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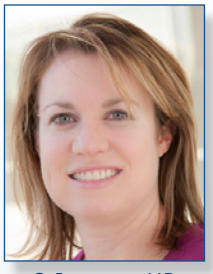

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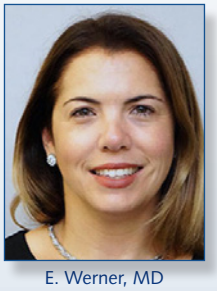

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The Obstetrician/Gynecologist (OB/GYN): Revisiting the Past, Exploring the Present and Preparing for the Future

ROXANNE VREES, MD
GUEST EDITOR

The primary purpose of the American Board of Obstetrics and Gynecology (ABOG) is to, "advance women's health through the study and practice of Obstetrics and Gynecology." Similarly, the American College of Obstetricians and Gynecologists (ACOG), a private non-profit organization with approximately 60,000 members nationally, is a strong advocate of high quality, evidence-based care, and fosters increased awareness among patients and providers of the ever changing issues facing women's healthcare. Despite the guidance and support of these parent organizations, there have been significant changes to the field of women's healthcare that has prompted close scrutiny of our specialty alongside residency training programs, to ensure that our current generation is adequately prepared for future practice.

A true landmark in the evolution of our specialty was the introduction of dedicated women's hospitals. The first model, Lying-in hospitals, was established in Strasbourg, France in 1728. The development of similar hospitals followed in Great Britain and the United States with the primary goal of providing care to underserved populations. Women & Infants Hospital, the primary teaching hospital in obstetrics and gynecology and newborn pediatrics of the Alpert Medical School of Brown University, was founded in 1884 as the Providence Lying-In Hospital. At that time the hospital was used exclusively for maternity care and childbirth. While the hospital has undergone four location changes and rebranding in 1996 to become a part of the Care New England Health System, its core values of providing high quality, unbiased women's health care have never wavered. What's more, the institution has expanded its scope to include highly specialized services in breast care, infertility treatment, gynecologic cancer, pelvic floor disorders and prenatal diagnosis. Impressively, the Department of Obstetrics and Gynecology was recently ranked 11th in *U.S. News & World Reports'* 2019 Best Medical Schools specialty rankings.

This month's issue of the *Rhode Island Medical Journal* features timely and important perspectives on critical areas in the field of obstetrics and gynecology. "Prison: Pipeline to Preventative Health," by **DRS. LUWAM GHIDEI**, **SEBASTIAN Z. RAMOS**, **E. CHRISTINE BROUSSEAU**, and **JENNIFER G. CLARKE**, highlights the important work that has been done at the local and national levels to improve access to necessary healthcare for incarcerated women, with particular emphasis on the remarkable accomplishments of Dr. Clarke, Medical Programs Director at the Rhode Island Department of Corrections, and her colleagues.

The Perspective article, "Current Threats to Contraceptive Access," by **DRS. LEANNE FREE**, **KATHLEEN COHEN** and **REBECCA H. ALLEN**, reflects on the very real and current threats to a woman's fundamental reproductive health rights. While we recognize that the political landscape has great influence on access to contraception, we are hopeful that this discussion will bring to light the importance of all providers, not just Ob/Gyns, advocating for patients' unrestricted access to family planning resources.

In response to the concerning trend of increased maternal mortality among high-resource countries such as the United States, **DRS. ERIKA WERNER** and **BRIDGET SPELKE** examine the concept of the "Fourth Trimester of Pregnancy." Their discussion implores all healthcare providers in Rhode Island, regardless of their chosen specialty, to seize the opportunity for maternal risk reduction and health promotion during pregnancy and beyond.

Similarly, in response to the current data on maternal deaths in our state, the featured article, "On the Future of Maternal Mortality Review in Rhode Island," by **DRS. BRIDGET SPELKE**, **SEBASTIAN RAMOS**, **HOPE YU**, **MICHAEL COHEN** and **TANYA L. BOOKER**, commends the Rhode Island Medical Society for its prior support of mortality review committees at the legislative level, while imploring our small state to take a big lead on both near misses and maternal death reviews.

The field of obstetrics and gynecology is rich, with a variety of subspecialties that have ultimately shifted the overall scope and practice of modern general Ob/Gyns. In the 1990s, greater than 90 percent of trainees chose a career as a general Ob/Gyn, as compared to 70 percent currently. As more and more graduates pursue fellowship training and are drawn to larger metropolitan areas, this creates shortages of providers

and disparities in access to care in other locations. Rhode Island has certainly been impacted by this. Additionally, despite the changing landscape of our specialty, residency training programs have remained relatively unchanged. The article, "A Melting Pot of Medical Education," by **DRS. MERIMA RUHOTINA** and **DAYNA BURRELL**, explores the challenges and solutions that exist for trainees and educators in a unique women's Emergency Department. It highlights the importance of thoughtful integration of the education of our medical students and residents into our often fast-paced clinical environments.

As leaders in the field of women's healthcare, we are poised at institutions like Women & Infants to transform the perceptions and expectations of the 21st-century specialist in general obstetrics and gynecology. Tackling important topics like those featured in this issue will enable our specialty and training programs to evolve and continue to meet the complex needs of our patients.

Guest Editor

Roxanne Vrees, MD, is Medical Director of Emergency Obstetrics and Gynecology at Women & Infants Hospital and Assistant Professor of Obstetrics And Gynecology at The Warren Alpert Medical School of Brown University.

Prison: Pipeline to Women's Preventative Health

LUWAM GHIDEI, MD; SEBASTIAN Z. RAMOS, MD; E. CHRISTINE BROUSSEAU, MD, MPH; JENNIFER G. CLARKE, MD, MPH

Women detained in prisons, jails and juvenile centers represent an underserved population. In her highly acclaimed book *Jailcare*, Dr. Carolyn Sufrin explores how and why prison can paradoxically serve as a place where women find healthcare.[1] As the rate of incarceration for women continues to increase, it is prudent to assess the current state of healthcare in correctional facilities and leverage this institution to link more women to care.

In December of 2017, women accounted for approximately 7% of the national detained population.[2] While the rate at which women are incarcerated varies greatly from state to state, the number of women in prison has been increasing at a rate 50% greater than men since 1980. Notably, Rhode Island is the state with the lowest incarceration rate with 12 out of every 100,000 women incarcerated in 2014.[3] As the smallest state with the lowest incarceration rate, Rhode Island is uniquely positioned to make large gains with optimization of healthcare for incarcerated women.

Incarcerated women disproportionately suffer from alcohol and drug abuse, sexually transmitted infections (STI), sexual and physical abuse, and mental illness, with rates of these conditions higher than those of incarcerated men.[4] This paper will highlight the major disparities in women's health care in the prison population nationally, the current interventions within the Rhode Island Department of Corrections (RIDOC), and the future steps needed to improve healthcare in incarcerated populations.

Ideally, healthcare in prison should serve as a safety net alongside a pipeline for preventative health to help women on the margins of society climb onto integrated, quality healthcare once they leave the system. The National Commission on Correctional Health Care (NCCHC) guidelines recommend several standards of OB/GYN care for detention centers including: systematic screening for gynecologic problems and pregnancies; initial health assessments including pap smears and pelvic exams; caring for the pregnant woman throughout her prenatal course; and assessing pregnant inmates for opioid use disorders.[4] These encounters should strive to provide care and counseling that does not infringe on the reproductive rights of these women who are already marginalized when considering the poverty, addiction, violence, and racial oppression that characterize their lives.[1] Importantly, this counseling should foster principles of reproductive justice allowing pregnant women to choose whether or not they desire contraception or if pregnant, continuation of a pregnancy, abortion, or adoption services.

