

Using Team Time-Outs in the Second Stage of Labor: A Quality Improvement Project

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Abstract

Objective: Implement standardized time-outs in the second stage of labor to increase communication between midwives and nurses.

Setting/Problem: This project took place at a midwifery practice within an academic hospital in an urban setting in the Pacific Northwest. There were no guidelines for the midwifery practice on communication standards during the second stage of labor.

Interventions/Aims: An electronic health record template was created to document a time-out at the beginning of the second stage and each hour thereafter. This template included information on: evaluation of fetal heart rate, the degree of descent in the past hour, patient positioning and effort, fetal position, presence of postpartum hemorrhage medications in the room, and whether it is indicated to collect cord blood gas. The main aim was to achieve a documentation rate of 75% of eligible patients and assess midwife satisfaction with time-outs.

Results: By the end of the third cycle, 60% of eligible patients had documentation completed during the second stage. There was limited response to the pre- and post-intervention survey.

Conclusion: In this quality improvement project, time-outs were introduced at the beginning and hourly during the second stage with an accompanying template for EHR. Implementing time-outs can help increase situational awareness in the delivery room and allow for comprehensive risk-assessment. Future direction for this project is to increase utilization of the documentation at the beginning of the second stage and perhaps involve nursing staff to create a nursing-led time-out versus midwife-led.

Introduction

Problem description

Labor dystocia, or failure to progress, is the leading indicator in the United States for primary cesarean birth (Caughey et al., 2014). In the United States, the primary cesarean rate was 21.9 births per 100 between the years 2018 and 2021 and Oregon's was slightly lower at 20.5 per 100 live births (March of Dimes, 2022). In a large prospective cohort study (n=103,415) that was conducted between 2002 and 2008, researchers found that approximately 15% of nulliparous patients and 3-4% of multiparous patients had a dystotic labor pattern in the second stage (Cheng & Caughey, 2017). Prolonged second stage of labor increases the risk of adverse maternal and neonatal outcomes, such as increased rates of postpartum hemorrhage (Niemczyk et al., 2022; Pergialiotis et al., 2020), chorioamnionitis (Hagiwara et al., 2022), perineal injury (Niemczyk et al., 2022; Pergialiotis et al., 2020), and admission to the neonatal intensive care unit (Niemczyk et al., 2022).

This project sought to continue quality improvement work addressing prolonged second stage within a midwifery practice at an academic hospital in the Pacific Northwest. This practice has been collecting data on their patients since 2012 in an effort to implement quality improvement strategies. In the first project, standardized midwifery documentation was enacted for all midwifery patients who were nearing or experiencing a prolonged second stage in the first quality improvement project. The first project found that utilizing a documentation template helped to improve communication during prolonged second-stages of labor. This project sought to further improve communication by implementing standardized midwifery-nurse time-outs on qualifying patients in the second stage of labor. A time-out is defined as an immediate pause by the medical team to review the medical case in order to prevent harm and improve outcomes.

Available knowledge

The second stage of labor is defined as the time between complete dilation to expulsion of the fetus. Prolonged second stage of labor is defined as lasting greater than or equal to three and four hours for nulliparous patients and two and three hours for multiparous patients, without an epidural and with an

epidural, respectively (Caughey et al., 2014). This definition was published as part of a joint consensus on the safe prevention of the primary cesarean and was endorsed by the American College of Obstetrics and Gynecology (ACOG) and the Society for Maternal-Fetal Medicine (SMFM) (Caughey et al., 2014). These recommendations were created utilizing data from research by Zheng et al. (2010) which applied data from the Consortium on Safe Labor (n=62,145) to create average labor curves. Prior to this research, normal labor curves were produced from research completed in 1955 by a physician at Columbia University who used data from 500 white patients to determine hourly dilation from zero to complete (Friedman, 1955). Despite multiple limitations to this research, it has remained greatly influential. Critiques of his research include the differences between obstetric patient population of the 1950s compared to the present day and the availability of more modern interventions. For example, the research had a small sample size (n<500), there were increased rates of interventions used to hasten birth (e.g. forceps), and included high-risk pregnancies and fetuses who died prior to delivery (Tilden et al., 2022). More contemporary research by Zheng et al. challenged Friedman's research by utilizing modern statistical interval measurements rather than simple mathematical modeling (King et al., 2019). Additionally, they utilized a much larger sample size that was more reflective of the obstetric population of today which is racially and socioeconomically diverse. However, a critique of this research is that much of contemporary obstetric population often receive interventions to accelerate labor, such as synthetic oxytocin (Tilden et al., 2022). Recent research offered insight into physiologic labor curves by utilizing data from the Midwives Alliance of North America (MANA) data registry which mostly contains data from out of hospital births where common obstetric intervention is not readily available (Tilden et al., 2022). This research found that active labor among nulliparous patients may be almost twice as long as earlier research suggests. Second stages of labor were significantly longer at 5.5 hours at the 95%ile versus 3.6 hours at the 95%ile for second stages without epidurals as earlier research found (Tilden et al., 2022; Zhang et al., 2010).

