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Full Length Article

Current postpartum management of hypertension: A survey of obstetricians, general practitioners, and midwives in the UK

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ABSTRACT

Background: For many women who experience hypertension in pregnancy, raised blood pressure continues into the postpartum period, usually settling over the first 6–12 weeks. Blood pressure control during this time appears to be important for long-term cardiovascular health but care appears to be haphazard. This study aimed to understand UK National Health Service usual postpartum care for such women.

Methods: A cross-sectional online survey was designed and piloted by a multidisciplinary team of midwives, obstetricians, primary care researchers, patient representatives, and a general practitioner, to capture current practice including blood pressure monitoring, antihypertensive prescribing, and use of self-monitoring; there were 38 questions. The survey was delivered via the Doctors.net (for obstetricians and general practitioners) and Joint Information Systems Committee (JISC) online platforms (for Midwives) from May to November 2023.

Results: A total of 253 clinicians responded to the survey, including 101 General Practitioners, 100 doctors working in maternity care, trained in obstetrics (obstetricians) or with specialist expertise in medical disorders in pregnancy (obstetric physicians), 50 midwives, and 2 maternity support workers. Women's care generally transferred from secondary to primary care at around two weeks postpartum, although this was not consistent, and there were differences in practice, awareness, and expectations between professions around the management of hypertension and responsibility. Communication barriers between professional groups and a need for better guidance and co-ordination were highlighted, and most professionals agreed that self-measured blood pressure readings could support postpartum care for those with hypertension.

Conclusions: The survey highlighted variations in the practice and expectations of different healthcare professionals involved in postpartum care. The time when care was transferred from hospital to primary care was not consistent, with potential for women's care to fall through gaps. The transfer of information and women's ability to access care at this time were highlighted as problematic.

Abbreviations: ARC, Applied Research Collaboration; BP, Blood pressure; COVID-19, Coronavirus disease 2019; GMC, General Medical Council; GP, General Practitioner; JISC, Joint Information Systems Committee (Jisc); MSW / MSWs, Maternity Support Worker(s); NHS, National Health Service; NICE, National Institute for Health and Care Excellence; NIHR, National Institute for Health and Care Research; PPI, Patient and Public Involvement; RCOG, Royal College of Obstetricians and Gynaecologists; mmHg, Millimetres of mercury.

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1. Introduction

Hypertensive disorders of pregnancy affect around 10% of women, equating to around 70,000 women per year in the UK [1–4]. Hypertension often persists postnatally, and women may experience rapid and unpredictable changes in blood pressure (BP) [5]. Around a third of the serious morbidity and mortality associated with pregnancy hypertension occurs postpartum. There are also long-term consequences, with women facing approximately double the risk of hypertension and cardiovascular disease for at least the next twenty years [6,7]. BP at six weeks postpartum following a hypertensive pregnancy is correlated with future cardiovascular risk and changes in cardiac structure evident in midlife [8,9].

Despite the importance of BP control in the postpartum period, care can be haphazard [10]. Guidelines for the National Health Service (NHS) set out recommended postnatal follow-up, including a written care plan on transfer to community care that clarifies responsibility for follow-up, thresholds for treatment adjustment, and planned General Practitioner (GP)/specialist review at 2 weeks for those on antihypertensive medication and 6–8 weeks postnatal for all those with gestational hypertension. This latter follow-up coincides with a routine postpartum review with a GP, offered to all women ("the 6-week check") [11].Despite this guidance, implementation remains variable, and care is often sub-optimal during the transition from maternity services to primary care, with little evidence to guide best practice, [12,13].

Evidence suggests self-monitoring and self-management of blood pressure post-partum improves both short- and long-term BP, reducing cardiovascular risk [14,15]. For self-management of BP to be widely implemented in practice, it is important to understand how care pathways operate, who delivers care, and how a self-management intervention would best fit.

The COVID-19 pandemic led to substantial changes in practice, with increased remote consultations and BP self-monitoring both during and following pregnancy [16–18]. Previous small-scale qualitative work suggests that communication, clinician education, and unclear responsibility between different health professionals all affect the quality of care postnatally, resulting in missed opportunities to improve outcomes for women, their infants, and families [19]. This survey was designed to help understand on a wider scale how the NHS currently provides care for women with high BP following birth, and how new interventions might best fit within existing care pathways to support improvements in care and outcomes.

2. Methods

2.1. Survey design

A cross-sectional online survey for health care professionals, consisting of 38 questions, was designed and piloted by a multidisciplinary research team of midwives, obstetricians, primary care researchers, patient representatives, and a general practitioner (GP). The aim was to ascertain current practice in postpartum hypertension management; examining the transition of care from hospital to primary care, understanding the current BP monitoring and treatment pathways. The survey included demographic information, respondent's usual role, BP measurement practices, antihypertensive prescriptions, and the use of self-monitoring in hypertension management. Obstetricians and GPs were also presented with a series of management and treatment options related principally to their prescribing role).

2.2. Participants and recruitment

An invitation to take part in the survey was made available to all doctors working in obstetrics or general practice who had consented to receive research emails via doctors.net.uk. This web platform provides information services to around 212,000 UK-registered doctors. Surveys undertaken using the platform have been shown to give similar results to standard sampling methods, where surveys are given to selected individuals or groups and the response rate is known [20], and have been used in this setting previously [21]. Invitations were received as unique links via the home page when an individual doctor logged in, and all respondents had had their identities validated via their General Medical Council (GMC) registration. Responses were accepted until there were 100 completed questionnaires for each group (obstetricians/ obstetric physicians and GPs).

Midwives and maternity support workers (MSWs) were recruited through the Royal College of Midwives registrant mailing list and website, through the charity Action on Pre-eclampsia, and research team connections across the UK. The survey was presented on the Joint Information Systems Committee (JISC) survey platform and was the same as that used for doctors, but with questions outside of the typical midwives' remit (e.g. prescribing medication) removed. The survey was open to all midwives practicing in England for 6 months, and 50 responses were collected from this group during this time. NHS England reports that there are 23,396 practicing midwives. [22].

All health care professionals were provided with study information and asked to confirm consent to participate and that they were aged 18 years or older before proceeding.

2.3. Statistical analysis

The primary analysis mapped current practice around BP monitoring and management, including the role of self-monitoring. The results are presented for each question, including any missing data. Results were tabulated across all respondents and stratified by health profession. Obstetricians and obstetric physicians were grouped together due to their similar roles. Similarly, the responses from two maternity support workers (MSWs) were considered alongside those of midwives. All analyses were performed using Stata version 16. We summarised responses descriptively using n (%). The primary analyses tested responses to the question: Do you think women's self-measured BP readings could have a role to play in guiding clinical decisions during the post-partum period? Chi-squared testing was used to test whether responses differed by health care profession.

