New York State Birth Registrar Survey Brief Report by Region: New York City and the Rest of New York State

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And

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Introduction

Birth records have important legal, administrative, public health, and program uses. Public health applications include the use of birth records to conduct population-based surveillance, research, and program planning and evaluation, to identify risk factors, measure health outcomes, monitor progress toward achieving state and national maternal, infant, and child health goals. In the area of Medicaid managed care, hospital birth data is used to assess risk-adjusted differences in prenatal care and birth outcomes across health plans.

Accurate and complete collection of vital birth data is a priority for the New York State Department of Health (NYSDOH). In order to identify potential barriers in the current practices of birth data collection in New York birth facilities and opportunities for improvement, NYSDOH's Office of Quality and Patient Safety, Bureau of Vital Statistics, with the support of the Department's Bureau of Vital Records and Division of Family Health and the New York City Department of Health and Mental Hygiene's (NYCSOHMH) Bureau of Vital Statistics, collaborated with IPRO to conduct the New York Birth Registrar Survey.

The purpose of the survey was to assess the environment, potential barriers, and current support for birth record reporting based on the experience and expertise of New York State's birth registrars (BRs). This survey represents an initial effort and baseline information to better understand potential areas for improvement across all birthing facilities in the state, in general, and by region. While the extent to which these factors directly affect birth record data quality is not currently known, it is anticipated that these findings will be highly beneficial to state and jurisdictional policy makers and individual birthing facilities as they work to address the staffing, education and training, communication, and electronic and hospital systems changes needed to support data quality improvement.

This brief report is a supplement to the full survey report[1] and presents findings by region: New York City (NYC) and the Rest of State (ROS). New York State (NYS) is unique in that vital records are reported by two jurisdictions with their respective operations overseen by the NYSDOH and the NYCDOHMH. It is anticipated that findings at the regional level will help further advance and target efforts at vital record data quality improvements within these jurisdictions.

Summary of Methods

- A total of 127 birthing facilities in the state were surveyed via SurveyMonkey.
- The survey was directed to the individual responsible for collecting and reporting information for electronic birth registration, and referred to as the Birth Registrar (BR).

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[1] New York State Birth Registrar Survey Report. New York State Department of Health, Bureau of Vital Statistics, Office of Quality and Patient Safety and IPRO Managed Care Department Survey Date: Report Date: September 2013.

- The response rate was 85% (n = 108).
- An additional four facilities partially completed the questionnaire through question 18 (n = 112; adjusted response rate = 88%).
- *Chi*-squared and *t*-tests were used for statistical testing. An asterisk (*) is used throughout to indicate significant associations ($p < 0.05$) by region (New York City vs. Rest of State).

Summary of Findings

- The hospital department in which the majority of BRs reported working was nearly evenly divided between Maternity Ward/Labor and Delivery (45%) and Medical Records/File Room (42%), while the rest reported being a part of a different department in their facility.

- Nearly three-quarters (74%) of BRs stated that a medical/clinical background or training is not required for their position, 70% reported the need for continuing education and training, and a majority of open-ended responses throughout the survey indicated a substantial need for training for BRs, including in medical terminology relating to births. Almost half (47%) reported that their facility does not provide formal training for BRs.

- Limited steps are taken to improve the accuracy and completeness of information for birth registration.   Approximately one-third of BRs (31%) reported that their facility does not have a single person or unit dedicated to confirming the accuracy or completeness of birth data. Adding to this, open-ended responses indicated that in some institutions no one other than the BR checks the accuracy and completeness of the data collected by the BR.

- Similarly, only 41% reported that BRs meet regularly with medical and clinical staff, and that 22% of facilities conduct audits to compare birth registration data to medical records, while 36% provide continuing education and training opportunities to improve data quality. Furthermore, 23% of BRs identified the need for improved hospital electronic data systems, and 29% mentioned that prenatal records are unavailable or incomplete. Over one-fifth (22%) of BRs reported that quality control activities to ensure accuracy and completeness of birth data are not performed in their facility.

