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## Safe Motherhood: Maternity Waiting Homes in Ethiopia to Improve Women's Access to Maternity Care

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# Chapter 8. General discussion and conclusion



In this research, a convergent parallel study design was applied to explore factors that may affect uptake of Maternity Waiting Homes (MWHs) (1). Hospital records of over 17,000 women were used to examine the impact of MWH use on birth outcomes. Moreover, 1,273 people were heard through structured questionnaires, in-depth interviews and focus group discussions to explore factors associated with and perceptions related to (intended) MWH use. In addition, 20 health centres were assessed to determine whether these were capable of providing necessary life-saving interventions for labouring women and neonates. Lastly, lessons and best practices were extracted from a well-used MWH. Here, we summarize the main findings, put these into a broader perspective and provide recommendations.

Four main findings arise from this research. First, our data suggest that MWHs contribute to reducing maternal deaths, stillbirths and uterine ruptures by bringing women closer to quality emergency obstetrics and newborn care (EmONC) (Chapter 2). Second, awareness of the availability of MWHs was poor among community members (Chapter 3). Third, after being explained the concept, more than half of the women indicated that they intended to use the intervention in the future (Chapter 3), but many demand- and supply-side barriers to MWH use came to light that could impede use. Some of these barriers could potentially be overcome by government and community initiatives (Chapter 3 & 4). Lastly, provision of care of sufficient quality was not guaranteed at health centres, where MWHs have been established since 2014, whereas this was considered to be the main facilitator according to users (Chapter 5 & 6). Findings are summarized in Figure 1 within the conceptual framework, the Adapted Three Delays Model (2).

### **Potential to save lives at birth**

The effectiveness of MWH use in improving access to obstetric and newborn care and reducing maternal and neonatal mortality has not been widely studied. While MWHs are used in over 25 countries, only 13 studies (including ours) have evaluated their effectiveness (Table 1). Eight of these 13 studies were hospital-based retrospective cohort studies (#1-4, 6, 8, 11, 13), three were community-based studies (#5, 10, 12), and two were before-and-after studies (#7, 9).

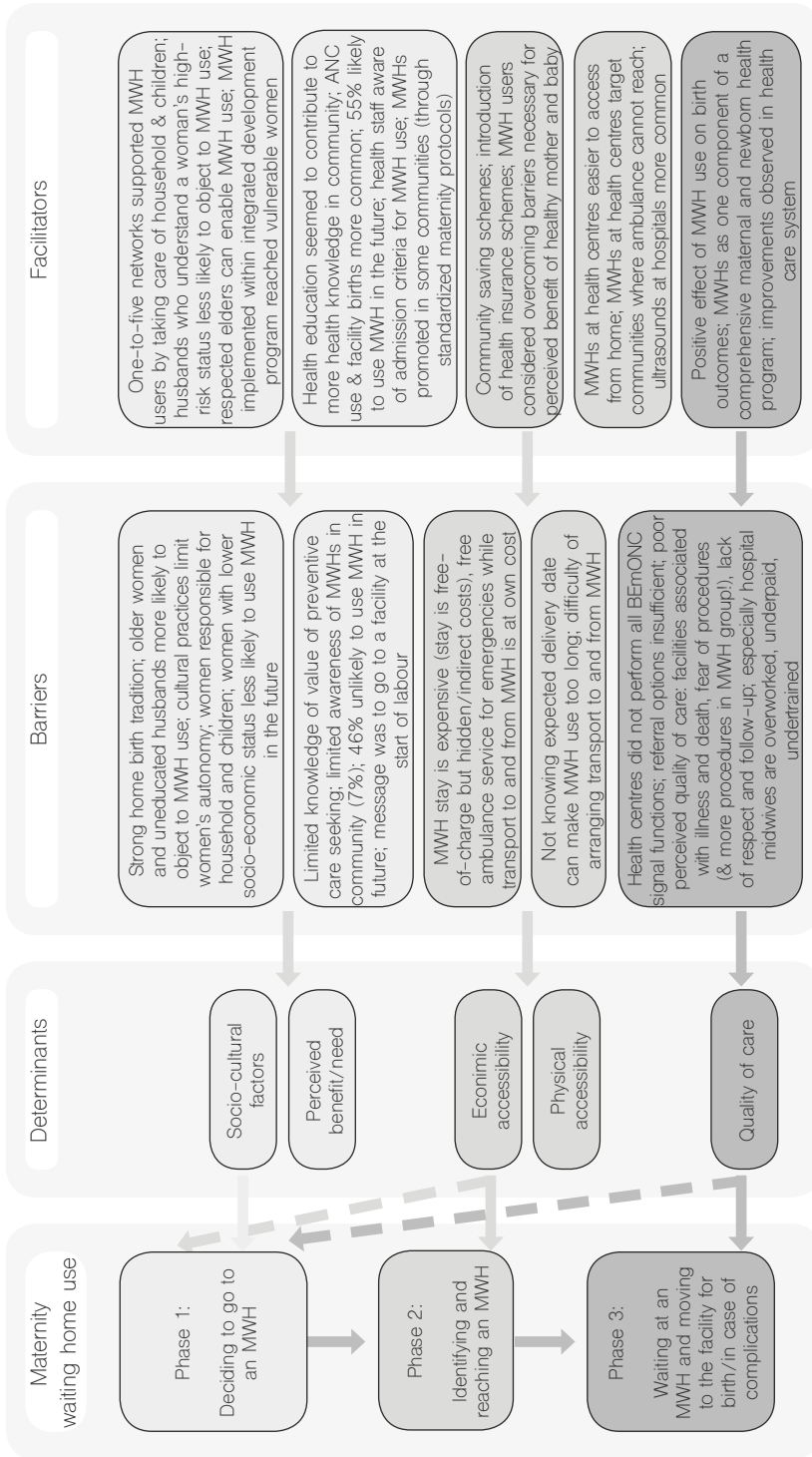


Figure 1. Research findings placed within our conceptual framework, the Adapted Three Delays Model by Gabrysch & Campbell (1990) (2)  
MWH: maternity waiting home