The NCCHC recommends that correctional institutions recognize community standards for women's health services.[4] Accordingly, all women entering correctional facilities should be offered screening for sexually transmitted infections (STIs). In a 2008 study of women entering jail in Rhode Island, 33% tested positive for an STI at admission and 26% of all women had trichomoniasis.[5] Detecting and treating women in correctional settings has an impact on community prevalence of these infections. For example, in 2011, correctional facilities accounted for up to 6% of reported syphilis cases in the United States.[4] One correctional facility was able to demonstrate that prompt treatment of all syphilis cases in a jail can lead to a substantial decrease in the prevalence in the local community.[6] RIDOC is currently working with the Rhode Island Department of Health (RIDOH) to offer urine-based STI testing to every woman who enters the facility, exemplifying the partnership between the RIDOC and the RIDOH in providing public health services to this population. In addition to STI screening, all women should be offered pregnancy testing within 48 hours of entering a correctional facility. According to the American College of Obstetricians and Gynecologists (ACOG), at any given time, approximately 6% to 10% of incarcerated women are pregnant and many first learn they are pregnant when they enter a correctional facility.[7] In 2004, a federal survey found that 3% of women in federal prisons and 4% of those in state prisons were pregnant upon arrival.[8] In a cohort of Rhode Island inmates, only 28% of sexually active women used birth control consistently and 83.6% had unplanned pregnancies.[9] This speaks to the need of improving family planning services both inside correctional facilities as well as in the community. This population tends to have complicated pregnancies and is inconsistently provided counseling on options or access to termination services nationwide.[10]

Women in prisons and jails disproportionately suffer from mental health disorders with up to 75% of incarcerated women having a mental health disorder.[11] Additionally, more than 40% of female prisoners are found to abuse drugs at the time of their entry to correctional facilities. When incarcerated women with opioid use disorders are pregnant, they should be offered medication for addiction treatment (MAT) in correctional facilities. Although pregnant women

incarcerated in Rhode Island have access to MAT, this is not a reality in most prisons and jails.[7]

Whether taken individually or as a whole, these disparities lead to poor outcomes and missed opportunities to address the healthcare needs of this marginalized population.[11] The RIDOC has implemented multiple initiatives to address these disparities in an effort to foster incarceration as an access point for intervention. In Rhode Island, all women who are incarcerated have a medical intake that provides their medical history, medications and drug history, providing opportunities to address unmet health needs. A multidisciplinary team of healthcare providers, including nurse practitioners and physicians from various specialities provide necessary medical care. With respect to routine women's healthcare, the RIDOC has onsite OB/GYN services, including prenatal care, contraceptive counseling, STI testing and treatment, breast and cervical cancer screening, and routine gynecologic care. Female inmates have access to LARC contraception, including hormonal implants and intrauterine devices as part of the RIDOC's receipt of Title X funding for family planning and preventative health services, another example of the partnership between the RIDOC and the RIDOH. Since 2017, cervical and breast cancer screening has been facilitated by the Department of Health's participation in the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) funded by the Centers for Disease Control (CDC). This program provides low-income, uninsured, and underserved women access to timely breast and cervical cancer screening and diagnostic services.

As the rest of the nation contends with the opioid epidemic, prisons and jails have been identified as potential areas of access to addiction treatment. Rhode Island has been particularly affected by the opioid epidemic with rates of overdose deaths reaching 23.5/100,000, the 8th highest in the country.[12] Rhode Island has been hailed as a model for how correctional facilities can offer therapies to incarcerated women. Specifically, a screening process during initial intake identifies inmates with opioid use disorders who are then offered treatment. Medication Assisted Treatment (MAT) programs such as those offered by the RIDOC are considered the most effective therapy for opioid addiction and Rhode Island leads the way in demonstrating why MAT should be the standard of care in correctional facilities.[2, 19]

The antepartum period poses unique challenges in the care of incarcerated women. The RIDOC provides onsite obstetrical care by a board-certified OB/GYN. Their collaboration with Women & Infants Hospital, the 9th largest stand-alone obstetrical service in the country, allows for continuity of that care which also spans the peripartum and postpartum periods respectively. In the postpartum period, once they return to their correctional facility, inmates are allowed to express breast milk which may be provided to the infant by family members. Additionally, along with only 21 other states, Rhode Island outlawed the practice of shackling pregnant prisoners during labor and antepartum transport.[3]

While the RIDOC has set the bar high, barriers to providing comprehensive OB/GYN care for incarcerated women remain. Notably, the challenge of time is a factor, since the majority of women are only incarcerated for a short period. The Department of Corrections 2017 Annual Report shows an average pretrial length of stay of 23 days in Rhode Island, making it difficult to establish continuity of care and further perpetuating the cycle of loss to follow-up.[13, 20]

Efforts are underway to improve the pipeline to continuation of care by collaborating with local healthcare organizations. An example of a successful model in continuity of care can be seen in the Human Immunodeficiency Virus (HIV) positive prison population in Rhode Island.[11] A clear and direct pipeline to continuing HIV treatment and follow-up through strong collaborations with hospitals in the community, such as The Miriam Hospital, with expertise in the treatment of HIV, improved continuity of care with treatment post-release.[21]

The NCCHC recognizes that the number of female inmates is large and growing. Although delivery of quality healthcare that achieves community standards seems impractical in a system with limited resources, the RIDOC has made significant strides to comply with the standards of care that the NCCHC promotes. Similarly, correctional institutions nationwide have put forth initiatives to improve access to gynecologic care.[10]

There are many future opportunities that can help transition healthcare in prison into a pipeline to preventative care, starting from intake. The customized health form is an example of how newly incarcerated women should be screened (**Table 1**). Future endeavors could include engaging community providers to take care of these women once they leave the system. Correctional health services and women's advocacy groups need to collaborate to provide leadership for the development of policies and procedures that address women's special healthcare needs in Corrections with provision of pre- and post-release services.[16] Perhaps a task force that encourages strong partnerships among public health, community, public assistance, and correctional agencies are needed to move forward with these initiatives. If gynecologic healthcare services are offered in correctional institutions in a streamlined manner with minimal barriers, healthcare in the prison setting may not only become comparable to standard community gynecologic care, but may, in fact, serve as a model to engage incarcerated women in their own health maintenance, truly establishing a pipeline to preventative care.

Table 1. Example intake form (Based on the Standards for Health Services, the basis of NCCHC's accreditation program for jails and the NCCHC Position Statement: Women's Health Care in Correctional Setting).[16]

Taking a thorough history	Inquiry into current women's healthcare issues including the Menstrual cycle, pregnancies, gynecologic problems, contraception, current breastfeeding, sexual and physical abuse, and a nutritional assessment.
Health maintenance exams	Adherence to clinical practice guidelines for breast and cervical cancer screening.
STI screening	CT/GC laboratory testing on women up to age 25, and when possible 35, and among pregnant women regardless of age, at receiving or as soon as possible unless the inmate is transferred from a facility where the testing was done. Facilities should review the yield of active syphilis screening within their institutions to determine whether laboratory testing is appropriate. Facilities should consider additional STI testing (i.e., HIV, Trichomonas vaginalis) for persons testing positive and newly diagnosed for CT/GC or syphilis.
Pregnancy test	All women at risk for pregnancy should be offered a pregnancy test within 48 hours of admission.
Menopause	Considering the aging of the prison population, correctional institutions need to address the unique health care needs of older women including menopausal symptoms.
Pregnancy counseling	Comprehensive counseling and assistance are given to pregnant inmates in keeping with their desires in planning for their unborn children, whether they desire abortion, adoptive service, or to keep the child. It also addresses prenatal care and the nonuse of restraints during childbirth.
Contraception	Women should be provided with nondirective contraception counseling, access to emergency contraception, and continuation of current contraceptive method while incarcerated.
Postpartum	Correctional facilities need to facilitate contact visits for mothers with their infants to promote mother-infant bonding.
Breastfeeding	Correctional facilities should make arrangements for postpartum women to either breastfeed or to pump, freeze, and transport breast milk for their infants.[8]
Postpartum depression	Women who deliver while in custody and who enter a facility within 1 year of childbirth should be screened for and educated about postpartum depression and psychosis.
Parenting	Counseling on parenting and child custody issues should be available.
Mental health	Counseling and treatment needs to be available to address mental health issues including alcohol and/or drug use disorders.
Opioid use disorders	Screen for opioid use disorders and offer MAT.
Counseling	Considering the incidence of sexual and physical violence among the female inmate population, counseling to resolve issues of victimization and perpetration of violence against intimates needs to be available (e.g., conflict resolution and parenting skills).

