V09.3 Special Analysis: Incidence of Episiotomy

I. Introduction

On October 24, 2008, The National Quality Forum (NQF) endorsed the time limited measure #0470, Incidence of Episiotomy, to address patient safety in pregnancy and childbirth. The description is the percentage of vaginal deliveries during which an episiotomy is performed. The steward of this measure is Christiana Care Health System and NPIC/QAS. Time-limited endorsement ends in Q4, 2010 at which time NQF will determine whether to fully endorse this measure. In order to field test the validity of this measure with our member hospitals we are providing this V09.3 Special Analysis on your Incidence of Episiotomy for the period 10/1/08-9/30/09. Please review your data carefully. We are happy to provide the list of medical record numbers associated with any of the numerator cases generating your rates.

Prior to the last quarter of CY 2008, when an episiotomy spontaneously extended with a laceration or tear, no code would be recorded for an episiotomy. This practice supported underreporting of episiotomies. In March 2008, Laurel Durham, Manager, OB Quality and Patient Safety, Providence St. Vincent Medical Center, OR made a presentation on behalf of the Council for Women's and Infants' Specialty Hospitals (CWISH) to the ICD-9 Coordination and Maintenance Committee stressing the importance of coding and reporting episiotomy with clinical accuracy. As a result, the coding guidelines were updated and beginning with October 2008 discharges any episiotomy that is performed regardless of extension by lacerations or tears should be coded as an episiotomy. Due to the change in episiotomy definition, a comparison will not be made through trends for this analysis. However, the 2004 NPIC/QAS trend database episiotomy rate was 19% ending with 13.3% in 2007. The rate was 12.3% in 2008 and 12.6% for the first 2 quarters of 2009.

Overview of NQF Incidence of Episiotomy Measure		
Numerator Statement	Number of episiotomy procedures	Vaginal deliveries with ICD-9 72.1, 72.21, 72.31 72.71, 73.6 excluding cases with an ICD-9 dx code of shoulder dystocia (ICD 660.41 or 660.42)
Denominator Statement	Number of vaginal deliveries	MS-DRGs for vaginal delivery (767-768 and 774-775) Exclusions: vaginal deliveries complicated by a shoulder dystocia (ICD-9 660.41 or 660.42)

II. Literature Overview of Topic

Episiotomy is defined as "the surgical enlargement of the vaginal orifice by an incision of the perineum during the last part of the second stage of labor or delivery"[1] and is one of the most common obstetrical procedures[2]. Even though episiotomies have been performed for several hundred years, it was not until the 1920's that there was more routine use of this procedure. Episiotomies in the United States have declined since the late 1970's from 61% in 1979 to 25% in 2004[3].

Suggested reasons to perform an episiotomy are varied, including: to prevent severe perineal tears; for preservation of the pelvic floor and perineum; and to increase the diameter of the vaginal outlet in order to facilitate the birth and promote ease of repair and improve healing. Adverse outcomes

related to episiotomies can consist of extension of the incision, unsatisfactory anatomic healing, pain, edema and other complications such as bleeding, hematoma formation, infection, dehiscence and abscess formation. Financial costs and additional resource utilization are another issue to consider when evaluating the use of episiotomies.

Alperin, et al. found in a study with over 6,000 women that the primary determinant for use of episiotomy is based upon obstetric care provider and not patient characteristics[4]. The rate of episiotomy in the first delivery by private practitioners was 67% while the episiotomy rate was 20% for resident services. Howden, et al. also found that episiotomies were higher among private practitioners[5]. They found higher rates of episiotomies when women were 30 or more years of age, were white, had completed greater than 12 years of education, were married and nulliparous.

In 2009, Argentinean researchers Carroli and Mignini completed a Cochrane collaboration review on episiotomy for vaginal birth[6]. They included eight randomized controlled trials with greater then 5,000 women comparing restrictive and routine episiotomy and examined the benefits and harms for mother and infant. With routine episiotomy policy 75% of women experienced an episiotomy versus 28% with a restrictive episiotomy policy. Benefits cited of a restrictive episiotomy policy included less severe perineal trauma, less posterior perineal trauma, less suturing and fewer healing complications at seven days. There was no difference in pain, urinary incontinence, painful sex or severe vaginal/perineal trauma after birth. Women did experience more anterior perineal damage with the restrictive episiotomy policy.

