Department of Health

Maternal Health

Report 2022-S-25 | July 2024

OFFICE OF THE NEW YORK STATE COMPTROLLER
Thomas P. DiNapoli, State Comptroller
Division of State Government Accountability

Audit Highlights

Objectives

To determine whether the Department of Health (DOH) has implemented recommendations with the goal of reducing maternal mortality and morbidity in New York State; and whether DOH is effectively monitoring related actions and outcomes to ensure rates of maternal mortality and morbidity are improving. The audit covered the period from January 2018 through December 2023.

About the Program

One key indicator of the overall health of a population is its occurrence of maternal mortality and morbidity. Maternal mortality refers to deaths of pregnant persons during pregnancy or within a year from the end of pregnancy. Morbidity refers to having a disease or a symptom of disease, or to the amount of disease within a population; whereas severe maternal morbidity (severe morbidity) is defined as unexpected outcomes of pregnancy, labor, or delivery that result in short- or long-term consequences to a person's health, including postpartum depression and any life-threatening medical complications or the need for life-saving interventions during delivery.

According to Centers for Disease Control and Prevention (CDC) 2020 data, the United States has a maternal death rate greater than almost every other high-income country, at 23.8 per 100,000 births —more than 2.5 times the rates of France and Canada and 3.5 times higher than the United Kingdom. There are also persistent racial and ethnic disparities in these deaths, with Black women dying nationally at a rate three times higher than White and Hispanic women; these disparities were exacerbated during the COVID-19 pandemic.[1]

New York has made progress in comparison to other states: once ranked 46th among other U.S. states in 2010, it climbed to 15th with a maternal mortality rate of 19.3 deaths per 100,000 live births for 2018 to 2020. However, despite this progress, Black women were still dying at a rate over four times higher than White women. Also, cesarean section rate is a significant factor in maternal deaths. According to CDC data, New York's cesarean section rate improved slightly from 34.1% in 2021 to 33.9% in 2022, but it is still higher than the national rate of 32.1% for both these years. According to a June 2023 U.S. Department of Health and Human Services (HHS) press release, nationally, severe morbidity cases are on the rise, increasing from 146.8 per 10,000 discharges in 2008 to 179.8 per 10,000 discharges in 2021—a 22% increase.

To address these alarming rates, New York established the Taskforce on Maternal Mortality and Disparate Racial Outcomes (Taskforce) in April 2018, which produced 10 recommendations to reduce maternal mortality rates and racial disparities. Two of these recommendations called for DOH to convene a statewide expert work group (Work Group) to optimize postpartum care and for New York State to establish a maternal mortality review board (Board). In 2019, Public Health Law Section 2509 officially established the Board and an advisory council on maternal mortality and morbidity. Generally, the Board is required to review all maternal deaths in New York State to determine cause and preventability; report findings, recommendations, and best practices to DOH's Commissioner; and issue a public report at least every 2 years. The report, released in April 2022, reviewed 2018 maternal deaths and produced an additional 14 recommendations. The recommendations required a collaboration between both public and private entities, with DOH being a main player in the majority

1 U.S. Government Accountability Office: Maternal health – outcomes worsened and disparities persisted during the pandemic, October 19, 2022

of the recommendations. Lastly, the Work Group ultimately issued four recommendations in January 2021.

New York State's 2019–2024 Prevention Agenda (Prevention Agenda) developed by the NYS Public Health and Health Planning Council and DOH is New York State's health improvement plan, the blueprint for State and local action to improve the health and well-being of all New Yorkers and to reduce health disparities for populations who experience them. One focus area in DOH's Prevention Agenda is maternal and women's health, including a goal to reduce maternal mortality and morbidity in New York and an objective to decrease the rate of severe morbidity.

Key Findings

While DOH has made progress in addressing the recommendations to improve maternal health in New York State, data from the CDC and DOH shows that maternal mortality and morbidity rates in New York State have not decreased since the Taskforce was established in 2018, and the maternal mortality rate has actually increased, along with increasing racial disparities statistics. We found DOH needs to do more to ensure that maternal mortality and morbidity rates decline. For example:

- DOH has not evaluated all of its maternal health programs and therefore can't measure whether its efforts have made an impact on improving maternal health.
- DOH does not collect severe morbidity data and has no analytic strategy to evaluate it, thus limiting its ability to effectuate change. HHS data shows that national severe morbidity cases have increased steadily since 2018.
- DOH conducted limited outreach with other agencies and private sector partners to understand their lack of participation in DOH maternal health programs. More robust outreach will likely increase participation of these programs and positively affect mortality and morbidity rates.

Key Recommendation

- Evaluate progress and impact on maternal health to assess the effectiveness of the programs aimed at improving maternal health outcomes. This should include but not be limited to the following:
  - Develop objectives, as appropriate, and implement monitoring and evaluation processes to assess the effectiveness of programs and projects aimed at maternal health outcomes.
  - Identify and analyze severe morbidity data and develop a strategy to address risks.
  - Increase outreach and collaboration efforts with birthing hospitals and other involved entities (such as providers and applicable agencies) to maximize participation in efforts to decrease maternal mortalities and morbidities.

Office of the New York State Comptroller
Division of State Government Accountability

July 30, 2024

James V. McDonald M.D., M.P.H.
Commissioner
Department of Health
Corning Tower Building
Empire State Plaza
Albany, NY 12237

Dear Dr. McDonald:

The Office of the State Comptroller is committed to helping State agencies, public authorities, and local government agencies manage their resources efficiently and effectively. By doing so, it provides accountability for the tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities, and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit entitled *Maternal Health*. This audit was performed pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

Division of State Government Accountability

Contents

Glossary of Terms

Term	Description	Identifier
DOH	Department of Health	*Auditee*
Advisory Council	Advisory Council on maternal mortality and morbidity	*Key Term*
Board	Maternal Mortality Review Board	*Key Term*
CDC	Centers for Disease Control and Prevention	*Federal Agency*
DOHMH	New York City Department of Health and Mental Hygiene	*City Agency*
HHS	U.S. Department of Health and Human Services	*Federal Agency*
Internal Control Standards	Office of the State Comptroller's *Standards for Internal Control in New York State Government*	*Key Term*
Law	Public Health Law Section 2509	*Law*
Maternal morbidity	Refers to having a disease or a symptom of disease, or to the amount of disease within a population	*Key Term*
Maternal mortality	Refers to deaths of pregnant persons during pregnancy or within a year from the end of pregnancy	*Key Term*
Perinatal Quality Collaborative	DOH's New York State Perinatal Quality Collaborative	*Key Term*
Prevention Agenda	New York State's 2019–2024 Prevention Agenda	*Key Term*
Severe morbidity	Severe maternal morbidity	*Key Term*
Taskforce	Taskforce on Maternal Mortality and Disparate Racial Outcomes	*Key Term*
Work Group	Statewide Expert Work Group	*Key Term*

