

1. INTRODUCTION

Maternal health, defined as women's health during pregnancy, childbirth, and the postnatal period, is a crisis in America. The United States has the highest maternal mortality rate among developed countries and experiences substantial disparities in maternal health outcomes, particularly by race and ethnicity. In 2019 the maternal mortality rate was 20.1 deaths per 100,000 live births, up from 17.4 per 100,000 in 2018. Racial disparities are stark and persistent. According to the CDC, Black and American Indian/Alaska Native (AI/AN) women are two to three times more likely to die from pregnancy-related causes than White women. This risk increases when your lens focuses on certain communities across the U.S.



The pandemic shed light on the disparities in healthcare access, affordability, and quality experienced across society. The maternal health crisis is not due to the pandemic; however, it exacerbated the fragilities in the system and highlighted the need for a unified system of care that serves all equally. Unfortunately, the healthcare system in the United States has failed to adequately address impactful variations in the quality of care, underlying chronic conditions, structural racism, and implicit bias that lead to poor maternal outcomes for certain groups of women. Although race and ethnicity contribute to different causes of maternal deaths, 80% of healthcare is defined by how we live which includes, but is not limited to, access to nutrition, living in safe communities, and access to affordable housing.^[4]

In the fall of 2021, Executives for Health Innovation (EHI) convened maternal health experts for a roundtable entitled "Maternal Health Matters: Equitable Access, Care, and Technology."

The roundtable's purpose was to explore this very complex topic and share insights around the following questions, ultimately providing a framework for future action and collaboration.

- Will we leverage the opportunity to bring technology solutions to light?
- How do we share best practices?
- How do we reach unreachable communities before the disparities gap widens?
- What are the best ways to raise awareness about the role of systemic racism and implicit bias to improve maternal health outcomes throughout various care settings?

^[1] https://www.healthaffairs.org/do/10.1377/hblog20210729.265068/full/

 $[\]hbox{[2] https://www.cdc.gov/nchs/data/hestat/maternal-mortality-2021/maternal-mortality-2021.htm}\\$

 $^{[3]\} https://www.cdc.gov/media/releases/2019/p0905-racial-ethnic-disparities-pregnancy-deaths.html$

^[4] Stacey Stewart, Roundtable

- When we think about disparities between African American women and White women, what are some things to consider beyond poverty measures to eliminate the disparities?
- How can providers be more culturally sensitive to the needs of diverse women for care delivery?
- What innovative partnerships should stakeholders consider to address maternal health needs?
- How do we ensure that telehealth doesn't create a wider gap for women seeking maternal support?

The panelists discussed the deliberate and long-term efforts to eliminate disparities in maternal health that lead to elevated maternal mortality rates. The guest speakers were:

- Vanessa Walker Harris, MD, Deputy Secretary, Dept. of Health and Human Services, Virginia Office of the Governor
- Dorothy Fink, M.D., Deputy Assistant Secretary for Health, Director, Office of Women's Health, Health & Human Services
- Stacey D. Stewart, President, and CEO, March of Dimes
- Wilna Paulemon, Project Manager, Merck for Mothers
- Anita Stewart, MD, Medical Director at Blue Cross Blue Shield of Illinois
- Veronica Adamson, Philips Maternal Health Champion & General Care Business Leader, Philips Healthcare



"The thing that keeps me up is the impact of race and racism in our society, and therefore on maternal health outcomes." (Dr. Pamela Brug, Founder, NJBlack Physicians Association)

Physicians, health equity experts, health IT professionals, and women with shared experiences attended. The guest speakers presented examples of collaboration between the government, the private sector, community-based organizations, and the healthcare industry to address the gaps in maternal care. They spoke about the need for a deeper understanding of the root causes and impact of systemic racism on healthcare access. They emphasized the importance of data and surveillance for evidence-based decision-making, and most importantly, everyone agreed that maternal deaths are preventable, and the time to act is now.

