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Counseling Women of Reproductive Age About Emergency Preparedness – Provider Attitudes and Practices

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Abstract

We report healthcare provider attitudes and practices on emergency preparedness counseling for women of reproductive age (WRA), including pregnant, postpartum, and lactating women (PPLW), for disasters and weather emergencies. DocStyles is a web-based panel survey of primary healthcare providers in the United States. During March 17–May 17, 2021, obstetricians-gynecologists, family practitioners, internists, nurse practitioners, and physician assistants were asked about the importance of emergency preparedness counseling, level of confidence, frequency, barriers to providing counseling, and preferred resources to support counseling among WRA and PPLW. We calculated frequencies of provider attitudes and practices, and prevalence ratios with 95% CIs for questions with binary responses. Among 1,503 respondents (family practitioners (33%), internists (34%), obstetrician-gynecologists (17%), nurse practitioners (8%), and physician assistants (8%)), 77% thought emergency preparedness was important, and 88% thought counseling was necessary for patient health and safety. However, 45% of respondents did not feel confident providing emergency preparedness counseling, and most (70%) had never talked to PPLW about this topic. Respondents cited not having time during clinical visits (48%) and lack of knowledge (34%) as barriers to providing counseling. Most respondents (79%) stated they would use emergency preparedness educational materials for WRA, and 60% said they were willing to take an emergency preparedness training. Healthcare providers have opportunities to provide emergency preparedness counseling; however, many have not, noting lack of time and knowledge as barriers. Emergency preparedness resources combined with training may improve healthcare provider confidence and increase delivery of emergency preparedness counseling.

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Keywords

emergency preparedness; women of reproductive age; preparedness counseling; health care providers; maternal morbidity and mortality

INTRODUCTION

Pregnant, postpartum, and lactating women (PPLW) face unique challenges during disasters triggered by natural hazards (e.g., hurricanes, tornadoes, wildfires). These challenges may be mitigated by emergency preparedness¹. Disasters are associated with adverse pregnancy outcomes such as pregnancy loss and preterm birth^{2–4}. Healthcare providers have unique opportunities to counsel this population on emergency preparedness (e.g., developing an evacuation plan, knowing the signs of obstetric emergencies, and assembling an emergency birth kit)^{5,6}. Multiple resources have been published to provide information for patient counseling, including safety messages for patients, outlined considerations for obstetric healthcare providers and facilities, and tools for ongoing provider training and support^{5–8}. The extent of this patient counseling has not been reported. Our objective is to describe healthcare provider attitudes and practices related to counseling women of reproductive age (WRA), including PPLW, on emergency preparedness^{5,6}, to provide useful information to mitigate adverse pregnancy health outcomes during emergencies.

METHODS

DocStyles, a web-based, non-probability panel survey of primary healthcare providers in the United States, is administered by Porter Novelli (<http://styles.porternovelli.com>). DocStyles respondents are recruited from SERMO's (<http://www.sermo.com>) global medical panel, which comprises of 350,000 panelists who are verified using a double opt-in sign up process with telephone confirmation at place of work. To be eligible for all DocStyles surveys, providers must be actively caring for patients in the United States; work in an individual, group, or hospital practice; and have practiced medicine for more than three years. During March 17–May 17, 2021 (Spring DocStyles), SERMO sampled its active panel members based on their previous activity level, inviting high responders (those who answer >75% of questions) first, then medium responders (25–75%), followed by low responders (<25%). To achieve a sample with a range of provider types, DocStyles set a quota of 1,000 family practitioners and internists (general primary care physicians), 250 obstetrician-gynecologists, and 250 nurse practitioners/physician assistants. Survey respondents received an honorarium that ranged from \$50 to \$58 depending on how many questions were asked. DocStyles has been used to describe provider knowledge, attitudes, and practices, especially those related to emerging public health concerns^{9,10}.