Additionally, Alperin, et al. found that when an episiotomy is performed at the first vaginal delivery there is an increased risk for a spontaneous obstetric laceration in following deliveries[7]. Fifty-one percent of women with a history of episiotomy experience a laceration during subsequent deliveries while 27% of women experienced laceration without a history of an episiotomy with their first delivery. When controlling for confounding variables at second time deliveries they found that in order to prevent one severe laceration the practitioner would be required to perform 32 fewer episiotomies. Further findings included that even with an episiotomy in the first delivery there was no protection for 3rd or 4th degree lacerations in that delivery.

According to ACOG, indications for episiotomy are varied and based mainly on clinical opinion. There is variation in techniques for episiotomies along with the repair. Current data and clinical opinion suggest that there are insufficient objective evidence-based criteria to recommend routine use of episiotomy. Clinical judgment remains the best guide for use of this procedure. Further research is needed to determine the indications for episiotomy, techniques for episiotomy along with repair techniques.

III. Description of Table and Graphs

The table and graphs in this analysis display data for your hospital compared to the NPIC/QAS subgroup and database averages.

Section A: Vaginal Deliveries displays total vaginal deliveries and vaginal deliveries coded with and without shoulder dystocia (diagnosis code 660.4). **Please note deliveries with shoulder dystocia are excluded from the remainder of this analysis.**

Section B: National Quality Forum Incidence of Episiotomy calculates NQF measure # 0470. The table shows the total vaginal deliveries without shoulder dystocia and the number of these deliveries with episiotomy procedure codes 72.1 (low forceps operation with episiotomy), 72.21 (mid forceps

operation with episiotomy), 72.31 (high forceps operation with episiotomy), 72.71 (vacuum extraction with episiotomy), or 73.6 (episiotomy with subsequent episiorrhaphy, episioproctotomy). The deliveries with episiotomy are displayed as a percent of total vaginal deliveries without shoulder dystocia.

Section B also displays episiotomy rates by type of delivery (operative and non-operative vaginal deliveries). The table shows total counts for operative and non-operative vaginal deliveries, forceps deliveries with episiotomy, vacuum deliveries with episiotomy and non-operative deliveries with episiotomy. Forceps and vacuum deliveries with episiotomy are each displayed as a percent of total operative vaginal deliveries and non- operative deliveries with episiotomy are displayed as a percent of total non-operative deliveries.

Section C: Laceration Rates displays the rate of 3rd or 4th degree laceration (664.2x or 664.3x) for deliveries with episiotomy (all vaginal, forceps, vacuum and non-operative). The total number of deliveries with episiotomy and 3rd or 4th degree laceration are shown for each category. Vaginal deliveries with lacerations are shown as a percent of total vaginal deliveries with episiotomy. Forceps and vacuum deliveries with lacerations are each displayed as a percent of total operative vaginal deliveries with episiotomy and non- operative deliveries with lacerations are displayed as a percent of total non-operative deliveries with episiotomy.

Section D: Maternal Conditions affecting Episiotomy displays the count of vaginal deliveries with episiotomy coded with prolonged second stage labor (dx code 662.2), precipitate labor (dx code 661.3) or advanced maternal age (≥ 35). The deliveries with each condition are displayed as a percent of total deliveries with episiotomy.

Section E: Linked Mother/ Baby Analysis displays the number of inborns linked to a mother with a vaginal delivery as a percent of total deliveries with an episiotomy. It also shows the number of linked inborns with the diagnosis code "heavy for dates" (dx code 766.1) as a percent of total deliveries with episiotomy.

Graph 1: National Quality Forum Incidence of Episiotomy for Vaginal Deliveries without Shoulder Dystocia

Graph 2: Incidence of 3rd or 4th Degree Laceration for Deliveries with Episiotomy

Graph 3: Incidence of Prolonged 2nd Stage Labor for Deliveries with Episiotomy

Graph 4: Incidence of Advanced Maternal Age (≥ 35) for Deliveries with Episiotomy

Graph 5: Incidence of Linked Inborns coded as "Heavy for Dates" (dx code 766.1) for Deliveries with Episiotomy

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IV. References

[1] Carroli G, Mignini L. Episiotomy for vaginal birth. *Cochrane Database of Systematic Reviews 2009*, Issue 1. Art. No.: CD000081. DOI: 10.1002/14651858.CD000081.pub.2.