Two women will die from pregnancy-related causes today [5]

Pregnancy-related deaths have doubled over the past 30 years^[6]



II. DYNAMICS IN MATERNAL CARE THAT LEAD TO DISPARITIES

The factors driving inequality in maternal care are complex. Access to quality maternal care is a privilege for many women, determined by insurance coverage, individual experience, proximity to health facilities, and social determinants of health. Compounding an already complicated issue is structural racism that drives consequential policies and causes stressors in women that impact maternal and child health. Structural racism^[7] in healthcare and social service delivery means that women of color often receive poorer quality care than white women. This gap in care and knowledge lead to higher morbidity and mortality rates for minority women, especially Black women.^[8]

INSURANCE

Medicaid covers 42% of all births and two-thirds of Black or African American and American Indian/Alaska Native (AI/AN) births. Having access to healthcare is easier when a person has insurance. A state's decision to expand Medicaid profoundly affects women of childbearing age. In 2019, women of childbearing age (age 18-44) who lived in non-expansion states were more than twice as likely to be uninsured (19%) than women living in states that had expanded Medicaid (9.2%). The trend extended across all racial and ethnic

"The strategy for addressing the disparities has to be intentional to address structural racism and other systems of oppression in order to move the needle in achieving equitable outcomes." (Dr. Vanessa Walker Harris, Deputy Secretary of Health and Human Resources, State of Virginia)

groups. Virginia expanded coverage in 2018 and has implemented strategies focused on considering payment models that would allow greater integration of birth workers, including midwives, coverage for birthing centers, and home births to expand pregnant persons' options. According to Dr. Harris, they are in the process of setting up a seat-certified doula certification process and registry, and offering a doula benefit in Medicaid for roll out in early 2022. Due to the expansion of coverage and eligibility, Virginia's enrollment numbers are currently over 500,000, including more than 200,000 people who signed up throughout the ongoing pandemic. [11]

[11] Dr. Harris

^{[5] &}quot;Closing the Maternal Health Gap". Maternal Health Roundtable, virtual, October 6, 2021.

^{[6] &}quot;Closing the Maternal Health Gap". Maternal Health Roundtable, virtual, October 6, 2021.

^[7] Structural racism is defined as a system where public policies, institutional practices, and cultural representations work to reinforce and perpetuate racial inequity.

^[8] https://www.usa.philips.com/healthcare/resources/landing/health-disparities/march-of-dimes

^[9] Dr. Dorothy Fink, HHS

^[10] https://ccf.georgetown.edu/2021/09/13/medicaid-expansion-narrows-maternal-health-coverage-gaps-but-racial-disparities-persist/# edn5

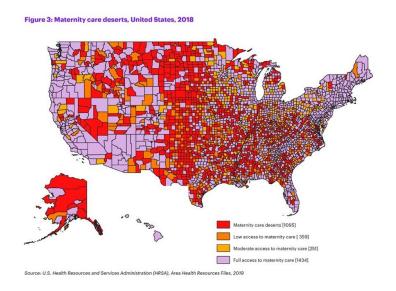
Studies have shown that Medicaid expansion is associated with lower maternal and infant mortality rates, with the most significant benefits for Black women and their infants. Women need healthcare before they are pregnant to address underlying conditions that can later impact their pregnancy. Across the U.S., expanding access to Medicaid has been associated with improvements in preconception health, utilization of preventive care, and supporting the healthy development of all parents and children. Ensuring that insurance is accessible to everyone through their employer or state program is essential to improving health outcomes. Medicaid expansion narrows the maternal health coverage gaps, but it doesn't address the needs of women who live in maternity care deserts.

Proximity to Care

Access to quality maternity care is a critical component of maternal health and positive birth outcomes, especially considering the high maternal mortality rates and severe maternal morbidity in the U.S. More than 2.2 million women live in maternity care deserts. Maternity care deserts are counties where access to maternity healthcare services is limited or absent, either through lack of services or barriers to a woman's ability to access that care. The focus of maternity care deserts is often in rural areas; however, as noted by Stacey Stewart from March of Dimes, "care deserts are not just in the rural areas, they are also in urban areas such as Washington, D.C." The sad reality is that some women live 50, 60, or 70 miles away from care or in areas without adequate care. Combined with transportation barriers, this puts a lot of women at risk of delaying their healthcare, delaying their prenatal visits, and delaying access to the care they need.

According to the Maternity Care Deserts report released by March of Dimes in 2020: [15]

- More than 2.2 million women of childbearing age live in maternity care deserts.
- 7 million women of childbearing age live in counties without access or with limited access to maternity care.



