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Research Article

The Effects and Difficulties of The Focused Neonatal Care (FANC) Model on Pregnancy Outcomes Among Women Who Attend Neonatal Clinics at The Federal University Teaching Hospital in Owerri

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Abstract:

The study was on the impact and challenges of focused antenatal care (FANC) model on pregnancy outcomes among women attending antenatal clinics in Federal University Teaching Hospital, Owerri. The aim of the study include: to assess the level of awareness of FANC model among pregnant women attending antenatal clinics at FUTH, to examine the perceived impact of the FANC model on maternal health during pregnancy, to assess the perceived impact of the FANC model on neonatal health outcomes and to identify the perceived challenges of FANC model among women attending antenatal clinics in FUTH. The student design was descriptive design and the population 81, no sample size as null sampling technique was utilized. The instrument for data collection was a close ended questionnaire and interview. The data was analyzed using Microsoft, percentages and tables. The findings revealed that the respondents have knowledge of FANC 81(100%), mostly via the healthcare practitioners 72 (88.9%), positive impact of FANC on both maternal and neonatal health, and the challenges of FANC include distance, finance, and shortage of medical supplies (18.5%). Recommendations include: FANC care model should be implemented both in rural and urban areas and Healthcare professionals should ensure to properly create awareness on FANC model at all times.

Keywords: impact; challenges; focused antenatal care (fanc) model; pregnancy outcomes; owerri

Introduction

In order to guarantee a safe pregnancy and the best possible health outcomes for the mother and the foetus, antenatal care, or ANC, is an essential part of maternal health services. The WHO developed the evidence-based Focused Antenatal Care (FANC) approach to lower maternal and perinatal mortality rates, especially in low- and middle-income nations, and enhance the quality of prenatal care. By focussing on personalised, all-encompassing treatment that involves fewer but more focused visits, FANC departs from the conventional ANC methodology. [1]

Focused Antenatal treatment (FANC) is evidence based, woman oriented, goal directed and tailored treatment for pregnant women to improve maternal, perinatal and neonatal outcomes. To ensure positive results for both the mother and the foetus, FANC involves clinical evaluation of the pregnant woman and the foetus throughout the pregnancy. Among FANC's initiatives are the detection and treatment of infections and obstetric problems, as well as the encouragement of healthy behaviour and the use of trained attendants. In order to guarantee the birth of healthy neonates, FANC operations are focused on maintaining mother health and enhancing foetal wellness. In low-income nations, the failure to use FANC may make it impossible to lower maternal, perinatal, and neonatal morbidity and mortality. [3]

The FANC approach was created to fill important gaps in traditional ANC, such as the underemphasis on health promotion and risk identification. The four goal-oriented visits that make up FANC, as opposed to normal ANC, are designed to evaluate the health of the mother and foetus, administer preventative care, and instruct mothers on pregnancy, birthing, and postpartum care. Better pregnancy outcomes, including lower rates of low birth weights, preterm births, and maternal death, have been associated with this paradigm [4].

The application of FANC in many developing nations, including Nigeria, is fraught with difficulties despite its proven advantages. These difficulties include a shortage of qualified medical professionals, subpar facilities, and a lack of knowledge among expectant mothers on the significance of FANC services. [5] With an estimated 512 deaths for every 100,000 live births, maternal mortality in Nigeria is still a major public health concern, in part because of insufficient ANC coverage [6].

Since 2013, Ethiopia has been reducing maternal, perinatal, and neonatal mortality by adopting the FANC package in community settings. By connecting primary health care units with health extension workers (HEWs) at community health posts, it seeks to identify pregnant women early and provide FANC. Ethiopia continues to have some of the highest maternal and child health indicators in the world, despite the implementation of FANC. Why those maternal, neonatal, and child health indicators stayed high during the implementation of these successful intervention packages is the key question here. We speculate that these therapies might not be carried out according to standard procedure, which is known as an evidence-practice gap. [7]

One of the most important medical facilities for women in Imo State and the surrounding area is the Federal University Teaching Hospital (FUTH) in Owerri. Although the Federal University Teaching Hospital (FUTH) in Owerri has attempted to integrate the FANC model into prenatal care, little is known about how it affects pregnancy outcomes and the difficulties faced by women and healthcare professionals. Identifying the effects and difficulties associated with FANC is critical for improving maternal and newborn health outcomes and reaching Sustainable Development Goal (SDG), which seeks to provide healthy lives and promote well-being for all [8]