Evidence suggests that following the second stage management recommendations set forth by ACOG and the SMFM can potentially reduce the primary cesarean rate (Thuillier et al., 2018; Wilson-

Leedy et al., 2016; Zipori et al., 2019). Since the publications of the 2014 ACOG and SMFM guidelines there has been inconsistent application in clinical practice. Skiffington et al., (2020) utilized perinatal data from 2007 to 2016 (n=181,738) in Alberta, Canada, and identified that approximately 55.4% of cesarean births for second stage dystocia did not meet the ACOG/SMFM criteria for second stage arrest. Another retrospective study that examined cesarean rates for failed induction and/or arrest of labor at an academic health center in the United States found that 73% of these deliveries (n=206) were not adherent to the ACOG/SMFM guidelines (Alrais et al., 2019). Only 17% of those who had cesareans for prolonged second stage met the ACOG/SMFM definition of second stage arrest (Alrais et al., 2019).

Using the ACOG and SMFM guidelines, one retrospective study used data sets from two different historical points at one hospital to examine the effects on the primary cesarean rate (Zipori et al., 2019). In one data set (n=9,300), the definition for prolonged second stage was considered using the above definition and in the next data set (n=10,531), nulliparous patients were given one extra hour beyond this definition before moving towards a cesarean birth. They found that the primary cesarean rate dropped from 23.3% in period one to 15.7% in period two, which is a significant reduction in the cesarean rate (RR=0.63). Rates of operative vaginal delivery increased from 17.7% to 19.2%, (RR=1.1) as well as a slight but statistically insignificant increase in rates of postpartum hemorrhage and third- and fourth-degree lacerations. Another retrospective study compared data pre- and post- implementation of these recommendations by ACOG and the SMFM (Wilson-Leedy et al., 2016). They found a reduction in the rate of cesarean births; however, their sample size (n=25) was not large enough to produce statistical significance. A much larger retrospective study (n=6,351) found a reduction in cesarean rates for arrest in the second stage between these two time points from 1.3% to 1.0%; however, this was not statistically significant (Thuillier et al., 2018). Lastly, one recent retrospective study found an increase in second stage cesarean deliveries after implementation of new guidelines at an academic health center from 4.0% to 5.9% which was statistically significant (P value = 0.0012) (Kadour-Peero et al., 2021). One limitation to this study is that this included all cesarean births in the second stage and did not delineate the indication.

One systematic review examined whether length of second stage was correlated with specific delivery outcomes (Gimovsky, 2021). The authors utilized a data set of nulliparous patients (n=661) both with and without an epidural and then divided the patients into three different groups by second stage length: normal second stage (0-179 minutes), prolonged second stage (180-299 minutes), and extremely prolonged second stage (≥ 300 minutes) (Gimovsky, 2021). The authors found that longer second stages increased rates of vaginal delivery among the normal, prolonged, and extremely prolonged second stage groups, with 92% of patients giving birth by the 5th hour of pushing. However, rates of postpartum hemorrhage, which they defined as blood loss greater than or equal to 500 mL, increased by 8% in both the prolonged second stage group and in the extremely prolonged second stage (p value < 0.001). This research supports the need to determine a safe balance between the reduction of cesarean deliveries and the safety of the patient and fetus.

Risks associated with prolonged second stage can be stratified by neonatal and maternal adverse outcomes. The following researchers defined prolonged second stage as greater than 2 hours or >3 hours in unmedicated multiparous and nulliparous patients, respectively, and greater than >3 hours or >4 hours in multiparous and nulliparous patients with epidurals, respectively. Maternal risks associated with prolonged second stage include: postpartum hemorrhage (Cheng & Caughey, 2017; Dalbye et al., 2021; Gimovsky et al., 2017; Pergialiotis et al., 2020; Zipori et al., 2019), chorioamnionitis (Hagiwara et al., 2022; Pergialiotis et al., 2020), and perineal and anal sphincter injuries (Hagiwara et al., 2022; Pergialiotis et al., 2020; Ramm et al., 2018). Data on neonatal outcomes are less clear however there is an association between short-term neonatal outcomes, such as decreased APGAR scores. In Pergialiotis et al., the authors found increased rates of Apgar scores less than 7 at five minutes (RR=1.65) and admission to the neonatal intensive care unit (RR=1.63).