- Barriers to completing birth registration are common and widespread. For example, respondents fully or somewhat agreed that: medical and clinical staff do not provide complete information in their notes and charts (74%); birth data are located across several systems (79%): different data sources contain conflicting data (53%); there is a need for continuing education and training (71%); staff resources are inadequate (30%); recorded information is not legible (54%); prenatal records are unavailable or incomplete (64%); there is a need for improved hospital electronic data systems (42%),electronic birth systems help tables and/or documentation is inaccurate or out of date (19%), and electronic birth systems edits checking features are not effective (27%).

- An overwhelming majority of BRs (> 90%) use hospital electronic databases, prenatal records, and doctor's notes to gather information to register a birth. An analysis of open-ended responses from BRs suggests that prenatal records and doctor's notes were identified as the main source of inaccurate and incomplete data throughout the survey. The median number of sources utilized by BRs for birth registration was four.

- BRs reported significant efforts to help the mother fill out the parents' information as well as acknowledgement of paternity (AOP). Moreover, 79% indicated that parents' information is usually or always reviewed for completeness.

- Delivery records and prenatal records (ACOG antepartum record forms) emerged as frequently cited primary and secondary sources of clinical birth data for most clinical elements, while admission history and physical records and newborn admissions and discharge records were often cited as secondary sources.

- Previous low birthweight, date of last menses, previous preterm delivery, and gestational hypertension were identified as the most difficult data elements to capture for birth registry. Date of last menses was also listed as an element for which there is frequent conflict among data sources.

- A need for improved clinical knowledge and instructions with regard to birth record coding was evidenced. When asked about coding for fetal presentation, occiput posterior, occiput transverse, and occiput anterior were correctly indicated as "Vertex" by only 42, 29, and 41% of BRs, respectively, while compound and transverse were correctly indicated as "Other" for only 32 and 33%, respectively. Coding as "Unknown" accounted for 28–31% of all coding for the fetal presentation types surveyed.

- Ongoing education for BRs, especially in medical and clinical terminology, as well as increasing the education for and requirement of clinical staff to report complete birth data, were identified as the top suggestions from BRs.

- According to the BRs in their written comments, induction of labor, low birthweight, date of last menses, congenital abnormalities, preterm labor, prolonged labor, and indications for C-section, among others, were identified as specific elements that BRs and clinical staff require more training on.

As compared to the Rest of State, birthing facilities in New York City were:

- Dedicating significantly fewer staff hours per birth to electronic birth registration on average, and significantly less likely to see the need for more staff resources for birth registration.

- Significantly less likely to locate their BRs in the Medical Records department and more likely to locate them in another department such as Admitting and Patient Access.

- More likely to utilize their BRs for obtaining the parents' information for birth registration.

- Significantly less likely to require that BRs have a clinical background or training, but more likely to recognize the need for and to provide training and continuing education for BRs, for the supervisor or manager to review data prior to or following entry into the electronic birth registration system, and more likely to hold meetings between medical/clinical staff and BRs to address missing and inconsistent data.

- Significantly less likely to see the need for improving hospital electronic data systems, and less likely to find electronic birth registration help tabs to be inaccurate or edit checking features to be ineffective.

- Significantly less likely to identify prenatal records as a source of information used to gather data for birth registration and using fewer data sources, on average, to obtain information for birth registration.

- Significantly less likely to use the prenatal record as the primary source of information to report previous low birthweight, previous preterm pregnancy, gestational hypertension, and date of last menses.

- Significantly less likely to always or almost always report accurate birth information for previous C-section, method of delivery, and birthweight, significantly, and more likely to find conflicting information for previous C-section and previous low birthweight.

- Significantly less likely to correctly code vertex fetal presentation types and more likely to report "Unknown" coding for all fetal presentation types presented in this survey.

- Significantly more likely to require that clinicians complete a single standard form that includes all medical information required for birth registration.

Conclusion

Birth Registrars in 112 facilities reported significant efforts by the NYCDOH and NYCDOHMH within their respective jurisdictions and by their own facility to support the collection and reporting of complete and accurate data for electronic birth registration. However, the results of the survey show that barriers and limitations to complete and accurate birth record reporting exist on many levels. Survey respondents identified lack of quality control measures, limited contact with medical and clinical staff, the need to glean clinical information from multiple sources, incomplete and conflicted data sources, and the need for continuing education and training as important areas of concern and opportunities for improvement.