Ethical approval.

The study received ethical approval from the University of Oxford Medical Sciences Interdivisional Research Ethics Committee on 21 March 2023 (R85159/RE001).

3. Results

253 clinicians responded. 101 General Practitioners (GP), 100 obstetric clinicians (98 obstetricians and 2 medical physicians specialising in the care of women with pregnancy complications (obstetric physicians)), 50 midwives and two Maternity Support Workers. The majority of obstetric and midwifery respondents were female, and the majority of GP respondents were male. Most were trained in the UK. Almost all obstetricians, GPs, and midwives said their role currently involved postpartum care (obstetric clinicians 98%, n = 98/100, GPs 99%, 100/101, midwifery clinicians 94%, 48/51) (Table 1).

3.1. Places of work

Responders were from across the UK. Almost all GPs worked in a GP practice (99%, n = 99). Most obstetricians worked in hospital inpatient (96%, n = 96) and outpatient clinics (62%, n = 62). Midwives were spread across community hubs or midwifery led units (62%, n = 32), hospital inpatient clinics (53%, n = 27), and outpatient clinics (12%, n = 6), with some in GP practices and research units (Appendix Table A1).

Table 1
Survey respondent demographics and professional characteristics by clinical role.

Demographics	**Obstetric clinicians** (n = 100) n (%)	**General Practitioners** (n = 101) n (%)	**Midwifery clinicians** (n = 52) n (%)
Gender			
Female	63 (63%)	38% (38)	51 (98%)
Prefer not to say	0 (0%)	2% (2)	1 (2%)
Age			
30 or under	0 (0%)	0 (0)	14 (27%)
31–40	30 (30%)	21 (21)	15 (28%)
41–50	37 (37%)	52 (51%)	8 (15%)
51–60	21 (21%)	23 (23%)	13 (25%)
Over 60	12 (12%)	4 (4%)	2 (4%)
Rather not say	0 (0%)	1 (1%)	0 (0%)
Training			
UK	93 (93%)	96 (95%)	51 (98%)
Europe outside the UK	3 (3%)	2 (2%)	0 (0%)
Outside Europe	4 (4%)	1 (1%)	1 (3%)
Rather not say	0 (0%)	2 (2%)	0 (0%)
Involved in Research			
Yes	35 (35%)	6 (6%)	13 (25%)
No	61 (61%)	93 (92%)	38 (73%)
Rather not say	4 (4%)	2 (2%)	1 (2%)
Currently managing hypertension, postpartum	97 (97%)	94 (93%)	48 (92%)

3.2. Postpartum care and coordination between teams

Reported timing of postnatal review ("When do you generally see women who have had a hypertensive pregnancy during the postnatal period?") varied by professional group. Obstetric clinicians most commonly reported reviewing women within 48 h (67%), while midwives most frequently reported review during week 1 (85%) and week 2 (73%). General practitioners (GPs) reported contact at multiple timepoints, most commonly at week 6 (64%), and also at 1- and 2-weeks following discharge (50% and 46%); fewer reported review within 48 h (17%) (Table 2).

Perceived timing of transfer from maternity to primary care was generally earlier among GPs, for whom transfer was most commonly reported at 1 week (37%) or 2 weeks (30%), indicating that 67% perceived transfer by 2 weeks. Midwives most commonly reported transfer at 2 weeks (67%), whereas obstetric clinicians reported a more mixed pattern (2 weeks 34%, 1 week 25%, 6 weeks 23%) (Table 2). Most respondents considered the timing of transfer "about right" (obstetric clinicians 72%, GPs 59%, midwives 63%), though a substantial minority—particularly GPs—felt transfer was too early (GPs 29%, midwives 19%, obstetric clinicians 17%) (Table 2). Remote contacts were uncommon across all groups and were generally used alongside in-person review rather than as a sole mode of care (Appendix Table A2).

As well as hypertension-specific care, most GPs and midwives reported that all women were offered a six-week check in primary care (89%, 89/100, and 78%, 40/51). Fewer obstetricians reported the same (55%, 55/100), with a higher proportion responding that they thought that the six-week GP check did not usually happen locally (14% vs 5% and 1%) (Table 3). There was a difference in the proportion of respondents who reported women took up the six-week check, with most GPs reporting reviewing women at 6 weeks (85%, n = 85/101). Fewer obstetricians and midwives reported the same (63%, 63/100 and 58% 30/52), and some (4%) said that they thought very few women attended the six-week check (Table 3).

When asked who would best provide postpartum care following hypertensive pregnancy, respondents most frequently selected maternity teams (obstetric and midwifery) in the first 0–2 weeks, with a shift towards general practice from 4–6 weeks onwards, and general practice predominating at 6–12 weeks and beyond (Table 4).

Table 2
Timing of postpartum review, transfer to primary care, and postnatal care plans for postpartum women with pregnancy hypertension by clinical role.

When do you generally see women who have had a hypertensive pregnancy during the postnatal period?	**Obstetric clinicians** (n = 100) n (%)	**General Practitioners** (n = 101) n (%)	**Midwives** (n = 52) n (%)
Within first 48 h	67 (67%)	17 (17%)	0 (0%)
1 week following discharge	39 (39%)	51 (50%)	44 (85%)
Week 2	27 (27%)	46 (46%)	38 (73%)
Week 3	13 (13%)	25 (25%)	13 (25%)
Week 4	11 (11%)	31 (31%)	11 (21%)
Week 5	7 (7%)	20 (20%)	2 (4%)
Week 6	14 (14%)	64 (64%)	4 (8%)
Did not respond	23 (23%)	2 (2%)	2 (4%)
Time of transfer from maternity to primary care			
1 week	25 (25%)	37 (37%)	4 (8%)
2 weeks	34 (34%)	30 (30%)	33 (67%)
3 weeks	0 (0%)	2 (2%)	5 (10%)
4 weeks	17 (17%)	4 (4%)	3 (6%)
6 weeks	23 (23%)	15 (15%)	4 (8%)
Don't know /didn't answer	1 (1%)	10 (10%)	3 (6%)
In your view, does this tend to be:			
About right for most cases	72 (72%)	60 (59%)	32 (63%)
Later than necessary (for most cases)	11 (11%)	12 (12%)	2 (4%)
Too early (for most cases)	17 (17%)	29 (29%)	10 (19%)
Not sure	0 (0%)	0 (0%)	8 (14%)
How is information shared with community colleagues?			
Discharge Summary	92 (92%)	97 (96%)	43 (83%)
Separate postnatal care plan (generic)	2 (2%)	13 (13%)	12 (23%)
Separate postnatal care plan (personalised)	35 (35%)	13 (13%)	15 (29%)
Do women receive a postnatal care plan?			
Yes, all women	68 (68%)	46 (46%)	28 (54%)
Yes, some of them	31 (31%)	38 (38%)	19 (37%)
No, none or very few	1 (1%)	17 (17%)	4 (8%)
I don't know	0 (0%)	0 (0%)	1 (2%)

Table 3
Health care professionals' views on whether women are routinely offered, and attend, the General Practitioner (GP) 6-week check.