One promising intervention for improving rates of guideline adherence is the Safety Program for Perinatal Care (SPPC) which emphasizes the following: (1) cultivating a culture of teamwork and communication, (2) applying safety science to processes, and (3) in situ simulations. A cohort study of 43 labor and delivery units found a statistically significant decrease of 6.3% in the primary cesarean rate

after implementation of the SPPC guidelines based on the ACOG/SMFM recommendations for second stage (Kahwati et al., 2019). A systematic review of communication interventions in obstetric care (n=71 articles) found that providing trainings on communication was helpful in decreasing adverse perinatal outcomes (Lippke et al., 2021). A quality improvement project at a tertiary care center in the Northeast implemented hourly time-outs during second stage of labor and found that documentation of hourly time-outs increased agreement in the care plan between the nurse and provider from 14% to 81% over a two year period (Wood & Stevenson, 2018). Additionally, providers, nurses, and residents felt that the documentation was helpful to their patient care and of 28 patients interviewed, 92% reported satisfaction and 86% remembered the hourly time-outs and felt included (Wood & Stevenson, 2018). Patient satisfaction interviews were conducted as well; 92% of patients remembered the conversations and that they were included in the discussion regarding their birth plan. Meaningful communication among care providers may increase adherence to guidelines in the second stage of labor.

A systematic review regarding communication between maternity care providers and patients yielded only two research articles (Chang et al., 2018). From this limited research, they found that there is very little quality evidence regarding best practices for communication and highlighted the need for more research in maternity care and communication. Another study that occurred at an academic hospital in Poland examined intrapartum as well as early postpartum communication between providers, RNs, and patients, and patient satisfaction (Baranowska et al., 2021). Baranowska et al. found that patients with a vaginal delivery reported an overall increased satisfaction with communication after implementation of time-outs during intrapartum care (P value = 0.0001).

Rationale

This project was created to improve communication among care providers during the second stage of labor by using hourly time-outs, which is a pause in care called by the health care provider or the nurse to review the current plan for delivery and status of the laboring patient and fetus. A time-out is defined as a deliberate pause by the entire team, including the patient, to increase patient safety (Shear et al., 2018). A fishbone diagram, as shown in Appendix 1, was created based on conversations with

midwives in the practice and student midwives to explore reasons that may contribute to time-outs not occurring during the second stage despite being best practice (Lippke et al., 2021). Current evidence suggests that better communication during labor can improve perinatal outcomes. The goal of implementing hourly time-outs was to increase communication between the nurse and midwife and ensure that the team is in consensus of the plan of care and interpretation of laboring patient and fetal status.

This project was designed using the IHI Model for Improvement by implementing Plan-Study-Do-Act cycles to assess the project as it was actualized in order to implement changes to better meet the goals of the practice (Langley et al., 2009). Reporting of the methods and findings were applied using the Standards for Quality Improvement Reporting Excellence: SQUIRE 2.0 guidelines (SQUIRE, 2015).

Specific Aims

The goal for this project was that the midwives would conduct an hourly time-out with the labor and delivery nurse for 75% of nulliparous and multiparous patients during the second stage of labor when delivery was not expected in the next 30 minutes. The time-out encompassed the following: evaluation of fetal heart rate, the degree of descent in the past hour, patient positioning and effort, fetal position, presence of postpartum hemorrhage medications in the room and ready for use, and whether it was indicated to collect cord blood gas. The time-out was documented using a template in the electronic health record while at the bedside.

Methods

Context

This midwifery practice is part of an academic health center in the Pacific Northwest. The practice consists of approximately 12 faculty and 10 per diem CNMs who attend roughly 500 births per year. The patient population is predominately white, non-Hispanic (79%) and about 23% are over the age of 35. Thirty-two percent of the patients use Medicare for health care coverage. Student midwives are a prominent feature of this practice and are supervised in a large percentage of the births at this setting. The midwives practice independently, caring for low- and moderate-risk patients; obstetricians are readily

available for consultation. Midwifery practice guidelines are revised and signed every 2 years by the midwifery practice manager, midwifery program director, and the obstetric chief of labor and delivery service.