Regional differences provide useful information to target electronic birth registration data quality improvement activities. Factors to consider include the education and training needs of BRs, their department location with the birthing facility, barriers and resources available to improve birth registration reporting, the use and availability of sources of information for specific clinical data elements such as the prenatal record, and the level of clinical knowledge necessary to adequately perform the duties and responsibilities of the BR.

These results form a baseline assessment of the environment, barriers, and support available to BRs in birth registration and can be helpful in directing future quality improvement efforts. The barriers that were identified as a result of this study may or may not have a direct impact on the quality of the birth data collected; however, striving to improve the birth registration process in facilities across NYS by mitigating or removing these barriers is expected to improve data accuracy and completeness.

Summary of Recommendations

Based on the findings of this survey, IPRO suggests that the NYSDOH encourage facilities to develop and enact policies to improve clinical staff compliance in providing accurate and complete birth data as well as increase interaction between clinical staff and BRs. Findings suggest that NYSDOH should focus on delivery records and prenatal records (ACOG antepartum record forms) to improve accuracy and completeness of birth data. Increasing ongoing education for BRs and Labor and Delivery nurses about the collection of accurate and complete birth data and about medical terminology regarding birth, as well as increasing awareness of coding rules for fetal presentations, are also potential areas of improvement based on survey findings. As results suggest that there may be regional differences in barriers to complete and accurate birth data collection, birthing facilities should be encouraged to evaluate their data collection processes and systems to identify barriers specific to their facility to inform future improvement efforts.

Results

Table 1. Average weekly staff hours dedicated to electronic birth registration

Q3. How many full-time and part-time employees are directly involved in collecting and reporting information for electronic birth registration? Number Full-Time:_____ Number Part-Time:_____			
Q4. For these employees, how many staff hours per week on average are devoted to collecting and reporting information for electronic birth registration? Hours:_____ Minutes:_____			
	New York State	**New York City**	**Rest of State**
Birthing Facilities: n (%)	112 (100%)	35 (31.2%)	77 (68.8%)
Mean Number of Employees[1]	5.6	7.1	4.9
Mean Weekly Staff Hours	38.8	50.2	33.7*
Mean Weekly Number of Births (2011)[2]	37.9	62.4	26.8*
Mean Staff Hours per Birth	1.37	0.98	1.54*

[1] Part-time employees were assumed to be working 50%.
[2] Source: New York State Vital Statistics
* Results differ by region ($p < 0.05$).

- Birthing facilities in NYC are dedicating significantly fewer staff hours per birth to electronic birth registration on average compared to facilities in the Rest of State (ROS). The mean staff hours per birth in NYC is 0.98, whereas it is 1.54 hours in the ROS.

Table 2. Location of Birth Registrar

Q5: In which department in your hospital is the Birth Registrar located?			
Department	**New York State**	**New York City**	**Rest of State**
Maternity Ward/Labor and Delivery	45%	46%	44%
Medical Records/File Room	42%	20%	52%*
Other (Admitting, Patient Access etc.)	13%	34%	4%*

* Results differ by region ($p < 0.05$).

- The hospital department in which the majority of BRs reported working is nearly evenly divided between Maternity Ward/Labor and Delivery (45%) and Medical Records/File Room (42%), while the rest reported being a part of a different department in their facility.
- It is significantly less likely for the BRs in NYC to be located in the Medical Records department compared to the BRs in the ROS, and more likely for them to be in other department such as Admitting and Patient Access.

Table 3. Background and training for electronic birth registration

Q6: Is a medical or clinical background or training required for the Birth Registrar position?			
	New York State	**New York City**	**Rest of State**
Yes	26%	11%	32%*
Q7: Does your hospital provide formal training for the Birth Registrar and other employees directly involved with collecting and reporting information for birth registration?			
	New York State	**New York City**	**Rest of State**
Yes	53%	67%	45%*

* Results differ by region ($p < 0.05$).

- Nearly three-quarters (74%) of BRs stated that a medical/clinical background or training is not required for their position. Almost half (47%) reported that their facility does not provide formal training for BRs.
- NYC birthing facilities are significantly less likely to require that BRs have a clinical background or training compared to facilities in the ROS, but more likely to provide formal training.