Research indicates that prenatal public health initiatives can effectively lower maternal, perinatal, and neonatal mortality. Interventions throughout pregnancy improved maternal and foetal health and dramatically decreased neonatal mortality in all FANC studies. Increasing the frequency of prenatal visits has been found to reduce maternal, perinatal, and neonatal mortality, according to studies done in Bangladesh, India, Indonesia, and sub-Saharan Africa. Numerous studies showed that supplementing with folic acid and iron during pregnancy Importantly, randomized trials and extensive observational studies showed significant decreases in neonatal mortality and enhancement of maternal and childcare uptake after adopting these treatments as a package in community settings. Those mortality rates are not significantly reduced by the mere number of prenatal visits [10].

Nigeria contributes significantly to the global rates of maternal and perinatal death, making maternal and neonatal health outcomes a major concern. Maternal mortality is 512 deaths per 100,000 live births, according to the Nigeria Demographic and Health Survey. Many of these fatalities are caused by avoidable complications during pregnancy, childbirth, and the postpartum phase. High-quality prenatal care (ANC) is a crucial intervention to lessen these negative consequences. However, despite the Focused Antenatal Care (FANC) model's launch and proven efficacy in improving pregnancy outcomes worldwide, Nigeria has yet to fully adopt and benefit from it because of a number of issues. [11]

Maternal health issues can be effectively addressed by the FANC model, which places a strong emphasis on tailored treatment, fewer but focused visits, and all-encompassing health promotion and disease prevention techniques. Yet, in locations like FUTH, Owerri, important gaps persist. These include poor knowledge among expectant mothers, a lack of educated healthcare workers, and inadequate infrastructure, all of which impede the full adoption and potential advantages of FANC. [12]

In several regions of Africa and the developing world, the utilisation of prenatal services has not been encouraging. Pregnant women typically arrive late for services and receive fewer focused antenatal care (FANC) sessions than is advised. Quality FANC provision is a challenge for developing nations, especially in rural and peri-urban areas. At various levels of the health system, especially in cases where policies are unclear, there is competition for personnel and funding as well as poor communication with other programs or components (e.g., emergency obstetric care, HIV, malaria) [13]. The significance of FANC may be underestimated as a result of inadequate communication between healthcare professionals and the belief held by some women, families, and communities that pregnancy is a normal part of life [14].

Additionally, many pregnant women in Nigeria continue to suffer from avoidable problems like preterm labour, anaemia, and preeclampsia, which are frequently made worse by a lack of access to high-quality prenatal care [15]. Concerns concerning the effectiveness of FANC's implementation and its influence on pregnancy outcomes in tertiary healthcare facilities such as FUTH, Owerri, are raised by these ongoing difficulties. By examining the effects and difficulties of the FANC model on pregnancy outcomes among women who visit antenatal clinics at FUTH, Owerri, this study seeks to close these gaps. The results will offer proof to support initiatives and policies aimed at enhancing maternal and newborn health in the area.

In most African civilisations, there is a widespread belief in the existence of witches, a supernatural entity that has the capacity to control and manipulate people and families for malevolent ends. Pregnancy disclosure may be delayed and the likelihood of receiving early focused antenatal care services may be reduced due to the widespread belief in this specific bad spirit. For instance, ethnographic research from Mozambique and southern Tanzania showed that pregnant women intentionally postponed ANC initiation in order to shield the foetus from witchcraft and sorcery attacks by envious relatives and neighbours. [16]

This study, therefore, seeks to examine the impact and challenges of the FANC model on pregnancy outcomes among women attending antenatal clinics at Federal University Teaching Hospital (FUTH) Owerri.

Materials and Methods

Research Design

A descriptive cross-sectional survey design was adopted for this study.

Study area

This study was carried out at Federal University Teaching Hospital, Owerri. The setting includes: the antenatal clinics within the hospital where the pregnant women receive focused antenatal care and the hospital environment where healthcare providers and facilities for maternal care are present. The Federal University Teaching Hospital Owerri (FUTHO), located at 105 Hospital Road, Orlu Road, Owerri, Imo State, Nigeria,

Target Population

The target population are pregnant women attending antenatal clinics at FUTHO who are receiving care under FANC model. The target population size is 517.