[12] E.L. Eliason, "Adoption of Medicaid Expansion Is Associated with Lower Maternal Mortality," Women's Health Issues, 30: 147-152 (2020), available at https://www.sciencedirect.com/science/article/abs/pii/S1049386720300050.

[13] R. Myerson, S. Crawford, & L.R. Wherry, "Medicaid Expansion Increased Preconception Health Counseling, Folic Acid Intake, and Postpartum Contraception," Health Affairs, 39: 1883-1890 (2020), available at https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00106.

 $[14]\ https://www.marchofdimes.org/materials/2020-Maternity-Care-Report.pdf$

[15] https://www.marchofdimes.org/materials/2020-Maternity-Care-Report.pdf

Implicit Bias

The recent nationwide focus on racial health disparities and health equity has brought implicit bias to the forefront of healthcare delivery and patient care. Implicit bias in maternal healthcare shapes how providers respond to women, irrespective of their race, ethnicity, where they live, and the language they speak. The outcome of this bias is that women feel ignored. During the roundtable, someone shared a powerful story about her experience that resulted in the death of her child:

"The OB-GYN did not want to do a C-section. I told him my contractions were different and I had a pain that was different, but he didn't listen. The end result: I had a ruptured uterus, losing my child and all sorts of damages." Name withheld (roundtable attendee)

Implicit bias interferes with high-quality healthcare delivery. New Jersey is the 4th deadliest state for a mother to give birth. In response, the New Jersey Black Women Physicians Association started an initiative called "Believe Black Women" to urge the healthcare community to address the racism and biases within their hospitals, practices, staff, and themselves. The physician-led group recognized that preventable irreversible complications and death of Black mothers, regardless of socioeconomic status, were primarily due to Black women being ignored when they speak up about their health and well-being.

"We want community based hospitals to provide a high level of care regardless of location, ensuring people do not have to travel hours and hours to get to another hospital that claims to have the best outcomes." (Dr. Dorothy Fink, Deputy Assistant Secretary for Women's Health and Director of the Office on Women's Health in the Office of the Assistant Secretary for Health (OASH) at the U.S. Department of Health and Human Services)



The March of Dimes created an implicit bias training program called "Breaking Through Bias™ in Maternity Care" for healthcare workers specifically addressing maternal and infant care issues. The program recognizes that training does not eliminate the bias; it does, however, help providers recognize unconscious bias attitudes that contribute to disparities in healthcare delivery. The training program brings awareness and the actionable steps that healthcare providers can take to make sure that they can recognize bias and have the tools to deal with it. Since the creation of the training program, more than 30,000 healthcare providers have participated in the implicit bias training in four key areas: Implicit Bias in Maternal Health Care, Structural Racism in the U.S., Strategies to Mitigate Implicit Bias, and Creating a Culture of Equity. The American Hospital Association recognizes the value of this critical training program and the potential benefits to healthcare providers across the country to better identify and

remedy implicit bias, which is why they awarded March of the Dimes the American Hospital Association's 2020 Award of Honor for efforts to advance health equity through implicit bias training for healthcare professionals in maternal and infant care settings.

By understanding the factors of disparities in maternal care, the health industry and stakeholders are equipped to address the causes of health disparities through policies and programs.^[19]



"We know that health systems that ask and act on women's views of their maternity care experience are better equipped to deliver respectful care and to address the needs that women have during pregnancy and after." (Wilna Paulemon, Project Manager, Merck for Mothers)

Social Determinants of Health

In addition to insurance and access to care, it is equally important that women receive optimal maternal nutrition, live in safe communities, and have access to affordable housing. These social determinants of health impact our health the most and, to the extent that racism is infused within social systems, contribute to some disparities between Black and Brown women and White women. The healthcare industry cannot address disparities alone. Partnerships between social and health organizations play a vital role in improving access to services and closing the social determinants gap. For example, in Appalachian Ohio, Prince George's County, and Washington D. C., the March of Dimes have partnered with local health systems to establish mobile care clinics to "take healthcare to the hardest to reach women that cannot get to it." [20]

"We recognize that only 10% of a person's health is dependent on what happens in the doctor's office, and the rest depends heavily on community factors, or those social determinants of health." (Stacey D. Stewart, President and CEO, March of Dimes)

III. POLICIES FACILITATE CHANGE

Policies, programs, and partnerships are vital to improving maternal care. According to the CDC, 60% of all maternal deaths in America could have been prevented. Maternal mortality review committees have found that these untimely deaths are not just a medical issue. Community factors and the social determinants of health - the conditions in which people live and work - contribute to poor maternal health outcomes. Combining efforts and resources is the most effective way to address maternal care gaps and challenges.