Background

The Department of Health (DOH) serves to protect, improve, and promote the health, productivity, and well-being of all New Yorkers. Its work has never been more vital—or demanding—as in the wake of the COVID-19 pandemic, which imposed unprecedented health challenges on all New Yorkers. Perhaps most compelling has been its impact on the health of pregnant women.

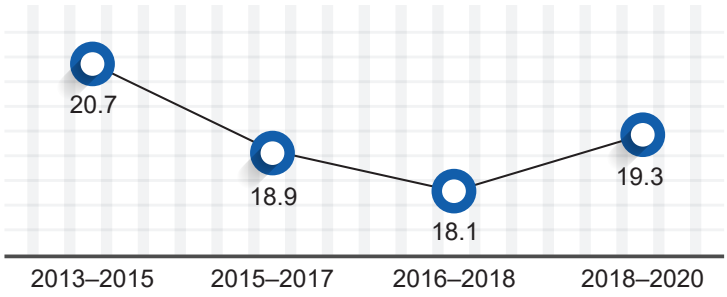
One key indicator of the overall health of a population is its occurrence of maternal mortality and morbidity.[2] Public Health Law Section 2509 (Law) defines maternal mortality as deaths of pregnant people during their pregnancy or within a year from the end of pregnancy. Research in the aftermath of COVID-19 has shown that infection among pregnant women placed them at higher risk for severe disease, including the need for hospitalization, intensive care unit monitoring, and mechanical ventilation.[3] These increased risks only amplified the perils to maternal health, which had contributed to rising maternal mortality rates both nationally and statewide. For example:

More than 80% of U.S. maternal deaths are preventable, CDC study shows.

- Among high-income countries, the United States has the highest maternal mortality rate (32.9 per 100,000 live births for 2021, up from 23.8 in 2020 and 20.1 in 2019)[4] despite spending the most on health care.
- The U.S. maternal mortality rate in 2020 was about three times the estimated rates of some other high-income countries, including Australia, Switzerland, Sweden, and Germany, which all hovered between one and seven deaths per 100,000 in 2020.[5]

Following its launch of the Maternal Mortality Review Initiative in 2010, New York made progress toward closing the gap, reporting a 2020 average of 19.3 deaths per 100,000 live births.[6] Despite its ambition to decrease the risk of maternal death, however, data from the latest New York State Report on Pregnancy-Associated Deaths shows progress has stalled. See Figure 1.

Figure 1 – Maternal Mortality in New York State, 2013–2020
(Number of Deaths per 100,000 Live Births)



2 New York State Expert Panel on Postpartum Care: Report – January 2021
3 CDC: COVID-19 – special clinical considerations
4 CDC: Maternal mortality rates in the United States, 2021
5 OEDC.*Stat*: Health status – maternal and infant mortality (as of June 10, 2024)
6 New York State Report on Pregnancy-Associated Deaths in 2018-2020

These deaths are significant not only because, in most cases, the causes are preventable and treatable but also for the racial divide that exists within those numbers.

- DOH's last two reports on pregnancy-associated deaths found that, respectively, 78% and 73.6% of pregnancy-related deaths were preventable, including 100% preventable for many of the conditions that lead to pregnancy-related death.
- Nationally, in 2021, the maternal mortality rate for Black women was 69.9 per 100,000 live births—2.6 times higher than for White women and 2.5 times higher than for Hispanic women.[7]
- In New York State, in 2020, the pregnancy-related mortality rate for Black women was 54.7 deaths per 100,000 live births—almost five times the rate for White women (11.2 deaths per 100,000 live births).[8]

The top causes of maternal mortality are cardiac and coronary conditions, the leading cause of death among Black women, and mental health conditions, largely affecting White and Hispanic women, as well as obstetric hemorrhage, infection, cardiomyopathy, and hypertensive disorders of pregnancy.

Severe morbidity—unexpected outcomes of pregnancy, labor, or delivery that result in significant short- or long-term health consequences, such as postpartum depression, cardiac arrest, uterine rupture, and hemorrhage—are important risk factors for maternal death,[9] as is cesarean section. This procedure presents a significantly increased risk of severe postpartum complications. Based on Centers for Disease Control and Prevention (CDC) data, New York's cesarean section rate improved slightly from 34.1% in 2021 to 33.9% in 2022, but it is still higher than the national rate of 32.1% for both these years.

In New York State in 2018, the overall severe morbidity rate for Black women was 2.3 times higher than for White women.

Similar to maternal mortality, severe morbidity has been steadily increasing nationally and statewide in recent years and rates are consistently higher for Black women. According to a June 2023 press release from the U.S. Department of Health and Human Services (HHS), severe morbidity cases have increased from 146.8 per 10,000 discharges in 2008 to 179.8 per 10,000 discharges in 2021—a 22% increase.