Sixteen emergency preparedness questions (referred to as EPR1 – EPR16) were developed at the Centers for Disease Control and Prevention (CDC) by a team of Maternal and Child Health emergency preparedness experts and were added to the Spring 2021 DocStyles survey (Appendix 1). Questions were asked about the importance of emergency preparedness counseling, level of confidence in counseling, frequency of counseling, barriers to providing counseling, and preferred resources to support counseling for their

patient populations, specifically for WRA and PPLW (Appendix 1). The overall response rate was 66% (65% for internists and family practice providers, 62% for obstetrician-gynecologists, and 71% for nurse practitioners and physician assistants). From these cross-sectional data, we calculated frequencies of provider attitudes and practices and conducted bivariate analyses using unadjusted log-binomial models to estimate prevalence ratios (PR) and 95% CIs for binary survey responses. We categorized number of years in clinical practice into 4–5, 6–10, 11–20, and >21 years¹¹.

This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.¹

Data licensed from Porter Novelli do not include personal identifiers; the activity is considered non-human subject's research and analyses of DocStyles survey data do not require Centers for Disease Control and Prevention Institutional Review Board evaluation. We conducted all analyses using R version 4.0.3.

RESULTS

A total of 1,503 respondents completed the survey (34% internists, 33% family practitioners, 17% obstetrician-gynecologists, 8% nurse practitioners, and 8% physician assistants). Most (65%) primarily work in group outpatient practice settings. Respondents were distributed across all US census regions (33% South, 24% Northeast, 21% Midwest, and 21% West). Respondent characteristics varied by provider type. For example, physician assistants had the youngest median age of 38 years (IQR: 13 years), and obstetrician-gynecologists had the oldest median age of 50 years (IQR: 19 years). Internists and family practitioners were predominantly male (72% and 67%, respectively), whereas nurse practitioners and physician assistants were predominantly female (85% and 67%, respectively), and 54% of obstetrician-gynecologists were female. Physician assistants had spent the fewest number of years in clinical practice (25% having practiced 4–5 years). Internists was the provider type most likely to work in an inpatient setting (31%), physician assistants was the provider type most likely to work in individual outpatient practices (22%), and obstetrician-gynecologists and nurse practitioners were the provider types most likely to work in a group outpatient practice (67% and 65%, respectively). The Southern region of the United States was most represented across all provider types (36% of obstetrician-gynecologists, 34% of nurse-practitioners, 34% of physician assistants, 33% of family-practitioners, and 31% of internists) (Table 1).

When asked if they had heard of various emergency preparedness and response information resources (data not shown, Appendix 1, EPR 1), 61% of respondents had not heard of any of the listed resources; 22% had heard of CDC's safety messages for pregnant, postpartum, and breastfeeding women during natural disasters and severe weather⁷; 17% had heard of ACOG Committee Opinion No. 457 Preparing for Disasters: Perspectives on Women⁵; 19% had heard of the ACOG Committee Opinion No. 726 Hospital Disaster Preparedness for Obstetricians and Facilities Providing Maternity Care⁶; 9% had heard of the Clinician

¹See e.g., 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. §241(d), 5 U.S.C. §552a, 44 U.S.C. §3501 et seq.

Outreach and Communication Activity (<https://emergency.cdc.gov/coca/>); and 6% had heard of the Obstetric Triage by Resource-Allocation for Inpatient⁸.

Overall, 77% of respondents thought that talking with reproductive-aged women about emergency preparedness plans was important (31% very important and 46% somewhat important). There was variation across provider type, work setting, and region among those who thought this counseling was very important. Among nurse practitioners, 40% thought that talking about emergency preparedness plans was very important, compared to 34% of physician assistants, 34% of internists, 29% of obstetrician-gynecologists, and 26% of family practitioners. Sixteen percent of obstetrician-gynecologists thought it not very important. There was variation by provider work setting, with 37% of individual outpatient providers and 35% of inpatient providers thinking it was very important, compared with 28% of group outpatient providers. There was also variation by provider region, with 38% of providers in the Northeast thinking it was very important compared to 33% in the South, 28% in the Midwest, and 24% in the West (Table 2, EPR 3).

Regarding emergency preparedness plans, 88% of respondents thought emergency preparedness plans were important for keeping WRA healthy in disasters and severe weather emergencies (51% very important and 37% somewhat important). There was variation across provider type, region, and work setting among those who thought emergency preparedness plans were very important. By provider type, 60% of nurse practitioners thought this was very important, compared with 56% of obstetrician-gynecologists, 54% of physician assistants, 49% of internists, and 47% of family practitioners. By region, 56% of Southern providers also responded they thought this was very important, compared with 46% of those in the West and Midwest and 52% in the Northeast. By practice setting, 55% of individual outpatient providers thought EPR plans very important compared with 53% inpatient providers and 49% group outpatient providers (Table 2, EPR 2).