^[19] https://www.marchofdimes.org/professionals/professional-education.aspx#

^[20] Stacey Stewart, March of Dimes

^[21] https://www.cdc.gov/vitalsigns/maternal-deaths/index.html

Policies

To address the maternal health crisis in America, Congressional leaders have been fighting for critically important policies like 12-month postpartum Medicaid coverage, ensuring moms have access to the care and support they need and deserve for the entire postpartum period. President Joe Biden and Vice President Kamala Harris championed policies to improve maternal health and equity. Addressing the maternal mortality and morbidity crisis is their Administration's key priority, including a call to action issued on December 7th to support women's postpartum needs fully. ^[23]

The Black Maternal Health Momnibus Act of 2021^[24] was introduced to address multiple dimensions of the maternal health crisis. Key areas of the act include 1. funding for community-based organizations to support their advocacy efforts, 2. investments in social determinants of health that impact maternal health, 3. digital health support, and 4. diversifying the workforce so that women receive the care that meets their individual needs.

The first bill in the Black Maternal Health Momnibus to make it through Congress and go to President Biden's desk for signature is called the Protecting Moms Who Served Act, which sets up a \$15 million maternal care program within the Department of Veterans Affairs. It will also require the Government Accountability Office to report the deaths of pregnant and postpartum veterans, and to focus on any racial or ethnic disparities in care.^[25]



Community-based organizations have also advocated for policies that support maternal health needs and increase awareness about the needs of women. March of Dimes leads the fight for the health of all moms and babies. [26] Some of their recent advocacy wins include, but are not limited to:

- Advancing maternal health bills (the Maternal Health Quality Improvement Act and the Helping Medicaid Offer Maternity Services Act) which passed the House of Representatives with bipartisan support.
- Strongly supporting the development and introduction of the Black Maternal Health Momnibus Act in collaboration with the Black Maternal Health Caucus.
- Federal paid family leave legislation. Successfully advocated for emergency paid leave and sick days under the Families First Coronavirus Response Act, while continuing to lobby for a permanent national paid leave program.
- Worked to continue March of Dimes' strong advocacy on pregnancy nondiscrimination legislation lobbying for the Pregnant Workers Fairness Act, which passed the House of Representatives with bipartisan support.[27]

Merck for Mothers advocates for strengthened data surveillance and programs that reflect women's needs. Policies inform programs and vice versa, so stakeholders must understand existing policies to develop programs that achieve the desired results.

^[22] https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/07/fact-sheet-vice-president-kamala-harris-announces-call-to-action-to-reduce-maternal-mortality-and-morbidity/

 $^{[23] \} https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/07/fact-sheet-vice-president-kamala-harris-announces-call-to-action-to-reduce-maternal-mortality-and-morbidity/$

^[24] https://blackmaternalhealthcaucus-underwood.house.gov/Momnibus

^[25] https://www.statnews.com/2021/11/18/a-win-for-black-maternal-health-advocates-as-congress-moves-to-set-up-new-va-program/

^[26] https://www.marchofdimes.org/mission/who-we-are.aspx

^[27] Presentation: Closing the Maternal Health Gap, October 6th, 2021, virtual conference



Programs

The programs implemented at the federal, state, and community levels work in tandem to address maternal health. Listed below are examples of maternal health programs discussed by experts from Health and Human Resources (HHR) and Merck for Mothers.

Virgina Office of the Governor, Department of Health and Human Services

Virginia's maternal health strategy focuses on data and best practices to ensure that women are as healthy as possible going into pregnancy. According to Dr. Harris, studies show that morbidity and mortality are related to inadequate chronic disease management or prevention. By addressing chronic disease through education and awareness, Virginia intends to reduce complications that result in maternal mortality.