While predispositions to underlying health conditions, such as hypertension, cardiovascular disease, diabetes, and obesity, are significant factors in the disparity of maternal mortality and morbidity rates, societal (e.g., historical discrimination and marginalization), racial (e.g., implicit bias within the health care system), and economic (e.g., availability of/access to health care) factors, creating barriers to essential quality maternal health care, are also to blame.[10]

7 CDC: Maternal mortality rates in the United States, 2021

8 New York State Report on Pregnancy-Associated Deaths in 2018-2020

9 NYS Prevention Agenda: Promote Healthy Women, Infants, and Children Action Plan, June 2023

10 Njoku A et al: Listen to the whispers before they become screams – addressing Black maternal morbidity and mortality in the United States. Healthcare (Basel), February 2023

The State's initial steps toward addressing maternal mortality began in 2010, with DOH's Maternal Mortality Review Initiative. Stagnant progress nationwide, however, ignited a renewed call for action within the State. In April 2018, New York State launched a multi-pronged effort to reduce maternal mortality and racial disparities, starting with a Taskforce on Maternal Mortality and Disparate Racial Outcomes (Taskforce) to identify strategies for changing the landscape of maternal mortality. The Taskforce's 10 recommendations included creating a racial bias training and education program for hospitals, investing in community health worker programs, and creating a data warehouse on perinatal outcomes. One of the 10 Taskforce recommendations led to a Statewide Expert Work Group (Work Group), tasked with identifying strategies to optimize postpartum care. Efforts to carry out a second recommendation culminated in two maternal mortality review boards responsible for analyzing maternal deaths in New York City (NYC) and elsewhere in the State —DOH's Maternal Mortality Review Board (Board) and the NYC Department of Health and Mental Hygiene's (DOHMH) Maternal Mortality and Morbidity Review Committee—with a report of results and recommendations issued at least every 2 years.

New York State's initiative resulted in a total of 28 recommendations (see Exhibit):

- 10 issued by the Taskforce in March 2019
- 4 issued by the Work Group in January 2021
- 14 issued by the Board in April 2022

The majority of the 14 recommendations issued by the Board required collaboration between DOH and other public and private entities, including communities, hospitals, maternal health care providers, and other agencies such as the Office of Mental Health, Office of Addiction Services and Supports, Office of Children and Family Services, and the State University of New York system. The recommendations cover a comprehensive range of topics, addressing, for example, access to health care including telehealth; improved health care coverage; mortality data collection; provider education; postpartum care; medical procedure protocols; risk screening; collaborative chronic care management; emergency room care; and home visits.

In addition, the New York State Prevention Agenda for 2019–2024 (Prevention Agenda), co-developed by the New York State Public Health and Health Planning Council and DOH, outlines the State's strategy for improving the health and well-being of all New Yorkers and reducing health disparities. Maternal and women's health is identified as an area of focus, with a goal of reducing maternal mortality and morbidity, including severe morbidity.

The following timeline details steps taken to address maternal health and New York State's ranking on maternal health.

Timeline of Events for Maternal Health

NYS ranks **46th** in nation for maternal mortality

2008–2010

24.4 maternal deaths per 100,000 live births

2010

DOH established the Maternal Mortality Review Initiative to review all maternal deaths in NYS and develop strategies to decrease the risk of maternal death

NYS ranks **30th** in nation for maternal mortality

2014–2016

18.9 maternal deaths per 100,000 live births

2016

NYS Maternal Mortality Review Report for 2006-2008 deaths is published

2017

NYS Maternal Mortality Review Report for 2012-2013 deaths is published

NYS ranks **23rd** in nation for maternal mortality

2016–2018

18.1 maternal deaths per 100,000 live births

2018

In **April**, the Governor created and launched the Taskforce on Maternal Mortality and Disparate Racial Outcomes as part of a multi-pronged effort to reduce maternal mortality and racial disparities

! In NYS, Black women are over **four times more likely to die** in childbirth than White women

2019

In **March**, the Taskforce on Maternal Mortality and Disparate Racial Outcomes publishes its report and 10 recommendations to the Governor

In **August**, Public Health Law Section 2509 is enacted, establishing a maternal mortality review board for NYS and NYC

In **December,** DOH, in partnership with the American College of Obstetricians and Gynecologists District II, convened a Statewide Expert Work Group—one of the 10 recommendations of the Taskforce

NYS ranks **15th** in nation for maternal mortality

2018–2020

19.3 maternal deaths per 100,000 live births

2020

NYS Maternal Mortality Review Report for 2014 deaths is published

2021

Statewide Expert Work Group to Optimize Postpartum Care in NYS publishes its report with four recommendations

2022

In **April,** the Board published New York State Report on Pregnancy-Associated Deaths in 2018 and 14 recommendations

2024

FY 2025 NYS Executive Budget proposes several initiatives targeted at reducing maternal mortality and improving maternal mental health

In **March**, the New York State Report on Pregnancy-Associated Deaths in 2018-2020 and the Maternal Mortality and Morbidity Advisory Council Report 2023 are published

NYS Maternal Mortality Review Report for 2018-2020 deaths is published

Audit Findings and Recommendations

DOH has made progress in addressing Taskforce, Board, and Work Group recommendations to improve maternal health in New York State. Yet, despite these inroads, data from the CDC shows that maternal mortality and morbidity rates in New York State have not decreased since the Taskforce was established in 2018, and the maternal mortality rate has actually increased. Furthermore, despite an objective of its Prevention Agenda to decrease the rate of severe morbidity, DOH has no severe morbidity data and has not dedicated any resources to this area until recently, and thus is not monitoring this issue or making any progress to improve this area.

DOH officials stated they face certain challenges in implementing the recommendations. Many of the recommendations require DOH's collaboration with numerous other external entities—public agencies, private organizations, and community partners—from a cross-section of disciplines. Cooperation from these other entities is essential in order for the State to make the necessary strides. DOH officials also indicated their efforts in implementing the recommendations were set back by the need to allocate resources to address the COVID-19 pandemic.

These issues notwithstanding, as evidenced by New York's worsening maternal mortality rate, more work is needed to reverse the trend. This enormous emergent need, along with a persistent underinvestment in public health over the last decade, has weakened DOH's efficiency and effectiveness on behalf of the State's maternal health initiative.

We identified opportunities for DOH to improve its oversight and better guide its partners toward the common goal of improving maternal health issues more effectively while addressing the recommendations of the Taskforce, Board, and Work Group. Better data analysis, along with more outreach to its partners, may provide DOH with more accurate and complete information to measure whether its efforts have made an impact on improving maternal health and assist DOH in determining how to move forward.