Among respondents, 30% had ever talked with a pregnant, postpartum, or lactating woman about developing an emergency preparedness plan in case of a disaster or severe weather emergency. Obstetrician-gynecologists were the most likely to report talking to their patients about developing an emergency response plan (50%); compared with obstetrician-gynecologists, physician assistants were 65% less likely (PR=0.35, 95% CI 0.23–0.51), nurse practitioners were 32% less likely (PR=0.68, 95% CI 0.51–0.89), family practitioners were 44% less likely (PR=0.56, 95% CI 0.47–0.68), and internists were 52% less likely (PR=0.48, 95% CI 0.40–0.59). By region, 27% of providers in the Midwest and West, and 28% of providers in the Northeast reported talking to their patients about developing an emergency response plan compared to 35% of providers in the South. Compared with providers in the Midwest, Southern providers were 30% more likely to talk with their patients about developing an emergency response plan (PR=1.30, 95% CI 1.05–1.62). Compared with individual inpatient practice providers, providers working in inpatient practices/hospitals were 27% less likely to have talked with their patients about an emergency response plan (PR=0.73, 95% CI 0.56–0.96). Providers who had been in practice for the shortest amount of time (4–5 years) were the least likely to have counseled their patients. Compared with newer providers (4–5 years in practice), providers who were in practice for 6–10 years were 67% more likely to have counseled their patients on emergency

preparedness (PR=1.67, 95% CI 1.21–2.37), providers with 11–20 years of experience were 67% more likely (PR=1.67, 95% CI 1.23–2.34), and those with >21 years were 71% more likely (PR=1.71, 95% CI 1.26–2.39) (Table 3, EPR 7). Respondents cited not having time during clinical visits (48%) or the knowledge to speak with their patients (34%) as main barriers to counseling their patients about emergency preparedness planning (data not shown, Appendix 1, EPR 9).

Respondents were asked what topics should be included when talking with WRA about emergency preparedness planning for a disaster or severe weather emergency. Seventy-two percent of respondents selected the topic of having emergency supplies to last for at least a week, followed by 68% who selected knowing the signs of preterm labor and other obstetric emergencies for pregnant women. Sixty-four percent selected the development of an evacuation plan for the patient and their family if they need to leave their home or community, and 61% thought having copies of important documents in a safe, accessible place should be included (data not shown, Appendix 1, EPR 4).

Among respondents, 54% were confident (15% very confident and 38% somewhat confident) talking with a pregnant woman about developing an emergency preparedness plan (including preparing an emergency birth kit) in case of a disaster or severe weather emergency. There was variation across provider type and work setting among those who were very confident. By provider type, 20% of obstetrician-gynecologists were very confident; this provider type had the highest percentage who were very confident. Twenty-four percent of physician assistants and 23% of nurse practitioners responded that they were not at all confident. Among those who worked in an inpatient setting, 21% reported they were not at all confident. There was little variation across provider region (Table 2, EPR 6).

Seventy-nine percent of respondents said that they would use educational materials in their practice to discuss emergency preparedness for disasters and severe weather emergencies with women of reproductive age (including pregnant, postpartum, or lactating women). Compared with obstetrician-gynecologists, physician assistants would be 23% less likely to use educational materials (PR=0.77, 95% CI 0.67–0.86), nurse practitioners would be 11% less likely (PR=0.89, 95% CI 0.79–0.99), family practice providers 10% less likely (PR=0.90, 95% CI 0.84–0.96), and internists 15% less likely (PR=0.85, 95% CI 0.79–0.91) (Table 3, EPR 11). Among those who said they would use materials (79% of respondents), fact sheets/brochures were thought to be most useful for patients by 87% of respondents, followed by text alerts for patients (63% of respondents) (data not shown, Appendix 1, EPR 12).