[2] The American College of Obstetricians and Gynecologists. Practice Bulletin Episiotomy. Number 71, April 2006 (Reaffirmed 2008).

[3] Frankman, E.A., Wang, L., Bunker, C.H. & Lowder, J.L. (2009). Episiotomy in the United States: has anything changed? *American Journal of Obstetrics & Gynecology;* 200: 573.e1-573.e7.

[4] Alperin, M., Krohn, M.A. & Parviainen, K. (2008). Episiotomy and increase in the risk of obstetric laceration in a subsequent vaginal delivery. *Obstetrics and Gynecology,* 111(6), 1274-1278.

[5] Howden, N.L.S., Weber, A.M. & Meyn, L.A. (2004). Episiotomy use among residents and faculty compared with private practitioners. *Obstetrics & Gynecology;* 103(1), 114-118.

[6] Carroli G, Mignini L. Episiotomy for vaginal birth. *Cochrane Database of Systematic Reviews 2009*, Issue 1. Art. No.: CD000081. DOI: 10.1002/14651858.CD000081.pub.2.

[7] Alperin, M., Krohn, M.A. & Parviainen, K. (2008). Episiotomy and increase in the risk of obstetric laceration in a subsequent vaginal delivery. *Obstetrics and Gynecology*, 111(6), 1274-1278.

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	Hospital SAMPLE	Subgroup Average	Database Average
A. Vaginal Deliveries			
Total vaginal deliveries	2,195	2,337	2,851
Vaginal deliveries with shoulder dystocia (dx code 660.41 or 660.42 - obstructed labor due to impacted fetal shoulders)	55	51	60
Vaginal deliveries without shoulder dystocia	2,140	2,286	2,791
B. National Quality Forum (NQF) Incidence of Episiotomy - measure #0470 *			
Total vaginal deliveries without shoulder dystocia	2,140	2,286	2,791
Vaginal deliveries without shoulder dystocia with episiotomy (procedure codes 72.1, 72.21, 72.31, 72.71, 73.6)	114	239	332
% of total	5.3%	11.7%	12.9%
Episiotomy Rates by Type of Delivery *			
Operative Vaginal Deliveries:			
Total operative vaginal deliveries	225	135	192
Forceps deliveries with episiotomy (procedure codes 72.1, 72.21 or 72.31)	0	13	18
% of total	0.0%	7.6%	7.6%
Vacuum deliveries with episiotomy (procedure code 72.71)	52	36	51
% of total	23.1%	32.2%	30.5%
Non-operative Deliveries:			
Total non-operative deliveries	1,915	2,151	2,599
Non-operative deliveries with episiotomy (procedure code 73.6)	62	189	263
% of total	3.2%	10.0%	10.9%

* - All vaginal deliveries (operative and non-operative) exclude cases with a shoulder dystocia code