Are women in your area routinely offered a 6-week check with their GP?	**Obstetric clinicians** (n = 100) n (%)	**General Practitioners** (n = 101) n (%)	**Midwives** (n = 52) n (%)
Yes, all women are offered a 6-week check	55 (55%)	89 (89%)	41 (78%)
Yes, most women are offered a 6-week check	28 (28%)	6 (6%)	9 (18%)
No, I don't think this usually happens	14 (14%)	5 (5%)	1 (2%)
I don't know	3 (3%)	1 (1%)	1, (2%)
What proportion of women do you think take up their 6-week check when offered?			
Most women	63 (63%)	85 (84%)	30 (58%)
Some women	16 (16%)	13 (13%)	12 (23%)
Very few women	4 (4%)	0 (0%)	2 (4%)
I don't know	17 (17%)	3/101 (3%)	8 (15%)

3.3. Communication between teams

The majority of obstetricians responded that all women with hypertension in pregnancy received a postnatal care plan upon discharge (68%, 68/100), though less than half of GPs reported the same (46%,

Table 4
Health care professionals' views on which professional groups are best placed to provide postpartum care after hypertensive pregnancy, by time since birth.

For women with hypertensive pregnancy who would best provide postpartum care?	Obstetric clinic	Midwives with support from doctors	Midwives	Health visitors*	General practice (General practitioner /nurse practitioner)	Prescribing pharmacist
	Obstetric clinicians (n = 100) n (%)					
0–2 weeks	48 (48%)	42 (42%)	1 (1%)	0 (0%)	8 (8%)	1 (1%)
2–4 weeks	19 (19%)	39 (39%)	4 (4%)	1 (1%)	36 (36%)	1 (1%)
4–6 weeks	6 (6%)	25 (25%)	2 (2%)	2 (2%)	61 (61%)	4 (4%)
6–12 weeks	2 (2%)	4 (4%)	1 (1%)	0 (0%)	90 (90%)	3 (3%)
12 weeks	1 (1%)	2 (2%)	0 (0%)	1 (1%)	89 (89%)	7 (7%)
	General Practitioners (n = 101) n (%)					
0–2 weeks	60 (59%)	24 (24%)	6 (6%)	1 (1%)	8 (8%)	2 (2%)
2–4 weeks	25 (25%)	32 (32%)	6 (6%)	1 (1%)	34 (34%)	3 (3%)
4–6 weeks	15 (15%)	23 (23%)	5 (5%)	0 (0%)	53 (52%)	5 (5%)
6–12 weeks	2 (2%)	12 (12%)	0 (0%)	4 (4%)	72 (71%)	11 (11%)
12 weeks	1 (1%)	5 (5%)	0 (0%)	1 (1%)	77(76%)	17 (17%)
	Midwives (n = 51; 1 'no response') n (%)					
0–2 weeks	25 (48%)	38 (73%)	11 (21%)	0 (0%)	7 (14%)	3 (6%)
2–4 weeks	17 (33%)	26 (50%)	6 (12%)	1 (2%)	28 (54%)	8 (15%)
4–6 weeks	6 (12%)	7 (14%)	1 (2%)	7 (14%)	40 (78%)	11 (22%)
6–12 weeks	1 (2%)	1 (2%)	0 (0%)	6 (12%)	48 (94%)	12 (24%)
12 weeks	1 (2%)	1 (2%)	0 (0%)	6 (12%)	45 (88%)	15 (29%)

*Health visitors are specialist community public health nurses who work with families with a child age 0–5 years.

46/101), and some reported that none or very few had a care plan (17%, 17/101) (Table 2).

Most health professionals responded that information about postnatal care was shared in the discharge summary (92%, 92/100 Obstetric clinicians; 96%, 97/101 GPs; and 83%, 43/52 midwives), with some also indicating that separate postnatal care plans were also used to share information (Table 2). Most obstetricians and midwives communicated with GPs in the postpartum period (94%, 94/100 and 87%, 45/52, respectively), and most obstetricians and GPs communicated with community midwives (86%, 86/100 and 63%, 64/101, respectively). Midwives are most likely to contact other midwives (60%, 31/52 community midwives) and GPs (87%, 45/52). GPs also reported involving nurses and pharmacists (Appendix Table A3).

3.4. Perceived barriers to the care of women following pregnancy complicated by hypertension

Several barriers to postnatal care were highlighted consistently by all groups, with most healthcare professionals suggesting that a lack of appointments (either hospital or primary care) could prevent access to care (67% Obstetricians, 65% GPs & 65% Midwives). Poor access to primary care was identified as a barrier by most obstetricians (71%) and midwives (67%), though interestingly, only around a third of GPs agreed (32%). The majority of GPs and midwives felt there was a communication barrier between professionals (66% and 67%, respectively) (Table 5).

3.5. Use of self-monitored readings and clinical readings

Most responding health care professionals would 'always', 'often' or 'sometimes' recommend BP self-monitoring in the postpartum period for women requiring anti-hypertensive medication; with GPs slightly more likely to do this than obstetricians or midwives (95% of GPs, 82% of obstetricians, and 74% of midwives) (Table 6).

Most professionals felt that self-measured BP readings could be useful in the postpartum period (94%, 94/100 obstetricians, 91%, 92/101 GPs, and 86%, 44/51 midwives) said that self-measurement could be used to guide clinician decisions in the postpartum period. There was no difference between the views of the different professions (p = 0.5 for difference between professions).

The most commonly selected reasons for recommending BP self-monitoring were to support self-management (63% of obstetricians, 72% GPs and 84% midwives), to guide adjustment of treatment (50%, 82% and 71%), and to support other professional measurement of BP (56%, 59% and 82%) (Table 6). Most clinicians who recommended BP self-monitoring advised daily readings, twice a day and twice per monitoring session. However, over a third of obstetricians suggested measuring BP once per session (Table 6). Self-monitored readings were

Table 5
Perceived barriers to postpartum care for women following hypertensive pregnancy by clinical role.