Among respondents, 60% would be willing to take a training on emergency preparedness planning for reproductive-aged women (Table 3, EPR 13). Sixty-eight percent of respondents would prefer a self-guided online training course about emergency preparedness planning for PPLW in disasters and severe weather emergencies. Sixty-two percent preferred an in-person training/conference, 44% preferred an on-demand recorded webinar, 41% preferred a live presentation (grand rounds, seminar, or webinar), and 27% preferred a newsletter by email (data not shown, Appendix 1, EPR 14). Compared with obstetrician-gynecologists, physician assistants would be 17% less likely to take an emergency

preparedness training (PR=0.83, 95% CI 0.71–0.95), nurse practitioners would be 19% less likely (PR=0.81, 95% CI 0.69–0.93), family practice providers 22% less likely (PR=0.78, 95% CI 0.71–0.86), and internists 33% less likely (PR=0.67, 95% CI 0.61–0.73). Willingness to take a training varied with length of time in practice. Compared with newer providers (4–5 years in practice), providers who were in practice for 6–10 years were 14% less likely to take a training (PR=0.87, 95% CI 0.76–0.99), providers with 11–20 years of experience were 11% less likely (PR=0.89, 95% CI 0.79–1.00), and providers with >21 years 21% less likely (PR=0.79, 95% CI 0.70–0.90). There was little variation in who would take a training among provider region or work setting (Table 3, EPR 13).

DISCUSSION

In this study most respondents thought talking with WRA and PPLW about emergency preparedness for disasters and severe weather emergencies was important; however, only 30% of providers reported providing any counseling. Lack of time and knowledge were reported as the most common barriers. Most respondents had never heard of existing clinician-tailored emergency preparedness resources (e.g., the ACOG committee reports)^{5,6}, suggesting an opportunity to improve promotion of emergency preparedness communication tools to providers to WRA and PPLW. This study indicates that most providers (87%) think emergency preparedness planning patient resources (brochures, fact sheets, and text alerts for patients) would be useful, and that most providers (60%) would be willing to take a training on EPR planning for women of reproductive age. These may be acceptable modes for improving healthcare provider confidence in counseling WRA and PPLW about emergency preparedness. Although CDC provides tools and resources for women of reproductive age for before, during, and after public health emergencies, these resources were developed for public health practitioners and not necessarily tailored for healthcare providers specifically (<https://www.cdc.gov/reproductivehealth/emergency/tools.html>). Tailoring materials for a clinical audience and broadening use of patient tools and resources among the range of healthcare providers caring for WRA and PPLW may be a strategy to improve delivery of these patient safety messages¹².

Obstetrician-gynecologists were the most likely to talk to patients about emergency preparedness; this may be explained by their patient population being specifically WRA and PPLW or familiarity with recommendations for this population. This practice pattern has been observed for other preventive counseling topics for WRA. For example, a DocStyles study that assessed providers' beliefs about the effectiveness of the HPV vaccine in preventing cancer found that obstetrician-gynecologists were most likely to recommend the HPV vaccine to their patients compared to the other provider types¹³, potentially due to increased interaction with WRA or increased knowledge of the HPV vaccine compared to other provider types

Providers were distributed across all US census regions at frequencies of regional distribution estimates similar to the U.S. population¹⁴. Additionally, providers of any type practicing in the South may be (although differences among census regions were not found to be significant) more likely than their counterparts in other regions to have counseled patients about emergency preparedness. This may be influenced by variation in annual

disaster occurrence, as the Southern region of the United States has more natural disasters annually than other regions¹⁵. For example, Texas has experienced the largest number of cumulative natural disasters in the United States since 1953¹⁵, which may increase provider likelihood of discussing emergency preparedness with their patients.

We observed that the provider types least likely to provide counseling were also those reportedly least likely to use educational materials or take trainings on emergency preparedness counseling (although differences among provider types were not found to be statistically significant). Future research may aim to elucidate what would facilitate uptake of existing educational materials and trainings on emergency preparedness for WRA and PPLW among non-obstetrician-gynecologic providers, providers in regions outside of the South, and providers in group outpatient practices and inpatient practices.

There may be opportunities to also deliver safety messages within inpatient settings. For example, inpatient counseling and resources on emergency preparedness for natural disasters and severe weather may be incorporated into hospital discharge planning and counseling during severe weather events (e.g., ice storms).