In 2021, the institution's Perinatal Best Practice (PBP) Committee, a multidisciplinary committee comprised of nurses, obstetricians, MFM practitioners, midwives, neonatologists, anesthesiologists, and family medicine providers analyzed best practice for prolonged second stages of labor, which helped inspire the project that preceded this one. The midwifery practice guidelines allow for inter-provider variation regarding total length of second stage, management techniques, timing of OB consultation, and associated documentation. This project intervention was intended to standardize the team communication process and documentation of time-outs at the beginning and during the second stage of labor.

Interventions

A template was developed to standardize the time-out and documentation based on similar documentation used by two different hospitals. It was adopted to be provider specific as both these hospitals incorporated into nursing progress notes as opposed to provider notes. This template was then sent to the practice manager and the advisors to the project. Their feedback was incorporated into the final template, which is shown in Appendix 2.

Prior to implementation, the practice manager and nurse manager were contacted via email to explain the intervention and feedback was solicited. The practice manager did cite concern about feasibility of using the computer at the bedside as the nurses are typically using that computer for their charting during the second stage of labor. The nurse manager did not anticipate the intervention would be disruptive as the time-out was to be brief. The project was then presented to the midwives at a practice meeting and a follow-up email was sent outlining the project and contained a survey to assess current practices in the second stage and to illicit feedback regarding the project. Additional emails with updates and a call for feedback were sent biweekly for the seven weeks of the project.

In the first and second PDSA cycle the template was to be used at the beginning of the second stage and each subsequent hour regardless of parity, as long as delivery was not imminent. In the final

PDSA cycle, documentation was only to be completed on nulliparous patients and started at the one-hour mark of second stage. The time-out included a discussion of fetal heart rate, the degree of descent in the past hour and since initiation of pushing, patient positioning and maternal effort, fetal position, whether postpartum hemorrhage medications are needed in the labor room, and whether it is indicated to collect a cord blood gas. The documentation was completed by the midwife or midwife student. After completion of the third PDSA, a final email was sent regarding the project and included a final survey.

Study of Intervention

In PDSA Cycles One and Two, all births that reached a second stage were included in analysis and a chart review was completed to determine if documentation occurred and whether documentation addressed each component of care. In the third PDSA cycle, this was changed to only include nulliparous patients with a second stage greater than one hour. A survey was distributed to the midwives to assess current communication practices during the second stage both pre- and post-intervention to assess whether documentation of hourly time-outs increased communication between team members.

Measures

The primary outcome measure for this project was whether or not the hourly time-outs were documented in the electronic medical record between October and December of 2022. The process measures included: the frequency of documentation and whether each of the six points were documented. The outcome measure was whether or not the intervention improved provider satisfaction with communication in the second stage. One balancing measure included the increased burden on midwives and midwife students to complete hourly time-outs. This was difficult to assess as students were not surveyed and there was low survey response by the midwives. Another balancing measure was whether or not this was cumbersome to the staff nurses to stop their own charting and patient care during the time out. This was not formally assessed.

Analysis

Quantitative data were collected via prospective chart review from October 12, 2022 through December 7th, 2022. The charts from each patient who delivered between these dates were reviewed,

including patients who had cesarean deliveries to assess the mode of delivery during the second stage. The following data were abstracted from the chart review: parity, whether or not the second stage was one hour or greater in length, second stage arrest (based on the ACOG/SMFM recommendations), attendance of a student, and lastly presence or absence of time-out documentation. A qualitative survey was administered to midwives working at this setting to assess their satisfaction with communication both pre- and post-intervention.

Ethical considerations

Three ethical considerations were addressed within this project. One, was assessing nursing staff impact and whether or not utilizing the bedside computer for charting the time out would be disruptive to the nurse charting and impact their work flow. This is further addressed in the results section below. Second, was the impact of the project on the patients and whether the time-out would be disruptive to the laboring patient and their support. Ultimately, the research on time-outs in labor showed increased patient satisfaction which assuaged this concern (Baranowska et al., 2021; Wood & Stevenson, 2018). The third concern was data abstraction and utilization of patient data. To mitigate any HIPPA concerns no identifiable patient data was used. A request for determination was approved by the institutional review board. This project was deemed not human subjects research and was a quality improvement project.