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Perspective: Current Threats to Contraceptive Access

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KEYWORDS: contraception, unintended pregnancy, postpartum contraception

Unrestricted access to reliable and effective contraception empowers individuals to decide whether or not and when to become pregnant. The average desired family size in the United States is two children.[1] In order to accomplish that goal, the typical woman will spend close to three years pregnant, postpartum, or attempting to become pregnant, and nearly three decades – more than three quarters of her reproductive life – trying to avoid an unintended pregnancy. To control their reproductive future, individuals must have a comprehensive understanding of and reasonable access to a range of contraceptive options. In 2011, the latest data available, nearly half of the 6.1 million pregnancies in the United States were unintended, meaning mistimed or unwanted, and most of these could have been prevented with better access to contraception. Unintended pregnancy rates are highest among poor and low-income women, women aged 18 to 24, and cohabiting women and are directly related to contraceptive access.[2]

Effective, affordable contraception has immediate and long-term impacts on individuals' right to plan their future, allowing improved caretaking of themselves and their families, as well as the ability to meet their educational, career, and financial goals. Furthermore, births resulting from unintended or closely spaced pregnancies can be associated with adverse maternal and child health outcomes such as delayed prenatal care, premature birth, and decreased rates of breastfeeding.[3] Individuals may elect to use a wide variety of contraceptive methods over the course of their life, and when people are satisfied with their choice of contraception, they are more likely to use it to effectively.[4-5] Patients need to have full health insurance coverage for counseling and obtaining any contraceptive method they may safely pursue. However, the guarantee of contraceptive coverage is one that fluctuates with the political landscape. Unfortunately, disparities in reproductive health access, as well as threats by policymakers to restrict adequate provision of contraception, remain at the forefront of recent political debate, making it difficult for patients to freely choose a method they can use effectively and consistently. In this article, we will review the current state of contraceptive freedom in the U.S. and the myriad ways this human right is being threatened.

Since the mid-1990s, 28 states have required insurance plans to provide contraceptive coverage while federal rules applied in the remaining 22 states. This was expanded by the Affordable Care Act (ACA) in 2010; federal law now requires Medicaid, as well as most private health insurance, to cover comprehensive contraceptive care, as it was deemed a vital preventive health service for women by the Institute of Medicine.[6] Importantly, this applies to coverage offered by employers that self-insure. Roughly 60% of insured workers in the U.S. are covered by self-insurers, and state laws are not allowed to regulate these employers, so the ACA's regulation of these insurers was a big step toward ensuring contraceptive access. Rhode Island law requires that if insurers cover prescription drugs, they also provide coverage for Food and Drug Administration (FDA)-approved contraceptives. The ACA's federal regulations are specific about requiring coverage for 18 different FDA-approved contraceptive methods, including emergency contraception and female sterilization.[7] The ACA also stipulates that there can be no out-of-pocket costs to the patient. A major gap in these federal mandates is the lack of required coverage for male condoms and vasectomies. The ACA has spurred several states to not only match the federal regulations but to go further in requiring coverage for over-the-counter methods without a prescription, for extended supplies of contraceptives, and for male sterilization.

Despite these significant advances, the Trump administration attempted to pass regulations in October 2017 that would have made it much easier for employers to claim a religious or moral objection to providing contraceptive coverage for their employees. The courts blocked enforcement of these regulations based on the ruling that they are not in compliance with the ACA.[8] Nonetheless, an older federal regulation still exists that does grant religious exemptions for a more strictly-defined group of employers. However, this does require that employees are able to receive contraceptive coverage from the same insurance company through alternative means.

Maintaining adequate, unrestricted access to contraception in the future is also uncertain due to threats to publicly funded family planning services. Title X is the only federal grant program solely dedicated to providing low-income

clients with affordable, much-needed reproductive health care. This includes annual exams, cervical and breast cancer screening, contraceptive education and provision, and testing and treatment for sexually transmitted infections, including HIV. Today, more than 4 million Americans rely on affordable family planning services that are provided through Title X.[9] In recent months, some politicians have increased their efforts to deny public funding to Planned Parenthood, a Title X recipient. As an organization, Planned Parenthood serves 32% of the 6.2 million women who obtain contraceptive care through some type of safety-net family planning center, and 41% of the 3.8 million contraceptive clients served through Title X.[9] Defunding Planned Parenthood would radically jeopardize access to family planning care. Many of the policy attacks have stemmed from anti-abortion politicians targeting organizations like Planned Parenthood that offer comprehensive contraceptive care in addition to abortion services, despite the fact that Title X funds have never been allowed to pay for abortion care. Furthermore, publicly funded contraception helped to avoid 1.3 million pregnancies in 2015 and these unintended pregnancies would have resulted in 453,400 abortions. Without publicly funded family planning services, rates of unintended pregnancy and abortion would have been 67% higher. [10] According to an analysis by the Guttmacher Institute, if social conservatives were to succeed in cutting Planned Parenthood out of Title X, the remaining providers, such as health departments, hospitals and federally qualified health centers would need to increase their caseloads by nearly 70%, a herculean task.[9]

Additionally, threats posed to restructuring Medicaid, including granting states greater authority to choose eligibility criteria, deciding what services to cover, limiting enrollees' provider options, and imposing paternalistic restrictions on enrollee's behavior, have significant consequences for family planning.[11] Medicaid is central to the family planning effort in the U.S., not only because it accounts for three quarters of all public dollars invested in family planning, but also because it ensures enrollees access to qualified providers and advocates for reproductive health. In all states, if a woman is pregnant, she is eligible for Medicaid coverage of maternity care services, including prenatal and postpartum care until 60 days post-delivery. In many states, once those 60 days expire, a woman is no longer eligible for Medicaid coverage, and thus, no longer has access to family planning care and FDA-approved contraceptives.[12] Often, this limited time frame of insurance coverage means providers must equip women with contraception either immediately or early in the postpartum period.

Because some patients are not able to attend their postpartum visit, providers frequently offer long acting reversible contraceptive (LARC) methods, including hormonal implants and intrauterine devices (IUDs), during the postpartum hospital stay – called "immediate postpartum contraception". In order to ensure that women are able to make an informed decision and understand available alternatives, conversations regarding postpartum birth control plans should be initiated early and revisited often during the prenatal period. Despite its high efficacy and convenience, significant barriers exist for individuals seeking access to LARC. Only 23%-60% of women requesting an immediate postpartum IUD actually receive it.[13] Part of the challenge to providing patients with LARC in the immediate postpartum period revolves around reimbursement. Before 2012, the majority of insurance carriers bundled obstetric reimbursement (prenatal care, delivery, and postpartum care) without providing extra reimbursement for immediate postpartum LARC insertion. This is in contrast to other methods of postpartum contraception that are prescription-based. However, due to increasing data supporting the benefits of immediate postpartum LARC, many states have begun providing extra compensation; however, this typically only applies to patients on Medicaid.[14] Another important barrier to immediate postpartum LARC uptake stems from religiously affiliated hospitals. One out of every six hospital beds in the United States are in Catholic hospitals that do not allow placement of LARC for contraceptive purposes or postpartum sterilization.[15] Clearly, more work is needed to ensure access to immediate postpartum LARC if patients desire it.