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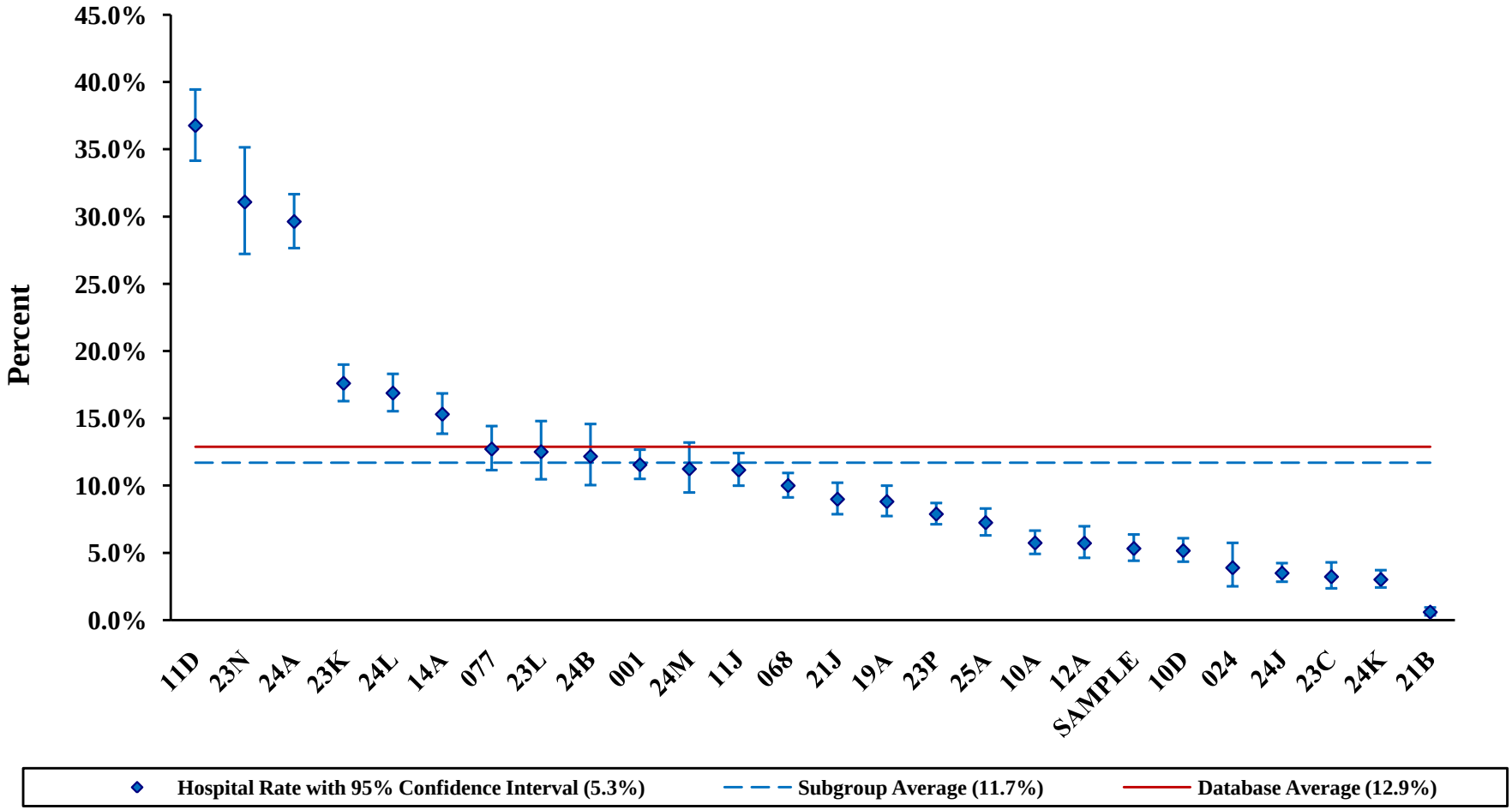
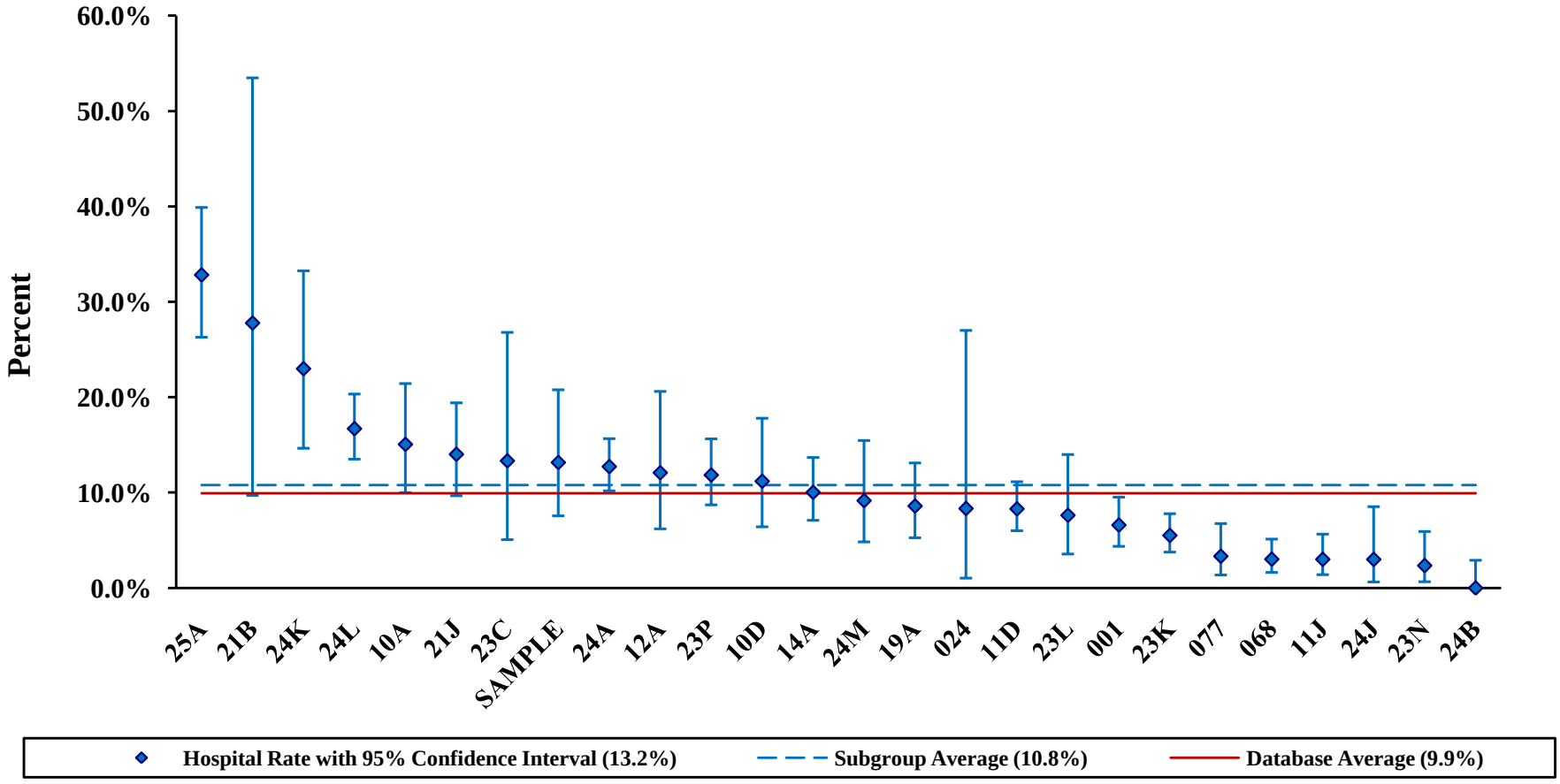
	Hospital SAMPLE	Subgroup Average	Database Average
C. Laceration Rates *			
Total vaginal deliveries without shoulder dystocia with episiotomy (procedure codes 72.1, 72.21, 72.31, 72.71, 73.6)	114	239	332
Vaginal deliveries with episiotomy and 3rd or 4th degree laceration	15	23	31
% of total	13.2%	10.8%	9.9%
Total operative vaginal deliveries with episiotomy (procedure codes 72.1, 72.21, 72.31, 72.71)	52	50	69
Forceps deliveries with episiotomy and 3rd or 4th degree laceration	0	4	5
% of total	0.0%	6.1%	5.8%
Vacuum deliveries with episiotomy and 3rd or 4th degree laceration	12	8	10
% of total	23.1%	15.1%	14.3%
Total non-operative deliveries with episiotomy (procedure code 73.6)	62	189	263
Non-operative deliveries with episiotomy and 3rd or 4th degree laceration	3	11	15
% of total	4.8%	5.7%	5.6%
D. Maternal Conditions affecting Episiotomy *			
Total vaginal deliveries without shoulder dystocia with episiotomy	114	239	332
Vaginal deliveries with episiotomy and prolonged 2nd stage labor (dx code 662.2)	4	3	6
% of total	3.5%	1.7%	2.4%
Vaginal deliveries with episiotomy and precipitate labor (dx code 661.3)	2	2	3
% of total	1.8%	1.1%	1.2%
Vaginal deliveries with episiotomy and advanced maternal age (≥ 35)	21	41	52
% of total	18.4%	16.1%	14.6%
E. Linked Mother/Baby Analysis *			
Inborns linked to a mother with a vaginal delivery and episiotomy	115	203	268
% of total mothers with a vaginal delivery and episiotomy	100.9%	86.9%	85.2%
Linked inborns with dx code 766.1 (heavy for dates)	5	8	14
% of total mothers with a vaginal delivery and episiotomy	4.4%	4.3%	4.2%