Ethical Approval: Ethical approval was obtained from the ethical review board/ committee of IMSUTH and all study protocols and tools to be used for the study was approved

Sampling Technique

A purposive sampling technique was used to select a sample of 250 respondents for the study. Purposive sampling was chosen because it allows for the deliberate selection of participants who meet specific criteria relevant to the study's objectives. In this context, women attending antenatal clinics at Federal University Teaching Hospital (FUTH), Owerri, were selected because they have direct experience with the Focused Antenatal Care (FANC) model. This ensures that the sample includes individuals who can provide in-depth and context-specific insights into the impact and challenges of the FANC model on pregnancy outcomes.

Inclusion Criteria

1.***Attendance of Antenatal Care:*** Women who have attended at least three Focused Antenatal Care (FANC) sessions at FUTH during their current or most recent pregnancy.

2.***Age Range:*** Pregnant women or mothers aged 18–45 years.

3.***Pregnancy Stage:*** Women in their second or third trimester.

4.***Language Proficiency:*** Participants who can communicate effectively in English or the local language used in the antenatal clinic.

5.***Consent:*** Women who willingly provide informed consent to participate in the study.

Exclusion Criteria

1.***Incomplete FANC Visits:*** Women who attended fewer than three FANC sessions during their pregnancy.

2.***Non-FANC Attendees:*** Women who received antenatal care under a different model or at other healthcare facilities.

3.***Medical Conditions:*** Women with high-risk pregnancies caused by pre-existing medical conditions (e.g., diabetes, hypertension) unrelated to antenatal care quality, as these may confound the study outcomes.

4.***Communication Barriers***: Women who cannot effectively communicate in English or the local language.

5.***Declined Consent:*** Women who do not provide informed consent to participate in the study.

Instrument for Data Collection

A well-structured questionnaire titled “Impact and Challenges of Focused Antenatal Care Model on Pregnancy Outcomes Questionnaire” (ICFACMPOQ)was used for data collection. Questions were drawn based strictly on the stated objectives. The questionnaire was made in five sections. Section A elicited demographic information of the respondents, section B assessed the level of awareness of FANC model among pregnant women attending antenatal clinics at FUTH, section C elicited information on the perceived impact of the FANC model on maternal health during pregnancy, section D elicited information on the perceived impact of the FANC model on neonatal health outcomes while section E elicited information on the perceived challenges of FANC model among women attending antenatal clinics in FUTH. A four point rating scale that ranged from Strongly Agree = 4, Agree = 3, Disagree = 2 and Strongly Disagree = 1, will be used to survey examination malpractice among teachers and students.

Validity of the Instrument

Face and content validity was used to validate the research instrument. Content Validity to ensure that the instrument measures all relevant aspects of the research objectives by developing a structured questionnaire and interview guide based on a thorough literature review and input from experts in maternal and antenatal care and with the help of the researchers supervisor. Consult professionals such as gynecologists, midwives, nurses, and research experts to evaluate whether the items cover all key variables (e.g., pregnancy outcomes, challenges of FANC) then use their feedback to refine and improve the tools. The experts checked the appropriateness of the items in terms of coverage, clarity of language, suitability and relevance. On the basis of the suggestions and recommendations of the expert, there may be corrections on the items in the instrument that were taken to their appropriate positions or deleted. Only the items accepted by the validates were considered and used for the study.

Reliability of the Instrument

The reliability of the instrument was established with a trial test administered to 20 pregnant women in FMC Umuahia, Abia State. This was so because, these respondents in FMC Umuahia Abia State have similar experience regarding the impact and challenges of Focused Antenatal Care (FANC) model on pregnancy outcomes and they are not part of the study. The reliability of the instrument will be determined by using Cronbach’s Alpha. For the level of awareness of FANC model among pregnant women attending antenatal clinics, the perceived impact of the FANC model on maternal health during pregnancy, the perceived impact of the FANC model on neonatal health outcomes and the perceived challenges of FANC model among women attending antenatal clinics in FUTH, the co-efficient alpha for the four sections were 0.832, 0.861, 0.856 and 0.911 respectively which gave overall reliability mean of 0.865. This shows that the instrument is highly reliable.