Maternal Health

Maternal Mortality

DOH needs to do more to ensure it will meet the goal of lowering maternal mortalities across New York State. From 2018, when the Taskforce was implemented, to 2021, CDC estimates indicate the maternal mortality rates in New York State may have increased by as much as 33%.[11]

DOH has progressed in addressing the recommendations to combat maternal mortality issues in New York. In some instances, the actions taken predated the recommendations. For example:

- The Board recommended that hospitals should ensure anesthesiologists and obstetricians follow a standard protocol for massive transfusion in hemorrhage

11 CDC/National Center for Health Statistics: Maternal deaths and mortality rates by state, 2018-2021

during pregnancy, delivery, and postpartum period. This issue was examined by DOH's New York State Perinatal Quality Collaborative's (Perinatal Quality Collaborative) Obstetric Hemorrhage Project. This project ran from November 2017 through June 2021, with one of its goals to reduce maternal mortality statewide by translating evidence-based guidelines into clinical practice to improve the assessment for and management of obstetric hemorrhage.

- The Board also recommended improved access to telehealth. On a pilot basis, DOH worked to temporarily obtain payment parity for telehealth services—a program running through April 2026. It is also developing regulations to establish audio-only telehealth services, but as of October 2023 these have not been finalized.
- To address a Board recommendation to engage community resources to help support high-risk mothers, DOH is investing approximately $14 million from 2022 through 2027 to fund 26 Perinatal and Infant Community Health Collaboratives. However, DOH officials stated that determining a connection between funding and patient outcomes is not feasible.

Additionally, two recommendations, from the Board and the Taskforce, highlighted the need for New York to address disparity issues in regard to maternal health:

- Develop a systemic approach to reduce structural racism.
- Design and implement a comprehensive training and education program for hospitals on implicit racial bias.

While DOH has taken action to implement these recommendations, in New York State, the pregnancy-related mortality rate for Black women was 54.7 deaths per 100,000 live births—almost five times the rate for White women (11.2 deaths per 100,000 live births) in 2020.[12] Moreover, while DOH has collected this information, it does little to utilize it. DOH needs to perform comprehensive data analysis of this information, along with additional outreach to its partners, to provide DOH with more accurate and complete information to measure whether its efforts have made an impact on improving maternal health and assist DOH in determining how to move forward.

Maternal Morbidity

DOH has not done enough to ensure it will meet the goals of lowering severe morbidities happening across New York State. Minority women again are more vulnerable in this area. According to HHS, severe morbidity cases are on the rise, climbing from 146.8 per 10,000 discharges in 2008 to 179.8 per 10,000 discharges in 2021—a 22% increase.

Given the significance of this, it would be prudent for DOH to closely monitor the trend in New York State and take necessary actions to reverse it. However, we found DOH does not currently track severe morbidity cases despite officials acknowledging the need for an analytic strategy to monitor these cases. Officials stated they are

12 New York State Report on Pregnancy-Associated Deaths in 2018-2020

currently in the early stages of developing a statewide surveillance program. We note that severe morbidity is included in DOH's Prevention Agenda, with an objective to decrease severe morbidity by 6% to 79.3 per 10,000 delivery hospitalizations. However, without monitoring severe morbidity cases, DOH cannot determine whether its Prevention Agenda goals will be reached or if the actions it is taking to reach its goals are effective. California, which has a maternal mortality rate about half that of New York, has a data dashboard to track severe morbidity trends. While there are many factors that impact the difference in each state's rate, dashboards can improve decision-making and performance tracking.

Further, during our review of CDC standards, we determined that DOH did not use appropriate standards and data to set its goals for the morbidity program. Instead, it used data that was calculated using the previous CDC criteria rather than the current standard that was updated in 2015—more than 3 years before the approval of DOH's Prevention Agenda. After auditors brought this to DOH's attention, DOH corrected its miscalculation, which lowered the rate goal to 79.3 per 10,000 delivery hospitalizations from 202 per 10,000, and acknowledged the need for current data in order to set appropriate goals. Although the target date for DOH to achieve its goal is less than a year away, it still has not developed a tracking system for severe morbidity cases.

DOH did implement some changes and upgrades, including developing new projects, to address the various recommendations related to morbidity. However, DOH can improve its oversight to ensure recommendations are effectively implemented and its own goals are reached. For example, DOH's Perinatal Quality Collaborative developed a toolkit, which was issued in September 2022, to assist with improving hospital teams' readiness, assessment, and response to obstetric hemorrhage. According to a February 2023 survey by DOH:

- Only 5% of birthing hospitals have implemented the Board's recommendation regarding a standard protocol for massive transfusion in hemorrhage during pregnancy, delivery, and postpartum period, and 94% are working on implementing it.
- 13% of birthing hospitals have implemented universal systems for quantification of blood loss and anesthesia involvement during delivery and postpartum period, and 86% are working on implementing it.
- Approximately 1% of hospitals have not started work on implementing either.

However, while DOH monitors whether facilities have the protocol in place, it does not conduct any tracking on how the facility is implementing it. According to DOH officials, facilities are responsible for seeing that the protocol is appropriate and followed. DOH also does not monitor or track the effect that implementation of these recommendations has had on obstetric hemorrhage. In its recent reports, it asked for the Legislature to require hospitals to participate in the projects.

Morbidities also include mental health issues, such as depression, which DOH identified in its Prevention Agenda as the most common morbidity among postpartum women. The Board recommended DOH and its partners develop an Issue Brief

on the importance of involvement of multi-disciplinary specialists in chronic care management during antenatal, intrapartum, and postpartum care. Although DOH's Board developed and disseminated an Issue Brief, S*potlight on Perinatal Mental Health*, officials stated they do not know whether providers and hospitals have read the Issue Brief or have taken steps to implement the recommendations in it.

DOH officials pointed to the fact that they are not required to review severe morbidity cases; rather, the Law allows the Board to review cases at its discretion. They also stated that DOH does not have the resources or funding to review all cases of severe morbidity as they are 65 to 95 times more common than maternal mortalities, but acknowledged that an aggregate analysis would provide information for action. However, as noted previously, DOH has not developed a strategy to monitor this area.

DOH officials also stated they do not have the enforcement authority to require birthing hospitals to participate in DOH's severe morbidity initiatives, but DOH continues throughout its projects to provide educational webinars to those not participating and, through its Regional Perinatal Centers, encourage participation. DOH also leads the Perinatal Quality Collaborative, which encompasses multiple projects to improve maternal health issues. According to DOH, participation in these projects varies. Yet, when we conducted a survey of 20 of the 123 birthing hospitals in the State, we found that DOH conducted little follow-up with non-participants to understand their decision and obtain buy-in.