Table 1. Peer-reviewed publications between 1991 and 2018 that evaluated the effectiveness of maternity waiting homes

#	First author	Year	Country	Comparison	Outcome	Conclusion	Positive effect MWH?	Better outcome MWH?
1	Chandra-mohan (3)	1994	Zimbabwe	MWH versus non-MWH	Non-users more obstructed labour, hysterectomies, craniotomies, uterine ruptures	Success of MWH dependent on risk selection	Yes	Yes
2	Chandra-mohan (4)	1995	Zimbabwe	MWH versus non-MWH	High-risk users had reduced risk of perinatal death compared to controls	Success of MWH dependent on risk selection	Yes	Yes
3	Millard (5)	1991	Zimbabwe	MWH versus non-MWH	Lower risk status users; fewer perinatal deaths and interventions among users but not significant	No effect MWH	No	No
4	Tumwine (6)	1996	Zimbabwe	MWH versus non-MWH	Fewer perinatal deaths among users and more low birthweight babies among non-users but not significant	No effect MWH	No	No
5	Spaans (7)	1998	Zimbabwe	Home versus facility births, incl. MWH use	No differences in risk factors except more previous CS among users; lower death rates among users but not significant	MWH improves access to hospital	Yes	No
6	van Lonkhuijzen (8)	2003	Zambia	MWH versus non-MWH	More high risk, CS, VE among MWH users; no differences in outcomes between users and non-users	Same outcome for high-risk users as high-risk non-users was seen as positive MWH effect	Yes	Yes

table continues



7	Andemichael (9)	2009	Eritrea	Number of hospital deliveries before & after MWH	49% increase in institutional deliveries after MWH introduction	Positive effect of MWH on number of institutional births	Yes	NA
8	Kelly (10)	2010	Ethiopia	MWH versus non-MWH	Much better outcomes for MWH users on MMR, SBR, uterine ruptures	Positive effect MWH	Yes	Yes
9	Wild (11)	2012	East Timor	Distance travelled to reach facility	Distances did not change after MWH implementation	No effect MWH	No	NA
10	Lori (12)	2013a	Liberia	Communities with MWHs versus without MWHs	Increase in team births (SBA + TBA) from baseline to post-intervention, lower rates of maternal (and perinatal death, but not significant) in communities with MWHs.	Positive effect of MWH on team births and maternal survival	Yes	Yes
11	Fogliati (13)	2017	Tanzania	MWH versus non-MWH	No differences in risk status or maternal outcomes; (very early) neonatal survival greater among users	Positive effect of MWH on neonatal outcomes	Yes	Yes
12	Henry (14)	2017	Zambia	Association of MWH quality with the likelihood of facility birth	Women living in catchment area where (quality) MWHs were available more likely to give birth at facility	MWH improves access to hospital	Yes	NA
13	Braat, Vermeiden (15) (Chapter 2)	2018	Ethiopia	MWH versus non-MWH at hospitals with and without MWH	No maternal deaths, fewer stillbirths and uterine ruptures among users	Positive effect MWH	Yes	Yes
<b>Total</b>							<b>10 of 13</b>	<b>7 of 10</b>

#: number; CS: Caesarean section; MWH: maternity waiting home; NA: not applicable; SBA: skilled birth attendant; SBR: stillbirth rate; TBA: traditional birth attendant; VE: vacuum extraction

Ten of the thirteen studies concluded that MWHs had a positive effect, either by improving access to the facility, increasing the number of facility births or improving birth outcomes. Of the ten studies that included birth outcomes, seven found positive results, while three (#3–5) found no significant differences. These findings are encouraging, suggesting that MWHs contribute to reducing delays in accessing facilities for childbirth. However, due to a high risk of selection bias in most of the studies, a more rigorous design is needed to evaluate effectiveness of MWHs, either a randomised controlled trial or cluster-randomised trial (16). A cluster-randomised trial is currently ongoing in Jimma zone, Ethiopia, whereby two intervention packages (upgraded MWHs with or without community and religious leader sensitization) are compared to no interventions (17).

One finding that deserves further research is the high percentage of Caesarean sections (CS) among MWH users in Attat Hospital (Chapter 2; (10)). Van Lonkhuijzen et al. (2003) also found higher CS rates among MWH users than those admitted directly to hospital; MWH users more often had a high-risk pregnancy than non-users (8). Chandramohan et al. (1994) found no differences in CS when comparing users and non-users with obstetric risks (3). Millard et al. (1991) found fewer CS among MWH users, but these women had fewer antenatal risk factors than non-users (5). A retrospective study could be done to evaluate the place of MWHs on the continuum of maternity care, with on one extreme end “too little, too late” and on the other “too much, too soon”. Such a study is important to establish whether MWH use allows health providers to provide the right care at the right time, or if their use subsequently leads to overmedicalisation (18).

## **AWARENESS OF MWHs**

Facility births are a relatively new phenomenon to most Ethiopians (10% between 2006 and 2011; 26% between 2011 and 2016) and MWHs an even newer concept (19). Between 2014 and 2016, the number of MWHs (or a dedicated room for women to await the start of labour) increased from 9 to 2,001, mostly through community support (20, 21). Although 53% of facilities now have such a structure, distribution across regions is uneven, with none in Gambella and only 7% of facilities in Afar and Somali (21) (see map on p.14).

