use of guidelines and best practices in maternal health care, and provides information outside the scope of standard textbooks/manuals to guide provider responses to health needs. It synthesizes biomedical and social science information with practitioner-based understandings, and offers a pragmatic, action-oriented approach to maternal health care.

The handbook demonstrates how doctors and staff nurses can make clinical decisions in the face of incomplete risk presentations and co-morbid conditions. It indicates how they can respond to social vulnerabilities and adverse cultural beliefs. The handbook cannot resolve the problem of resource scarcity. Still, its cluster-based diagnostic approach can help providers make reasonably robust clinical assessments even when laboratory/radiological facilities prove elusive, and ration resources fairly (i.e., according to clinical needs). Taken together, the systematic adaptation informing primary care practice outlined in the handbook supports both maternal safety and equity.

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RÉSUMÉ

Il est reconnu que le processus d'adaptation des directives universelles aux milieux institutionnels et culturels locaux importe pour l'application et l'adoption de ces directives. Quoi adapter, pourquoi le faire et comment s'y prendre en se fondant sur les preuves sont toutefois des questions auxquelles il n'existe pas de réponses claires. Les personnels de santé des pays à faible revenu et à revenu intermédiaire doivent souvent composer avec des comorbidités et des inégalités sociales largement répandues chez les femmes enceintes. Comme ces deux problèmes sont insuffisamment abordés dans les directives habituelles, et devant les pressions continuelles exercées par la rareté des ressources, les personnels de santé répondent par des adaptations ponctuelles parfois contraires à la sécurité des mères et à l'équité. Nous promulguons et décrivons un processus bien rodé d'adaptation systématique des directives disponibles en citant l'exemple d'un guide sur les risques maternels rédigé à l'intention des médecins de premier recours et des infirmières de soins généraux. Les adaptations systématiques présentées dans ce guide pratique et pragmatique tirent parti de la recherche effectuée pour un ancien projet communautaire sur la sécurité et les droits des mères. Le guide emploie une méthode de résolution de problèmes au cas par cas. En répétant les directives et les pratiques exemplaires en matière de décisions diagnostiques et de gestion des risques, le guide indique comment elles peuvent répondre aux comorbidités et aux inégalités sociales en les illustrant par des cas cliniques complexes et de nouvelles données de sciences sociales.

MOTS CLÉS : santé maternelle; pratiques exemplaires; directives; comorbidité; inégalité sociale; renforcement des capacités