DOH officials disagreed, stating staff contact each birthing hospital that is not currently participating in one of DOH's Perinatal Quality Collaborative projects to ensure they are aware of the project and the benefits of participation and to understand why they choose not to participate. However, based on our survey, there are additional opportunities to improve participation.

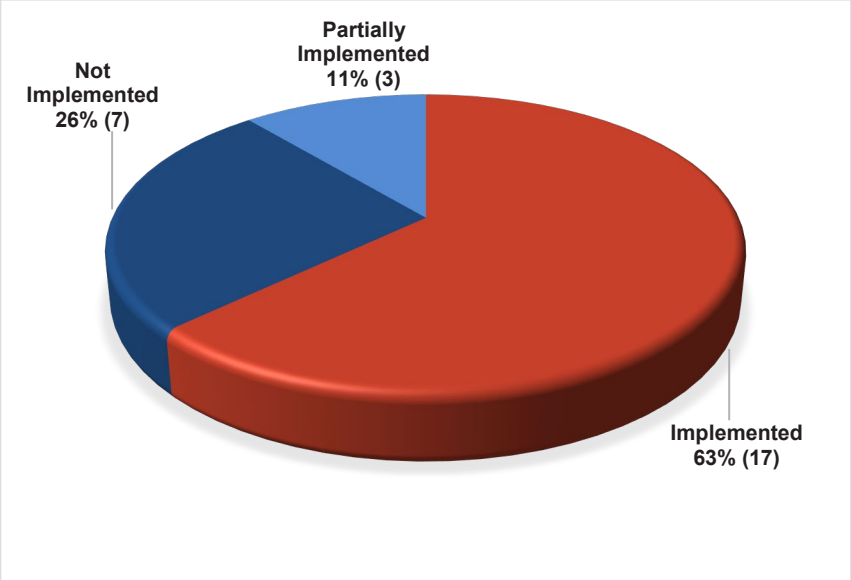
Taskforce, Work Group, and Board Recommendations

Implementation Status of Recommendations

To tackle the maternal health crisis, the Taskforce, Work Group, and Board developed 28 recommendations, of which one (Create a State University of New York scholarship program for midwives to address needed diversity) did not require DOH resources. We reviewed the remaining 27 recommendations (many of which required the participation of other entities) to determine the extent to which they were implemented and their outcomes monitored and measured, and to understand the effectiveness of the actions taken to implement them.

DOH has made progress in implementing many of the recommendations (17), as displayed in Figure 2. (See Exhibit for a complete listing of recommendations and their implementation status.)

Figure 2 – Implementation Status of Recommendations



Further, for the recommendations that DOH has implemented, it has set measurable objectives and is monitoring them in most instances. However, there is room for improvement. DOH has not evaluated the overall effectiveness of the recommendations and therefore can't measure whether its efforts have had a positive impact on maternal health or why the rates aren't improving.

According to DOH officials, each set of recommendations represents substantial system changes, which require time and resources to implement. Regarding the Board's recommendations in particular, DOH officials pointed out the relatively short 18-month time frame involved, from when the recommendations were issued to when we completed audit fieldwork.

In addition to significant systems changes, DOH officials highlighted the toll that the COVID-19 pandemic took on DOH's resources and noted that DOH received no additional funding to address the recommendations. Nevertheless, we identified opportunities for DOH to make further progress toward its goals. DOH officials also stated that, without the progress they have made regarding the recommendations, the rates of maternal mortality in New York State over the past few years could have been worse, yet they could not provide any definitive documentation for this assertion.

While DOH has made progress in addressing the recommendations, about 37% (10 of the 27 recommendations) are either not implemented (seven) or partially implemented (three). These recommendations include important actions such as:

- Promoting universal birth preparedness and postpartum continuity of care.
- Implementing a maternity medical home model of care and convening a multi-stakeholder group to develop standard guidance about additional

psychosocial services and coordination of care, including trauma and social determinants of health.

- Creating competency-based curricula for providers as well as medical and nursing schools.
- Ensuring that all pregnant individuals have seamless health insurance coverage that includes comprehensive preventive and primary care, including mental health and substance use services, without disruption or delay for 1 year after giving birth.

In addition, the Taskforce recommended the State establish a comprehensive data warehouse on perinatal outcomes to improve quality. The Taskforce noted that a robust infrastructure to provide hospitals with timely access to perinatal quality measures stratified by race, ethnicity, and insurance status is central to improving maternal outcomes as well as addressing disparities. DOH officials began working on a warehouse at the end of 2019, but the effort was paused due to the COVID-19 public health emergency. DOH resumed work in 2022, but there is currently no time frame for completion.

Additionally, both the Board and Work Group recommended payment parity for telehealth services to promote increased access to telehealth services. DOH piloted a program in April 2022 requiring health plans to reimburse for telehealth services on the same basis and the same rate as in-person services for 2 years. However, this program is set to expire in April 2026.

While DOH does not have the authority to effect payment parity on a permanent basis, DOH officials did not indicate any plans to provide additional temporary solutions in the meantime or any actions they've taken to work with their partners toward this end.

While we recognize the progress DOH has made since the recommendations were issued, much of which occurred during the pandemic, we maintain that more work needs to be done to implement recommendations and make the necessary advances toward improved maternal health as efficiently and effectively as possible, as evidenced by the rising mortality and morbidity rates.

Oversight of Recommendations

For the 20 recommendations that DOH implemented or partially implemented, we assessed them in terms of three key elements of the Office of the State Comptroller's *Standards for Internal Control in New York State Government* (Internal Control Standards): measurable objectives, monitoring, and outreach to external stakeholders.

Measurable Objectives

Measurable objectives are stated in a quantitative or qualitative form that permits reasonably consistent assessment. Monitoring is the ongoing evaluation of internal control components to ascertain whether they are present and functioning.

Monitoring activities should include a review of data, including from external sources, that would allow management to determine whether the organization is fulfilling its mission. In this case, outreach to partners allows DOH to better monitor the recommendations.

