Data Quality Assurance Survey: Kansas Birth Registration
Executive Summary
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The Kansas Department of Health and Environment Center for Health and Environmental Statistics compared paper medical records to birth certificates from year 2000 at two hospitals to assess data accuracy and surveyed birth clerks at 78 Kansas birthing hospitals to identify data entry issues. A randomly selected sample of 324 births was surveyed at an urban Kansas hospital serving a large regional population. Eighty–four births, the entire year's tally, were reviewed at a rural hospital. Thirty-nine data elements, falling into six categories and comprising demographic information frequently used in the process of applying for a certificate and health information needed for research, were surveyed. Information entered into the medical record within two days of birth that matched the birth certificate information was defined as accurate. Birth certificate worksheets, not routinely retained at either hospital, were not reviewed. Survey methods were modified for better data collection efficiency for the rural hospital. The results were not effected.

Results were similar at both hospitals. The highest match rates generally occurred with demographic information: names, times, birth dates, and residency information. (Table A). Match rates were generally lower overall for the health information categories from the confidential part of the birth certificate. Among health information categories, previous pregnancy information had the highest overall match rates.

The birth clerk telephone survey identified variability in how clerks gathered information for the birth certificate worksheet. The worksheets were not routinely kept by many hospitals. That was the case for the two hospitals where medical records were reviewed. Over one-third (35.9%) of birth clerks said they believe birth mothers frequently or occasionally report inaccurate information for the worksheets. A majority of the clerks did not favor moving data elements from Worksheet part 1 to part 2 to alleviate misinformation concerns. In each of four questions asking about the hospital's and birth clerk's capacity to use a possible web-based electronic birth registration system, over two-thirds felt capable.

The hospital medical record findings indicate paper medical records generated or available within two days of birth did not provide sufficient matching information for certain data to be considered accurate. Incomplete or contradictory information in the medical record could not be resolved from a worksheet. The impact of mismatched information would be minimal on the issuance process where name and date accuracy is imperative. However, lower match rates for some medical fields raise concern about the validity of eliminating the worksheet in lieu of collecting the information solely from medical records. Birth clerk surveys show an inconsistent application of birth data collection protocols, but a desire for training and accuracy.

Recommendations include:
- Improve quantity and quality of birth clerk training,
- Retain the worksheet as a data collection tool and require it be maintained in the medical record,
- Enhance computerized edit checks and validation programs to identify data anomalies, and
- Use health information from the mother for the certificate when the information is not available in the medical record within the time period the mother is in the hospital.

Table A. Birth Certificate - Medical Record Match Counts and Rates by Hospital by Data Element

ELEMENTS BY GROUP	Hospital 1				Hospital 2			
	MATCH	NON-MATCH	MISSING	% MATCH	MATCH	NON-MATCH	MISSING	% MATCH
INFANT AND PARENT NAME								
Child's Name	278	41	5	85.8%	84	0	0	100.0%
Mother's Name	310	9	5	95.7%	84	0	0	100.0%
Mother's Maiden Name	15	0	309	4.6%	30	0	54	35.7%
Father's Name	244	36	44	75.3%	81	2	1	96.4%
PARENTAL INFORMATION								
Mother's Date of Birth	309	3	12	95.1%	80	0	4	95.2%
Mother's Street Address	283	39	2	87.3%	75	9	0	89.3%
Mother's City	308	15	1	95.1%	81	3	0	96.4%
Mother's State	321	2	1	99.1%	84	0	0	100.0%
Mother's Zip Code	296	25	3	91.4%	81	3	0	96.4%
Mother's Race	297	9	18	91.7%	59	1	24	70.2%
Mother's Social Security #	299	20	5	92.3%	80	2	2	95.2%
Mother Married?	280	30	14	86.4%	83	0	1	98.8%
Mother's Education	6	8	310	1.9%	30	8	46	35.7%
Father's State of Birth	45	0	279	13.9%	9	0	75	10.7%
Father's Race	29	0	295	9.0%	5	0	79	6.0%
Father's Education	40	1	283	12.3%	6	0	78	7.1%
Father's Date of Birth	46	278	0	14.9%	27	1	56	32.1%
Father's Social Security #	115	6	203	35.5%	49	0	35	58.3%
DELIVERY INFORMATION								
Time of Birth	291	27	6	89.8%	77	7	0	91.7%
Date of Birth	317	7	0	97.9%	84	0	0	100.0%
Facility Where Birth Occurred	322	1	1	99.4%	84	0	0	100.0%
Attendant	307	16	1	94.8%	84	0	0	100.0%
PREGNANCY OUTCOMES								
Live Births	286	29	9	88.3%	83	1	0	98.8%
Live Births Now Dead	301	8	15	92.9%	84	0	0	100.0%
Terminations < 20 weeks	268	46	10	82.7%	82	2	0	96.7%
Terminations >20 weeks	302	12	10	93.2%	84	0	0	100.0%
CONDITION OF MOTHER								
Date of Last Menses (LMP)	91	184	49	28.1%	66	12	6	78.6%
Month Prenatal Care Began	25	266	33	7.7%	36	42	6	42.9%
Weeks of Gestation	208	75	41	64.2%	78	6	0	92.9%
Number of Prenatal Visits	19	275	30	5.9%	27	54	3	32.5%
Mother's Medical Risk Factors	172	146	6	53.1%	58	25	1	69.0%
Prenatal Procedures	169	37	118	52.2%	72	6	6	85.7%
Conditions of Labor	200	112	12	61.7%	75	9	0	89.3%
Method of Delivery	296	18	10	91.4%	83	1	0	98.8%
CONDITION OF INFANT								
Birth weight	139	174	11	42.9%	38	46	0	45.2%
Condition of the Newborn	271	48	5	83.6%	75	9	0	89.3%
Plurality	314	1	9	96.9%	84	0	0	100.0%
Birth Anomalies	307	10	7	94.8%	84	0	0	100.0%
Apgar Scores	281	22	21	86.7%	67	9	9	79.8%

Source: KDHE Center for Health and Environmental Statistics