Barriers to the care of women in your area	Obstetric clinicians (n = 100) %			General Practitioners (n = 101) %			Midwives (n = 51; 1 'no response') %		
	Agree	Disagree	Neither agree or disagree	Agree	Disagree	Neither agree or disagree	Agree	Disagree	Neither agree or disagree
Lack of time in consultations	57%	16%	27%	49%	29%	23%	65%	23%	13%
Lack of access to primary care services	71%	19%	10%	32%	51%	18%	67%	18%	15%
Lack of access to obstetric services postnatally	39%	52%	9%	62%	19%	20%	60%	33%	6%
Difficulty accessing appropriate advice /support from medical staff Inadequate staffing	31%	49%	20%	46%	33%	22%	61%	28%	11%
Inadequate funding to support postpartum care	76%	14%	10%	56%	21%	24%	69%	14%	16%
Lack of appropriate guidelines	68%	18%	14%	53%	22%	26%	35%	59%	6%
Lack of experience/knowledge of postpartum hypertension	28%	59%	13%	38%	34%	29%	61%	28%	11%
Not enough information (for healthcare professional) from delivery/hospital discharge	39%	48%	13%	37%	41%	23%	49%	33%	18%
Communication barriers between different groups of healthcare professionals	39%	35%	26%	66%	17%	18%	68%	26%	6%
Lack of available appointment slots	67%	21%	12%	65%	20%	16%	65%	27%	8%

Table 6
Health care professionals' recommendations for, and use of, postpartum blood pressure self-monitoring following hypertensive pregnancy by clinical role.

Do you recommend that postpartum women with hypertension measure their blood pressure themselves?	**Obstetric clinicians** (n = 100) n (%)	**General Practitioners** (n = 101) n (%)	**Midwives** (n = 52) n (%)
Never	5 (5%)	1 (1%)	5 (10%)
Rarely	13 (13%)	5 (5%)	7 (13%)
Sometimes	45 (45%)	35 (35%)	18 (35%)
Often	33 (33%)	43 (43%)	15 (29%)
Always	4 (4%)	17 (17%)	5 (10%)
Didn't answer	0	0	2 (4%)
Why do you recommend women measure their bloods pressure themselves?			
To confirm a diagnosis of ongoing hypertension	32 (32%)	50 (50%)	21 (40%)
To guide adjustment of treatment	50 (50%)	82 (81%)	27 (52%)
To support self-management	63 (63%)	72 (71%)	32 (62%)
As sole measure of blood pressure postnatally	3 (3%)	4 (4%)	4 (8%)
Alongside clinic or other professional measurement of blood pressure	56 (56%)	59 (58%)	31 (59%)
How many occasions per week?			
1	2 (2%)	1 (1%)	0 (0%)
2	13 (13%)	5 (5%)	4 (8%)
3	16 (16%)	18 (18%)	4 (8%)
4	6 (6%)	3 (3%)	2 (4%)
5	2 (2%)	9 (9%)	2 (4%)
6	2 (2%)	1 (1%)	0 (0%)
7	34 (34%)	46 (46%)	21 (40%)
Other/Depends on their blood pressure	0 (0%)	0 (0%)	17 (33%)
How many occasions per day?			
1	28 (28%)	10 (10%)	12 (23%)
2	40 (40%)	77 (76%)	7 (13%)
3	8 (8%)	7 (7%)	12 (23%)
4	5 (5%)	1 (1%)	3 (6%)
More than 4	1 (1%)	0 (0%)	1 (2%)
Other / Depends on their blood pressure	0 (0%)	0 (0%)	15 (29%)
How many measurements per occasion?			
1	37 (37%)	11 (11%)	16 (31%)
2	34 (34%)	56 (55%)	17 (33%)
3	10 (10%)	26 (26%)	5 (10%)
4	1 (1%)	0 (0%)	0 (0%)
More than 4	0 (0%)	2 (2%)	0 (0%)
Other /Depends on their blood pressure	0 (0%)	0 (0%)	12 (26%)
How do women communicate their home blood pressure measurements to you and/or your team?			
In-person during consultation/visit – verbally or written record	57 (70%)	65 (68%)	34 (65%)
In-person during consultation/visit –show results in blood pressure machine memory, smartphone app or printout	29 (35%)	39 (41%)	20 (38%)
Telephone	39 (48%)	51 (54%)	20 (38%)
Text message / via an app	20 (24%)	42 (44%)	18 (36%)
Email	8 (10%)	40 (42%)	2 (4%)
Virtual consultation	13 (16%)	11 (12%)	1 (2%)
Other (written down, via community midwife, app, from other health care professionals, and submitted via GP website)	7 (9%)	5 (5%)	5 (10%)
Do you trust measurements from home and clinic blood pressure equally?			
Tend to trust home more	14 (14%)	33 (33%)	1 (2%)
Tend to trust clinic more	45 (45%)	20 (20%)	23 (44%)
About the same	39 (39%)	44 (44%)	22 (42%)
Unsure	2 (2%)	4 (4%)	6 (12%)
If recent home measurements are available, when are you most likely to re-measure blood pressure in clinic?			
Almost always, taking little account of home measurements	42 (42%)	14 (14%)	34 (65%)
If home measurements are above threshold	46 (46%)	59 (58%)	7 (13%)
If home measurements are below threshold	2 (2%)	2 (2%)	0 (0%)
Rarely, unless home measurements look anomalous	10 (10%)	26 (26%)	3 (6%)
Never	0 (0%)	0 (0%)	1 (2%)

communicated at clinics verbally or via written diaries, Apps or shown on the BP monitor's memory. GPs were most likely to receive readings by telephone (Table 6).

When asked about factors that would influence recommendations for BP self-monitoring, suspected white coat hypertension was commonly selected: 87% of obstetricians, 88% of GPs, and 73% of midwives said this would make them more likely to recommend self-monitoring of BP. Women with experience of monitoring was also a common positive influence (for 90% of obstetricians, 85% of GPs, and 69 of midwives %). The presence of complex social factors was the most common deterrent with 56% of obstetricians, 50% of GPs, and 51% of midwives reporting that this would make them less likely to recommend BP self-monitoring (Appendix Table A4).

During postnatal clinics or hospital admissions, midwives or other health care professionals often take BP readings for the obstetrician to review, whereas GPs and midwives most often used their own measurements as the basis for decisions. Most survey respondents reported that they sometimes had access to measurements taken by women at home, but not often (Appendix Table A5). Half of the obstetricians reported 'sometimes' using home readings (50%) and fewer 'often' using them (24%). GPs and midwives were more likely to report often using them (40% of GPs and 39% of midwives) (Appendix Table A5).

3.6. Thresholds and medications

When adjusting antihypertensive medications, GPs used lower thresholds for self-monitored BPs than clinic readings, but most obstetricians used the same thresholds. GPs were more likely to use home readings in preference to clinic readings than obstetric clinicians (38% vs 11%). Midwives were less trusting of self-monitored readings, with most (34/51, 67%) selecting the response that they "almost always re-measuring BP", "taking little account of the home measurements" (Appendix Table A6).