Results

Between October 12th, 2022 and December 7th, there were thirty-one eligible patients and of those patients, seven charts contained completed documentation utilizing the template. Of these eligible patients, 19 were nulliparous and 11 were multiparous (see Figure 1). Out of 31 patients, 15 patients had second stages that lasted an hour or longer and one patient had a second stage that met the criteria for second stage arrest (see Figure 1). Fourteen of the 15 patients were nulliparous. Two patients had second stage cesarean births, however, both patients had been transferred to the obstetric service prior to the second stage for preeclampsia with severe features and were not included in this data. Students were involved in 21 of the births included in the data.

Prior to the start of the first PDSA cycle, a survey was sent out to the midwives to collect qualitative data regarding their experience with communication during the second stage of labor. One midwife responded to the formal survey although a few communicated informally prior to the start of the intervention via email and personal communications. One midwife stated that she already did hourly time-outs in her practice although she did not document them unless there was a change in the plan of care or if it was a prolonged second stage. She was under the belief that other midwives practiced this way, although from my communications with individual midwives and students this was not standardized practice. Additionally, the nurse manager was contacted via email regarding the impact of implementing this study and having the midwives utilize the computer in the room. The manager forwarded the email to the nurses soliciting for any feedback. There were no responses from them concerning the project.

At the start of the first PDSA cycle from October 12th to October 26th, 2022, the midwife on call was instructed to document using the standardized template in the EHR at the beginning of the second stage and each hour thereafter unless delivery was imminent. In this cycle there were 11 births and documentation occurred twice. Midwives reported forgetting about the template or simply having short second stages in which they did not feel compelled to hold a time-out prior to the start of the second stage. During the second PDSA cycle from October 27th to November 10th, 2022 a page was sent at the start of the shift as a reminder of the intervention. In this cycle there were 15 births and three had documentation. Feedback was solicited via email and two midwives responded that they felt it was unnecessary to document for births with shorter second stages or multiparous patients. Two additional midwives, while completing clinical shifts with the author, relayed similar feedback. In the final PDSA cycle from November 11th to December 7th, 2022 midwives were asked to conduct a time-out at the first hour and hourly thereafter and to complete documentation on nulliparous patients only. The change was made to start documentation at the first hour as no one had completed initial documentation at the start of pushing during the first two cycles. In this third cycle, there were five patients who qualified and two had documentation. At the end of this cycle, a post-intervention survey was sent out and there were no respondents. No follow-up emails were sent to provide reminders which was a limitation to the project.

While the target documentation was 75% of qualifying second stages, there was an increase in documentation rate from cycle to cycle, from 18.2% in Cycle 1 to 40% in Cycle 3 (see Figure 2). Excluding data from multiparous patients, the documentation rate for nulliparous patients jumps to 33.3% in the first and second cycle (see figure 3). Additionally, among nulliparous patients with second stage lengths of one hour or greater, the documentation rate changes from 50% in Cycle 1 to 60% in Cycle 2 to 66.7% in Cycle 3 (see figure 4). When reviewing the charts for completeness, every time the template was used each component was answered. No one completed a time-out at the start of pushing. A majority of time-outs occurred at the one-hour mark or at greater than two hours. During the project period there were no second stage cesareans. Lastly, every documentation of a time-out occurred with a student in attendance at the birth.

Discussion

Summary

This DNP project sought to increase communication between the nurse and midwife during the second stage of labor at an academic health center in the Pacific Northwest. The desired outcome was to see an increase in time-outs at the beginning of and hourly during the second stage of labor in hopes of increasing midwife and nurse communication. Although this project did not reach the target documentation rate of 75%, there was an overall increase from an 18.2% completion rate in the first cycle to 66.7% in the third cycle. The time-out documentation was used exclusively in nulliparous patients with second stages greater than one hour instead of the intended use in both nullipara and multiparas.

Strengths of this project were an overall increase in midwife and nursing communication during the second stage and that when documentation did occur each component was addressed. A notable limitation to this project were the lower birth numbers at 31 births, most of which were multiparous patients with second stages less than one hour. None of these births were instrumental vaginal deliveries. Only one patient had a prolonged second stage.

Additionally, midwife engagement with the surveys was minimal and there is no baseline or post-intervention quantitative data on the usefulness of this project. Through informal communications with

midwives in the practice, four midwives stated difficulty in remembering to document as their focus was oriented towards patient care. One midwife stated that she did hold a time-out at the beginning of the second stage already but she did not document unless there was a change in the plan of care. It was also noted that a majority of the second stages were less than an hour (n=16) and some midwives felt that they needed to be present with their patients instead of spending time on a time-out or documentation.