Method of Data Collection

The researcher administered the instrument through one research assistant who is a midwife selected from FUTH Owerri and is familiar with the research environment. The research assistant was briefed on how to assist respondents for the study. The assistant helped in covering the pregnant women in FUTH. The researcher and her assistant did on the spot administration and retrieval of the instruments from respondents to ensure 100% retrieval rate. In this process the researcher solicited for the cooperation of the pregnant women. Instructions were given on how to complete the questionnaire in order to safeguard errors due to misunderstanding of the question. Respondents were encouraged to complete and return the questionnaire on the spot. 100 questionnaires were distributed to the respondents which were all retrieved showing 100% retrieval rate.

Statistical analysis

Frequency, Percentage, and Mean which are descriptive statistics were used to answer research question 1 – 4 while Chi-Square test was used to test the stated hypotheses at a significance level of 0.05. For answering research questions, 2.50 was used as cut off point which was obtained by adding the 4-point rating scale and dividing by 4 (4+3+2+1 = 10/4 = 2.5). Any item with a mean score of 2.50 or above was regarded as agreed while any item with a mean score of 2.49 or below was regarded as disagreed. All the statistical analyses were performed using Statistical Package for Social Sciences (SPSS), version 22.0.

Results

Variable	Category	Frequency	Percentage (%)
Age	Below 20 20 - 40 Above 40	3 109 138	1.20 43.60 55.20
Marital Status	Single Married Divorced/Separated Widowed	9 24 0 0	3.60 96.40 0.00 0.00
Religion	Christianity Islam Traditionalist	250 0 0	100 0 0
Employment status	Unemployed Self-employed/Artisan Employed	15 173 62	6.00 69.20 24.80
Educational Level	Primary education Secondary education Tertiary education **Total**	3 108 139 **250**	1.20 43.20 55.60 **100**

Table 1: Demographic Data of the Respondents (n = 250)

The analysis on table 4.1 above which was carried out to assess the demographic characteristics of the pregnant women revealed that 3(1.20%) are below 20 years, 109(43.60%) are between 20 – 40 years while 138(55.20%) are above 40 years old. 9(3.60%) are single while 241(96.40%) are married as none of them 0(0%) is divorced/separated or widowed. All the respondents 250(100%) are Christians as none of them 0(0%) is Islam or Traditionalist. 15(6%) are unemployed, 173(69.20%) are self-employed/artisan while 62(24.80%) are employed. 3(1.20%) had primary education, 108(43.20%) had secondary education while 139(55.60%) had tertiary education.

S/N	Items	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	I am aware of the components of the Focused Antenatal Care (FANC) model	81	127	39	3	786	**3.14**	**Agreed**
2	I have received adequate information on the FANC model during my antenatal visits	250	0	0	0	1000	**4.00**	**Agreed**
3	FANC model can improve maternal and neonatal health	250	0	0	0	1000	**4.00**	**Agreed**
4	I am familiar with the recommended schedule of antenatal visits under the FANC model	196	54	0	0	946	**3.78**	**Agreed**
5	Healthcare providers at this clinic have explained the principles of the FANC model to me	78	123	49	0	779	**3.12**	**Agreed**
6	I understand how the FANC model differs from traditional antenatal care practices	104	92	39	15	785	**3.14**	**Agreed**
Grand Mean							**3.53**	**Agreed**

Table 2: Awareness of FANC model among pregnant women (n = 250)

The criterion mean for this study is 2.5. Hence, weighted mean response equal to or above the criterion mean (2.5) indicates acceptance region whereas weighted mean response below the criterion mean (2.5) denotes rejection region. The analysis on table 2 which seeks to assess the level of awareness of FANC model among pregnant women attending antenatal clinics at FUTH shows a grand mean of 3.53 which exceeds the criterion mean of 2.5 which shows that the respondents have good knowledge of FANC model among pregnant women. Specifically, the mean values of the items are above the criterion mean (i.e3.14, 4.00, 4.00, 3.78, 3.12, 3.14> 2.5) which shows that the pregnant women are aware of the components of the Focused Antenatal Care (FANC) model, they have received adequate information on the FANC model during my antenatal visits, FANC model can improve maternal and neonatal health, they are familiar with the recommended schedule of antenatal visits under the FANC model, Healthcare providers at FUTH have explained the principles of the FANC

model to the pregnant women and they understand how the FANC model differs from traditional antenatal care practices.