Given the recent expansion and to facilitate women's access, proper information about the intervention needs to be made available to its stakeholders. For this purpose, the Federal Ministry of Health prepared the “Guideline for the establishment of Standardized Maternity Waiting Homes at Health Centres” in December 2015 (22). It states that the Ministry's responsibility is to prepare, distribute and monitor implementation of the



guideline. Implementation is decentralised to regional and zonal governments, health facilities, the Health Development Armies<sup>1</sup> and communities. Health Extension Workers are responsible for creating community awareness on this topic (22). However, in 2016, the MWH guideline was found in less than 20% of the regional, *woreda* (district) and zonal government offices [(21); fieldwork was done from May to December 2016]. Implementation activities are to be funded through community resources and from health facilities' internal expenditures, which implies that no separate funding has been made available for this purpose (22). Furthermore, little attention is given to the intervention within national health plans and performance reports. The Health Sector Transformation Plan 2015–2020 only mentions MWHs once, ascribing responsibility to the community (23). The 2016 annual performance report praises the community's commitment to constructing MWHs, but no mention is found in the 2017 annual performance report (24, 25).

With regard to community awareness, only 7% of women in the eastern Gurage Zone had heard of an MWH prior to our 2014 survey (Chapter 2), as may be expected in the early phases of the country-wide rollout of the intervention. In September 2016, a community-based study (N=3,784) in bordering Jimma zone (see the map on p. 14) found that 71% of women were aware of the service (26). During in-depth interviews in the eastern Gurage Zone in the same month, healthcare workers stated that MWH promotion was ongoing or had been completed (Chapter 4). We interviewed only three non-users in the community at that time, who were unaware of the availability of MWHs, despite the fact that their *Kebele* leader stated to be promoting them in his neighbourhood. Awareness is likely to increase over time. Nonetheless, it is important to determine whether Health Extension Workers are capacitated to do so and monitor community awareness levels. In other settings, lack of awareness in the community was found to negatively impact MWH use, while knowledge of services, being acquainted with other users, and significant others' positive attitudes towards MWHs were facilitators of (intended) use (27–30).

Moreover, women should be provided with a clear, consistent message about who should go to the MWH and when. Although health centre staff in our study (Chapter 4) indicated that all pregnant women were welcome, the Ethiopian MWH guideline defines the target group by distance and antenatal risk factors (22). Pregnant women living far from a health facility (where an ambulance cannot reach) and those with risk factors should be encouraged by Health Extension Workers to go to an MWH around 38 weeks of pregnancy. In addition, all women are encouraged to stay 24 hours after birth (22). We found that women were told to come to the facility at the start of labour (Chapter 4), which may explain why close to 60% of users

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<sup>1</sup> Health Development Armies organize women into one-to-five networks for the purpose of attitudinal and behavioural change as well as politics.

in the aforementioned community-based study in Jimma zone stayed at the MWH for 24 hours or less prior to going into labour (26). Furthermore, the guideline indicates that women with certain risk factors should be referred directly to hospital (22). However, this list of indications expressed in the guideline is not exhaustive and, for example, does not include a history of stillbirth, antepartum or postpartum haemorrhage. Contrary to health centre staff welcoming all women, we found that one of the two studied hospital MWHs did not allow low-risk pregnant women with a term pregnancy, even though there were empty beds available (Chapter 4). Since maternal health services, including MWHs, are currently underutilized in Ethiopia and access is a major challenge, denying women access to the MWH should be avoided at all costs. Lastly, when to go to an MWH should be determined using a woman's estimated delivery date and the risks associated with her pregnancy. Estimated delivery date is ideally calculated using the first day of her last menstrual period and/or from an ultrasound examination between 10- and 13-weeks' gestation (31). However, few Ethiopian women attend antenatal care (ANC) in the first trimester and ultrasound scanning is still limited (19). Nonetheless, even if women do not know the exact date, health providers can probe by using local marking points such as market days, religious holidays or lunar months.

All in all, raising awareness about MWHs is still in its early phases in Ethiopia, and should go hand in hand with increasing accessibility and quality of these services, as described below.

## ACCESSIBILITY OF MWHs

According to our 2014 findings, intended MWH use among women was 55% (Chapter 3). A 2016 facility-based survey (N=387) in Jimma zone found that 39% of ANC users had past experiences with MWHs and 57% intended to use an MWH in the future (29). Conversely, the earlier mentioned community-based study in Jimma zone found that actual MWH use was only 7% (26). A study from Zimbabwe showed that two thirds of women had stated having the intention to use an MWH if it was available, but only one third actually had accessed the service five years later (32).

Our qualitative findings (Chapter 4) complement those from other studies that, both historically and culturally, Ethiopian women are bound to their homes, to care for the household, cattle and children. Home births (with Traditional Birth Attendants) have a long and rich tradition and uncomplicated births still preferably take place in the home (Chapter 3 & 4) (33, 34). Although most community respondents acknowledged that MWH stays and facility births had their advantages (Chapter 3 & 4), husbands and mothers(-in-law) were likely to object to MWH use. Also women themselves felt uncomfortable leaving the house. Furthermore, the indirect costs associated with MWHs were high

according to users, despite their stay being free-of-charge. (Chapter 4). These findings are comparable to those from other settings (Table 2), which confirms conclusions of the 2012 Cochrane literature review: even if women have a positive attitude towards staying at an MWH, barriers can prevent them from doing so (16).

Nonetheless, various examples are available of MWHs that were accepted and used by the community. Table 2 demonstrates that barriers and facilitators to MWH use are two sides of the same coin. MWH users in Attat and Butajira Hospitals (Chapters 4 and 5) shared enabling factors that could increase MWH use and facility births in Ethiopia. First, providing high quality, respectful maternity care at the health facility was crucial (Chapter 5). Second, Health Extension Workers created community dialogues to agree on a standardized maternity protocol (Chapter 4). Third, community groups of pregnant women (one-to-five networks) created a safety net through saving schemes and support to a woman during her MWH stay (Chapter 4). In addition to the facilitators that we uncovered (Chapters 3, 4 and 5; Figure 1), it would also be useful to explore whether best practices from other settings relate to the broader context of Ethiopia (Table 2).