The federal policy requiring 30-day consent for Medicaid funded sterilization procedures puts forth yet another barrier to reproductive autonomy. In 1978, the U.S. Department of Health, Education and Welfare created new legislation that required a 30-day waiting period prior to surgical sterilization for women receiving Medicaid.[16] It also prohibited pregnant women in labor and women under the age of 21 to consent to sterilization. This legislation was drafted in response to coercion and forced sterilization of minorities and women of low-socioeconomic status. Although well-intentioned, this mandate has actually resulted in new barriers to contraceptive access for low-income women.

Because the 30-day waiting period is only mandated for those patients receiving Medicaid, it predominantly affects those women whose lives are already filled with obstacles to free choice. It impacts an already vulnerable population and patronizes these individuals with the assumption that their choices about their own bodies are flippant and must be chaperoned.[17] Not only is it morally indefensible, it has become clear that this mandated waiting period negatively affects a woman's ability to receive a desired sterilization procedure. In one study, only 52% of women desiring postpartum sterilization procedure were granted their request, and the primary reason women were unable to undergo postpartum sterilization was due to an inability to complete the federally mandated consent form at least 30 days prior to delivery.[18] The American College of Obstetricians and Gynecologists states that postpartum sterilization is an "urgent surgical procedure" given the narrow window during which it may be performed and the serious consequences of failing to complete it.[19-20]

For those patients who do not elect or are unable to receive immediate postpartum contraception, many must wait until the postpartum visit for initiation of contraception. However, reliance on the postpartum appointment to provide contraception creates a significant gap in the ability to provide egalitarian and effective contraceptive care. Approximately a third of women will not attend their postpartum visit, and non-attendance is associated with social and economic disadvantage.[21] A recent study showed that 43% of women will resume intercourse within six weeks of delivery, indicating that waiting until the postpartum visit to provide contraception may be too late.[22] Our healthcare culture must move towards an increased awareness on the postpartum period as a critical time in a woman's life. In addition to being a time of joy and excitement, this "fourth trimester" is a period marked with considerable challenges. Truly supporting women during the postpartum period, rather than only offering a single visit almost two months after delivery, would undoubtedly have a positive impact on the number of women able to stay connected to health services and receive appropriate contraceptive care.

It is a personal decision and human right to decide when one would like to have a child. It is important for advocates of reproductive health to protect unrestricted access to contraception and ensure that personal choices about childbearing can be made freely and without coercion. There is a war being waged against contraception in this country. All health care providers must step up to the plate to protect patients' rights to access contraception. This work can start with having regular, open discussions about reproductive life plans, contacting local, state and national representatives, and testifying at hearings for new legislation. Let us realize our power to create change and join the ranks of those fighting for reproductive justice.

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The Fourth Trimester of Pregnancy: Committing to Maternal Health and Well-Being Postpartum

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ABSTRACT

The postpartum period is a time of significant challenge and need as women adapt to hormonal and physical changes, recover from delivery, experience shifting family responsibilities, and endure sleep deprivation, all while caring for and nourishing their newborn.[1–4] It is also a period of significant maternal health risk. Recent data on U.S. maternal mortality indicate a shift in the timing of maternal deaths over the past 10 years, with the majority of maternal deaths now occurring postpartum, from one day to one year after delivery.[5,6] Postpartum care also marks a period of transition, as women shift from pregnancy-centered care to interpregnancy and primary care, yet current systems of care are marked by poor coordination of care between providers and patient care settings.[4,7] Suboptimal postpartum follow-up is particularly worrisome for women with chronic health conditions or pregnancy complications who face both short- and long-term health risks.[8,9] Given known challenges and medical risks, the single, 6-week postpartum visit women receive is woefully inadequate in addressing maternal health needs. Postpartum visits often fail to address the unique postpartum needs identified by mothers[1,3,4], inadequately connect women with primary care services, and have low attendance.[1,7] Recognition of these unmet needs of "the Fourth Trimester" have led national organizations, including the American College of Obstetricians and Gynecologists (ACOG), to call for a restructuring of postpartum care to reduce postpartum and long-term morbidity and improve postpartum well-being.[2,7,10] Rhode Island has several recent initiatives with the potential to improve outcomes for mother-baby dyads including the Baby Friendly Hospital Initiative (BFHI), the provision of long-acting reversible contraception (LARC) immediately postpartum, and the addition of HPV immunization postpartum. These initiatives remove barriers of access to care and provide vital women's health services prior to discharge. The Fourth Trimester provides a rich opportunity for maternal risk reduction and health promotion at a time when women are motivated and engaged with health care.

ADDRESSING MATERNAL RISK POSTPARTUM

Maternal mortality in the United States is increasing and more than doubled from 1982 to 2012.[5,6] Over this same period, the causes and timing of pregnancy-related deaths have shifted; deaths due to maternal hemorrhage and infection, which typically occur at the time of delivery, have proportionally decreased, while deaths from cardiovascular disease, which can result in more distant postpartum deaths, have increased.[11] Postpartum deaths, which includes deaths between 1 day and 1 year after birth, represent more than half of all maternal deaths, and underscore the significant health risks faced by postpartum women.[5,6] Though maternal deaths remain rare, 65,000 women experience severe maternal morbidity annually in United States, which increasingly occurs postpartum and is due to chronic medical conditions.[11] Both maternal morbidity and mortality affect minorities disproportionately; black women experience maternal mortality 3-4 times more frequently than white women and experience severe maternal morbidity two times more frequently.[5,12–14] Rising rates of postpartum morbidity suggest that women face significant unmet medical needs after delivery and has led to a renewed focus on care in the fourth trimester.[1,2,7,10,15]

A central role for postpartum care is maternal health risk reduction, both in the immediate postpartum period and long-term, yet the ability of current postpartum services to improve maternal outcomes is limited by only a single dedicated visit. Both providers and patients report that current postpartum visit schedules are inadequate.[1,3,4] Towards the end of pregnancy, women are routinely seen in the office weekly, and more often if the pregnancy is complicated. In contrast, most women are seen only once in the first-year postpartum and not until 6 weeks after delivery. This gap in care is not biologically logical nor practical from a public health perspective. Newborns are seen within days of discharge from the hospital because of the physiologic changes that occur in the first few weeks of life. Similar changes are occurring to the postpartum woman, yet no similar appointments occur. Furthermore, even the currently recommended appointments are not always used. While increasing attendance at postpartum visits is a goal of Healthy People 2020, between 10 and 40% of women do not attend a postpartum visit 4-12 weeks after delivery[7] with lower attendance rates reported among women in low-resource settings, contributing to health disparities.[8,9,16]

In a review of postpartum utilization, Chu et al describe the postpartum visit as an "opportunity to assess the physical and psychosocial well-being of the mother, counsel her on infant care and family planning, and detect and give appropriate referrals for preexisting or developing chronic conditions such as diabetes, hypertension or obesity."[17] Most postpartum women will become pregnant again, though many will not see an ob/gyn until the subsequent pregnancy. As such, preconception counseling is also a vital part of postpartum care. Women should be advised of evidence-based interventions to reduce complications in subsequent pregnancies, such as daily baby aspirin for hypertensive diseases of pregnancy and 17-hydroxyprogesterone for women with a history of preterm birth.[7] Medications which are appropriate to continue in pregnancy should be reviewed, and women should be encouraged to continue safe medications as prescribed. As is evident from the list above, postpartum care addresses immediate health needs and serves as the foundation for interconception health and well-woman care.