Respondents noted lack of time as the most common barrier to providing EPR counseling to patients. Clinicians, and physicians specifically, are a trusted source of clinical information for patients¹⁶; however, they are faced with a growing list of counseling topics to fit within the span of a short patient encounter. Most respondents indicated that they would use patient materials. In particular, fact sheets, brochures, and patient text alerts for delivering information were noted to be most useful for EPR planning. There may be opportunity to improve delivery of counseling for this topic among this patient population by broadening this practice to other members of the clinical and public health workforce, especially other birthing providers (doulas and midwives), community health workers, and Maternal Child Health Title V home visiting nurse program staff. A whole community approach would expand knowledge of this issue within the clinical community, reinforce consistent messaging, and increase opportunities to deliver information to patients^{17,18}.

This study is subject to several limitations. DocStyles is a voluntary opt-in survey, and sampling is not population-based or random, so there may be selection bias towards providers who feel strongly about emergency preparedness counseling (positively or negatively). DocStyles is not a nationally representative survey; however, it is a large national survey that samples across provider characteristics. Findings may not be generalizable to the broader U.S. provider population of obstetrician-gynecologists, family-practitioners, internists, physician assistants, or nurse practitioners. The survey data are self-reported, which may not be reflective of provider practices due to recall or social desirability bias; however, it is web-based¹⁹ and anonymous²⁰, which may mitigate social desirability bias. Lastly, this survey does not include all types of birthing providers, e.g., midwives. Despite the limitations, this study uniquely reports specifically on healthcare provider attitudes and practices related to counseling WRA and PPLW on emergency preparedness, populations with special clinical needs in emergencies and disasters. This analysis was completed on large survey data that is sampled across the United States and across provider demographics.

CONCLUSION

In conclusion, although most providers thought counseling WRA and PPLW about emergency preparedness planning was important, many never provided counseling, citing lack of confidence, lack of knowledge, and limited healthcare visit time as the most common barriers to counseling patients. However, many respondents would use educational resources to share with their patients, and training about emergency preparedness counseling. These findings identify gaps in emergency preparedness counseling of WRA and PPLW. Also, findings identify the need for development and promotion/dissemination of provider resources (fact sheets and brochures) and trainings for emergency preparedness counseling with their patients.

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Appendix 1.: Spring (March 17, 2021-May 17, 2021) DocStyles Emergency Preparedness and Response (EPR) Questions:

EPR 1. Which of the following have you ever heard of?

Select all that apply.

EPR1a.	Clinician Outreach and Communication Activity (COCA)
EPR1b.	CDC’s Safety Messages For Pregnant, Postpartum, and Breastfeeding Women During Natural Disasters and Severe Weather
EPR1c.	ACOG Committee Opinion No. 457 Preparing for Disasters: Perspectives on Women
EPR1d.	ACOG Committee Opinion No. 726: Hospital Disaster Preparedness for Obstetricians and Facilities Providing Maternity Care
EPR1e.	Obstetric Triage by Resource Allocation for INpatient (OB TRAIN)
EPR1f.	None of the above

EPR2. In general, how important do you think emergency preparedness plans are for keeping women of reproductive age (including pregnant, postpartum, or lactating women) healthy in disasters (natural or man-made) and severe weather emergencies?

Select one.

1	Very important
2	Somewhat important
3	Not very important

4	Not at all important
5	Don't know

EPR3. How important would you rank talking with women of reproductive age (including pregnant, postpartum, or lactating women) about emergency preparedness plans?

Select one.

1	Very important
2	Somewhat important
3	Not very important
4	Not at all important
5	Don't know

EPR4. Which topic(s) do you think should be included when talking with women of reproductive age (including pregnant, and postpartum, or /lactating women) about emergency preparedness planning for a disaster or severe weather emergency?

Select all that apply.

EPR4a.	Developing an evacuation plan for themselves and for their family (including for children) if there is a need to leave home or community in the event of a disaster
EPR4b.	Having emergency supplies (such as enough extra water, food, and medicine to last for at least seven days)
EPR4c.	Having copies of important documents (like birth certificates, insurance policies, and a prenatal record summary) in a safe place that can be accessed quickly
EPR4d.	Knowing the signs of preterm labor and other obstetric emergencies for pregnant women
EPR4e.	Developing an emergency birth kit for pregnant women
EPR4f.	Promoting lactation and relactation during a disaster
EPR4g.	Reviewing infant care, including safe sleep and infant feeding in disasters
EPR4h.	Reviewing signs of mental distress and promoting prompt attention to mental health needs
EPR4i.	None of the above

EPR5. How confident are you in talking with women of reproductive age (including postpartum or lactating women) about developing an emergency preparedness plan?