In most places both GPs and obstetricians titrated anti-hypertensive medication with only a few indicating that midwives could take on this role (15% of obstetricians, 8% of GPs and 14% of midwives). Even then, most answered that this was in a limited role with guidance from medical practitioners (9%, 7% and 10% respectively) (Appendix Table A7).

When reducing medication, the highest BP that most GPs and obstetricians would consider down-titrating from was 130/80—–140/90

mmHg (Appendix Table A8). When increasing medication almost all (96%) of obstetricians and midwives reported that they would up-titrate in response to a BP of 140/90 mmHg compared to 83% of GPs (Appendix Table A9).

On average, GPs used a significantly higher systolic BP threshold for hospital re-admission than obstetricians or midwives but the same average diastolic BP threshold; the mean thresholds for admission were 172/103 mmHg for GPs, 157/103 mmHg for obstetricians, and 148/95 mmHg for midwives.

The type of anti-hypertensive medications prescribed by obstetricians and GPs differed; obstetricians were much more likely than GPs to use Labetalol and Nifedipine, even when initiating new treatment (Appendix Table A10 and A11).

4. Discussion

4.1. Main findings

Postnatal hypertension management appeared to be variable, with differences in the timing of the move from secondary care to primary care, along with differences in practice, awareness, and expectations between professions. Additionally, the transfer of information and access to care were reported to be problematic. Most professionals who took part responded that self-measured BP readings could be used to guide clinician decisions in the postpartum period.

Findings around the responsibilities of postpartum care suggest that few obstetricians saw women past the first week postpartum, and only GPs commonly saw women by six weeks postpartum, presumably as part of the routine postnatal check. Midwives were the most likely to provide care between one and three weeks postpartum, with some GPs and midwives both reviewing women at three to five weeks, though less than a third of all responders reported caring for women at this important time for the titration of anti-hypertensive medication, indicating a potential gap in postnatal BP management, with no professional group clearly identified as the responsible lead and point of contact for women or other health professionals.

Communication barriers between healthcare professionals appeared common, as reflected in varied responses between professions about discharge summaries, suggesting they were either not produced as expected, not delivered, or not read within a reasonable time. This is despite recommendations that discharge summaries are produced for all those with hypertension during pregnancy, and this issue being highlighted by reports investigating maternal deaths in the UK [23].

All healthcare professionals reported that women experienced difficulties in securing appointments with health care professionals. Importantly, midwives noted challenges in accessing appropriate advice and support for themselves from medical staff, as well as a lack of relevant experience or knowledge. This is an important finding given that midwives are key providers of care during a crucial time for the titration of anti-hypertensive medication, while having limited prescribing responsibilities themselves.

GPs and obstetricians had differing preferences regarding anti-hypertensive medications and varied action thresholds, with GPs more likely to have a higher target threshold than obstetricians. Most healthcare professionals already recommend BP self-monitoring in some form to support self-management and guide treatment. National and hospital guidelines most likely influence practice, although a lack of clear guidance was identified as a barrier.

4.2. Strengths and weaknesses

The survey was designed in collaboration with a range of stakeholders, including patients with experience of hypertensive pregnancy, obstetricians, midwives, and quantitative and qualitative researchers with expertise in hypertension in pregnancy related research. It was tested with each group of clinicians to minimise bias towards the views of a few individuals. The study provides an overview of current postpartum care across the country, comparing the views of key professionals involved in hypertension management. The study focuses on the care of those with hypertension within the UK, as an important group to consider as the consequences of substandard care are significant. The survey's anonymity encouraged honest responses.

The findings may not be transferable to other health systems, such as the United States, where obstetric care often extends beyond the immediate postpartum period. A potential weakness is the exclusion of health visitors (specialist community public health nurses who work with families with a child age 0–5) from the survey. While we considered including them, initial discussions with healthcare professionals, including health visitors, suggested that this group had little involvement in hypertension management. These surveys concentrated on health care professionals, but the patient's perspective will also be important to consider, linked ongoing research with patients will be reported separately.

Most respondents reported being trained in the UK, perhaps underrepresenting clinicians who trained abroad. However, all other demographics are closely matched to nationally available data. Finally, taking part in this survey could have appealed to those with an interest in blood pressure management and the postpartum period and those who are actively researching in this area as many of the responding obstetricians were involved in research, perhaps over-representing this group. There were fewer responses from midwives compared to the other groups.

4.3. Clinical and research implications

The findings align with previous studies on postpartum antihypertensive medication use, which also identified significant variations in practice [10]. Barriers to effective postpartum hypertension care include unclear responsibilities and clinical pathways, which may result in care gaps, poor communication of medical information, and a lack of guidelines, likely due to insufficient evidence.

This data suggests that the current postpartum care pathway risks substandard care, with women potentially receiving conflicting advice from different healthcare professionals or not receiving the care needed. Interventions to promote more cohesive, connected care are essential, especially for women who may be at greater risk of falling through the cracks due to social, cultural, or economic factors. This situation is likely to contribute to inequalities as many women are left with the responsibility for managing the transition in care and ensuring they seek care at a particularly vulnerable time [24].

Recent trials have reported that self-management of blood pressure effectively improves hypertension control postpartum, offering long-term benefits [25]. Monitoring would also provide better surveillance than currently offered thus improving current care. For self-management to succeed, healthcare professionals need clear guidance on care pathways with effective communication channels, medication, and titration schedules, and self-management adoption, ensuring coordinated support from all healthcare professionals involved in postpartum care. Barriers to access to care, particularly for the most vulnerable, should also be addressed.

5. Conclusions

This survey of UK healthcare professionals offers insights into current postnatal care for women with hypertensive pregnancies. While care typically transitions from secondary to primary settings at around two weeks postpartum, there are significant variations in practice, awareness, and expectations among healthcare professionals. Midwives play a key role as care providers during this critical period for medication management, despite their limited prescribing authority. Key issues identified include communication barriers between professions, challenges in accessing appointments, advice, and support, a lack of

evidence-based guidelines, and the potential for unequal access to blood pressure self-monitoring and management interventions for women with complex social factors. There is a pressing need for action to improve postnatal hypertension care, particularly for those in most need medically, due to difficulties in accessing care or intersectional factors. Strategies involving self-management of BP could improve care but will need to be accompanied by improvements in communication and access to care.

Patients and Public Involvement.

Patients and public involvement (PPI) has been an important part of this study, from the application for funding and study design to consideration of the findings. Our PPI leads were MG and SI.

Authors' contributions.

KT & RM conceived the study. The protocols were developed by KT, RS, & RM with the advice and support of all authors. KT managed the study, KT, LL, AC and RS developed and formatted the research surveys. Analysis was completed by KT with support from RS. The first draft of the article was written by KT with support from HE, which was subsequently edited and approved by all co-authors. All authors have read, provided critical revision, and approved the final version of the manuscript.