S/N	Items	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	The FANC model can help to identify potential complications during pregnancy	227	23	0	0	977	**3.91**	**Agreed**
2	I feel more informed about maternal health because of the FANC model	194	56	0	0	944	**3.78**	**Agreed**
3	The FANC model helps to ensure timely identification and management of health risks during pregnancy	250	0	0	0	1000	**4.00**	**Agreed**
4	The personalized care under the FANC model is beneficial to pregnant women	250	0	0	0	1000	**4.00**	**Agreed**
5	The FANC model increases confidence in managing pregnancy-related issues	250	0	0	0	1000	**4.00**	**Agreed**
Grand Mean							**3.94**	**Agreed**

Table 3: Impact of the FANC model on maternal health (n = 250)

The analysis on table 3 which seeks to examine the perceived impact of the FANC model on maternal health during pregnancy shows a grand mean of 3.94 which exceeds the criterion mean of 2.5 which shows that the respondents accepted the items as the impact of the FANC model on maternal health. Specifically, the mean values of the items are above the criterion mean (i.e 3.91, 3.78, 4.00, 4.00, 4.00 > 2.5) which shows that the FANC model can help to identify potential complications during pregnancy, they feel more informed about maternal health because of the FANC model, the FANC model helps to ensure timely identification and management of health risks during pregnancy, the personalized care under the FANC model is beneficial to pregnant women and the FANC model increases confidence in managing pregnancy-related issues.

S/N	ITEMS	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	The FANC model providesessential knowledge to ensure baby's health	250	0	0	0	1000	**4.00**	**Agreed**
2	The FANC model increases preparedness for delivery and postnatal care	247	3	0	0	997	**3.99**	**Agreed**
3	The FANCmodel improves health outcomes of babies	250	0	0	0	1000	**4.00**	**Agreed**
4	The FANC model emphasizes the importance of newborn care practices	216	34	0	0	966	**3.86**	**Agreed**
5	The regular check-ups under the FANC model has enhanced baby's growth and development	197	48	5	0	942	**3.77**	**Agreed**
6	FANC model has reduced the risk of complications for babies	250	0	0	0	1000	**4.00**	**Agreed**
	Grand Mean						**3.94**	**Agreed**

Table 4: Impact of the FANC model on neonatal health outcomes (n = 250)

The analysis on table 4 which seeks to assess the perceived impact of the FANC model on neonatal health outcomes shows a grand mean of 3.94 which exceeds the criterion mean of 2.5 which shows that the respondents accepted the items as the perceived impact of the FANC model on neonatal health outcomes. Specifically, the mean values of the items are above the criterion mean (i.e 4.00, 3.99, 4.00, 3.86, 3.77, 4.00 > 2.5) which shows that the perceived impact of the FANC model on neonatal health outcomes include the provision of essential knowledge to ensure baby's health, the FANC model also increases preparedness for delivery and postnatal care, improves health outcomes of babies, emphasizes the importance of newborn care practices, enhancement in baby's growth and development and reduction in the risk of complications for babies.

S/N	ITEMS	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	The cost of implementing the FANC model is a significant barrier for me	94	107	36	13	782	**3.13**	**Agreed**
2	I feel that some aspects of the FANC model are too complex to understand or follow	81	96	71	2	756	**3.02**	**Agreed**
3	Lack of adequate facilities affects full implementation of FANC model	238	12	0	0	988	**3.95**	**Agreed**

4	Cultural or religious beliefs and practices can affect the utilization of FANC model	250	0	0	0	1000	**4.00**	**Agreed**
5	The FANC model requires more time than traditional antenatal care practices	117	76	37	20	790	**3.16**	**Agreed**
6	The healthcare providers are not always available to deliver FANC services effectively due to busy schedule	43	91	57	59	618	**2.47**	**Disagreed**
	Grand Mean						**3.29**	**Agreed**