* - All vaginal deliveries (operative and non-operative) exclude cases with a shoulder dystocia code

Graph 1: National Quality Forum (NQF)
Incidence of Episiotomy for Vaginal Deliveries without Shoulder Dystocia
NPIC ID: SAMPLE

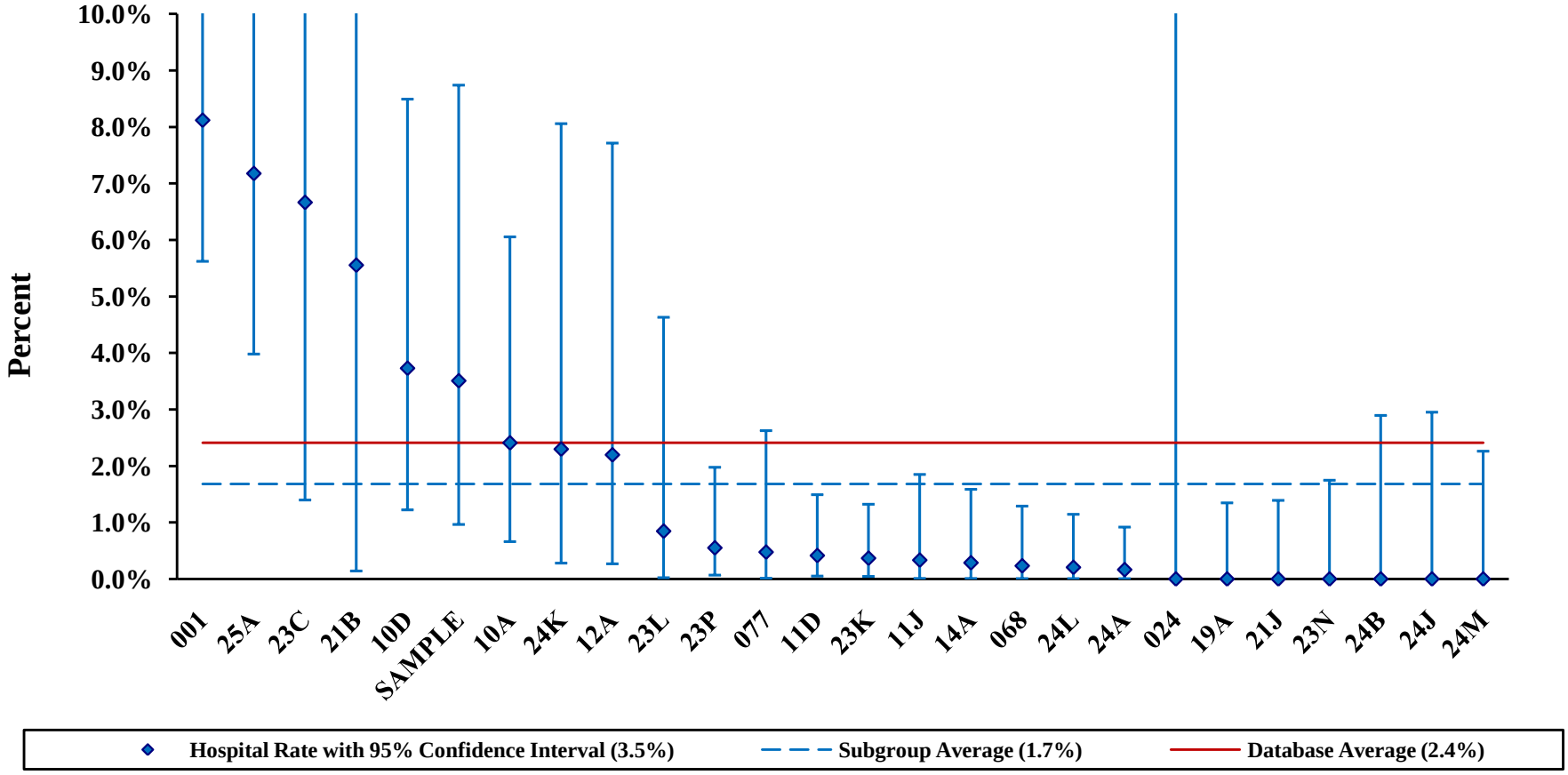


Graph 2: Incidence of 3rd or 4th Degree Laceration for Deliveries* with Episiotomy
NPIC ID: SAMPLE