Table 4. Specific person/unit and activities for accuracy and completeness of birth registration data

Q8: Does your hospital have a designated unit or specific individual whose role is to confirm the accuracy and completeness of the information collected and reported for birth registration?			
	New York State	**New York City**	**Rest of State**
Yes	69%	71%	68%
Q9: Which of the following are performed to improve the accuracy and completeness of the information for birth registration?[1]			
	New York State	**New York City**	**Rest of State**
Meetings are held between medical/clinical staff and the Birth Registrar to address birth data that is missing or inconsistent	41%	51%	36%
Continuing education and/or training opportunities are provided to improve data quality	36%	54%	27%*
Supervisor or manager reviews data prior to or following entry into the electronic birth registration system	23%	40%	16%*
Audits are conducted to compare birth registration data with medical record data for a sample of births	22%	17%	25%
None	22%	11%	27%

[1] For Q9, respondents were asked to choose all that apply and/or use the open-ended response.

* Results differ by region ($p < 0.05$).

- Approximately one-third of BRs (31%) reported that their facility does not have a single person or unit dedicated to confirming the accuracy or completeness of birth data. Adding to this, open-ended responses indicated that in some institutions the BR checks the accuracy and completeness of the birth data collected, with no oversight in place.
- Similarly, only 41% reported that BRs meet regularly with medical and clinical staff, and 22% reported that facilities conduct audits to compare birth registration data to medical records, while 36% provide continuing education and training opportunities to improve data quality. Over one-fifth (22%) of BRs reported that quality control activities to ensure accuracy and completeness of birth data are not performed in their facility.
- NYC facilities are significantly more likely to provide continuing education and/or training to improve data quality, review data prior to or following electronic birth registration data entry, significantly more likely to hold meetings between medical/clinical staff and BRs to address missing and inconsistent data compared to the ROS facilities, and more likely to hold meetings with medical/clinical staff and the BR to address missing or inconsistent birth data.

Table 5. Barriers to completing electronic birth registration

Q10: Please indicate your level of agreement with the following barriers to completing electronic birth registration:	Agree[1]			Disagree		
	New York State	New York City	Rest of State	New York State	New York City	Rest of State
Medical/clinical staff do not provide complete information in their notes and charts	46%	54%	43%	13%	11%	14%
Birth data is located in multiple systems and/or obtained from multiple sources	58%	51%	61%	9%	14%	6%
Conflicting birth data information is contained in different sources	26%	31%	23%	29%	43%	23%*
There is a need for continuing education and training	37%	51%	30%*	10%	11%	9%
Staff resources are inadequate	13%	11%	13%	35%	49%	29%*
There is a need for improved hospital electronic data systems	23%	26%	22%	24%	37%	18%*
Information recorded in the forms is not legible	16%	26%	12%	27%	29%	26%
Data from the mom's prenatal records is unavailable or incomplete	29%	34%	27%	17%	17%	17%
Electronic birth reporting system help tabs and/or documentation are inaccurate or out of date	10%	6%	12%	36%	46%	31%
Electronic birth reporting system edit checking features are not effective	9%	14%	6%	38%	43%	35%

[1] Responses were provided according to a five-point Likert scale: Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, and Disagree.

* Results differ by region ($p < 0.05$).

- BRs fully or somewhat agreed that: medical and clinical staff do not provide complete information in their notes and charts (74%); birth data are located across several systems (79%): different data sources contain conflicting data (53%); there is a need for continuing education and training (71%); staff resources are inadequate (30%); recorded information is not legible (54%); prenatal records are unavailable or incomplete (64%); there is a need for improved hospital electronic data systems (42%),electronic birth systems help tables and/or documentation is inaccurate or out of date (19%), and electronic birth systems edits checking features are not effective (27%).

- Compared to the BRs in the ROS, BRs in NYC birthing facilities are significantly more likely to see the need for continuing education and training and to see that birth data are conflicting in different sources. NYC BRs are also less likely to see the need for improving hospital electronic data systems,

and less likely to find electronic birth registration help tabs to be inaccurate or edit checking features to be ineffective and to find staff resources inadequate.