A central component of fourth trimester care is the need to arrange appropriate follow-up for chronic conditions and pregnancy complications and to communicate the implications of these risks to both the patient and the care providers who will be assuming their care.[7] Lack of consistent communication between providers may contribute to inadequate recognition and under emphasis of these risks.

Suboptimal postpartum follow-up is particularly troubling when pregnancies are complicated by common morbidities such as diabetes or hypertension. For women with chronic health conditions, the postpartum period often calls for changes in disease management and a coordinated transition from obstetric to primary care or subspecialty providers – a process which is often untimely and inadequate, with only 69.6% of women with preexisting diabetes and 57.0% of women with hypertensive disorders attending a primary care visits within 1 year of delivery.[7–9]

Pregnancy complications can serve as a "window to future health" due to their implications for the development of chronic disease. This is the case for hypertensive diseases of pregnancy (including gestational hypertension, preeclampsia, and eclampsia) and gestational diabetes (GDM), which both confer risks of future cardiovascular disease (CVD) and type 2 diabetes (T2DM). Preeclampsia remains a leading cause of maternal mortality and morbidity and ACOG recommends early postpartum follow-up for women with hypertensive disorders of pregnancy and counseling for recurrent preeclampsia in future pregnancies and long-term CVD risk. ACOG also recommends screening for diabetes 6 weeks and 1 year postpartum for women who had GDM (who are at risk for developing T2DM and CVD), yet a study of insurance claims data showed that only 56% of women with pregnancy complications attended primary care visits in the year following delivery.[9] A single-center study of women with gestational diabetes found that women were three times more likely to completed recommended postpartum screening if they attended a postpartum visit[9], yet even at an academic institution with high rates of postpartum primary care visits (>80%), pregnancy complications were not associated with a postpartum healthcare visit and nearly 20% of women with pregnancy complications were never seen in the year following delivery.[8]

For many women, pregnancy serves as the first encounter with the health care system in adulthood and as a result, obstetric providers may be the first provider to diagnose and address chronic health conditions such as hypertension, obesity, and substance dependence. While obstetric providers may manage pregnancy complications and chronic conditions independently during pregnancy, uncoordinated transitions from obstetric to primary care can result in women failing to receive care that may mitigate long-term risks for diabetes, hypertension, and cardiac disease.[8,9]

PROMOTING MATERNAL WELLBEING IN THE FOURTH TRIMESTER

It is critical that women's voices contribute to our understanding of postpartum health needs, voices.[1,3,4,18] Surveys and focus groups tell us that women feel unprepared for the emotional, biological, and social changes that occur postpartum and less than half of women report receiving adequate information regarding postpartum depression, nutrition, physical activity and weight loss, or changes in sexuality and emotional response.[1,3,7] A disconnect is described between the areas of concern for clinicians, such as signs of infection or bleeding, and those of mothers, who experience significant disruption in their daily lives from symptoms considered "normal" by providers, such as sleep deprivation, discomfort and pain, and emotional changes.[1,4] Considering this feedback is critical as we strive to improve health outcomes for women through a recommitment to maternal postpartum care. By listening to and anticipating women's needs, the patient-provider relationship is strengthened, increasing the likelihood of postpartum follow-up. This commitment to patient-centered care should improve both maternal health outcomes and maternal and infant well-being throughout the life course.

Anticipatory guidance on common postpartum problems can be provided antepartum, including information on urinary incontinence, sleep changes, emotional response and sexuality, expected weight loss, and recommendations for exercise and healthy eating.[3,4,10] As women are often uncomfortable broaching these topics themselves, providers should ask about common symptoms specifically during both postpartum and primary care visits during the first year. Written or multimedia aids like handouts, videos, or websites can provide women with postpartum resources that can be referred to after discharge, a request often voiced in focus groups.[3,4]

Prior to discharge from the hospital, all women should receive counseling on warning signs and symptoms postpartum that should prompt medical attention and written instructions should be provided on who to contact with common postpartum problems. In qualitative studies, women report being unsure who to contact with questions

or concerns, particularly when questions arise that overlap provider expertise, such as those pertaining to lactation and medication use.[1] The Association of Women's Health, Obstetric and Neonatal Nurses' (AWHONN) proposes a postpartum discharge education program which includes a patient handout with descriptions of warning signs and an education checklist for nurses to review with patients prior to discharge.[15] While the initiative has been well received by nurses, efficacy studies are pending.[10,15]

FORMULATING A POSTPARTUM CARE PLAN

While several studies document the unmet needs of postpartum women[1,3,4], few have established evidence-based approaches to improving maternal health outcomes. In their recent Committee Opinion on Optimizing Postpartum Care, ACOG recommended that patients and their obstetric providers formulate postpartum care plans during antepartum visits to identify, discuss, and plan for the postpartum transition period.[7] In addition to identifying the members of the postpartum care team and providing written information on the timing of postpartum visits, this plan should include discussions on infant feeding, reproductive life plans and contraceptive needs, mental health risks of the postpartum period, pregnancy complications, chronic health conditions, and anticipatory guidance on common postpartum problems.[7] When available, risk reduction strategies for future pregnancies should be reviewed with the patient and her primary-care provider. ACOG recommends early postpartum follow up for women with hypertensive disorders of pregnancy and those at high risk for complications. This includes first-time mothers and women with a history of depression and anxiety who are at higher risk for severe postpartum depression and may benefit from an early postpartum visit. Studies have also suggested that postpartum phone support can reduce depression scores.[7]

Women choosing to breastfeed should be provided with community support resources, such as WIC, Lactation Warm Lines, and local breastfeeding support groups. Additional resources should be provided as women prepare to return to work, including prescriptions for breast-pumps and education on frequency and methods of breastmilk expression.[7,19] While conditions suffered at higher rates by underserved women (like hypertension, hyperlipidemia, cardiovascular disease and type 2 diabetes) may improve with breastfeeding, those same women face the greatest barriers to sustained breastfeeding, including suboptimal social support and unpaid maternity leave which reduces the interval before returning to work.[20] Identifying these breastfeeding challenges antepartum can enable patients and their care team to plan appropriately and identify available resources.[7,19,20]

Formulated antepartum, the postpartum plan should be reviewed and updated prior to discharge and at subsequent postpartum visits. ACOG's recommendations above are derived largely from expert opinion and stakeholder working groups and while emphasizing anticipatory guidance, improved care coordination, and frequent and clear communication around a shared plan of care should serve postpartum needs, research is needed to identify effective postpartum care strategies that serve to reduce maternal health risks and promote long-term wellbeing.

LOCAL INITIATIVES

Several recent initiatives have improved postpartum services in Rhode Island. In 2015, Women & Infants Hospital (WIH) achieved 'Baby Friendly' hospital designation after meeting the Ten Steps to Successful Breastfeeding (http://www.womenandinfants.org/news/baby-friendly-designation.cfm). BFHI is sponsored by the WHO and the United Nations Children's Fund and recognizes hospitals that support breastfeeding mothers and promote evidenced-base feeding practice for babies. In some studies, regions served by Baby Friendly hospitals report higher rates of breastfeeding initiation, particularly among low-resource women, though data is conflicting.[21] Research is needed to determine if breastfeeding rates have increased in Rhode Island.