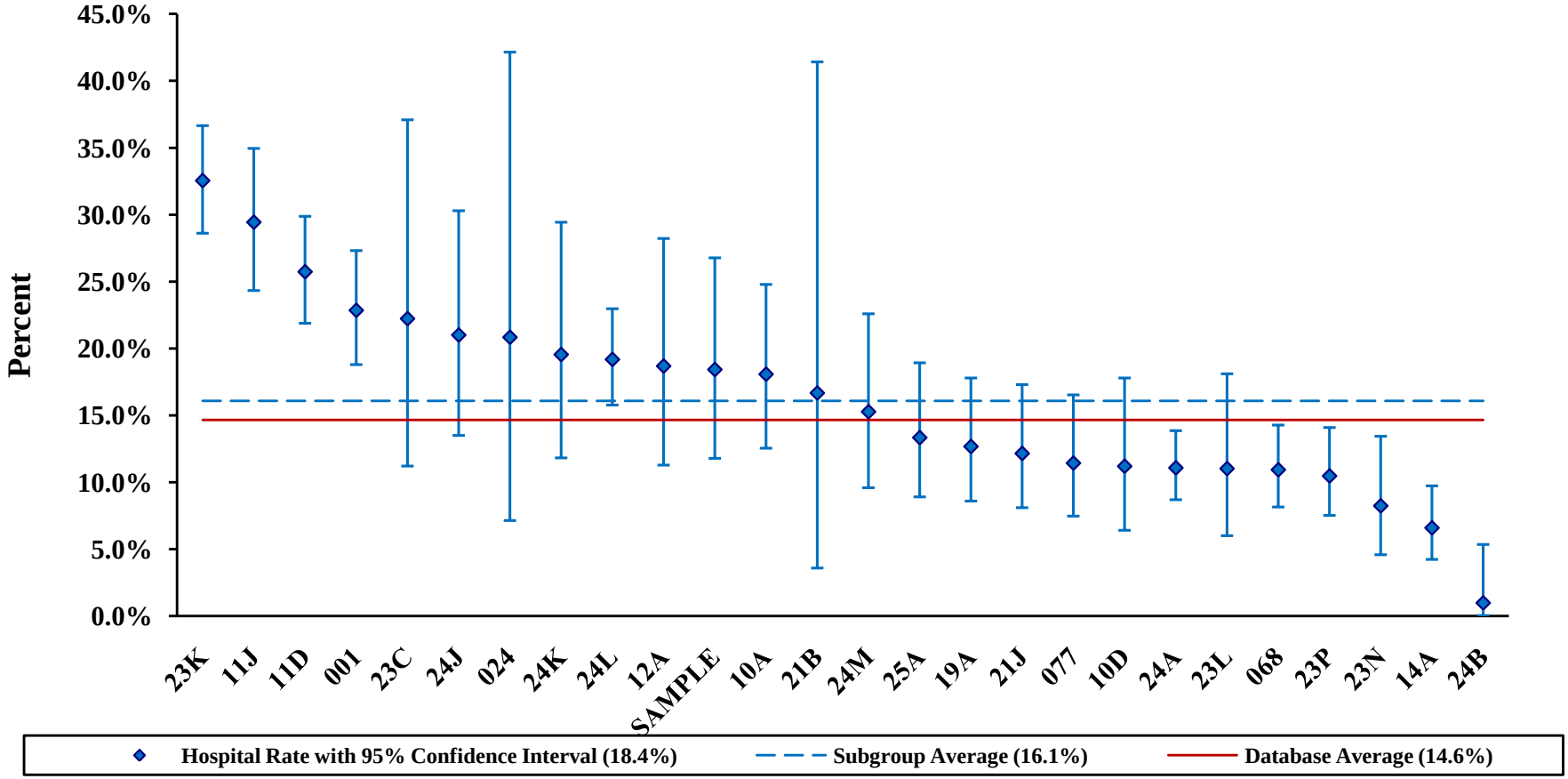
*** Excludes vaginal deliveries complicated by a shoulder dystocia**

Graph 3: Incidence of Prolonged 2nd Stage Labor for Deliveries* with Episiotomy
NPIC ID: SAMPLE