Ethics approval and consent to participate.

The study received ethical approval from the University of Oxford Medical Sciences Interdivisional Research Ethics Committee on 21 March 2023 (R85159/RE001).

Consent for publication

No identifying images or other personal or clinical details of participants are presented that would compromise anonymity.

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Data Availability declaration

Data from this study will be made available upon reasonable request, subject to the approval of the Sponsor (University of Oxford).

Conflict of Interest Disclosures.

RM has received BP monitors for research use from Omron and is working with them to develop a telemonitoring system for use in primary care. He receives no personal payment for such work. The remaining authors have no disclosures.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

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Table A1
Regional location and workplaces of survey responders. *Some respondents had more than one place of work.

	Obstetric clinicians (n = 100)* n (%)	General Practitioners (n = 101)* n (%)	Midwives (n = 52)* n (%)
Region			
East Midlands	7 (7%)	7 (7%)	1 (2%)
East of England	6 (6%)	8 (8%)	4 (8%)
London	17 (17%)	14 (14%)	6 (12%)
North East	4 (4%)	7 (7%)	0 (0%)
North West	10 (10%)	7 (7%)	23 (44%)
South Central	3 (3%)	1 (1%)	6 (12%)
South East	10 (10%)	13 (13%)	5 (10%)
South West	8 (8%)	9 (9%)	4 (8%)
West Midlands	5 (5%)	9 (9%)	1 (2%)
Yorkshire and Humber	8 (8%)	8 (8%)	0 (0%)
Wales	8 (8%)	4 (4%)	1 (2%)
Scotland	7 (7%)	7 (7%)	0 (0%)
Northern Ireland	4 (4%)	7 (7%)	0 (0%)
Retired	1 (1%)	0 (0%)	0 (0%)
Working in research	0 (0%)	0 (0%)	1 (2%)
Rather not say	2 (2%)	0 (0%)	0 (0%)
Place of work			
GP practice	0 (0%)	99 (98%)	3 (6%)
Hospital outpatient clinic	62 (62%)	3 (3%)	6 (12%)
Hospital inpatient unit (including day assessment unit)	96 (96%)	0 (0%)	27 (53%)
Midwifery led unit	8 (8%)	0 (0%)	12 (24%)
Community hub	2 (2%)	3 (3%)	20 (40%)
Research unit or department	0 (0%)	0 (0%)	2 (4%)

Table A2
Mode and timing of remote and in-person postpartum review for women following hypertensive pregnancy.

When do you generally see women who have had a hypertensive pregnancy during the postnatal period?		Within first 48 h	1 week following discharge	Week 2	Week 3	Week 4	Week 5	Week 6
General Practitioners (n = 99) n (%)	In-person only	7 (7%)	30 (30%)	30 (30%)	14 (14%)	16 (16%)	11 (11%)	43 (43%)
	Remotely only	5 (5%)	6 (6%)	4 (4%)	5 (5%)	6 (6%)	4 (4%)	5 (5%)
	In-person and remotely	5 (5%)	15 (15%)	12 (12%)	6 (6%)	9 (9%)	5 (5%)	16 (16%)
Obstetric clinicians (n = 77) n (%)	In-person only	55 (71%)	23 (30%)	25 (19%)	4 (5%)	6 (8%)	3 (4%)	8 (10%)
	Remotely only	3 (4%)	7 (9%)	6 (8%)	3 (4%)	2 (3%)	2 (3%)	1 (1%)
	In-person or remotely	9 (12%)	9 (12%)	6 (8%)	3 (4%)	3 (4%)	2 (3%)	5 (6%)
Midwives (n = 50) n (%)	In-person only	0 (0%)	40 (78%)	33 (69%)	8 (16%)	6 (12%)	0 (0%)	1 (2%)
	Remotely only	0 (0%)	4 (8%)	5 (10%)	5 (10%)	5 (10%)	2 (4%)	3 (6%)
	In-person and remotely	0 (0%)	4 (8%)	4 (8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Table A3
Communication and information-sharing between healthcare professionals involved in postpartum care by clinical role.

Which other health care professionals do you communicate with, or share information with, in the postnatal period – specifically thinking about women with hypertension?	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
General Practitioner	94 (94%)	52 (51%)	45 (87%)
nurse	8 (8%)	43 (43%)	0
Practice pharmacist	2 (2%)	23 (23%)	1 (2%)
Community pharmacist	3 (3%)	3 (3%)	0
Community midwives	86 (86%)	64 (63%)	31 (60%)
Hospital midwives	37 (37%)	15 (15%)	19 (37%)
Health visitor	22 (22%)	26 (26%)	13 (25%)
Obstetrician / obstetric physician	37 (37%)	37 (37%)	20 (38%)
Maternity support worker	8 (8%)	4 (4%)	18 (35%)
other	0 (0%)	4 (4%)	2 (4%)
Not sure	0 (0%)	0 (0%)	2 (4%)

Table A4
Factors that influence recommending blood pressure self-monitoring to postpartum women by clinical role.

Factors	Obstetric clinicians (n = 100) n (%)				General Practitioners (n = 101) n (%)				Midwives (n = 51) n (%)			
	More likely	Less likely	Neither	Don't know	More likely	Less likely	Neither	Don't know	More likely	Less likely	Neither	Don't know
Woman living alone	43 (43%)	16 (16%)	39 (39%)	2 (2%)	12 (12%)	18 (18%)	64 (63%)	7 (7%)	10 (20%)	7 (7%)	32 (63%)	2 (4%)
Woman has young child(ren) at home	42 (42%)	23 (23%)	35 (35%)	0 (0%)	19 (19%)	28 (28%)	52 (51%)	2 (2%)	14 (27%)	11 (22%)	25 (49%)	1 (2%)
Woman lives more than 1 h from hospital	76 (76%)	4 (4%)	20 (20%)	0 (0%)	52 (51%)	4 (4%)	41 (41%)	4 (4%)	33 (65%)	3 (6%)	14 (28%)	1 (2%)
Suspect woman may have white-coat hypertension	87 (87%)	7 (7%)	6 (6%)	0 (0%)	88 (87%)	5 (5%)	7 (7%)	1 (1%)	37 (73%)	3 (6%)	9 (18%)	2 (4%)
Facilities for video-consultation available	61 (61%)	3 (3%)	34 (34%)	2 (2%)	32 (32%)	4 (4%)	56 (55%)	9 (9%)	24 (47%)	3 (6%)	21 (41%)	3 (6%)
Woman has experience of self-monitoring/ management already	90 (90%)	4 (4%)	6 (6%)	0 (0%)	85 (85%)	3 (3%)	12 (12%)	1 (1%)	35 (69%)	3 (6%)	12 (24%)	1 (2%)
Woman is anxious	46 (46%)	27 (27%)	26 (26%)	1 (1%)	54 (53%)	25 (25%)	18 (18%)	4 (4%)	24 (47%)	16 (31%)	10 (20%)	1 (2%)
Woman has complex social factors	21 (21%)	56 (56%)	22 (22%)	1 (1%)	20 (20%)	50 (50%)	26 (26%)	5 (5%)	6 (12%)	26 (51%)	18 (35%)	1 (2%)
Woman lives close to hospital	15 (15%)	31 (31%)	54 (54%)	0 (0%)	3 (3%)	17 (17%)	75 (75%)	6 (6%)	5 (10%)	9 (18%)	36 (71%)	1 (2%)

Table A5
Postpartum women's blood pressure measurements available and used in clinical decisions by clinical role.