Not only are they focusing on chronic illness, but they are also paying attention to population-specific needs. For example, they have established a workgroup on reproductive health, pregnancy, and postpartum care in local and regional jails to align with national best practices.

"We can't improve what we don't measure. Data collection is a primary component of the plan as well." (Dr. Harris, Deputy Secretary of Health and Human Resources, State of Virginia)

Lastly, the governor signed legislation to establish a task force on maternal health data and quality measures to evaluate partners' capabilities and identify best practices for measuring outcomes related to maternal health. Virginia has created a potential roadmap for others to follow by establishing a solid foundation.

Safer Childbirth Cities (Merck for Mothers)

Safer Childbirth Cities [28] was launched in 2018 by Merck for Mothers, Merck's \$500 million global initiative to help create a world where no woman has to die while giving life. The program supports community-based efforts to improve maternal health equity by fostering local solutions responsive to the needs of individual cities. These cities are exploring diverse approaches and models to bridge that community and clinic divide. Examples of models include providing doula and emotional support, strengthening data and surveillance systems, conducting implicit bias training for maternity care providers, and connecting women to resources. Each cohort in the program consists of 10 cities to form a community of practice. Safer Childbirth Cities cohorts meet throughout the grant period to share lessons learned, challenges, and pose questions to each other.

"We've reached millions of women through our programs that promote safe, high quality, and respectful care. Through these investments, we've learned that investing in maternal health can lead to broader impact not just directly on the mom and her life, but also on her healthcare and her world." (Wilna Paulemon, Project Manager, Merck for Mothers)



Partnership

Collaboration produces innovation. Solving the maternal health crisis can't be done in a silo. Organizations recognize the value of establishing strategic partnerships that leverage each other's resources and expertise to reach a common goal. In recent years, the private sector has emerged as a partner willing to invest both in solutions and communities. For example, Philips has partnered with March of Dimes to fight health disparities for moms and babies by closing the gap to access that many mothers face in the U.S.

Other examples of partnerships are between technology companies and government agencies, such as UniteUs and the Health and Human Resources of Virginia who have worked together to address SDOH needs by connecting women to social services.

IV. UTILIZING TECHNOLOGY TO INCREASE HEALTH EQUITY

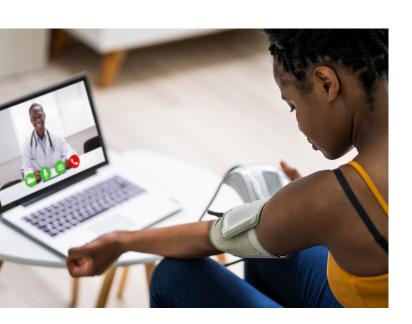
30% of moms in the U.S. cannot get the recommended care because they can't make it to their appointments, for a variety of reasons. Philips is committed to utilizing technology to provide access to care and create awareness of the role of technology in increasing health equity before, during, and after a newborn enters the world. Through its Mother and Child Care solutions that include tools for jaundice management, fetal and maternal monitoring, and ultrasound among others, Philips demonstrates the importance of private sector investment and innovation in maternal care. Recently during the White House's Maternal Health Day of Action, Philips announced new expanded research programs in virtual care and artificial intelligence to help close the gap on maternal care deserts. Through point of care solutions, Philips is working to enable caregivers in rural areas to connect with specialists who can help them understand how to support a healthy pregnancy. As Veronica Adamson noted, "It's important to develop tools that consider limitations, such as broadband access so that we (industry) don't inadvertently widen the disparity gap." Below are examples of the application of technology in maternal health.



- [29] https://www.usa.philips.com/healthcare/resources/landing/health-disparities/march-of-dimes
- [30] Veronica Adamson, Philips Healthcare
- [31] Caring for Mother & Child (https://www.nytimes.com/paidpost/philips/caring-for-moms-and-babies.html)

REMOTE MONITORING

Fetal non-stress tests are vital to ensuring a healthy pregnancy. For many women, the multiple appointments are an economic burden due to the added expense of childcare, forced time off from work to fulfill the appointment, and additional transportation costs (if needed). In Denmark, women can do the tests at home, alleviating undue burden and stress. Philips is increasing awareness of the possibilities of technology with legislators and partnering with startups, nonprofits, and country governments to help put the technology where it's needed the most.



