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Evaluating the accuracy of CPT coding for inpatient second- and third-trimester labor induction abortion at a tertiary medical center☆

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ABSTRACT

Objective: To evaluate the accuracy of Current Procedural Terminology (CPT) codes used to bill inpatient second- and third-trimester labor induction abortion relative to clinically confirmed encounters at a Northern California academic medical center.

Study design: We conducted a two-phase retrospective chart review. In phase one, we assessed whether encounters billed using CPT codes recommended for labor induction abortion (59850, 59851, 59855, 59856) from 2014 to 2024 represented true labor induction abortions based on electronic medical record (EMR) review using predefined clinical criteria. In phase two, we assessed how actual labor induction abortions were coded through identification of clinically confirmed encounters through manual review of labor and delivery unit paper logs from January to December 2024 and examined the CPT codes applied to these encounters, including use of vaginal delivery codes permitted by professional guidance for gestations ≥ 20 weeks.

Results: Of 57 encounters billed using labor induction abortion-specific CPT codes over the 11-year period in phase one, 26 (46%) represented clinically confirmed labor induction abortions. Manual review in phase two identified 47 such procedures in 2024 alone; of these, only 5 (11%) were coded using labor induction abortion-specific CPT codes. Including vaginal delivery coding permitted by professional guidance, 20 of 47 cases (43%) were coded appropriately.

Conclusions: CPT coding for inpatient second- and third-trimester labor induction abortion fails to reliably capture the true incidence of these procedures and demonstrates substantial inconsistency and misclassification, limiting utility of data for abortion research, surveillance, and financial analyses.

Implications: CPT coding and billing for second- and third-trimester labor induction abortion at one institution is highly inaccurate and does not capture the true incidence. Assuming this finding is representative of national trends, billing datasets for these procedures are likely unreliable and have limited utility for research and policy.

1. Introduction

Inpatient second- and third-trimester medication abortion, also referred to as labor induction abortion, involves the use of medications primarily to effect labor for the purpose of terminating a pregnancy. In the United States, the American Academy of Professional Coders (AAPC) recommends four specific Current Procedural Terminology (CPT) codes for billing these procedures [1]. These codes reflect the use of intraamniotic injection (59850) or medications with or without osmotic dilators (59855) to induce labor, with secondary codes when a uterine evacuation procedure (59851 and 59856, respectively) is required to complete the process.

Medical coding involves interpretation of clinical documentation using a standardized classification system which is then used to bill insurance companies for healthcare services [2]. Importantly, hospital coding and billing data are also frequently used in clinical research and health policy. Previous studies suggest that billing data related to procedural abortion are often incomplete or misclassified due to outdated codes, ambiguous definitions, or institutional variation in practice [3–6]. These inaccuracies limit reliability of using

☆ Conflicts of interest: None.

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Table 1
Clinical scenarios billed with AAPC-recommended second- and third-trimester labor induction abortion CPT codes (59580, 59851, 59855, 59856) at a single California hospital, 2014–2024 (N = 57)

Clinical encounter type (based on electronic medical record review)	n (%)	Concordance* of abortion CPT code with clinical encounter
Second- or third-trimester labor induction abortion	26 (46)	Concordant
Intrauterine fetal demise	16 (28)	Discordant
Dilation and evacuation	9 (16)	Discordant
Ectopic pregnancy management	3 (5)	Discordant
Injection to induce fetal asystole	3 (5)	Discordant

AAPC: American Academy of Professional Coders; CPT: Current Procedural Terminology
*Coding discordance is defined as application of a second- or third-trimester labor induction abortion CPT code to a clinical encounter that did not involve labor induction abortion.

billing datasets for research purposes, including ability to quantify procedure frequency and assess outcomes. Coding discrepancies can also contribute to underpayment for abortion services, especially in inpatient settings where procedures are more complex. No data is available regarding coding accuracy related to second- and third-trimester labor induction abortion.