Table 2. Publications between 1985 and 2019 on barriers and facilitators to maternity waiting home use

Studies	Countries	Barriers	Studies	Countries	Facilitators
<b>Sociocultural</b>					
Poovan 1990 (35), Wilson 1997 (36), Shrestha 2007 (27), Ruiz 2013 (37), Lori 2013b (38)	Ghana, Guatemala, Liberia, Nepal	Lack of community involvement in MWH set-up, support and maintenance	Figa-Talamanca 1996 (39), Poovan 1990 (35), WHO 1996 (40), Aendemichael 2009 (9), Kelly 2010 (10), Lori 2013b (38), Vermeiden 2018b (41) (Ch. 5)	Colombia, Cuba, Eritrea, Ethiopia, Liberia	Community participation in land provision, construction, maintenance and/or funding of MWH
WHO 1996 (40), Wilson 1997 (36), Chamberlain 2000 (42), Stekelenburg 2006 (43), Eckermann 2008 (44), Schooley 2009 (45), Garcia Prado 2012 (28), Lori 2013b (38), Ruiz 2013 (37), Sialubanje 2015 (46), Kyokan 2016 (30), Sialubanje 2016 (47), Tiruneh 2016 (48), Endalew 2017 (29), EmONG 2017 (21), 2018 Vermeiden 2018a (49) (Ch. 3), Vermeiden (Ch. 4)	Canada, Ethiopia, Ghana, Guatemala, Laos, Liberia, Nicaragua, Peru, Sierra Leone, Zambia	Being away from home & children; no one to take care of children, farm, household; lack of autonomy – husband/family does not allow MWH stay	Figa-Talamanca 1996 (39), Eckermann 2008 (44), Schooley 2009 (45), Kelly 2010 (10), Endalew 2017 (29), Singh 2017 (50), Vermeiden 2018b (41) (Ch. 5), Vermeiden (Ch. 4)	Cuba, Ethiopia, Guatemala, Laos, Tanzania,	Encouragement and support of husbands/ family/ community in overcoming barriers to MWH use
Kruske 2006 (51), Shrestha 2007 (27), Garcia Prado 2012 (28), Wild 2015 (52), Kyokan 2016 (30), Chibuye 2018 (53), Vermeiden (Ch. 4)	Australia, East Timor, Ethiopia, Liberia, Nepal, Nicaragua, Sierra Leone, Zambia	Preference for home births and TBAs, especially for uncomplicated cases	Kruske 2006 (51), Aendemichael 2009 (9), Garcia Prado 2012 (28), Lori 2013b (38), Kyokan 2016 (30), Vermeiden under review (Ch. 4)	Australia, Eritrea, Liberia, Nicaragua, Sierra Leone	TBAs have an active role in referring and/ or accompanying women to the MWH and acting as companion during labour

table continues

Schooley 2009 (45), Garcia Prado 2012 (28), Vermeiden 2018a (49) (Ch. 3), Vermeiden (Ch. 4)	Ethiopia, Guatemala, Nicaragua	Low socio-economic status; illiteracy, limited education, autonomy, wealth	Garcia Prado 2012 (28), Schooley 2009 (45), 2018 Vermeiden 2018a (49) (Ch. 3), Vermeiden (Ch. 4)	Ethiopia, Guatemala, Nicaragua	Higher socio-economic status; general literacy, education, autonomy, wealth
<b>Perceived need/benefit</b>					
Figa-Talamanca 1996 (39), Wilson 1997 (36), Shrestha 2007 (27), Mramba 2010 (54), Garcia Prado 2012 (28), Metcalfe 2013 (55), Ruiz 2013 (37), Kyokan 2016 (30), Tiruneh 2016 (48), Vermeiden 2018a (49) (Ch. 3), Vermeiden (Ch. 4)	Colombia, Ghana, Guatemala, Ethiopia, Kenya, Nepal, Nicaragua, Sierra Leone	Lack of awareness of availability and/or why and when to use an MWH	Barss 1985 (56), Poovan 1990 (35), Figa-Talamanca 1996 (39), Schooley 2009 (45), Kelly 2010 (10), Gaym 2012 (20), Garcia Prado 2012 (28), Wild 2012 (11), Endalew 2017 (29), Kyokan 2016 (30), Vermeiden 2018b (41) (Ch. 5), Vermeiden (Ch. 4)	Colombia, East Timor, Ethiopia, Guatemala, Nicaragua, Papua New Guinea, Sierra Leone	Awareness of the availability of MWHs through community outreach and mobilisation; word-of-mouth promotion in the community; knowing other users; positive attitude of important others towards MWH use
Spaans 1998 (7), Eckermann 2008 (44), Schooley 2009 (45), Gaym 2012 (20), Lori 2013b (38), Sialubanje 2015 (46), Sialubanje 2016 (47), Tiruneh 2016 (48), Endalew 2017 (29), Vian 2017 (57), Scott 2018 (58), Lori 2018 (59), Vermeiden 2018b (41) (Ch. 5), Vermeiden (Ch. 4)	Ethiopia, Guatemala, Laos, Liberia, Zambia, Zimbabwe	Perceiving advantages and benefits of an MWH stay in the community: safety, rest, reducing the distance barrier			