Which of the following blood pressure measurements are available to you postpartum? (6 weeks)	**Obstetric clinicians** (100) n (%)					**General Practitioners** (101) n (%)					**Midwives** (52*) n (%)				
	Often	Some-times	Rarely	Never	N/A	Often	Some-times	Rarely	Never	NA	Often	Some-times	Rarely	Never	NA
Measurements by yourself during consultation	23 (23%)	32 (32%)	26 (26%)	19 (19%)	0 (0%)	78 (77%)	18 (18%)	4 (4%)	1 (1%)	0 (0%)	42 (82%)	6 (12%)	1 (2%)	2 (4%)	0 (0%)
Measurements by your colleagues immediately prior to the consultation*	61 (61%)	16 (16%)	10 (10%)	13 (13%)	0 (0%)	22 (22%)	38 (38%)	23 (23%)	18 (18%)	0 (0%)	17 (35%)	16 (33%)	6 (12%)	10 (20%)	0 (0%)
Measurements by other health professionals	64 (64%)	26 (26%)	8 (8%)	2 (2%)	0 (0%)	21 (21%)	58 (57%)	17 (17%)	5 (5%)	0 (0%)	10 (20%)	20 (40%)	9 (18%)	11 (22%)	0 (0%)
Measurements by patients at home	20 (20%)	55 (54%)	22 (22%)	3 (3%)	0 (0%)	26 (26%)	58 (58%)	14 (14%)	3 (3%)	0 (0%)	14 (28%)	31 (62%)	2 (4%)	3 (6%)	0 (0%)
Measurements from 24-hour patient monitoring (ambulatory monitor)*	8 (8%)	23 (23%)	48 (48%)	21 (21%)	0 (0%)	5 (5%)	32 (32%)	44 (44%)	20 (20%)	0 (0%)	2 (4%)	11 (22%)	14 (29%)	11 (45%)	0 (0%)
And which do you base your treatment/ clinical decisions on? (first 6 weeks).	**Obstetricians** (100) n (%)					**General Practitioners (101)** n (%)					**Midwives** (51; 1 no response) n (%)				
	Often	Sometimes	Rarely	Never	NA	Often	Sometimes	Rarely	Never	NA	Often	Sometimes	Rarely	Never	NA
Measurements by yourself during consultation	36 (36%)	29 (29%)	18 (18%)	7	10	75 (74%)	21 (21%)	3 (3%)	0 (0%)	2 (2%)	46 (90%)	4 (8%)	0 (0%)	1 (2%)	0 (0%)
Measurements by other health professionals	78 (78%)	20 (20%)	1 (1%)	0	1	36 (36%)	54 (53%)	7 (7%)	0 (0%)	4 (4%)	23 (46%)	16 (32%)	6 (12%)	3 (6%)	2 (4%)
Measurements by patients at home	24 (24%)	50 (50%)	21 (21%)	3	2	40 (40%)	47 (47%)	12 (12%)	0 (0%)	2 (2%)	19 (39%)	18 (37%)	7 (14%)	4 (8%)	1 (2%)
Measurements from 24-hour patient monitoring (Ambulatory blood pressure monitoring)	16 (16%)	26 (26%)	30 (30%)	18	10	17 (17%)	29 (29%)	32 (32%)	10 (10%)	13 (13%)	7 (15%)	4 (9%)	7 (15%)	13 (28%)	16 (34%)

Respondents ticked all that applied. *3 midwives did not answer all the questions; n = 49 for those marked.

Table A6
Treatment and diagnostic thresholds for postpartum self-monitored blood pressure readings used by clinicians by clinical role.

Do you use the same treatment and diagnostic thresholds for home blood pressure measurements as clinic blood pressure readings during the postnatal period?	**Obstetric clinicians** (n = 82; 18 'no response') n (%)	**General Practitioners** (n = 95; 6 'no response') n (%)
No, clinic blood pressure thresholds are lower than home BP thresholds	2 (2%)	2 (2%)
No, home blood pressure thresholds are lower than clinic BP thresholds	6 (7%)	60 (63%)
Yes, use the same threshold for both types of blood pressure measurement	69 (84%)	28 (29%)
Unsure	5 (6%)	5 (5%)
If there is a difference between a woman's self-measured and clinic readings, what do you do?	**Obstetric clinicians** (n = 100) n (%)	**General Practitioners** (n = 101) n (%)
Generally, I consider both and act on the higher measurement	53 (53%)	34 (34%)
Generally, I consider both and act on the lower reading	2 (2%)	8 (8%)
Generally, I would use the clinic measurement to guide treatment	34 (34%)	19 (19%)
Generally, I would use the home measurement to guide treatment	11 (11%)	38 (38%)
Not applicable	0 (0%)	2 (2%)

Table A7
Healthcare professionals views on who is able to titrate antihypertensive medication in the postpartum population by clinical role.

Who can titrate anti-hypertensive medication postpartum where you work? (*tick all that apply*)	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 51; 1 'no response') n (%)
Obstetric clinicians	87 (87%	47 (47%)	45 (87%)
General Practitioners	82 (82%)	94 (93%)	35 (67%)
Midwives	15 (15%)	8 (8%)	7 (14%)
Don't Know	2 (2%)	5 (5%)	4 (8%)
Are any midwives able to prescribe anti-hypertensive medication postpartum where you work?	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
Yes	7 (7%)	2 (2%)	0 (0%)
No	84 (84%)	62 (61%)	44 (85%)
Limited role only (with guidance from clinicians)	9 (9%)	7 (7%)	5 (10%)
Don't Know	0 (0%)	30 (30%)	3 (6%)

Table A8
The highest blood pressure threshold considered for down-titration of antihypertensive medication in the postpartum population by clinical role.