Rhode Island also recently secured approval from Neighborhood Health, a Medicaid insurance provider, to provide immediate postpartum LARC to patients in the hospital prior to discharge. Immediate postpartum LARC is highly effective at reducing unintended and short-interval pregnancies and ACOG strongly recommends that it be offered to women antepartum and provided immediately after delivery and prior to discharge.[7,22] Immediate postpartum LARC circumvents postpartum access barriers at a time when the patient has high motivation to prevent unintended pregnancy.[22] Furthermore, many women who planned to obtain an IUD postpartum, including those who do not return for a postpartum visit, never have it placed.[22] Immediate postpartum LARC has been shown to decrease unintended births without increasing contraception bias and is cost effective from a societal perspective.[1,22,23] This service is particularly important for populations at highest risk for short-interval pregnancies and least likely to receive postpartum care, like teenagers and low-resource women.

Finally, last year, WIH started an initiative to identify pregnant women eligible for the Human Papilloma Virus (HPV) vaccine series in order to offer women the first dose prior to discharge. HPV immunization prevents HPV infection and reduces rates of HPV-associated cervical cancer. At WIH, postpartum women are routinely assessed for MMR, Varicella, and pneumococcal vaccine eligibility, and offered appropriate immunizations prior to discharge. HPV vaccine is not recommended in pregnancy but identifying vaccine eligible women during pregnancy increases the likelihood that women will receive both recommended doses.

Each of these initiatives improves the quality of care provided to pregnant and postpartum women in Rhode Island; however, as is the case throughout the country, postpartum care remains fragmented and sub-optimally coordinated between care settings and among providers as patients shift from obstetric to primary care postpartum. Adoption of ACOG's proposal for Postpartum Care Planning may serve to minimize current gaps in care.

CONCLUSION

Pregnancy is a time of high health care utilization and strong health motivation for women, and women's regular interaction with the health care system during the antepartum period contrasts starkly with the fragmented maternal care provided postpartum. To sustain the opportunities for risk-reduction and health promotion identified prenatally, providers across all specialties must recommit to patient-centered care that reflects patient specific fourth trimester needs, supports the well-being of mothers and their infants and establishes care plans for management of chronic as well as pregnancy-related complications.

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On the Future of Maternal Mortality Review in Rhode Island

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The United States has the highest reported number of maternal deaths per 100,000 live births, or maternal mortality ratio (MMR), among high-resource countries and recent trends suggest it has increased by over 26% since 2000.[1,2] Global trends reported by the World Health Organization (WHO) demonstrate that pregnant women in the U.S. face a mortality ratio that is at least four times higher than leading European countries and in 2014, the U.S. ranked 47th globally in maternal mortality.[1] The most recent CDC estimates report a national pregnancy-related ratio of 17.3 deaths per 100,000 live births. According to the Rhode Island Department of Health, Center for Health Data and Analysis, the 2013–2017 maternal mortality rate was 11.2 deaths per 100,000 live births. For many readers, these statistics are nothing new. Over the past several years, media coverage, and ensuing public awareness of U.S. maternal deaths have reached new heights.[3] The award-winning NPR/ProPublica series, "Lost Mothers," brought the stories of just a few of the estimated 900 women in the U.S. who die each year during or within a year of pregnancy.[3] Maternal mortality is considered an indicator of the overall health of a population. Two bills introduced in Congress reflect a growing desire to address these devastating outcomes.[4,5]

Studies on U.S. maternal mortality reveal that most maternal deaths result from well-known causes, namely cardiovascular disease and stroke, thromboembolic events, hemorrhage, hypertensive disorders of pregnancy, and infection.[6] Despite increased public awareness and well-described data on disease states leading to maternal death, the underlying and potentially modifiable root-causes of worsening maternal mortality remain largely unknown. This is perhaps most true when we consider inequities in maternal mortality.

For over 20 years, obstetric journals have recognized the overwhelming disparities in maternal mortality faced by black and Hispanic women.[7,8] The most recent reports indicate a pregnancy-related mortality ratio for non-Hispanic black women of 43.5 per 100,000 live births, compared to 12.7 for non-Hispanic white women.[8] Many explanations for these disparities have been proposed including incidence of pregnancy-induced hypertensive disorders, compliance with prenatal care, and education attainment. However, the evidence supporting these explanations is inconsistent.

First, there are conflicting data concerning pregnancy-induced hypertensive disorders. A large, 10-year, longitudinal, population-based study in New York State found that preeclampsia rates were higher among black and Hispanic groups.[9] In partial contrast, an analysis of National Vital Statistics System (NVSS) data demonstrated that while the *prevalence* of preeclampsia and eclampsia did not differ between black and white patients, *case-fatality rates* were 2-3 times higher in black women.[10] Determining whether black women face an increased risk of developing a disease or rather, an increased risk of dying from it, has direct implications upon strategies developed to reduce maternal deaths. Are the data only for race/ethnicity, or also by economic class? If the latter, that should be included.

Second, suboptimal prenatal care has also been linked to disparate rates of maternal mortality. A 2010 study reported that black women were less likely to initiate prenatal care in the first trimester.[7] However, in the same year, Berg et al. found that mortality ratios did not differ by timing of prenatal care initiation and in fact, among women who started prenatal care in the first trimester, black women still had higher pregnancy-related mortality ratios compared to their white counterparts. This suggests that optimal prenatal care is not protective against maternal mortality in black women.[11]

Finally, the argument that limited educational attainment drives higher mortality rates among black women is also unsupported. Saftlas et al., studying risk factors for maternal mortality, demonstrated that educational attainment did not differ between cases and surviving controls in black women, whereas white women who had died had fewer years of education than controls. Educational attainment, therefore, appears to be a protective factor for white women but not for black women. Perhaps most alarming, Saftlas et al. demonstrated that the largest racial disparities in pregnancy-related mortality occurred among women with the lowest risk of maternal death: those who were married, of low parity, aged 20–29, highly educated, adherent with prenatal care, and delivering normal birth-weight infants at term.[12]

While these examples represent only a few possible contributors to racial disparities in maternal mortality, they illustrate our profound lack of understanding regarding its drivers, particularly among black women. How is it that we have known about this problem for 20 years and still lack an answer? The answer lies in reliance upon data sources that preclude review of underlying disease states and medical care, as well as the contribution of globally recognized social determinants of health such as structural racism, poverty, and access to care. This detailed level of review is essential. As eloquently stated in Clark and Belfort's call for national maternal mortality review,

> "The current maternal mortality ratio may be the result of any number of highly disparate realities ranging from immigration policy, to racial disparity, to regionalization of care, patient transport, health care provider training, or certification. Alternately, it could reflect fundamental problems in the structure of the specialty itself. However, without data, we just do not know. Without this knowledge, we cannot effectively address this problem."[13]

The majority of studies on maternal mortality rely on administrative datasets and not focused review. This includes vital statistics data, ICD-10 codes on death certificates, and hospital billing databases.[14] Disturbingly, a study comparing medical record review by an experienced critical care obstetrician with discharge diagnostic codes noted concordance in the cause of death only 52% of the time.[15] If our best available data are incorrect nearly half the time, it is unsurprising that we have been unable to reduce disparities and improve maternal health outcomes.[13]

Equally concerning, current data collection methods also inaccurately capture presumably simple, yet vital, data on the number of women in the U.S. who die each year from causes related to pregnancy and childbirth.[3] When compared with focused review, administrative datasets underestimate maternal mortality by 20–87% and the lack of a nationwide approach to identification of maternal deaths has led to embarrassingly incomplete data.[16] Given these limitations, Clark and Bedford propose that only focused review of maternal deaths, conducted by Maternal Mortality Review Committees (MMRC), can provide the data necessary to shape health policy and address factors that contribute to poor pregnancy outcomes.[13] We know from experiences in the U.K. and California that MMRCs identify strategies that lead to reductions in maternal mortality.[13,14] To aggregate this data as a nation, we must first standardize MMRCs at the state level. The American College of Obstetricians and Gynecologists and the Society for Maternal Fetal Medicine have lobbied Congress over the past two years for passage of H.R. 1318, Preventing Maternal Deaths Act[5] and S. 1112, the Maternal Health Accountability Act[4] – two bills that would create a grant to help states establish or improve MMRCs. While the Senate bill has moved to the Senate calendar, the House bill remains stalled in committee, demonstrating the need for each individual state to pursue establishing MMRCs internally rather than waiting for federal support.