table continues

	Barss 1985 (56), Chandramohan 1994 (3), Chandramohan 1995 (4), Figa-Talamanca 1996 (39), Poovan 1990 (35), WHO 1996 (40), Van Lonkhuijzen 2003 (8), Kruske 2006 (51), Wagner 2007 (60), Gory 2011 (61), Vermeiden 2018a (49) (Ch. 3), Vermeiden 2018b (41) (Ch. 5)	Australia, Canada, Colombia, Cuba, Ethiopia, Papua New Guinea, Zimbabwe	Risk selection and users' awareness of high-risk status *
Chandramohan 1994 (3), Figa-Talamanca 1996 (39), Spaans 1998 (7), Eckermann 2008 (44), Tiruneh 2016 (48)	Ethiopia, Laos, Zimbabwe	Unsure of gestational age; long stays	Devices/methods to calculate the expected delivery date
<b>Economic accessibility</b>			
Wilson 1997 (36), Spaans 1998 (7), Chamberlain 2000 (42), Stekelenburg 2006 (43), Eckermann 2008 (44), Garcia Prado 2012 (28), Lori 2013b (38), Ruiz 2013 (37), Sialubanje 2015 (46), Kyokan 2016 (30), Lori 2016 (62), Sialubanje 2016 (47), Tiruneh 2016 (48), Vian 2017 (57), Chibuye 2018 (53), Scott 2018 (58), Vermeiden 2018 (49) (Ch. 3), Vermeiden (Ch. 4)	Canada, Ghana, Guatemala, Ethiopia, Laos, Liberia, Nicaragua, Sierra Leone, Zambia, Zimbabwe	Associated costs too high	Removal or reduction of costs (through community saving and/or health insurance schemes)
<b>Physical accessibility</b>			

table continues

Chamberlain 2000 (42), Shrestha 2007 (27), Sialubanjanje 2015 (46), Kyokan 2016 (30), Sialubanjanje 2016 (47), Endalew 2017 (29), Chibuye 2018 (53), Scott 2018 (58), Vermeiden 2018a (49) (Ch. 3), Vermeiden (Ch. 4)	Canada, Ethiopia, Nepal, Sierra Leone, Zambia	Lack of transport, poor roads	Figa-Talamanca 1996 (39)	MWHs at BEmONC facilities close to the woman's community; requires availability of communication means and emergency transport
Wilson 1997 (36)	Ghana	Far from facility, insecure location	Poovan 1990 (35), Figa-Talamanca 1996 (39), WHO 1996 (40), Van Lonkhuijzen 2003 (8)	Functioning referral system
<b>Quality care</b>				
<b>At MWH</b>				
1990 Sambe [in (16)], 1996 Nhindiri [in (16)], Wilson 1997 (36), Van den Heuvel 1999 ((32), Shrestha 2007 (27), Ruiz 2013 (37), Sialubanjanje 2015 (46), Kyokan 2016 (30), Lori 2016 (62), Endalew 2017 (29), EmONC 2017 (21), Chibuye 2018 (53), Scott 2018 (58), Lori 2018 (59)	Ethiopia, Ghana, Guatemala, Nepal, Sierra Leone, Zaire, Zambia, Zimbabwe	Poor conditions, services, management; lack of sustainable funding	Figa-Talamanca 1996 (39), Kruske 2006 (51), Wagner 2007 (60), Eckermann 2008 (44), Fraser 2008 (63), Gorry 2011 (61)	Good quality of facilities and services, culturally appropriate and respectful care at the MWH
Wilson 1997 (36), Chamberlain 2000 (42), Gorry 2011 (61), Ruiz 2013 (37), Sialubanjanje 2015 (46), Endalew 2017 (29), Lori 2018 (59)	Canada, Cuba, Ethiopia, Ghana, Guatemala, Zambia	Feeling alone, bored, uncomfortable at MWH	Wessel 1990 [in (16)], Tumwine 1996 (6), Gorry 2011 (61), Ruiz 2013 (37)	Activities at MWH including health education and income generating activities
<b>At health facility</b>				

table continues

Chamberlain 2000 (42), Shrestha 2007 (27), Eckermann 2008 (44), Gaym 2012 (20), Garcia Prado 2012 (28), Lori 2013b (38), Ruiz 2013 (37), Wild 2015 (52), Lori 2016 (62), Stalubanje 2016 (47), Chibuye 2018 (53), Scott 2018 (58), Windsma 2018 (64) (Ch. 6), Vermeiden (Ch. 4)	Canada, East Timor, Ethiopia, Guatemala, Laos, Liberia, Nepal, Nicaragua, Zambia	<b>Poor conditions, lack of quality care: lack of choice, culturally appropriate care, respect, female providers</b>	WHO 1996 (40), Kruske 2006 (51), Wagner 2007 (60), Eckermann 2008 (44), Fraser 2008 (63), Schooley 2009 (45), Yadamuren 2010 (65), Lori 2018 (59), Vermeiden 2018b (41) (Ch. 5)	Australia, Canada, Guatemala, Laos, Mongolia, Peru, Zambia	Continuous availability of high quality care, culturally appropriate and respectful care at the facility
Shrestha 2007 (27), Windsma 2018 (64) (Ch. 6)	Ethiopia, Ghana, Nepal	<b>Lack of Caesarean section and referral options</b>	Poovan 1990 (35), Figa-Talamanca 1996 (39), WHO 1996 (40), Van Lonkhuijzen 2003 (8), Vermeiden 2018b (41) (Ch. 5)		Functioning referral system; MWHs at CEmONC facilities close to all essential obstetric services
<b>System</b>					
Wild 2015 (52)	East Timor	<b>MWH as single solution to improving access to care</b>	Barss 1985 (56), Knowles 1988 (66), Poovan 1990 (35), Figa-Talamanca 1996 (39), WHO 1996 (40), Danel 2004 [in (16)], Hill 2006 [in (16)], Stekelenburg 2006 (43), Fraser 2008 (63), Schooley 2009 (45), Kelly 2010 (10), Yadamuren 2010 (65), Gorry 2011 (61), Vermeiden 2017 (67) (Ch. 7), Vermeiden 2018b (41) (Ch. 5)	Cuba, Ethiopia, Guatemala, Mongolia, Peru, Zambia	MWH as one component in a comprehensive approach to reduce maternal and newborn mortality and morbidity

\* Among the Inuit in Canada and Aboriginals in Australia, risk selection for the MWH is a holistic process that includes physical, mental, social, cultural and spiritual aspects; BEmONC: basic emergency obstetric and newborn care; CEmONC: comprehensive emergency obstetric and newborn care; Ch.: chapter; MWH: maternity waiting home; WHO: World Health Organization



Table 2 leads to the question whether an MWH is an equitable intervention. In other words, does the intervention reach those that bear the highest burden of maternal and neonatal mortality and morbidity: remote, vulnerable women with high-risk pregnancies? Or are the barriers too high for these women in particular?