Table 6. Types of sources used for birth data collection

Q11: What sources of information are used to gather data for birth registration?[1]			
	New York State	**New York City**	**Rest of State**
Hospital Electronic Databases	93%	91%	94%
Prenatal Records	91%	83%	95%*
Doctor's Notes and Charts	90%	90%	90%
Charts from Various Clinical Program Areas	36%	34%	36%

[1] Respondents were asked to choose all that apply and/or use the open-ended response.

* Results differ by region ($p < 0.05$).

Table 7. Number of sources used for birth data collection

Q12: How many different sources of information including databases, charts, notes, and other sources are required to obtain all the birth information needed to register a birth?			
	New York State	New York City	Rest of State
Mean Number of Different Sources:	3.9	3.4	4.1*

* Results differ by region ($p < 0.05$).

- An overwhelming majority of BRs (> 90%) use hospital electronic databases, prenatal records, and doctor's notes to gather information to register a birth. An analysis of open-ended responses from BRs implies that prenatal records and doctor's notes were identified as the main source of inaccurate and incomplete data throughout the survey. The median number of sources utilized by BRs for birth registration was four.
- NYC birthing facilities are significantly less likely to identify prenatal records as a source of information used to gather data for birth registration and using fewer data sources, on average, to obtain information for birth registration.

Table 8. Who obtains the parents' information?

Q13: Who is responsible for obtaining the parents' information?[1]			
	New York State	**New York City**	**Rest of State**
Birth Registrar	74%	94%	65%*
Labor and Delivery Staff	45%	26%	53%*
Other	12%	6%	14%

[1]Respondents were asked to choose all that apply and/or use the open-ended response.

* Results differ by region ($p < 0.05$).

- In about three-fourths of the birth facilities, BRs are responsible for obtaining parents' information. In NYC facilities BRs are more likely to be responsible for this function than in the ROS facilities.

Table 9. Methods used to collect parents' information

Q14: What method do you use to collect and record the parents' information?[1]			
	New York State	**New York City**	**Rest of State**
Parents' information is recorded on the forms provided for this purpose by the health department (workbook/worksheet)	83%	83%	83%
Our hospital has developed a separate paper form to collect the parents' information	7%	3%	9%
Parents' information is entered directly into an electronic system by staff	8%	11%	6%
Other	2%	3%	1%
Q15: How is the parents' information collected at your hospital?			
	New York State	**New York City**	**Rest of State**
The mother reads and completes a form herself or with the help of the father	88%	83%	91%
Translation services are available as needed	82%	83%	82%
Hospital staff is available to assist the mother while she completes the form independently	79%	74%	81%
Family members, including children and extended family, assist the mother with providing the parents' information	35%	34%	35%
Hospital staff reads through the form along with the mother while the she fills it out	35%	40%	32%
Hospital staff reads the form to the mother, and she reports the information to the hospital staff, who completes the form	27%	26%	27%
Other way(s) with which information is collected	11%	9%	12%

[1] In Q14, respondents were asked to choose only one response or the open-ended "Other" response, whereas in Q15, they were asked to choose all responses that apply.

- The majority of facilities record parents' information using the forms provided for this purpose by the health department. BRs report significant efforts to facilitate the collection of parents' information, including availability of hospital staff to assist the mother in completing the information and the availability of translation services.

Table 10. Review of parents' information for completeness

Q16: Please choose the best option to fill in the blank in this statement: The parents' information is _____ reviewed for completeness before the mother is discharged.			
	New York State	**New York City**	**Rest of State**
Always	32%	29%	34%
Usually	47%	57%	43%
Sometimes	12%	6%	14%
Rarely	5%	3%	6%
Never	4%	6%	3%

- Seventy-nine percent of BRs indicated that parents' information is usually or always reviewed for completeness.

Table 11. Barriers in obtaining mother's race/ethnicity information

Q17: Have you encountered any of the following barriers when trying to collect information concerning the mother's race, especially as it relates to mothers of Hispanic ethnicity?[1]			
	New York State	**New York City**	**Rest of State**
Mother leaves the field blank or chooses "other" when asked about her race	63%	66%	62%
Hospital policy is not to inquire about the mother's race or ethnicity	4%	6%	3%
Hospital staff is not trained on techniques for collecting information on race and ethnicity	7%	6%	8%
None of the above	27%	23%	29%

[1] Respondents were asked to choose all that apply and/or use the open-ended response.

