

Web Appendix B. Maternity service quality measurement instrument

Topics	Dimensions	Theoretical Constructs
Capacity Related Concerns	Care capacity Patient room availability Space in wards Patient privacy Hospital ward capacity Comfort on the ward Staff availability Midwives' capacity Doctors' English language capability Language comprehension for foreign patients)	Tangible Physical aspects (Brahmbhatt et al., 2011) Infrastructure (Padma et al., 2009, 2010) Responsiveness (Anbori et al., 2010)
Insufficient Amenities	Parking situation Conditions of the toilets Conditions of hospital infrastructure Appropriate washing and bathroom facilities	Tangible Tangible (S. Andaleeb, 2008) Physical aspects (Brahmbhatt et al., 2011)
Night-time Care Conditions	Noise level in wards Patient care at night Wards staffing Partner presence to assist new mothers	Tangible Physical aspects (Brahmbhatt et al., 2011) Responsiveness (Abuosi & Atinga, 2013; Ahmadi, 2017; Lam & Woo, 1997; Lin et al., 2004) Empathy/Access (Adams et al., 2009) NIGHT TIME CARE CONDITIONS (author's construct)
Labour Ward Access	Facility accessibility	Tangible Physical aspects (Brahmbhatt et al., 2011) Tangibles (Lin et al., 2004)
Staff Attitude	Nurse availability Nurse capacity Staff attitude Doctor empathy Consultant approach towards patients Patient privacy Staff patience	Empathy Empathy (Processes) (D. H. Lee, 2017; D. Lee & Kim, 2017) Communication with nurses (Webster et al., 2011)
Deficit of Hospital Resources	Availability of hospital resources Hospital staffing	Tangible Responsiveness (Anbori et al., 2010) Tangibles (Abuosi & Atinga, 2013)
Appointment Management System	Appointment ticketing system Accuracy of appointment times Patient informed about appointments Appointment waiting times Length of appointment	Process Convenient and Fair Process (Otalora et al., 2018) Process of healthcare Administrative procedures (Siddiq et al., 2016) Process (Brahmbhatt et al., 2011)
Quality of Food	Standard of hospital food Nutrition levels of breakfast offered Portion size	Tangible Food and beverage (Aborumman & Aborumman, 2011) Tangibles (Ahmadi, 2017) Physical aspects (Brahmbhatt et al., 2011)
Management of Visiting Times	Flexibility of visiting times Visits limitations Enforcement of visiting times Noise levels during ward visiting times	Process Process (Brahmbhatt et al., 2011) Process of healthcare administrative procedures (Siddiq et al., 2016)

Topics	Dimensions	Theoretical Constructs
Insensitive Care Conditions	Sleep hygiene on wards Mothers access to milk during the nights Access to neonatal ward Sensitivity around ward co-location of those pregnant and those experiencing miscarriages	Empathy Empathy (Abuosi & Atinga, 2013; Lam, 1997; Lin et al., 2004)
Doctors' Pre-visit Preparation	Doctors' preparedness Doctors' communication with care team Communication and agreement on visit timings	Process of clinical care (Padma et al., 2009, 2010)
Labour Postnatal Support and Delayed Appointments	Frequency of delays or cancellation Timeliness	Process Service Reliability (Otalora et al., 2018) Responsiveness (Büyüközkan et al., 2011) Process (Büyüközkan et al., 2011) Process of healthcare administrative procedures (Siddiq et al., 2016)
Care Under Exceptional Circumstances	Medical staff understand of patients' specific needs	Empathy Empathy (Abuosi & Atinga, 2013) Physician–Patient Relationship (Otalora et al., 2018)
Access to Pain Relief	Pain management Options for pain relief Early-stage access to pain relief Staff responsiveness to pain Epidural pain relief	Pain management (Webster et al., 2011)
Discharge Issues	Discharge timing Information clarity from staff on discharge	Process Process (Brahmbhatt et al., 2011) Process of healthcare administrative procedures (Siddiq et al., 2016)
Need for Increased Breastfeeding Support	System supports for breastfeeding Breastfeed expectations Breastfeeding support	Competency Professionalism/Skill/Competence (Ramsaran-Fowdar, 2005)
Information Support and Individualised Options	Early discussion on birth method Information provision on all delivery options Consultant attitude of consultant towards birth decisions Provision of clear information from staff Respect of patients' personal choices Access to required scans at appointments Active listening to women	Empathy Empathy (Abuosi & Atinga, 2013; Al-Damen, 2017; Anbori et al., 2010; Lam, 1997; Lin et al., 2004; Ramsaran-Fowdar, 2005) Personalization (Isa et al., 2014; Karami et al., 2016; Raajpoot, 2004) Reliability (Brahmbhatt et al., 2011) Responsiveness (Ahmadi, 2017)
Holistic Care Experience	Primary and technical quality Treatment process and its outcome Reliability Understanding of illness Comprehensive care satisfaction Midwives experience Midwives attitude Up-to-date dietary advice Operational devices	Process Credibility (Pakdil & Harwood, 2005; Parasuraman et al., 1990; Zeithaml et al., 1990) (Zeithaml et al. 1990) Process of clinical care (Padma et al., 2009, 2010)
Insufficient Care Checks (Pre and Postnatal)	Conduct necessary tests Conduct process checks Midwives post-delivery care	Process Process of clinical care (Padma et al., 2009, 2010) Process (Brahmbhatt et al., 2011)