Comparing two hospitals in the Gurage zone, we found that MWH users at Attat Hospital had the poorest socio-economic profile compared to non-users at Attat Hospital and women who gave birth in Butajira Hospital (Chapter 2). Nevertheless, in the community of the eastern Gurage Zone, women with a lower socio-economic and socio-cultural status, and those who envisioned more barriers to MWH use were less likely to use an MWH in the future (Chapter 3). Table 3 summarizes studies that examined associations of personal factors on MWH use.

Table 3. Overview of studies into associations between MWH use and distance, risk factors and/or socio-economic status

#	First author	Year	Country	Remote?	Risk factors?	Vulnerable groups?	Details
1	Millard (5)	1991	Zimbabwe	-	No	No	Users more likely without antenatal risk factors and more ANC attendance than non-users; distance and socio-economic status not assessed.
2	Chandra-mohan (4)	1995	Zimbabwe	Yes	Yes	No	48% of users lived more than 40km from facility compared to 22% of non-users; users more often risk factors & ANC attendance.
3	Spaans* (7)	1998	Zimbabwe	-	Partially	No	59% of all women used MWH; women with previous CS and primiparous women more often facility birth; women > 4 births and no ANC more often home birth.
4	Van Lonkhuijzen (8)	2003	Zambia	Yes	Yes	No	Users more maize production, risk factors and further from hospital than non-users.
5	Kelly (10)	2010	Ethiopia	Yes NS**	-	Yes	Users more often illiterate, less often primiparous and young than non-users; both users and non-users poor subsistence farmers and average distances from facility (>40 km).
6	Wild (11)	2012	East Timor	No	-	-	Facility births among those living more than 25 km from facility did not increase after introduction MWHs. Risk factors and socio-economic status not assessed.
7	Fogliati (13)	2017	Tanzania	Yes	No	Yes	Users more likely to be less educated, further from hospital and in lowest socio-economic groups than non-users. No association between risk factors presence and MWH use.
8	Singh (50)	2017	Malawi	No	Yes	Yes	Users more likely to report prior spontaneous abortion and be in lowest wealth quintile.

table continues

9	Braat (15) 2)	2018	Ethiopia	Yes	-	Yes	Users more likely to have a poor socio-economic profile and live further from hospital.
10	Lori (59)	2018	Zambia	Yes	-	No	Users more likely to live more than 15km from facility and be married. Risk factors not assessed.
11	Kurji (26)	Under re-view	Ethiopia	Yes	-	No	Users more likely to be housewives, have social support during pregnancy, longer travel times and more household wealth than non-users. Risk factors not assessed.
<b>Total</b>				<b>7 of 9</b>	<b>3.5 of 6</b>	<b>4 of 10</b>	

ANC: antenatal care, Ch.: chapter, CS: Caesarean section, KM: kilometres, NS: non-significant; \* Spaans (1998) compared home births to facility births, which included 59% MWH use. \*\* Although the difference in distance between users and non-users was not significant, this intervention was qualified as reaching remote users because the average number of kilometres that women travelled to the MWH was over 40.

Overall, seven of in total nine studies found that the MWH(s) had reached women living more than 15 kilometres from

Overall, seven of in total nine studies found that the MWH(s) had reached women living more than 15 kilometres from the facility. Three out of in total six studies found that MWH users more often had a high-risk pregnancy than those that did not use the MWH; the study by Spaans et al. (1998) revealed that the MWH partially reached pregnant women at risk of complications. Women who had given birth more than four times were more likely to give birth at home, while they would also have benefitted from an MWH stay (#3 in Table 3) (7). Only in four of ten studies did the intervention reach vulnerable women (those with a low socio-economic status and/or no ANC attendance) (Table 3). Thus, to unlock the full potential of MWHs to improve women’s access to obstetric and newborn care, the intervention must go beyond creating a space where women can stay before birth.

### QUALITY OF CARE AT MWHS AND HEALTH FACILITIES

MWH users at Attat Hospital were clear that the most important reason for their stay was the perceived benefits for the pregnant woman and her baby. The hospital was well-trusted and management acknowledged and stressed the importance of continuous availability of comprehensive EmONC (CEmONC). Most MWHs in Ethiopia, however, were established at basic EmONC (BEmONC) facilities (21). None of these facilities in the eastern Gurage Zone had performed all seven life-saving interventions in the three months prior to our 2015 assessment (Chapter 6). Below a comparison between our findings and those from a nationwide assessment in 2016, which revealed a similar problem (Figure 2) (21).