- BRs reported that mothers leave the race information blank or choose "other" more than 60% of the time.

Table 12. Acknowledgement of Paternity

Q18: How does your hospital fulfill the oral notification requirement included in the Acknowledgement of Paternity (AOP) process?[1]	New York State	New York City	Rest of State
Hospital staff includes AOP information with form used to collect parents' information	89%	97%	86%
Hospital staff reads AOP to parents	13%	14%	13%
Hospital staff has parents watch the AOP video	11%	6%	13%
Other – Hospital staff explains AOP and assists parents	23%	17%	26%
Other – Language and translation support	3%	3%	3%
Other – Hospital staff witnesses signing of AOP	3%	3%	3%

[1] Respondents were asked to choose all that apply and/or use the open-ended response.

- BRs reported significant efforts to fulfill the oral notification requirement included in the AOP; while 89% reported including the AOP information with the form used to collect parents' information, 23% indicated that hospital staff explains AOP and assists parents in the AOP process.

Table 13. Primary sources for clinical birth data elements

Q19: Please indicate the primary and secondary (if applicable) sources of each data element.											
	Primary Source[1]										
Data Element	Delivery Record	New York City	Rest of State	Prenatal Record (ACOG)	New York City	Rest of State	Admission History & Physical	New York City	Rest of State	MD's Delivery Notes	New York City	Rest of State
Previous C-Section	37%	42%	35%	36%	24%	41%	11%	15%	9%	8%	9%	8%
Previous Low–Birth-Weight Birth	9%	24%	3%*	66%	39%	77%*	7%	18%	3%*	6%	6%	5%
Method of Delivery	75%	81%	72%	5%	0%	7%	1%	0%	1%	14%	15%	13%
Previous Preterm Delivery	8%	15%	5%	62%	27%	77%*	13%	33%	4%*	8%	18%	4%*
Fetal Presentations	69%	73%	68%	4%	0%	5%	4%	0%	5%	17%	18%	16%
Induction of Labor – AROM	59%	64%	57%	2%	0%	3%	6%	0%	8%	18%	21%	16%
Gestational Hypertension	17%	24%	13%	46%	27%	55%*	16%	21%	13%	6%	12%	4%
Birthweight	64%	58%	67%	2%	0%	3%	1%	3%	0%	6%	3%	6%
Clinical Estimate of Gestation	32%	27%	35%	23%	15%	27%	20%	18%	21%	11%	15%	9%
Date of Last Menses	3%	6%	1%	68%	39%	80%*	11%	24%	5%	5%	6%	4%

[1] Only percentages for delivery record, prenatal record (ACOG), admission history & physical, and MD's delivery notes used as primary sources are shown. As such, the percentages across rows for statewide, NYC, and the ROS do not add up to 100%. Other choices for primary source included in this survey question were: newborn admit/discharge record, nursing documentation in mother's record, other notes in record, other, and none. Significantly fewer BRs in NYC facilities chose these five remaining options (pooled) compared to BRs in the ROS as sources for the clinical estimate of gestation and date of last menses (data not shown).
* Results differ by region ($p < 0.05$).

- Delivery records and prenatal records (ACOG, i.e., antepartum record forms) emerged as frequently cited primary and secondary sources of clinical birth data for most clinical elements (Table 13), while admission history and physical records and newborn admissions and discharge records were often cited as secondary sources (data not shown).

- NYC birthing facilities are significantly less likely to use the prenatal record as the primary source of information to report previous low birthweight, previous preterm pregnancy, gestational hypertension, and date of last menses.
- BRs in NYC facilities are significantly less likely to utilize the prenatal record for a primary source for date of last menses, while they are more likely to utilize the admission history and physical for this data element compared to BRs in the ROS.