Select one.

1	Very confident
2	Somewhat confident
3	Not very confident
4	Not at all confident

EPR6. How confident are you in talking with a pregnant woman about developing an emergency preparedness plan (including preparing an emergency birth kit) in case of a disaster or severe weather emergency?

Select one.

1	Very confident
2	Somewhat confident
3	Not very confident
4	Not at all confident

EPR7. Have you ever talked with a pregnant, postpartum, or lactating woman about developing an emergency preparedness plan in case of a disaster or severe weather emergency?

Select one.

1	Yes
2	No

EPR8. In the past 12 months, for what percentage of your pregnant, postpartum, or lactating patients have you discussed emergency preparedness planning in case of a disaster or severe weather emergency?

% of patients: _____

What are some of the reasons for not always talking with women of reproductive age (including pregnant, postpartum, or lactating women) about emergency preparedness planning?

Select all that apply.

EPR9a.	The risk of a disaster (natural or man-made) occurring is low
EPR9b.	I do not know enough to talk with my patients about this topic
EPR9c.	My patients are not interested or concerned about this topic
EPR9d.	There is not enough time to talk about this topic during clinical visits
EPR9e.	There is no recommendation for talking with pregnant or lactating women about this topic
EPR9f.	There is not enough scientific evidence to support talking about this topic
EPR9g.	Emergency preparedness planning is too difficult
EPR9h.	Talking about emergency prepared planning is not my job
EPR9i.	Other reason not listed

EPR10. When would you consider counseling women of reproductive age (including pregnant, postpartum, or lactating women) on emergency preparedness planning?

Select all that apply.

EPR10a.	If recommended by my professional organization
EPR10b.	If recommended by a public health official
EPR10c.	At least annually (like during an annual wellness visit)
EPR10d.	At least once as part of prenatal or postpartum care
EPR10e.	If a disaster or severe weather emergency is imminent
EPR10f.	If caregiver/family member has concerns about emergency preparedness
EPR10g.	If patient has concerns about emergency preparedness
EPR10h.	Other circumstances not listed above
EPR10i.	Never

EPR11. Would you use educational materials for women of reproductive age (including pregnant, postpartum, or lactating women) about emergency preparedness for disasters and severe weather emergencies for your practice?

Select one.

1	Yes
2	No

What types of materials about emergency preparedness planning for your patients would be useful?

Select all that apply.

EPR12a.	Posters/Infographics
EPR12b.	Fact sheets/brochures
EPR12c.	Videos
EPR12d.	Text alerts for patients
EPR12e.	Social media messages
EPR12f.	Other

EPR13. Would you take healthcare provider training about emergency preparedness planning for women of reproductive age (including pregnant, postpartum, or lactating women)?

Select one.

1	Yes
2	No

EPR14. What are your preferred methods for receiving training about emergency preparedness planning for pregnant, postpartum, and lactating women in disasters and severe weather emergencies?

Select all that apply.

EPR14a.	In-person training / conference
EPR14b.	Live presentation (Grand rounds, seminar or webinar)
EPR14c.	On-demand recorded webinar
EPR14d.	Self-guided online training course
EPR14e.	Newsletter by email
EPR14f.	Other
EPR14g.	I would not use any of these methods

EPR15. Which of these emergency preparedness planning topics for women of reproductive age (including pregnant, postpartum, or lactating women) would you like to know more about?

Select all that apply.

EPR15a.	Health risks in disasters and severe weather emergencies
EPR15b.	Talking with women of reproductive age (including pregnant, postpartum, and lactating women) about emergency preparedness planning
EPR15c.	Coping and mental health distress during disasters
EPR15d.	Developing an emergency birth kit
EPR15e.	Lactation and relactation during a disaster
EPR15f.	Infant care in disasters, including safe sleep and infant feeding
EPR15g.	Emergency preparedness planning for natural disasters
EPR15h.	None of the above

EPR16. Which of these emergency preparedness planning topics would you like to know more about?

Select all that apply.