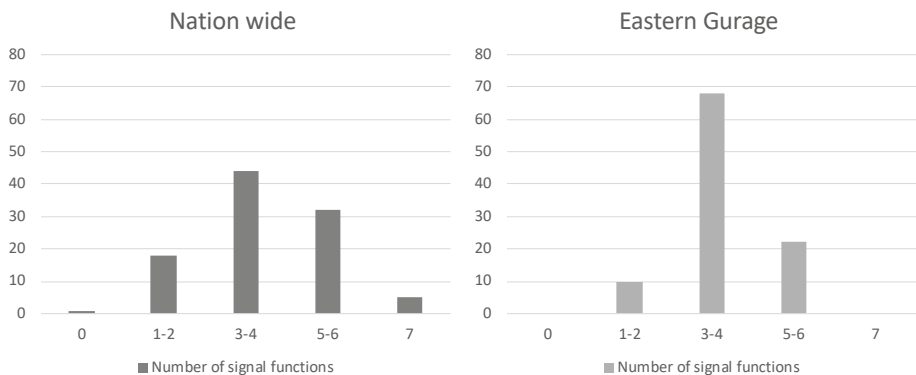


Figure 2. Comparison between our study findings (Chapter 6) and a nationwide assessment (21) on performance of the seven signal functions of Basic Emergency Obstetric and Newborn Care (BEmONC)

Table 4. Percentage of health centres that performed each BEmONC signal function in our 2015 assessment (N=20) (Chapter 6) and in a nation-wide assessment in 2016 (N=3,488) (21)

Signal function	Eastern Gurage Zone	Nation-wide
1. Administer parenteral antibiotics	42%	79%
2. Administer uterotonic drugs	<b>90%</b>	<b>93%</b>
3. Administer parenteral anticonvulsants	<b>5%</b>	<b>22%</b>
4. Manual removal of retained placenta	90%	60%
5. Removal of retained products	<b>37%</b>	<b>39%</b>
6. Assisted vaginal delivery	<b>16%</b>	<b>30%</b>
7. Newborn resuscitation	90%	71%

Administering anticonvulsants was the least performed signal function at health centres (Table 4). Authors of the nationwide assessment state that this may be due to lacking skills or confidence to treat, and/or directly referring women with (severe pre-)eclampsia to higher level facilities. For both assisted vaginal delivery and removal of retained products, approximately half of the health centres lacked necessary drugs, equipment and supplies (41% and 57%, respectively) as well as human resources (47% did not have at least one staff member who could perform manual vacuum extraction or vacuum-assisted vaginal delivery) to perform these signal functions. The authors questioned whether all health centres should be ready to provide these two signal functions (21). However, referral capacity to higher level facilities was also limited, both in terms of distance and available transport to the nearest CEmONC facility. In the Southern Nations, Nationalities, and Peoples' Region for example, approximately 55% of the referral facilities were at more than 25 kilometres' distance, while only one ambulance was available for every 73,411 people (21). This means that MWH users with complications are likely not to receive timely and adequate care, which should be taken into consideration when determining the preferred location of future of MWHs and MWH admission criteria. Additionally, some healthcare workers stressed the importance of improving quality of care at facilities before further promoting the MWH intervention in the community (Chapter 4).

Along with delays and underperformance in treatment of complications, women are likely to face disrespect and abuse during labour and birth at a facility in (but not limited to) Ethiopia (23, 68, 69). In our qualitative study (Chapter 4), community members and Health Extension Workers shared that lack of respectful care was a strong deterrent from MWHs and health facilities. The concept of 'Respectful Maternity Care' entered the global landscape in the 1990s and has received increasing attention over the last decade (70). In 2015, the Ethiopian Ministry of Health also acknowledged the need for a marked transformation in the health care system towards respectful, compassionate maternity care in order to improve quality and equity in service delivery (23).

## A SYSTEM APPROACH TO FULFIL THE RIGHT TO SEXUAL AND REPRODUCTIVE HEALTH

For Ethiopia to improve quality and equity in service delivery, a system approach is applied that encompasses six building blocks: service delivery, health workforce, health information systems, access to essential medicines, financing, leadership/governance (23, 71). In its Health Sector Transformation Plans and Performance Reports, the Ethiopian government acknowledges both impressive achievements in the past two decades and huge challenges ahead (23-25).

The World Health Organization's document describing the health system approach is called "Everybody's business: strengthening health systems to improve health outcomes"(71). It is indeed everybody's business: high quality, respectful care is every woman's fundamental right around pregnancy and childbirth, embedded in article 12 of the International Covenant on Economic, Social and Cultural Rights (72). On the one hand, Ethiopia has:

*"a core obligation to ensure, at the very least, minimum essential levels of satisfaction of the right to sexual and reproductive health."* [(73), .p12]

On the other hand, The Netherlands and other high-income countries have the obligation to assist if resources are insufficient, by contributing at least 0.7% of their gross national income if they are in the position to do so. However, while the Dutch economy is growing, its budget for Official Development Assistance is decreasing (0.59% in 2018 to 0.55% budgeted in 2023) (74, 75).

This is not the time to step down, but to step up. We have an unfinished agenda: 5.4 million women and babies are still dying every year globally (76). The world has proven that reducing maternal and neonatal mortality is possible through combined action of national governments, the international community, non-governmental and civil society organisations and the private sector (77). Accelerated and continuous efforts are needed to reduce maternal mortality ratio in Ethiopia to 199 maternal deaths per 100,000 live births and globally to less than 70 deaths per 100,000 live births by 2030 (78, 79).

## CONCLUSION

Our research findings demonstrate that MWHs have the potential to contribute to saving lives at birth. In a setting such as the Gurage zone in Ethiopia, accommodating pregnant women in an MWH at the end of their pregnancy may be their only option to access a skilled birth attendant on time. However, MWHs are not a magic bullet for creating access to institutionalized maternity care. Numerous barriers could prevent use, on the side of both the

individual/community and health system. This intervention should therefore be considered as one component in a comprehensive approach to reduce maternal and newborn mortality and morbidity. The MWH intervention seems to have a better chance of success when implemented with sufficient (funding) mechanisms to overcome barriers to MWH use, and when respectful, high-quality care is provided at both the MWH and EmONC facility.