Table 14. Ease of finding and ability to report accurate information for clinical data elements

Q20: Please indicate how easy is it to find information for the following birth registration items:			
	Always Easy to Find		
Data Element	**New York State**	**New York City**	**Rest of State**
Previous C-Section	51%	39%	56%
Previous Low Birthweight Birth	27%	21%	29%
Method of Delivery	78%	67%	83%
Previous Preterm Delivery	30%	27%	31%
Fetal Presentations	61%	61%	61%
Induction of Labor – AROM	46%	52%	44%
Gestational Hypertension	44%	33%	48%
Birthweight	69%	70%	69%
Clinical Estimate of Gestation	64%	58%	67%
Date of Last Menses	30%	27%	31%
Q21. How would you rate your ability to report accurate information during birth registration?			
	Always or Almost Always Able		
Data Element	**New York State**	**New York City**	**Rest of State**
Previous C-Section	76%	61%	83%*
Previous Low Birthweight Birth	47%	42%	49%
Method of Delivery	87%	72%	93%*
Previous Preterm Delivery	49%	45%	51%
Fetal Presentations	78%	70%	81%
Induction of Labor – AROM	60%	64%	59%
Gestational Hypertension	55%	45%	59%
Birthweight	88%	79%	92%*
Clinical Estimate of Gestation	79%	70%	83%
Date of Last Menses	46%	42%	48%

* Results differ by region ($p < 0.05$).

- Previous low birthweight, date of last menses, previous preterm delivery, gestational hypertension, and date of last menses were identified as the most difficult data elements to capture for birth registry.
- NYC birthing facilities are significantly less likely to always or almost always have the ability to report accurate birth information for previous C-section, method of delivery, and birthweight.

Table 15. Frequency of conflicting data across different sources for clinical data elements

Q22: How often do data sources (e.g., prenatal vs. delivery record) conflict for the following items?			
	Rarely or Never		
Data Element	**New York State**	**New York City**	**Rest of State**
Previous C-Section	69%	55%	75%*
Previous Low Birthweight Birth	60%	45%	67%*
Method of Delivery	77%	73%	79%
Previous Preterm Delivery	59%	52%	63%
Fetal Presentations	70%	67%	72%
Induction of Labor – AROM	57%	64%	55%
Gestational Hypertension	59%	55%	61%
Birthweight	77%	76%	77%
Clinical Estimate of Gestation	62%	61%	63%
Date of Last Menses	46%	48%	45%

* Results differ by region ($p < 0.05$).

- Data sources most often have conflicting information about the date of last menses, followed by gestational hypertension and previous preterm delivery.
- NYC BRs are significantly more likely to find conflicting information for previous C-section and previous low birthweight compared to their ROS counterparts.

Table 16. Coding clinical terms regarding fetal presentation

Q23: The terms below are different ways medical and clinical staff document fetal presentation. These terms can be very difficult to code. How does your hospital instruct staff to code these terms for electronic reporting?							
	Clinical terms[1,2]						
Coding	Occiput posterior (OP)	Occiput transverse (OT)	Occiput anterior (OA)	Brow[1]	Face[1]	Compound	Transverse
Vertex:							
New York State	42%	29%	41%	20%	20%	12%	6%
New York City	21%	18%	21%	9%	9%	12%	9%
Rest of State	51%*	33%	49%*	25%	25%	12%	5%
Breech:							
New York State	1%	3%	1%	3%	3%	5%	13%
New York City	3%	3%	3%	3%	3%	6%	12%
Rest of State	0%	3%	0%	3%	3%	4%	13%
Other:							
New York State	7%	15%	7%	24%	27%	32%	33%
New York City	9%	12%	9%	21%	21%	18%	21%
Rest of State	7%	16%	7%	25%	29%	39%*	39%
Unknown:							
New York State	29%	30%	28%	29%	28%	29%	31%
New York City	52%	52%	48%	52%	48%	48%	48%
Rest of State	19%*	20%*	19%*	19%*	19%*	20%*	23%*
Term not used at this hospital:							
New York State	15%	16%	16%	17%	14%	15%	10%
New York City	12%	12%	15%	12%	12%	12%	9%
Rest of State	16%	17%	16%	19%	15%	16%	11%
Clear instructions not provided:							
New York State	6%	8%	7%	7%	8%	7%	6%
New York City	3%	3%	3%	3%	6%	3%	0%
Rest of State	8%	11%	9%	9%	9%	9%	9%

[1] The survey included "vertex," a subset of "cephalic" fetal presentation, as a response choice. "Cephalic," which would be appropriate for brow and face presentations, was not included as a response choice in the survey.
[2] Shaded areas indicate correct responses.
* Results differ by region ($p < 0.05$).