Systolic blood pressure (mmHg)	**Selection**			**Cumulative**		
	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
110	10 (10%)	4 (4%)	6 (12%)	10 (10%)	4 (4%)	6 (12%)
120	18 (18%)	20 (20%)	14 (27%)	28 (28%)	24 (24%)	24 (48%)
130	31 (31%)	43 (43%)	12 (23%)	59 (59%)	67 (66%)	32 (64%)
140	31 (31%)	31 (31%)	13 (25%)	90 (90%)	98 (97%)	45 (90%)
150	10 (10%)	3 (3%)	6 (12%)	100 (100%)	101 (100%)	51 (98%)
unsure	0	0	1 (2%)	0 (0%)	0 (0%)	52 (100%)
Diastolic blood pressure(mmHg)	**Selection**			**Cumulative**		
	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
< 60	3 (3%)	4 (4%)	4 (8%)	3 (3%)	4 (4%)	4 (8%)
< 70	20 (20%)	9 (9%)	10 (20%)	23 (23%)	13 13%)	14 (28%)
< 80	35 (35%)	51 (50%)	14 (28%)	58 (58%)	64 (63%)	28 (56%)
< 90	32 (32%)	35 (35%)	21 (38%)	90 (90%)	99 (98%)	49 (94%)
< 100	10 (10%)	2 (2%)	2 (4%)	100 (100%)	101 (100%)	51 (98%)
unsure	0 (0%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	52 (100%)

Table A9
The lowest blood pressure threshold considered for up-titration of antihypertensive medication in the postpartum population by clinical role.

Systolic (mmHg)	Selection			Cumulative		
	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
170	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0
160	6 (6%)	2 (2%)	0 (0%)	6 (6%)	2 (2%)	0
150	42 (42%)	17 (17%)	29 (57%)	48 (48%)	19 (19%)	29 (57%)
140	48 (48%)	64 (63%)	21 (41%)	96 (96%)	83 (82%)	50 (97%)
130	2 (2%)	15 (15%)	1 (2%)	97 (97%)	98 (96%)	51 (99%)
120	0 (0%)	0 (0%)	0 (0%)	97 (97%)	98 (96%)	51 (99%)
110	1 (1%)	2 (2%)	1 (2%)	99 (99%)	100 (99%)	52 (100%)
Other	1 (1%) (145 mmHg)	1 (unsure)				
Diastolic (mmHg)	**Selection**			**Cumulative**		
	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)	Obstetric clinicians (n = 100) n (%)	General Practitioners (n = 101) n (%)	Midwives (n = 52) n (%)
120	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
110	2 (2%)	1 (1%)	0 (0%)	2 (2%)	1 (1%)	0 (0%)
100	41 (41%)	3 (3%)	23 (45%)	43 (43%)	4 (4%)	23 (45%)
90	53 (53%)	79 (78%)	28 (55%)	96 (96%)	83 (82%)	51 (99%)
80	2 (2%)	15 (15%)	0 (0%)	98 (98%)	98 (97%)	51 (99%)
70	1 (1%)	2 (2%)	0 (0%)	99 (99%)	100 (99%)	51 (99%)
60	0 (0%)	0 (0%)	1 (2%)	99 (99%)	100 (99%)	52 (100%)
Other	1(95 mmHg)	1 (unsure)	0 (0%)	100 (100%)	101(100%)	

Table A10
Antihypertensive medications continued postpartum for women requiring ongoing treatment after hypertensive pregnancy by clinical role.

Obstetric clinicians (n = 100) n Class	**Specify**	**Often**	**Occasionally**	**Rarely**	**Never**	**Only/mainly if already taking it**
Beta-blocker	Atenolol	14	21	23	26	16
	Metoprolol	2	9	19	56	14
	Labetalol	76	13	3	1	7
	Other beta-blocker	5	7	26	31	31
Angiotensin-converting enzyme inhibitor (ACE) inhibitor	Captopril	5	15	18	53	9
	Enalapril	34	32	16	13	5
	Ramipril	5	19	29	33	14
	Other angiotensin-converting enzyme inhibitor (Other ACEI)	3	3	21	50	23

(*continued on next page*)

Table A10 (*continued*)

Obstetric clinicians (n = 100) n Class	Specify	Often	Occasionally	Rarely	Never	Only/mainly if already taking it
Central	Methyldopa	5	18	15	54	8
Calcium Channel blocker	Nifedipine	69	25	1	2	3
	Amlodipine	27	35	20	10	8
	Other Calcium Channel Blocker	3	7	18	45	27
General Practitioners (n = 101) n Class	Specify	Often	Occasionally	Rarely	Never	Only/mainly if already taking it
Beta-blocker	Atenolol	5	16	30	30	20
	Metoprolol	10	18	26	29	18
	Labetalol	71	9	8	3	10
	Other beta-blocker	1	10	33	31	26
Angiotensin-converting enzyme (ACE) inhibitor	Captopril	2	4	17	59	19
	Enalapril	9	7	30	36	19
	Ramipril	20	13	21	24	23
	Other angiotensin-converting enzyme inhibitor (Other ACEI)	4	9	21	37	30
Central	Methyldopa	5	21	22	31	22
Calcium Channel blocker	Nifedipine	23	29	15	16	18
	Amlodipine	22	25	22	14	18
	Other Calcium Channel Blocker	2	10	29	29	31

Table A11
Antihypertensive medication choices when initiating new postpartum treatment after hypertensive pregnancy by clinical role .

Obstetric clinicians (n = 100) n Class	Specify	Often	Occasionally	Rarely	Never	Only/mainly if already taking it
Beta-blocker	Atenolol	15	23	29	27	6
	Metoprolol	1	7	18	61	13
	Labetalol	55	25	11	5	4
	Other beta-blocker	4	3	20	47	26
Angiotensin-converting enzyme (ACE) inhibitor	Captopril	6	14	18	53	9
	Enalapril	39	32	15	11	3
	Ramipril	6	20	32	32	10
	Other angiotensin-converting enzyme (Other ACEI)	2	5	13	55	25
Angiotensin receptor blocker	Methyldopa	2	12	10	71	5
Calcium Channel blocker	Nifedipine	66	22	5	3	4
	Amlodipine	31	27	23	13	6
	Other Calcium Channel Blocker	3	5	17	51	24
General Practitioners (n = 101) n						
Beta-blocker	Atenolol	2	13	33	39	14
	Metoprolol	4	15	26	42	14
	Labetalol	37	22	14	17	11
	Other beta-blocker	3	8	31	37	22
Angiotensin-converting enzyme (ACE) inhibitor	Captopril	0	5	20	64	12
	Enalapril	10	14	24	44	9
	Ramipril	22	29	15	25	10
	Other angiotensin-converting enzyme inhibitor (Other ACEI)	4	13	23	40	21
Angiotensin receptor blocker	Methyldopa	2	14	22	46	17
Calcium Channel blocker	Nifedipine	13	23	21	32	12
	Amlodipine	26	32	17	15	11
	Other Calcium Channel Blocker	3	20	18	36	25

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