Topics	Dimensions	Theoretical Constructs
	<p>Explanation of birth process and feeding progress</p> <p>Delivery of medical information by midwives rather than doctors</p> <p>Post delivery mental health checks</p> <p>Provision of mental health supports (related to postnatal depression and coping mechanisms) at antenatal stage by public health nurse and GP after the birth</p> <p>Postnatal patient check-up</p> <p>Personally tailored care</p> <p>Inclusion of the woman in addition to focus on the child</p> <p>Prenatal scans</p> <p>Access to necessary scans</p> <p>Patient privacy</p>	
Ineffective Post Care	<p>Post c-section care</p> <p>Mother and child contact post c-section</p> <p>Monitoring of baby post birth</p> <p>Access to necessary scans</p> <p>Patient privacy</p> <p>Postnatal care management</p> <p>Maternity baby app for maternity timeline information and supports</p> <p>Appropriate postnatal check</p> <p>Communication in initial post-natal days</p>	<p>Reliability</p> <p>Service Reliability (Otalora et al., 2018)</p> <p>Empathy (Ramsaran-Fowdar, 2005)</p>
Detection and Treatment of Infections	<p>Public health nurse capability to treat post op wound infection</p> <p>Appropriate treatment of patients after detection of infection</p>	<p>Reliability</p> <p>Reliability (Adams et al., 2009; Ramsaran-Fowdar, 2005)</p>
Care Consistency	<p>Consistency of advice</p> <p>Detailed explanations by staff</p> <p>Alignment between GP and midwives advice</p> <p>Aligned best practice advice given by midwives on breastfeeding</p> <p>Consistent care by different staff</p> <p>Consistent care across labour stage</p> <p>Availability of space in delivery suite</p> <p>Appropriate move into labour ward</p> <p>Appropriate space in labour ward</p>	<p>Reliability</p> <p>Reliability (Lin et al., 2004)</p> <p>Empathy (Ramsaran-Fowdar, 2005)</p> <p>CARE CONSISTENCY (author's construct)</p>
Rushed Care	<p>Midwives' patience during birth</p> <p>Appointment care and time</p> <p>Doctors' opinions towards induction process</p> <p>Availability of information on occurrences during induction process</p> <p>Presentation of induction as an option</p>	<p>Reliability</p> <p>Reliability (Lin et al., 2004; Peprah & Atarah, 2014)</p> <p>Empathy (Ramsaran-Fowdar, 2005)</p>
Integrated GP Care Services	<p>Patient note sharing between hospital and GP</p> <p>Care continuity</p>	<p>Process (Coordination)</p> <p>CO-ORDINATED CARE (author's construct)</p>
Ineffective Communication	<p>Communication of pregnancy changes</p> <p>Information relevance</p> <p>Information availability regarding occurrences in theatre following delivery</p> <p>Access to information on physical changes post pregnancy</p>	<p>Communication</p> <p>Communication (S. Andaleeb, 2008; S. S. Andaleeb, 2000, 2001; Pakdil & Harwood, 2005; Zeithaml et al., 1990)</p> <p>Empathy (Büyüközkan et al., 2011)</p>

Topics	Dimensions	Theoretical Constructs
	Active listening by doctors Addressing patient questions or concerns Adequate communication with consultant Full responses to questions about how a procedure went Respectful consideration of patient questions Communication between midwives and the patient during labour Staff communication prior to labour	Communication / interpersonal relationship (Peprah & Atarah, 2014)
Partner Participation	Partner participation Partner access to mother and child	EMOTIONAL/MORAL SUPPORT (author's construct)

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