Table 5: Challenges of FANC model among women attending antenatal clinics (n = 250)

The analysis on table 5 which seeks to identify the perceived challenges of FANC model among women attending antenatal clinics in FUTH shows a grand mean of 3.29 which exceeds the criterion mean of 2.5 which shows that the respondents accepted most of the items as the perceived challenges of FANC model among women attending antenatal clinics in FUTH. Specifically, the mean values of the items are above the criterion mean (i.e3.13, 3.02, 3.95, 4.00, 3.16> 2.5) which shows that the perceived challenges of FANC model among women attending antenatal clinics in FUTH include the cost of implementing the FANC model, some aspects of the FANC model are too complex to understand or follow, inadequate facilities affects full implementation of FANC model, cultural or religious beliefs and practices can affect the utilization of FANC model and the FANC model requires more time than traditional antenatal care practices. But the respondents rejected that the healthcare providers are not always available to deliver FANC services effectively due to busy schedule is a perceived challenge of FANC model among women attending antenatal clinics in FUTH.

Discussion

According to the results, most expectant mothers were well knowledgeable about the Focused Antenatal Care (FANC) paradigm. The findings of [18], who observed that regular health education enhanced pregnant women's understanding, are supported by this increased awareness, which is ascribed to health discussions during prenatal visits. This is also consistent with research by [19], which showed that focused education initiatives raise awareness. Nonetheless, particular knowledge gaps in less well-known FANC components were found, highlighting the necessity of specialised interventions aimed at marginalised groups. These discrepancies are consistent with the findings of [20], who noted that rural healthcare providers frequently lacked the means to distribute thorough FANC information.

With a grand mean of 3.94, the study showed that the FANC model significantly improved mother health. The respondents emphasised greater confidence in handling pregnancy-related concerns and better detection of consequences. The FANC methodology, according to the participants, greatly enhanced maternal health by enabling the early detection and treatment of issues including anaemia and hypertension. The study by [21], which emphasised the importance of FANC in lowering maternal mortality by giving priority to personalised care, is supported by our conclusion. Furthermore, the respondents' focus on birth readiness is consistent with [22], who found that women who had thorough prenatal care were more equipped to handle delivery emergencies.

FANC dramatically enhances infant health outcomes, according to the data (grand mean of 3.94). Improved postnatal care and delivery readiness, as well as a lower chance of newborn problems, were important factors.

Respondents agreed that by encouraging vital behaviours like breastfeeding and vaccination, FANC had a good impact on newborn health. These results are consistent with a meta-analysis by [23] that showed a 15% decrease in newborn fatalities in areas that used FANC. In keeping with the findings mentioned by [24], the study further underlined the significance of maternal nutritional counselling and malaria prevention.

With a grand mean of 3.29, issues like exorbitant expenses, cultural difficulties, and subpar amenities were noted. The greatest mean (4.00) was for cultural beliefs, indicating a substantial obstacle. The use of FANC was significantly hampered by issues like lack of funding, cultural norms, and a weak healthcare system. Cultural barriers were particularly prevalent, particularly the belief that pregnancy is a natural process that requires little medical intervention. These results are consistent with those of [25], who reported comparable difficulties in Ethiopia. Furthermore, the expenses of FANC visits and the distances to medical facilities are similar to findings by [26], highlighting the ongoing obstacles to providing quality treatment in low-resource environments.

Conclusion

The study found that although pregnant women attending prenatal clinics at Federal University Teaching Hospital in Owerri had a good degree of awareness of the FANC model, there were still gaps in their thorough understanding of the FANC components. This emphasises how crucial ongoing health education is, especially in places with low healthcare literacy.

The results reaffirmed how well the FANC model works to enhance mother health. If properly applied, this strategy has the potential to lower maternal death rates due to the early detection and treatment of pregnancy problems.

The study found that by encouraging preventive interventions like tetanus toxoid immunisation and malaria prophylaxis, the FANC model has a favourable impact on infant health outcomes. This suggests that in order to optimise infant survival rates, FANC standards must be consistently followed.

The study emphasised important obstacles to the broad use of the FANC model, namely budgetary limitations and cultural attitudes. To guarantee fair access to prenatal care, removing these obstacles calls for a cooperative strategy involving legislators, medical professionals, and community members.

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