As described by the CDC, fully-functional MMRCs must identify, abstract, prepare case summaries, and review maternal deaths with the aim of resolving six essential questions (**Table 1**).[14] Although most states have conducted maternal death reviews in some capacity for decades, non-standard data collection has limited information exchange and precluded data analysis at regional and national levels. This limitation hinders the development of evidence-based regional and national prevention strategies. To facilitate uniform state maternal death review, the CDC, CDC Foundation, and the Association of Maternal and Child Health Programs (AMCHP) collaborated to develop two free and comprehensive resources. MMRIA (mmria.org), a protected data collection system, provides MMRCs with uniform methodology and data language for case abstraction, summary, and review and supports MMRCs in their identification of prevention strategies.[17] Review to Action (reviewtoaction.org) provides step-by-step guidance for states seeking to establish fully-functional MMRCs.[18] Thirty-two states currently have CDC-recognized MMRCs and an additional 13 are currently planning a review. Twenty states and jurisdictions have implemented standard data collection via MMRIA.[19]

Table 1. Six essential questions of Maternal Mortality Committee Review (Adapted from Review to Action[18])

1. Was the death pregnancy-related?
2. What was the underlying cause of death?
3. Was the death preventable?
4. What were the factors that contributed to the death?
5. What are the recommendations and actions that address those contributing factors?
6. What is the anticipated impact of those actions if implemented?

The Rhode Island Medical Society has a long renowned history of commitment to improving maternal health. In 1931, RIMS leadership established the nation's first-ever Maternal Mortality Committee.[20] Under their oversight, the state experienced a dramatic decline in maternal deaths. A 1977 article published in this journal, "A History of the Maternal Health Committee of the Rhode Island Medical Society 1931–1976," details how, after pioneering maternal death reviews by obstetricians at the Providence Lying In Hospital, the Society continued to shape their committee towards the standards we expect today: regularly held reviews with representation from anesthesiology, pathology, the Department of Health, and obstetricians from across the state.[20] As maternal deaths fell, the committee renamed itself the Maternal Health Committee, tackling broader maternal health challenges in years with few deaths to review. The article questioned the necessity of ongoing state review given the fortunate rarity of maternal deaths in Rhode Island. Though ultimately the committee was continued, meetings since the 1970s have been less regular and without a uniform approach to case identification and review. In recent years, due to legal concerns, the committee elected not to determine the preventability of deaths. A move in Rhode Island towards standardized CDC procedures would allow comparisons and conclusions to be drawn not only within our state over time, but also more broadly across southern New England, where larger pools of data are available. The value of regional review of maternal deaths is particularly important where, as in Rhode Island, state populations are small and patients cross state lines readily for care.[18]

In this light, we propose the realignment of Rhode Island Maternal Mortality Review Committee procedures with

CDC recommendations. Consistent with CDC's Review to Action guidelines, this committee would develop a systematic approach to case identification and pursue case abstraction and review in accordance with the uniform data collection methods provided by MMRIA. As with its historical precursor, committee membership would be interdisciplinary, include broad geographic representation, and hold regularly scheduled reviews. Given the Rhode Island Department of Health's (DOH) experience with Infant and Drug Overdose Death Reviews, and their existing role in identifying maternal deaths, consideration could be given to shifting the MMRC to their jurisdiction. This might allow funding, administrative, and personnel resources to be shared between existing review committees, defraying state costs, and would capitalize on the stability and longevity of state institutions. Finally, maternal mortality captures only the worst outcome among the much larger pool of women who experience severe maternal morbidity; consideration should be given to including review of our state's more common near-misses.

In 1962, RIMS successfully lobbied the RI legislature to obtain legal protection for review committee transactions and case reports. It is time to take these further and secure through legislation not only the confidentiality and protection from subpoena of all committee materials and members, but also guaranteed access to all pertinent records. Further assuring the future of maternal death review in RI, we propose this legislation include state accountability for conducting ongoing and regular reviews.

According to the RI Department of Health Center for Health Data and Analysis, the maternal mortality ratio in Rhode Island is 11.2 per 100,000 live births. As obstetricians in Rhode Island, this number raises more questions than it answers. Were these deaths accurately reported? Were they pregnancy-related or accidental? And most importantly, could they have been prevented? A recent report compiling standardized data from state MMRCs found that 60% of their maternal deaths were preventable.[19] By increasing our own capacity for maternal death review, Rhode Island would once again be poised to lead the country towards the elimination of preventable maternal deaths.

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A Melting Pot of Medical Education: Challenges, solutions, and opportunities for improving trainee feedback and education in the ED

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KEYWORDS: Emergency medicine, medical education, educational feedback

INTRODUCTION

It is 6 p.m. on a Monday evening and you are a second-year Ob/Gyn resident at Women & Infants Hospital starting your shift. Following sign-out, you head down to the Emergency Department (ED). The electronic patient board is full and 20 patients are in the waiting room. Your supervising faculty includes two attending Ob/Gyn physicians, a nurse midwife, and a nurse practitioner. Your first-year colleague and a visiting Emergency Medicine resident are already hard at work. Additionally, there are three third-year Ob/Gyn clerkship medical students, one visiting fourth-year medical student, and a nurse practitioner student. In such a busy, high acuity, rapid turnover environment the question becomes: How will each of these learners receive the relevant education for their level of training? How will timely and comprehensive patient care be maintained? Recent research tells us that in the absence of adequate feedback "efficient learning is impossible, and improvement only minimal, even for a highly motivated subject."[1] However, in this time constrained, unpredictable environment, how can proper feedback be integrated? There are very few dedicated women's only Emergency Departments in the United States; however, parallels can be drawn to the clinical and educational environment in more traditional Emergency Medicine (EM) programs. The aim of our paper is to explore the unique nature of education in a highly specialized ED, highlighting the challenges of feedback and learning in this environment, and to provide potential opportunities for educational growth without compromising patient care.