EPR16a.	Provider-to-patient communication strategies during natural disasters
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EPR16b.	Emergency preparedness planning for obstetric healthcare facilities
EPR16c.	ACOG/SMFM levels of maternal care and integrated regional referral networks
EPR16d.	Triage and evacuation of obstetric units in natural disasters
EPR16e.	Planning surge capacity of obstetric units in natural disasters
EPR16f.	Strategies for providing obstetric services in natural disasters
EPR16g.	Considerations for non-obstetrical clinical providers caring for pregnant women after natural disasters
EPR16h.	None of the above

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HIGHLIGHTS

- Emergency preparedness counseling for reproductive aged women is uncharacterized.
- Providers think counseling is important (77%) and necessary for safety (88%).
- Providers lack counseling confidence (45%) and most (70%) have never counseled.
- Counseling barriers include time for appointment (48%) and lack of knowledge (34%).
- Providers would use educational materials (79%) and a preparedness training (60%).

Table 1.

Sample Characteristics for Total Respondent Group and Type of Primary Healthcare Providers — Spring DocStyles, United States, 2021 (N= 1,503)

	column % or median (Interquartile Range)					
	Total (N=1503)	Obstetrician- Gynecologist (n=250)	Family Practitioner (n=490)	Internist (n=512)	Nurse Practitioner (n=124)	Physician Assistant (n=127)
Provider Characteristics						
Age, years	46 (19)	50 (19)	48 (18)	46 (19)	44 (17)	38 (13)
Gender						
Female	43	54	33	28	85	67
Male	57	46	67	72	15	33
Number of patients per week	95 (50)	85 (40)	100 (50)	95 (56)	75 (50)	80 (40)
Provider length of practice (years)						
4–5	13	9	12	13	15	25
6–10	21	16	19	22	20	33
11–20	32	34	31	32	35	29
>21	34	41	38	33	31	13
Primary Work Setting						
Inpatient/Hospital	18	14	6	31	19	19
Individual outpatient practice	17	19	18	17	16	22
Group outpatient practice	65	67	76	52	65	59
Census region ^{14, a}						
Northeast	24	23	19	29	23	22
Midwest	21	21	24	20	27	20
South	33	36	33	31	34	34
West	21	20	24	21	16	24

^a**Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin. **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia. **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

Table 2.

Associations for Emergency Preparedness and Response Counseling Attitudes* of Primary Healthcare Providers — Spring DocStyles, United States, 2021 (N= 1,503)

How important would you rank talking with women of reproductive age about emergency preparedness plans?												
		Provider Type (column %)				Provider Work Setting (column %)				Provider Region (column %)		
Total (N=1503)	Physician Assistant (n=127)	Family Practitioner (n=490)	Internist (n=512)	Ob-Gyn (n=250)	NP (n=124)	Inpatient (n=312)	Individual Outpatient (n=301)	Group Outpatient (n=1140)	Midwest (n=374)	Northeast (n=423)	South (n=586)	West (n=370)
Very important	34	26	34	29	40	35	37	28	28	38	33	24
Somewhat important	47	49	41	50	39	42	42	48	47	40	45	50
Not very important	9	14	12	16	10	13	11	13	12	12	13	15
Not at all important	3	4	5	2	3	3	5	4	6	3	3	4
Don't know	6	7	8	2	9	8	5	7	6	6	6	7
How important do you think emergency preparedness plans are for keeping women of reproductive age healthy in disasters (natural or man-made) and severe weather emergencies?												
		Provider Type (column %)				Provider Work Setting (column %)				Provider Region (column %)		
Total (N=1503)	Physician Assistant (n=127)	Family Practitioner (n=490)	Internist (n=512)	Ob-Gyn (n=250)	NP (n=124)	Inpatient (n=312)	Individual Outpatient (n=301)	Group Outpatient (n=1140)	Midwest (n=374)	Northeast (n=423)	South (n=586)	West (n=370)
Very important	54	47	49	56	60	53	55	49	46	52	56	46
Somewhat important	34	42	34	38	29	32	33	40	39	36	33	41
Not very important	7	4	6	3	2	6	4	4	7	3	4	5
Not at all important	0	1	1	1	1	1	1	1	2	1	1	1
Don't know	6	6	10	1	8	8	7	6	7	7	6	7
How confident are you in talking with a pregnant woman about developing an emergency preparedness plan?												
		Provider Type (column %)				Provider Work Setting (column %)				Provider Region (column %)		
Total (N=1503)	Physician Assistant (n=127)	Family Practitioner (n=490)	Internist (n=512)	Ob-Gyn (n=250)	NP (n=124)	Inpatient (n=312)	Individual Outpatient (n=301)	Group Outpatient (n=1140)	Midwest (n=374)	Northeast (n=423)	South (n=586)	West (n=370)