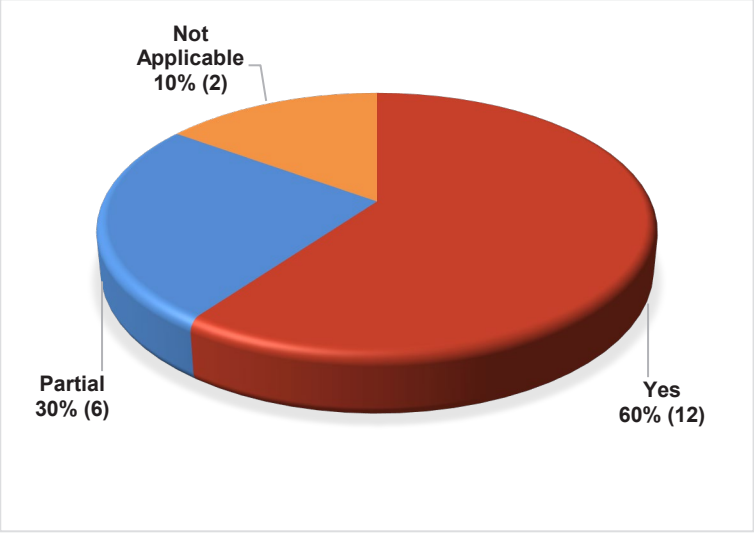
For two of the 20 recommendations, DOH developed objectives that measured part of the recommendation. For the remaining 18, either DOH established measurable objectives (15) or an established objective was not required (three)—for example, the Taskforce recommendation to establish a statewide maternal mortality review board in statute.

DOH officials stated that, as they continue to implement recommendations, they will ensure the same level of comprehensive measurable objectives are developed to evaluate the progress and impact of the work and make evidence-informed decisions.

Monitoring

Two of the 20 recommendations, including the Taskforce recommendation to convene a statewide expert work group to optimize postpartum care, did not require monitoring. For the remaining 18, we found DOH was fully monitoring 12 and only partially monitoring six recommendations, as shown in Figure 3.

Figure 3 – DOH Recommendation Monitoring



These recommendations included important actions such as:

- Hospitals should ensure that anesthesiologists and obstetricians follow a standard protocol for massive transfusion in hemorrhage during pregnancy, delivery, and postpartum period.
- All facilities should implement universal systems for quantification of blood loss and anesthesia involvement during delivery and postpartum.

- Obstetricians and other providers should utilize a multi-disciplinary approach for collaborative chronic care management of obstetrical patients including the postpartum period.

Outreach to External Stakeholders

Addressing many of the recommendations requires DOH to reach out to health care facilities and providers with informational material as well as projects and programs related to maternal health issues. DOH officials stated they do not have authority to enforce implementation by hospitals or private practices. However, the Board, under DOH's purview, developed and published the recommendations as part of its biennial report to the Commissioner of Health, and DOH is not restricted from obtaining information to determine whether hospitals are implementing recommendations. While DOH has conducted some outreach, it does not track whether the facilities and providers are reading the information or using it to change their practices or engaging in the projects and programs. Therefore, DOH cannot have a clear understanding of why rates are not declining or changing or what more could be done to improve them.

To determine the extent of DOH's outreach efforts to understand why hospitals did not participate in various maternal mortality prevention programs and trainings, including the New York State Obstetric Hemorrhage Project and Birth Equity Improvement Project, we administered a survey to a judgmental sample of 20 of the 123 birthing hospitals in the State. Of the 20 hospitals we surveyed, 12 responded. Seven of the 12 hospitals (58%) indicated DOH did not reach out to them to find out why they didn't participate in programs and projects DOH developed to improve maternal health. Of the remaining five hospitals, only one expressed certainty that DOH reached out regarding their lack of participation in a program; the other four hospitals were uncertain.

Further, in February 2023, DOH officials also sent a survey to the current 120 birthing hospitals to determine the implementation status of six of the Board's recommendations that involved health care facilities and providers. According to DOH officials, 118 birthing hospitals indicated they were making progress toward implementing these key recommendations.

Although DOH officials disagreed with our findings about the lack of sufficient effort in monitoring, they agreed they do not know how many facilities and providers have read the Issue Brief or have used the information to change practice. However, they also noted that they do not have authority to require hospitals or private practices to implement changes. Nevertheless, we maintain that more could be done to monitor efforts and measure the impact of the recommendations, as this information would allow DOH to improve the effectiveness of the program.

We note that, in March 2024, after our audit work had concluded, DOH published its biennial report, New York State Report on Pregnancy-Associated Deaths in 2018-2020. The report highlighted similar findings as the previous biennial report (2016-2018):

- Pregnancy-related deaths were 18.5 per 100,000 live births, representing a slight increase from the last report (18.1 per 100,000) and from 2004 (also 18.1 per 100,000).
- Black, non-Hispanic women had a pregnancy-related mortality ratio five times higher than White, non-Hispanic women.
- 73.6% of pregnancy-related deaths were preventable.
- The pregnancy-related mortality ratio for cesarean section was 3.1 times that for vaginal delivery.

The report contains 18 key recommendations proposed by the Board. Of these, many were recommendations from the previous report and are also emphasized in our audit report. We found that DOH is not monitoring recommendation actions and outcomes to determine their effectiveness in reducing maternal mortality and morbidity—a finding that is supported by the lack of improvement in the pregnancy-related death rate over the past 20 years.

The Board's latest report emphasizes the need for hospitals and private entities to implement the programs and tools that DOH put in place to improve maternal health issues, including asking for legislative requirements for program participation and funding to those that participate. However, there is no recommendation to address the need to analyze these projects and tools to determine their effectiveness in lowering the pregnancy-related death rate and addressing other related factors such as racial disparities.

Additionally, in March 2024, the Advisory Council released its report on maternal mortality and morbidity. The report's findings were based on the review of pregnancy-associated deaths in 2018 (issued in 2022) and mimicked the findings and recommendations of the 2018 report and the most recent version of that report. These findings included requesting legislative requirements for participation, coordination, and funding. Yet again, there is no recommendation to analyze the maternal and morbidity rates for effectiveness of the recommendations.

Recommendation

1. Evaluate progress and impact on maternal health to assess the effectiveness of the programs aimed at improving maternal health outcomes. This should include but not be limited to the following:
    - Develop objectives, as appropriate, and implement monitoring and evaluation processes to assess the effectiveness of programs and projects aimed at maternal health outcomes.
    - Identify and analyze severe morbidity data and develop a strategy to address risks.
    - Increase outreach and collaboration efforts with birthing hospitals and other involved entities (such as providers and applicable agencies) to maximize participation in efforts to decrease maternal mortalities and morbidities.