Because we had a long-term goal of understanding reimbursement for second- and third-trimester labor induction abortions to work with insurers to improve reimbursement rates, we sought to first evaluate the accuracy of coding data as it relates to these procedures. We performed this exploratory evaluation at one large institution to assess the accuracy of CPT coding for second- and third-trimester labor induction abortion. We assessed coding accuracy in two ways; first, whether labor induction abortion-specific CPT codes accurately identify labor induction abortion cases and, second, whether confirmed labor induction abortions are consistently represented by appropriate CPT codes in practice.

2. Materials and methods

We conducted a retrospective chart review at a single Northern California academic medical center. For our chart review, we defined a second- or third-trimester labor induction abortion as use of medications to cause delivery at ≥ 14 weeks and 0 days gestation, with the intent to end the pregnancy without fetal or neonatal survival. Such procedures, by definition, do not include inductions for patients with spontaneous intrauterine fetal demise (IUFD). The University of California, Davis Institutional Review Board deemed this study exempt.

We performed this retrospective analysis in two phases. In phase one, we aimed to evaluate billing code accuracy for identification of labor induction abortion. Our hospital coding department identified patients who had labor induction abortions performed from January 2014 through December 2024 based on CPT billing codes specific to labor induction abortion (59850, 59851, 59855, 59856). We reviewed electronic medical records (EMR) for each case to confirm if the associated case truly represented an inpatient labor induction abortion.

In phase two, we aimed to evaluate the billing codes used for known labor induction abortion cases over a 12-month period (January through December 2024), which included the last year of phase one. Using our institution's labor and delivery logs, we manually identified all possible cases that could be classified as a second- or third-trimester labor induction abortion. These logs are paper records kept by the unit secretary for every patient admitted to the labor and delivery unit, listing the date of service, medical record number, gestational duration, and admission indication. We identified patients with gestational durations ≥ 14 weeks and 0 days and fetal or maternal indications for admission suggesting a possible labor induction abortion, such as fetal anomaly or periviable prelabor rupture of membranes. We then reviewed patient EMR charts to confirm those who had a labor induction abortion and subsequently cross-referenced these encounters with CPT data provided by the hospital coding department to identify the codes used to bill these encounters. For this analysis, in addition to labor induction abortion-specific codes 59850, 59851, 59855, and 59856, we included codes suggested by professional society guidelines that start with 594xx (in which the last two numbers refer to different aspects of care that include a vaginal delivery, which would be 59400, 59409, and 59410) as appropriate for labor induction abortion at ≥ 20 weeks gestation [7,8], while recognizing that this approach lacks specificity for abortion identification at the systems level.

3. Results

3.1. Phase 1: CPT code review (2014–2024)

For the 132-month period evaluated from January 2014 through December 2024, we identified 57 encounters billed with one of the four AAPC-recommended labor induction abortion CPT codes, averaging one case every 2.3 months or about five cases annually. Upon chart review, only 26 encounters (46%) were verified as labor induction abortion, indicating concordance between the billed abortion-specific CPT code and the clinical encounter. The actual procedures that occurred for these 57 encounters are detailed in Table 1.

3.2. Phase 2: Manual labor and delivery log review (2024)

We identified 70 possible second- or third-trimester labor induction abortion cases in the labor and delivery log. We excluded 23 cases (spontaneous IUFD [n = 14], spontaneous delivery [n = 9]), leaving 47 confirmed second- and third-trimester labor induction abortions over the 12-month period, averaging approximately four cases per month. In total, 20 (43%) labor induction abortions were assigned CPT codes concordant with professional guidance, including five (11%) that used one of the four AAPC-recommended abortion-specific CPT codes and 15 (32%) coded for vaginal delivery (Table 2).

4. Discussion

In this study at a large tertiary health system, we found CPT coding for labor induction abortion in the second- and third-trimester was largely inconsistent and frequently discordant with abortion-specific CPT code guidance. Across an 11-year period, billing data using recommended CPT codes identified labor induction abortions occurring at a rate of approximately 5 cases annually, when 47 such abortions were performed in just the final year of this evaluation period. Although it is possible that some cases over the 11-year evaluation may have been coded as vaginal delivery, which would technically be considered correct per professional societies, using this code for research or billing analyses is likely to generate highly inaccurate datasets because of the tremendous overlap with the multitude of vaginal deliveries that occur on labor and delivery units. Using this code could also result in over- or under-payment