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Very Confident	15	10	16	12	20	19	13	17	15	15	15	14
Somewhat Confident	38	29	41	34	50	30	31	46	38	41	36	35
Not Very Confident	32	37	32	36	25	28	36	26	33	29	31	38
Not at all Confident	15	24	11	18	5	23	21	11	14	15	17	13

* Selected categorical survey questions

NP = Nurse Practitioner

Table 3. Emergency Preparedness and Response Counseling Practices and Willingness to Use Related Educational and Training Materials Among Primary Healthcare Providers by Selected characteristics — Spring DocStyles, United States, 2021 (N= 1,503)

	Ever Talked [§]			Use Materials [¶]			Willing to Train ^{**}		
	n(row %)	PR ^{&}	95% CI	n(row %)	PR ^{&}	95% CI	n(row %)	PR ^{&}	95% CI
Total	451 (30)	-	-	1187 (79)	-	-	902 (60)	-	-
Provider Type									
Obstetrician-Gynecologist	124 (50)	Ref	Ref	222 (89)	Ref	Ref	190 (76)	Ref	Ref
Internist	123 (24)	0.48	0.40-0.59	387 (76)	0.85	0.79-0.91	259 (51)	0.67	0.61-0.73
Family Practice	137 (28)	0.56	0.47-0.68	392 (80)	0.90	0.84-0.96	291 (59)	0.78	0.71-0.86
Nurse Practitioner	42 (34)	0.68	0.51-0.89	98 (79)	0.89	0.79-0.99	76 (61)	0.81	0.69-0.93
Physician Assistant	22 (17)	0.35	0.23-0.51	87 (69)	0.77	0.67-0.86	80 (63)	0.83	0.71-0.95
Provider Length of Practice (years)									
4-5	37 (19)	Ref	Ref	165 (83)	Ref	Ref	136 (69)	Ref	Ref
6-10	97 (31)	1.67	1.21-2.37	241 (78)	0.93	0.86-1.02	185 (60)	0.87	0.76-0.99
11-20	151 (31)	1.67	1.23-2.34	370 (76)	0.92	0.85-1.00	296 (61)	0.89	0.79-1.00
>21	163 (32)	1.71	1.26-2.39	410 (80)	0.96	0.90-1.04	279 (55)	0.79	0.70-0.90
Provider Region									
Midwest	89 (27)	Ref	Ref	256 (78)	Ref	Ref	196 (59)	Ref	Ref
West	88 (27)	1.01	0.79-1.30	249 (77)	1.00	0.92-1.08	193 (60)	1.01	0.89-1.15
Northeast	97 (28)	1.02	0.79-1.30	272 (77)	1.00	0.91-1.08	205 (58)	0.98	0.86-1.11
South	174 (35)	1.30	1.05-1.62	409 (82)	1.06	0.99-1.14	302 (61)	1.02	0.91-1.15
Provider Work Setting									
Individual outpatient practice	90 (33)	Ref	Ref	226 (83)	Ref	Ref	156 (57)	Ref	Ref
Group outpatient practice	292 (30)	0.92	0.76-1.13	734 (77)	0.92	0.87-0.99	571 (60)	1.04	0.91-1.17
Inpatient practice/Hospital	66 (24)	0.73	0.56-0.96	226 (83)	1.00	0.93-1.08	169 (62)	1.08	0.92-1.23

[&]Prevalence Ratio

[§] Have you ever talked with a pregnant, postpartum, or lactating woman about developing an emergency preparedness plan in case of a disaster or severe weather emergency? (EPR 7)

[¶] Would you use educational materials for women of reproductive age (including pregnant, postpartum, or lactating women) about emergency preparedness for disasters and severe weather emergencies for your practice? (EPR 11)

* Would you take healthcare provider training about emergency preparedness planning for women of reproductive age (including pregnant, postpartum, or lactating women)? (EPR 13)

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