EDUCATIONAL OPPORTUNITIES

The ED provides unique exposure to a host of educational opportunities. Students participating in an EM rotation have a higher level of involvement in the initial assessment and management of patients and are exposed to a great depth and variety of patient complaints when compared to their internal medicine counterparts.[2] As represented by Edgar Dale's Cone of Learning, students who are more engaged in a hands-on learning environment gain and retain more in their experience.[3] Giving students an ability to see the whole scope of medicine and having them be at the forefront of patient evaluation provides an opportunity to build their clinical decision-making skills. Additionally, within the ED, medical, nursing and allied health staff of varying levels of experience and expertise work alongside one another.[4] This allows learners to be exposed to an invaluable variety of lenses for clinical situations. Basic EM knowledge and skills learned throughout the clinical years provide a sound foundation for medical students, regardless of their intended career path.[5]

CHALLENGES

Despite the many advantages of education in the ED, there are perceived pitfalls that may challenge optimal and effective teaching and feedback experiences. Emergency physicians are constantly multi-tasking with an average of 10 interruptions per hour. The brisk pace and unpredictable variability in workload can limit extended case discussions and sit-down rounds which may impact teaching and feedback.[6] Additionally, educators are challenged to adapt to trainees coming from different educational levels and backgrounds with inconsistent longitudinal exposure. Pressures of teaching around the clock while maintaining tolerable patient wait times in a typically physically crowded space pose further hurdles.[7] Increasing ED volumes and overcrowding limit the available time of faculty and residents to engage in frequent, timely and substantive feedback. This in turn may lead residents to believe that training programs emphasize service over education.[8-9]

EFFECTIVE STRATEGIES

So, how can we overcome the challenges of education in the ED setting? In order to create noteworthy interventions for feedback and teaching, we must ask: What teaching qualities are most valuable in this environment and does feedback really matter? Previous research shows that effective teaching in medicine requires flexibility, energy, and commitment amidst a busy background of clinical care.[10] Thurgur et al surveyed medical students and residents in the ED to assess what learners want from their teachers. Learners

vocalized a preference for teachers who "give feedback," "take time" and "use the teachable moment." Students and residents surveyed were sympathetic to the challenges faced by their ED teachers and felt that providing the educators resources and methods for teaching in this busy setting would be beneficial.[11] Students further recognize feedback as a core component of medical education and identify it as a strong indicator of clerkship quality.[1] A study by Torre et al demonstrated that providing feedback in various forms was connected to students' perceptions of high quality teaching during their internal medicine rotation.[12] Feedback has been shown to improve clinical performance, clinician self-assessment accuracy, and patient satisfaction.[13-15]

PRECEPTOR MODEL

The answers to ensuring a robust educational environment in the ED therefore lie in high quality educators with tools to enhance learning with limited time, and to ensure effective feedback. There are many proposed tools to elevate the learning experience, but perhaps the most applicable to the ED setting is the One-minute-preceptor (OMP) model. The OMP incorporates the five-step microskills model of learner-centered clinical teaching initially described by Neher and colleagues.[16] This enables high impact clinical teaching alongside efficient and comprehensive patient care. Within this model, the educator uses a series of five steps to assess and teach the learner, and to provide directed feedback. The OMP begins with a specific patient presentation. In step 1, the learner is asked to commit to a direction, with the question often posed: What do you think is going on with this patient? In step 2, the learner is asked for supporting evidence for the differential diagnosis based on details from the history and physical, and asked to propose further diagnostics needed. Step 3 involves a moment for the educator to teach a specific point on the case presented. In step 4, the educator provides feedback on the learner's assessment of the patient and thet impact on the patient's care. Lastly, step 5 is an opportunity for the educator to correct any mistakes and direct the learner on suggested improvements. **Table 1**, adapted from Parrot et al, provides an example of the use of the OMP model with a common clinical scenario in our ED setting. Note that the microskills do not have to be used in order, and incorporation of some skills more than once may enhance the learning experience.[17]

In this scenario, a third-year medical student is presenting a 25-year-old female with right lower quadrant abdominal pain, vaginal spotting, nausea and emesis.

In this clinical scenario, the five-step microskills safely permits high-yield education in the acute setting. This model can be utilized by all physician and non-physician providers, promoting a collaborative teaching model and facilitates a team-based interdisciplinary approach to each patient. Arming our educators in the ED setting with this and similar tools will have a profound impact on learner experience and education.

Although the OMP model incorporates feedback into each patient encounter, providing feedback to medical students

Table 1. The five-step microskills model of clinical teaching.

Preceptor:	What do you think is going on with this patient?	Microskill #1: Get a commitment
Student:	I think that she may have appendicitis.	
Preceptor:	What makes you think that she has appendicitis?	Microskill #2: Probe for supporting evidence
Student:	She has right lower abdominal pain, no appetite and emesis for the past 24 hours. On exam her heart rate is elevated to 125 bpm and she has rebound and guarding on abdominal exam, worse in the right lower quadrant.	
Preceptor:	That is a good start. I am concerned about appendicitis as well. We also need to consider that she may be pregnant. It is important to consider pregnancy in all women of reporductive age. This patient's symptoms may also represent a ruptured ectopic pregnancy. What are the next steps for this patient?	Microskill #3: Teach general rules Microskill #1: Get a committment
Student:	I will find out if she has already had a pregnancy test performed. I think that we should send off a CBC, place an IV and consider a CT scan.	
Preceptor:	I agree, a CBC will be important to see if the patient is anemic or has an elevated WBC. Obtaining IV access in someone who may become more hemodynamically unstable is a very important initial step. We should also send off a creatinine in case we need to send the patient for a CT scan, and a type & screen in case the patient needs to go to the OR. We will need to determine if the patient is pregnant or not before we order a CT scan. We would like to avoid excessive radiation exposure during pregnancy if possible, and may be able to start with an ultrasound for diagnostic purposes. You can read more about diagnositc imaging guidelines during pregnancy in the ACOG committee opinion.	Microskill #4: Reinforce what was done right Microskill #3: Teach general rules Microskill #5: Correct mistakes

Adapted from Parrot, et al, Family Medicine, 2006

and residents in a variety of ways improves satisfaction with the educational experience.[12] Ideally, feedback is incorporated into medical student and resident rotations in a formal process at both mid-point and at the end of the rotation experience. These sessions benefit from being planned, and incorporates findings from multiple specific patient encounters. On a day-to-day basis in the ED setting, successful feedback takes place "on the fly." As a positive, this real-time feedback occurs very soon after a specific patient encounter and allows for the learner and educator to engage on three points: what went well, what could have gone better, and how to improve. A downside of this feedback experience is that many learners do not recognize that they are receiving feedback in these brief, unplanned sessions.[19]

So, how can this be improved? In a randomized, controlled study Yarris et al evaluated a feedback curriculum with training sessions for both faculty and residents in addition to a feedback card system designed to create specific, timely, face-to-face feedback. The card (**Table 2**) carried by the resident included areas for self and faculty evaluation and one targeted area for improvement. A reference was also provided to faculty on performance expectations for each level of training. The residents were given primary responsibility for initiating the feedback process and asked to turn in one card per shift for at least two-thirds of their shifts. A control group continued with their current method of feedback. The intervention was noted to significantly improve overall resident satisfaction with feedback. Additionally, significant improvement was noted with the overall quality, amount, and timeliness of feedback.[20] This strategy engages learners in feedback which can improve teaching perception and clinical performance. Implementing similar methods into our fast-paced learning environment has the potential to improve the learner's experience, reduce the perceived burden of service while maintaining an emphasis on education.

Table 2. Feedback Card

Date	
Resident	
Attending	
Resident Self- Evaluation	
What went well today?	
What can I improve?	
Faculty Evaluation	
Please discuss with the resident or medical student your impression of the strengths of their performance in the ED today and areas of improvement. Do you agree with their self-evaluation?	
One specific learning issue or suggestion for improvement	
Other comments	

Adapted from Yarris, et al, Academy Emergency Medicine, 2011

CONCLUSIONS

Academic medicine in the ED setting is unique. It is truly a melting pot of educators and learners from all backgrounds at various stages in their careers. This, coupled with a wide range of patient acuity, high clinical demands, and impressive breadth and depth of pathology, make the ED at times a challenging teaching and learning environment. However, while the ever changing landscape of patient care demands and growing educational needs are daunting, we believe that the above proposed strategies can be employed to overcome perceived barriers in education and feedback in our unique setting. The OMP model and feedback card system are both simple to remember, and easy to apply in the acute-care setting. In our women's only ED, all providers can employ these strategies to empower learners and create an optimal educational environment. In doing so, we embrace the challenge of providing excellent care to our patients while ensuring a positive educational experience for our future generation of providers.

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