Table 2
CPT codes applied to second- and third-trimester labor induction abortions at a single California hospital, January-December 2024 (N = 47)

CPT code applied by hospital billing department	Code description	Confirmed labor induction abortion encounters billed with code	Concordance with clinically appropriate coding for labor induction abortion*
59409	Vaginal delivery	15 (32)	Concordant
59850	Termination of pregnancy by injection of saline into the amniotic sac to cause fetal demise, including labor management, delivery, and inpatient care until discharge	5 (11)	Concordant
998002	Miscellaneous medical procedure	21 (45)	Discordant
99024	Global surgical package	3 (6)	Discordant
59414	Manual placental delivery	1 (2)	Discordant
59841	Dilation and evacuation	1 (2)	Discordant

AAPC: American Academy of Professional Coders; CPT: Current Procedural Terminology
All data presented as n (%)
*Coding was classified as concordant if the CPT code applied was correct for labor induction abortion (AAPC 59580, 59851, 59855, 59856), or recommended by professional society guidance (vaginal delivery codes 59400 [routine obstetric care involving antepartum, vaginal delivery, and postpartum care], 59409 [vaginal delivery including postpartum care], and 59410 [vaginal delivery only] can be used for induced medical abortion ≥20 weeks [7,8]).

depending on the clinical scenario. The numerous non-related codes applied to encounters for labor induction abortion (Table 2) over the 12-month analysis demonstrate that use of incorrect or unacceptable codes more likely accounts for the underestimation of actual labor induction abortion incidence rather than use of vaginal delivery codes.

Coding errors in our sample exceed the five percent error threshold recommended by the United States Department of Health and Human Services for administrative data quality assessments [9]. An additional problem in coding second- and third-trimester labor induction abortion is that the recommended "correct" CPT codes fail to reflect modern practice, such as those describing intra-amniotic saline instillation, which has not been standard practice for decades [10]. Out-of-date or inaccurately defined codes likely contribute to miscoding.

Additionally, professional society guidance condoning the use of a vaginal delivery code (594xx, in which the last two numbers refer to vaginal delivery), obscures the care being provided. In a world in which billing codes are frequently used for database research and quality improvement programs, use of vaginal delivery codes also complicates accurate identification of labor induction abortion at the systemic level. Even if a diagnosis code of "problems related to unwanted pregnancy" (Z64.0) was added, this process is still a sub-optimal workaround for a coding system that does not accurately reflect the actual procedure. As a result, inaccurate coding limits utility for research and surveillance and can undermine accurate reimbursement. These issues have a real impact for data collection nationally. Coding inconsistencies likely result in underreporting of second- and third-trimester labor induction abortion and mischaracterization of clinical practices. Without accurate coding data, advocating for data-informed policy and improved payment structures is greatly hampered. Revising CPT codes to reflect current clinical practice and improving education for coders and providers are essential next steps.

Our study is limited by being conducted at a single institution. The accuracy of coding practices at this institution may not reflect that of other healthcare systems. Coding at different institutions may be determined by specific institutional policies, EMR systems, provider documentation quality and practices, and coder training, interpretation, and culture. Provider documentation and coding practices may also change over time.

Based on the patterns observed in this analysis, coding errors have implications for research, reimbursement, and policy development related to second- and third-trimester labor induction abortion. National organizations should prioritize updating and revising procedural codes and standardizing coding and billing practices to improve the integrity and quality of abortion-related data and ensure fair compensation for complex inpatient abortion care. One solution would be to redefine 59850 and 59855 as labor induction abortion in the second and third trimester using prostaglandins and anti-progestins, which would better reflect current clinical practice compared to current definitions [10]. The disparities we found add to the literature demonstrating the unreliability of administrative codes for assessing abortion incidence and outcomes.

CRediT authorship contribution statement

Natalie DiCenzo: Writing – review and editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Sarah Kirshner:** Writing – review and editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Mitchell D Creinin:** Writing – review and editing, Supervision, Methodology, Data curation. **Jennefer Russo:** Writing – review and editing, Writing – original draft, Supervision, Methodology, Investigation, Data curation, Conceptualization.

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