Audit Scope, Objectives, and Methodology

The objectives of our audit were to determine whether DOH has implemented recommendations with the goal of reducing maternal mortality and morbidity in New York State; and whether DOH is effectively monitoring related actions and outcomes to ensure rates of maternal mortality and morbidity are improving. Our audit covered the period from January 2018 through December 2023.

To accomplish our objectives and assess related internal controls, we reviewed relevant sections of the State's Public Health Law and DOH policies and procedures, interviewed DOH officials and employees, and examined DOH records. We also reviewed various DOH publications and Board meeting minutes.

We used a non-statistical sampling approach to provide conclusions on our audit objectives and to test internal controls and compliance. Because we used non-statistical sampling, we cannot project the results of each sample to the respective populations. To review monitoring of birthing hospitals, we judgmentally selected a sample of 20 of 123 hospitals based on their participation in DOH programs related to maternal health. However, only 12 hospitals responded. We used these responses to determine whether DOH was following up on hospitals that weren't participating in the various programs.

We relied on data obtained from the CDC, which is recognized as an appropriate source, and used this data for widely accepted purposes. Therefore, this data is sufficiently reliable for the purposes of this report without requiring additional testing.

Statutory Requirements

Authority

The audit was performed pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

We conducted our performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds, and other payments. These duties may be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our professional judgment, these duties do not affect our ability to conduct this independent performance audit of DOH's oversight of maternal health.

Reporting Requirements

We provided a draft copy of this report to DOH officials for their review and formal written comments. We considered their response in preparing this final report and have included it in its entirety at the end of the report. DOH officials agreed with our recommendation and indicated actions they would take to implement it.

Within 180 days of the final release of this report, as required by Section 170 of the Executive Law, the Commissioner of Health shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendation contained herein, and where the recommendation was not implemented, the reasons why.

Exhibit

Recommendations	Status	Monitoring
Taskforce		
1. Establish a statewide maternal mortality review board in statute.	Implemented	N/A
2. Design and implement a comprehensive training and education program for hospitals on implicit racial bias.	Implemented	Yes
3. Establish a comprehensive data warehouse on perinatal outcomes to improve quality.	Not Implemented	N/A
4. Provide equitable reimbursement to midwives.	Implemented	Yes
5. Expand and enhance community health worker services in NYS.	Implemented	Yes
6. Create a State University of New York scholarship program for midwives to address needed diversity.	N/A	—
7. Create competency-based curricula for providers as well as medical and nursing schools.	Not Implemented	No
8. Establish an educational loan forgiveness program for providers who are underrepresented in medicine and who intend to practice women's health care services.	Implemented	Yes
9. Convene a statewide expert work group to optimize postpartum care in NYS.	Implemented	N/A
10. Promote universal birth preparedness and postpartum continuity of care.	Not Implemented	N/A
Work Group		
1. Ensure that all birthing people have seamless health insurance coverage that includes comprehensive preventive and primary care, including mental health and substance use services, without disruption or delay, for 1 year after giving birth.	Partially Implemented	Yes
2. Provide access to essential wraparound and care coordination services to all birthing people in NYS through "Stress-Free Zones" and/or insurance coverage benefits.	Implemented	Yes
3. Payment parity for telehealth services to promote increased access to postpartum visits.	Partially Implemented	Yes
4. Enhanced Medicaid reimbursement for the global fee for vaginal deliveries.	Not Implemented	N/A
Board		
1. Hospitals should implement the AIM bundle to reduce cesarean delivery rates.	Implemented	Yes
2. Hospitals should ensure that anesthesiologists and obstetricians follow a standard protocol for massive transfusion in hemorrhage during pregnancy, delivery, and postpartum period.	Implemented	Partial
3. All facilities should implement screening for venous thromboembolism and chemoprophylaxis during intrapartum and postpartum care.	Implemented	Partial
4. All facilities should implement universal systems for quantification of blood loss and anesthesia involvement during delivery and postpartum.	Implemented	Partial
5. DOH, ACOG DII, and partners should develop a cardiac bundle to assist with provider education.	Not Implemented	N/A
6. DOH, ACOG DII, and partners should develop an Issue Brief on the importance of involvement of multi-disciplinary specialists in chronic care management during antenatal, intrapartum, and postpartum care.	Implemented	Partial

7. Obstetricians and other providers should utilize a multi-disciplinary approach for collaborative chronic care management of obstetrical patients including the postpartum period.	Implemented	Partial
8. The Office of Mental Health, ACOG DII, and partners should develop materials to educate providers on behavioral health evaluation, treatment, and understanding of patient barriers to seeking care.	Implemented	Yes
9. Obstetrical providers and hospitals should engage community resources during prenatal and hospital discharge planning (e.g., doula, visiting nurses, community health workers/patient navigators, telehealth, and remote monitoring) to help support and link high-risk mothers with chronic conditions and difficult access (e.g., rural areas) to follow-up care and community resources.	Implemented	Partial
10. DOH should implement a maternity medical home model of care and convene a multi-stakeholder group to develop standard guidance about additional psychosocial services and coordination of care, which includes trauma and social determinants of health.	Not Implemented	N/A
11. DOH and partners should develop a systemic approach to reduce structural racism.	Implemented	Yes
12. DOH should expand Medicaid coverage to include 1 year postpartum.	Implemented	Yes
13. DOH, ACOG DII, and partners should develop an emergency room bundle for the care of pregnant women.	Not Implemented	N/A
14. NYS should offer all families at least one home visit from a nurse or paraprofessional within 2 weeks postpartum to educate patients and families about signs and symptoms of potential complications.	Partially Implemented	Yes

N/A: not applicable; AIM: Alliance for Innovation on Maternal Health; ACOG DII: American College of Obstetricians and Gynecologists District II

Agency Comments

NEW YORK STATE OF OPPORTUNITY. Department of Health

KATHY HOCHUL
Governor

JAMES V. McDONALD, M.D., M.P.H.
Commissioner

JOHANNE E. MORNE, M.S.
Executive Deputy Commissioner

June 6, 2024

Nadine Morrell, Audit Director
Office of the State Comptroller
Division of State Government Accountability
110 State Street – 11th Floor
Albany, New York 12236-0001

Dear Nadine Morrell:

Enclosed are the Department of Health's comments on the Office of the State Comptroller's Draft Audit Report 2022-S-25 entitled, "Maternal Health."