ACCESS TO INFORMATION

Women often feel ignored by providers. Both community and access to information are empowering. Some apps allow women to track symptoms, which equips them with the knowledge to provide their doctor and instills confidence to advocate for care. There's technology available today that allows a woman to look at her vital signs, be able to identify when something is off, and do it in a way that is objective and non-biased.

CONNECTION TO PROVIDERS AND SERVICES

Resources and providers are difficult to locate. The application of technology to address this need saves time and money. Women need to connect with lactation specialists, behavioral health specialists, community support, and others. Some tools act as care navigators to connect patients with specialists or providers who have preferred linguistic abilities. Telehealth became mainstream during the pandemic and continues to be the preferred model of healthcare delivery especially for underserved or geographically isolated areas.

V. THE WAY FORWARD

Improving maternal health does not begin when a woman becomes pregnant, and the solution for addressing maternal health disparities does not rest on the shoulders of one sector. The way to move forward is to reflect on the historical lessons, and others learned during the pandemic, and implement actions that address the disparity gaps. The White House has made efforts through HHS and others to partner with both private and public sector. Their approach has the potential to help the U.S leap frog other developed nations if public/private partnerships deepen and create action. As a result of their efforts, the administration has received pledges from more than 20 companies and nonprofits to invest more than \$20 million in maternal health efforts in the U.S. and more than \$150 million globally. The organizations supporting the effort range from Uber, Lyft, and DoorDash to Pampers, CVS, the March of Dimes, American College of Obstetricians and Gynecologists, and the Blue Cross Blue Shield Association.

It is an understatement that the pandemic impacted mothers and mothers-to-be. Many had to leave the workforce to balance home and work-life. For pregnant women, regardless of socioeconomic status, a change in healthcare delivery was unexpected, resulting in delayed care and increased behavioral health needs. As stated by Stacey Stewart from March of Dimes, "We ought to be investing and pooling our resources together to make sure that we can have the healthiest population, the healthiest workforce as possible, and to make sure families feel secure."

Women require coordinated support for their maternal care beyond clinical needs. Below are recommendations for consideration to ensure that women receive the care that they need to reduce maternal care disparities:

Support while pregnant

- Physician care addressing implicit bias that impacts care quality
- Nutritional support ensuring access to healthy foods that support caloric needs
- Insurance coverage Medicaid expansion to include doula support
- Special populations task force dedicated to immigrants, prisoners, young mothers

Support while working

- Provide adequate time off for appointments and paid leave
- Technology remote fetal and patient monitoring
- Ongoing education for a patient to create awareness of potential risk factors

Support after birth

- Remove barriers to follow up transportation, economic (job)
- Lactation consulting, immunization, and routine physicals
- Mental health support
- Proactively monitor postpartum complications from chronic disease
- · Strengthen surveillance data and tools
- Remove coverage barriers to at-home care
- Increase awareness and utilization of pregnancy applications
- · Improve access to quality care

"The disparities that exist in maternal health, particularly the increased mortality rate for Black and American Indian/Alaska Native women in the U.S., have reached a tipping point, creating a critical public health crisis. Unfortunately, we haven't yet seen enough commitment and focus on innovation to address health inequities in maternal care; however, I'm encouraged by this report which outlines a framework for how government, communitybased organizations, and the health care industry can partner to improve access and care for all women before, during, and after childbirth." (Veronica Adamson, Philips Maternal Health Champion & General Care Business Leader, Philips Healthcare)



Additional recommendations from the experts include improving data surveillance and collection, advocating for policies to support the unique needs of childbearing age women, and providing access to quality care regardless of insurance coverage.

In conclusion, maternal health and the disparities in care are urgent issues. Without the acknowledgment of policymakers, collaborative partnerships between stakeholders, proper funding, and awareness of the root causes, women will continue to be at risk for poor maternal outcomes. Although progress has been made to reduce maternal mortality, there is still much work to be done.

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ABOUT EXECUTIVES FOR HEALTH INNOVATION (EHI)

Executives for Health Innovation (EHI) is a catalyst for healthcare transformation, convening diverse leaders from across the industry to unlock opportunities for collaborative innovation. EHI, along with its coalition of members, focuses on education, thought leadership, and advocacy.

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