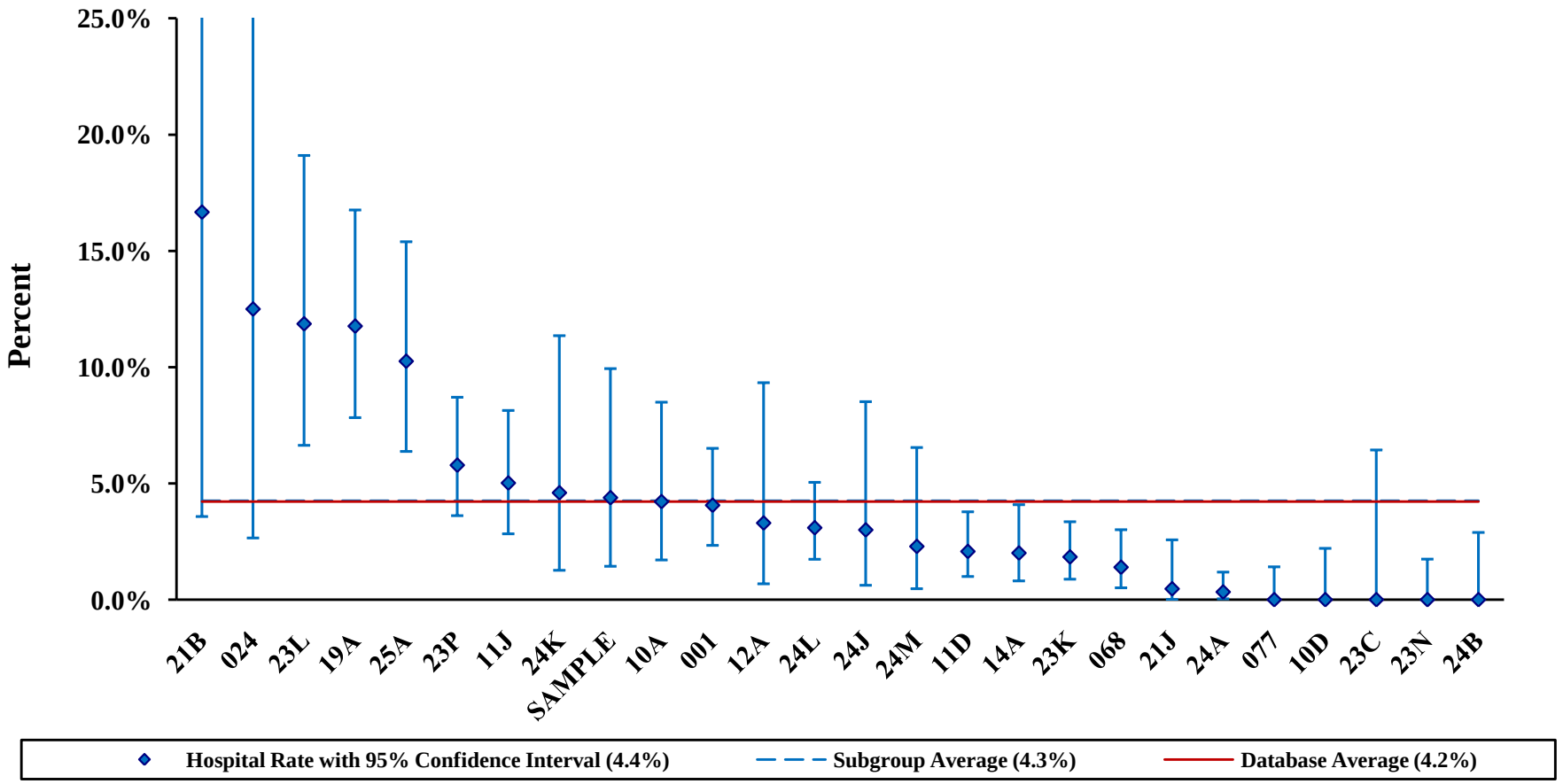
*** Excludes vaginal deliveries complicated by a shoulder dystocia**

Graph 4: Incidence of Advanced Maternal Age (≥ 35) for Deliveries* with Episiotomy
NPIC ID: SAMPLE



*** Excludes vaginal deliveries complicated by a shoulder dystocia**

Graph 5: Incidence of Linked Inborns coded as "Heavy for Dates" (dx code 766.1) for Deliveries* with Episiotomy
NPIC ID: SAMPLE



*** Excludes vaginal deliveries complicated by a shoulder dystocia**