Thank you for the opportunity to comment.

Sincerely,

Johanne E. Morne

Johanne E. Morne, M.S.
Executive Deputy Commissioner

Enclosure

cc: Melissa Fiore
Michael Atwood

Empire State Plaza, Corning Tower, Albany, NY 12237 | health.ny.gov

Department of Health
Comments on the
Office of the State Comptroller's
Draft Audit Report 2022-S-25 entitled,
"Maternal Health"

The following are the Department of Health's (Department) comments in response to the Office of the State Comptroller's (OSC) Draft Audit Report 2022-S-25 entitled, "Maternal Health."

Recommendation #1

Evaluate progress and impact on maternal health to assess the effectiveness of the programs aimed at improving maternal health outcomes. This should include but not be limited to the following:

- Develop objectives, as appropriate, and implement monitoring and evaluation processes to assess the effectiveness of programs and projects aimed at maternal health outcomes.

- Identify and analyze severe morbidity data and develop a strategy to address risks.

- Increase outreach and collaboration efforts with birthing hospitals and other involved entities (such as providers and applicable agencies) to maximize participation in efforts to decrease maternal mortalities and morbidities.

Response #1

Bullet 1

The Department agrees that having objectives and implementing monitoring and evaluation processes to assess the effectiveness of programs and projects is critical. The Department integrates objectives as well as monitoring and evaluation toward those objectives in its state-funded or federally-funded programs and projects aimed at maternal health outcomes. Programs and projects are managed by multidisciplinary teams of staff with expertise in clinical care, statistics, epidemiology, and program management.

For example, one of the state's core programs addressing maternal health outcomes is the NYS Perinatal Quality Collaborative (NYSPQC). The NYSPQC is voluntary for birthing facilities (hospitals and birthing centers), so not all will agree to participate. Currently, the Department engages with 60-75% of birthing facilities (hospitals and birthing centers) for any project. The NYSPQC implements an evidence-based or informed quality improvement framework to improve quality of care. Projects have focused on issues of significant clinical concern. Prior successful NYSPQC projects have focused on reducing hemorrhage and changing the practice of scheduling medically necessary cesarian births. The current NYSPQC project being implemented is addressing systemic racism and its impact on care and patients' reported experiences. For this project, there are two outcome measures, seven structural measures, four process measures, and two balancing measures. Data are collected, reviewed, and shared back to participating hospitals monthly.

Another example is the state's home visiting programs, which provide support for people who are pregnant, giving birth, or postpartum and their infants. The Department manages two programs: the Nurse Family Partnership and the Perinatal and Infant Community Health Collaborative. These programs have data-driven objectives supported by data systems in which locally-funded programs enter information. These data are evaluated and shared back with programs to monitor progress toward improving maternal outcomes.

Bullet 2

The Department agrees that identifying and analyzing severe morbidity data is a critical first step to being able to understand the issues and determine steps to address them. The Department recently hired a highly-qualified Centers for Disease Control and Prevention (CDC) Maternal and Child Health Epidemiology Assignee with a PhD and Master of Science in Public Health (MSPH) in Population, Family and Reproductive Health from the Johns Hopkins Bloomberg School of Public Health. The CDC Senior Maternal and Child Health Epidemiology Field Assignee is a social epidemiologist and demographer with expertise in reproductive, maternal, and perinatal health, and was a Research Fellow at the Johns Hopkins Bloomberg School of Public Health in the Center of Excellence in Maternal and Child Health Science, Education, and Practice. The primary objective for the Epidemiology Field Assignee is to analyze and report about severe maternal morbidity.

The Department of Health was also recently awarded new funding under the State Maternal Health Innovation grant. The grant funding will support the hiring of additional analytic staff to improve data capacity for analyzing maternal morbidity and mortality.

These two efforts will provide greater insight into severe maternal morbidity, the characteristics of the pregnancies, and factors impacting maternal outcomes. The information will allow the Department to better identify the areas of greatest concern and opportunities to engage with the community and clinical partners to develop strategies to reduce risk and improve maternal outcomes.

Bullet 3

The Department frequently collaborates with the state's birthing hospitals as well as the American College of Obstetricians and Gynecologists District II, the Healthcare Association of New York State, and the Greater New York Hospital Association. The Department is increasing its efforts to engage midwives and doulas to ensure a more holistic approach to supporting the birthing system. The Department also collaborates with other state agencies, including the Office of Mental Health, the Office of Addiction Services and Supports, and the Office of Children and Family Services, which all have critical roles in supporting the health and well-being of people who are pregnant, giving birth, and in the postpartum period.

The Department will continue to engage with birthing facilities to promote participation in the NYSPQC, using an evidence-based or informed quality improvement framework from the Institute for Healthcare Improvement to effect and sustain change in clinical care. Participation in the NYSPQC projects is voluntary for birthing facilities. The state's enacted budget for fiscal year 2024-2025 includes an investment in the NYSPQC. The Department must develop and release a Request for Applications/Proposals to competitively select an entity to support the work. Together, the Department and the successful awardee will prioritize engaging with birthing facilities to increase engagement in the state's clinical quality improvement initiatives with the overall goal to decrease maternal mortalities and morbidities.

Contributors to Report

Executive Team

Andrea C. Miller - *Executive Deputy Comptroller*

Tina Kim - *Deputy Comptroller*

Stephen C. Lynch - *Assistant Comptroller*

Audit Team

Nadine Morrell, CIA, CISM - *Audit Director*

Cynthia Herubin - *Audit Manager*

Jessica Kirk - *Audit Supervisor*

Richard Podagrosi - *Audit Supervisor*

Jeffrey Dormond - *Senior Examiner*

Maeve Wood - *Senior Examiner*

Essence Parker-Chatham - *Infographics Specialist*

Mary McCoy - *Supervising Editor*

Contact Information
(518) 474-3271
StateGovernmentAccountability@osc.ny.gov
Office of the New York State Comptroller
Division of State Government Accountability
110 State Street, 11th Floor
Albany, NY 12236

For more audits or information, please visit: www.osc.state.ny.us/state-agencies/audits