- When asked about coding for fetal presentation, occiput posterior, occiput transverse, and occiput anterior were correctly indicated as "Vertex" by only 42, 29, and 41% of BRs, respectively, while compound and transverse were correctly indicated as "Other" for only 32 and 33%, respectively. Coding as "Unknown" accounted for 28–31% of all coding for the fetal presentation types surveyed.
- NYC birthing facilities are significantly less likely to correctly code vertex fetal presentation types, and more likely to report "Unknown" coding for all fetal presentation types presented in this survey.

Table 17. Hospital activities to facilitate birth registration

Q24: Does your hospital do any of the following to facilitate birth registration?[1]			
	New York State	New York City	Rest of State
Clinicians are educated on the importance of providing complete and consistent information in the patient medical records	46%	42%	48%
Reports are generated from the hospital electronic data system that include all necessary medical information for birth registration	36%	48%	31%
Clinicians are required to complete a single standard form (paper or electronic) that includes all medical information required for birth registration	35%	64%	23%*
None of the above	20%	9%	25%*
Other	10%	6%	12%

[1]Respondents were asked to choose all choices that apply and/or use the open-ended response.

* Results differ by region ($p < 0.05$).

- NYC facilities are significantly more likely to require that clinicians complete a single standard form that includes all medical information required for birth registration compared to the ROS facilities.

Table 18. Use of electronic reports for birth data quality control

Q25: Do you use health department or electronic birth registration system reports to monitor the quality of the data prepared and entered for birth registration?			
	New York State	New York City	Rest of State
Yes	88%	78%	92%*

* Results differ by region ($p < 0.05$).

- The majority of BRs use health department or electronic birth registration system report to monitor the quality of the data prepared and entered for birth registration; however, NYC BRs are less likely to use such reports for quality monitoring compared to BRs in the ROS.

Recommendations

Based on the findings of this survey, IPRO suggests that the NYSDOH:

- encourage the installment and enactment of facility policies to require clinical staff and attending physician compliance to provide accurate and complete delivery and prenatal information;
- encourage hospitals to facilitate coordination between clinicians and birth registrars (BRs) on a regular basis;
- focus on delivery records and prenatal records (ACOG antepartum record forms) for completeness and accuracy;
- increase ongoing education efforts directed at BRs and Labor and Delivery nurses in:
    o acquiring complete and accurate information from the mother using DOH and facility workbook/worksheets, in-person interviews, and the AOP process,
    o understanding medical terminology to aid with accurate interpretation and entry of clinical findings and information, including terminology and knowledge required for:
        ▪ induction of labor,
        ▪ malpresentation,
        ▪ preterm labor vs. contractions,
        ▪ indications for C-section,
    o and collecting complete information for:
        ▪ low birthweight,
        ▪ date of last menses
        ▪ previous preterm deliveries,
        ▪ gestational hypertension,
        ▪ induction of labor;
- increase awareness for existing electronic birth registration rules for coding fetal presentations , provide more education as needed, and ensure that guidelines for electronic birth reporting are consistent with NCHS guidelines;
- encourage and support quality control activities in facilities, potentially using several successful facilities as models to develop similar quality control functions in others;
- encourage facilities to evaluate their birth data collection processes and systems to identify potential barriers specific to their facility to focus future improvement efforts;
- devise ways to reduce the time required by clinical staff to complete birth data collection, for example, by simplifying current forms and encouraging hospitals to switch to internal electronic systems for easy and direct birth data entry;
- increase efforts to seamlessly connect the DOH electronic birth registry system to existing hospital birth databases;
- encourage hospitals to include IT personnel in training for BRs to improve IT support for computer-based birth registration functions, such as printing and connectivity;
- require hospitals to review and confirm completeness of birth data before entry to electronic systems;
- require BRs to extract race/ethnicity from mother directly with necessary language and translation support;

- encourage and increase awareness and accessibility of electronic birth database reports to BRs;
- consider developing an online forum where BRs can ask questions that can be answered by a DOH representative in real time, keeping in mind that a collection of such questions and answers can benefit all BRs with similar inquiries and seriously cut down other support efforts via phone.
- develop and disseminate birthing facility-level reports to monitor birth record data quality on an ongoing basis.

List of Tables

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