## STRENGTHS AND LIMITATIONS

An overall strength of this research is that the questions addressed emerged from local practice before implementing the MWH intervention at a hospital in Southern Ethiopia. By applying a convergent parallel study design and summarizing the quantitative and qualitative results in this discussion, we provide an overview of factors are likely to affect MWH use in a rural setting in Ethiopia. Since the intervention has been rolled out nationwide, our findings may be of practical relevance to health managers at both Butajira Hospital and other health facilities in Ethiopia, as well as governmental and non-governmental organisations involved in maternal and newborn health policies and/or service provision. Limitations of the applied study designs are that they: 1) did not allow us to establish causality, only associations and were at high risk of selection bias (Chapter 2); 2) were done among relatively small samples (Chapters 3–6); and 3) may be context-specific. However, after placing them within the literature on MWHs, we feel confident that our findings offer learning potential to readers working on maternal and newborn health in Ethiopia and other contexts.

## RECOMMENDATIONS FOR MWH POLICY

1. The World Health Organization has recommended MWHs to be established close to a health facility (80). An important next step is for the WHO to update the guideline, including the minimum standard for infrastructure, staffing, services, admission criteria, management and operating procedures, and monitoring and evaluation indicators, while leaving room for local contextualisation (40).
2. MWHs should be part of national strategy to improve maternal and newborn health, and thus requires strategic planning using a health system approach (described earlier in this chapter).
  - a. Establish and distribute an MWH guideline;
  - b. Dedicate funding for the implementation of the MWH guideline and to overcome barriers to MWH use;
  - c. Add MWH use as indicator in Health Management Information Systems for monitoring and evaluation and to delivery registration books for birth outcome comparisons between users and non-users.

### Community support

3. Community support is an indispensable contributor to MWH success, often provided in terms of materials and labour for construction, food provision to users and sometimes management tasks. If MWHs fulfil a community need, they are more likely to be supported and used. An important question is whether communities are contributing out of conviction or if they are compelled to do so through government structures. Compelled community support may have adverse effects in terms of acceptability of the intervention and impoverishing poor communities further.
4. Some governments have penalized home births and/or traditional birth attendants. Incentive-based interventions (for example, conditional cash transfers) that promote healthy behaviour should be considered and may prove more beneficial, especially if they go hand in hand with supply-side improvements (81).
5. Explore MWH best practices, such as involving and incentivising traditional birth attendants. Traditional birth attendants have played a role as MWH attendant, birth companion/attendant, and in running an MWH in core groups (12, 82). Also consider standardized maternity protocols through community dialogue, community saving schemes and women support groups for MWH stays and facility births.

### Admission criteria/risk selection

6. Decide on the location of MWHs: near BEmONC and/or CEmONC facilities. MWHs at BEmONC facilities are closer to the communities they serve, allowing its members to more easily provide support to MWH users. However, these do not offer all life-saving interventions in case of severe complications.
7. MWH admission criteria should be established based on EmONC performance of the health facility and available referral options. In general, MWHs at BEmONC facilities should target women with low-risk pregnancies (non-risk-based model) and MWHs at CEmONC facilities women with high-risk pregnancies (risk-based model).
8. If a risk-based model is applied, health workers need to be trained to identify high-risk pregnancies. Health workers should also receive training to provide the community with a clear, consistent message about which MWH to go to (at a BEmONC or CEmONC facility) and when to go to an MWH (four weeks in advance if gestational age is unclear and/or risks are high).
9. Expand your perspective on risk selection through examples from indigenous communities in Australia and Canada. These reveal that risk selection may need to more than a purely medical endeavour and also include social, emotional, spiritual and cultural factors (51).



### **MWH promotion / health education**

10. Word-of-mouth is the best form of MWH promotion, and will be achieved by providing continuous good quality, respectful care at both the MWH and facility.
11. Community promotion of the MWH intervention should not be done without improving the performance of routine and emergency obstetric and newborn care at facilities, providing respectful and compassionate care, and improving referral capacity.
12. Health education is an essential component of a maternal and newborn health program. It should be done in the community, at the MWH and in the facility. Since husbands are the main decision makers in many cultures, they should be involved in MWH promotion / health education activities.

### **MWHs/health facilities**

13. Make women and their families feel welcome, safe and comfortable at the MWH; provide quality EmONC at the facility and ensure women and their families are treated with respect and compassion;
14. Explore to what extent non-harmful cultural practices around pregnancy and childbirth can be performed at the MWH and health facility;
15. Provide at least the following MWH services: regular monitoring, antenatal and post-natal care, health education, and if possible food (or a piece of land to grow crops), transport and recreational/income-generating activities.

### **Non-governmental organisations and research institutes**

16. If MWHs are underutilized, bring together stakeholders (policymakers, researchers, facility managers, communities) to discuss the current status of MWHs and the way forward. To increase cross-contextual learning, involve stakeholders from for example Ethiopia and Zambia, where different models of MWHs are being tested.
17. Pilot a community-based MWH model. If successful, expand to other regions/countries.
  - a. Explore together with communities if and in what form MWHs are beneficial, how the community can contribute to MWH stays, and what needs to be done by other stakeholders. It is important to involve the women themselves, but also their husbands, mothers(-in-law) and other important community members.
  - b. Community health workers could lead this process, for which they may need extra training.
  - c. The MWH, health facilities and referral capacity in this pilot should meet a minimum set of quantitative and qualitative requirements.
  - d. Use a participatory action research design to evaluate the process and a matched cohort design to evaluate the effects on facility births and birth outcomes.

18. Future research on MWHs should:
  - a. include both home and facility births (MWH users and non-users), in addition to collecting data on risk factors to allow for sub-group analyses;
  - b. include variables relating to equity in order to gain a better understanding if and how MWHs reach vulnerable groups;
  - c. evaluate the cost-effectiveness of MWHs compared to other interventions that address the second delay (ambulances, community transport schemes).

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