Interpretation

Given the small-scale nature of this project it is difficult to compare the outcomes of the available literature to these findings. Nurse satisfaction with the project was not assessed and there was limited engagement by the midwives for formal assessment of their satisfaction. Of note, during this period there were no second stage cesarean births performed and only one birth met the definition for a prolonged second stage. Practice data available from 2012-2019 revealed a prolonged second stage rate of 27.5% in nulliparous patients whereas this project had a 7.2% rate (n=1) (Wharton, 2022). In the previous year's project, there were only six patients who met the criteria for a prolonged second stage (Wharton, 2022). A limitation for both of these projects was the short time-frame and limited sample size. However, it may be worthwhile to assess second stage data for 2019-2023 to assess whether there has been a reduction in prolonged second stages within the practice.

Furthermore, due to low utilization of the time-out and based on the feedback that was received, perhaps this project would have more utility as a nurse-led time-out. Other institutions have implemented second stage time-outs that occur at the beginning of the second stage and hourly thereafter, however, all of these institutions designated this time-out protocol as nurse-led. A similar quality improvement project at an academic hospital on the East Coast had an 89% documentation rate and was nursing implemented (Knowles, 2015). Having an interprofessional quality improvement project could be a future direction for this project. Having this intervention be nursing led may also help nurses to feel empowered in the decision making process and help lessen the feeling of provider hierarchy (Wood & Stevenson, 2018). Pivoting to nurse-led documentation would also address midwife concern over not feeling they are able to

be present with the patient if they have to complete this documentation and nurses already are documenting frequently throughout the second stage.

Limitations

A significant limitation of this study was the inability to assess midwife satisfaction with the project. The lack of response to the pre- and post-survey was likely influenced by a number of factors. First, there were multiple improvement projects happening simultaneously which may have led to provider overwhelm with emails and surveys. Second, there were only two emails sent to prompt provider survey completion and additional requests may have yielded a higher response rate from the midwives. Lastly, there were very few providers who actually used the template as it was only completed a total of seven times. It may have been generative to have had a pre- and post-survey for students as students were involved with all seven of the patients who had documentation in the second stage. Perhaps this template was more helpful for students as it provided orientation around what to consider during the second stage. It may be beneficial to see if nurses could be involved in the documentation as the midwives felt it was difficult to complete documentation while pushing with a patient. This project would have been strengthened by the ability to assess nurse and patient satisfaction in the time-out protocol.

Another limitation of this project was the lack of documentation occurring at the beginning of the second stage which arguably is most critical as it increases situational awareness when providers and nurses may experience “tunnel vision” at the start of pushing. Situational awareness refers to the ability to cognitively be aware of what is going on around oneself and the potential outcomes. At times, situational awareness decreases during the second stage and providers report “losing track of time” and interventions tried (Wood & Stevenson, 2018). Time-outs and huddles can increase situational awareness amongst team members (Edozien, 2015). Discussing the components of this time out (evaluation of fetal heart rate, the degree of descent in the past hour, patient positioning and effort, fetal position, presence of postpartum hemorrhage medications in the room, and whether it is indicated to collect cord blood gas) can assist providers and nurses about the risk-level of the patient and lead to increased preparedness for a variety of outcomes.

Conclusion

In this quality improvement project, time-outs were introduced at the beginning of and hourly during the second stage with an accompanying template for EHR. Implementing time-outs can help increase situational awareness in the delivery room and allow for comprehensive risk-assessment. A cohort study of 43 labor and delivery units found a statistically significant decrease of 6.3% in the primary cesarean rate after implementation of the SPPC guidelines which includes team huddles in the second stage based on the ACOG/SMFM recommendations for second stage (Kahwati et al., 2019). Having a more consistent utilization of time-outs may better the practice's outcomes. As an offered improvement project implementation, efforts need to be oriented towards engagement of nurses and as assessment of the feasibility of nurse-led time-out protocol needs to be assessed for this setting. Other institutions have implemented this protocol as a nursing intervention with observed success. Additionally, it is important to assess midwife experience with the time-outs as well as the student midwife experience. The time-outs were somewhat successful among nulliparous patients who had second stages greater than an hour and future projects should consider focusing on increasing this documentation at the start of the second stage and increasing the utilization of time-outs for all patients who are not imminently delivering.

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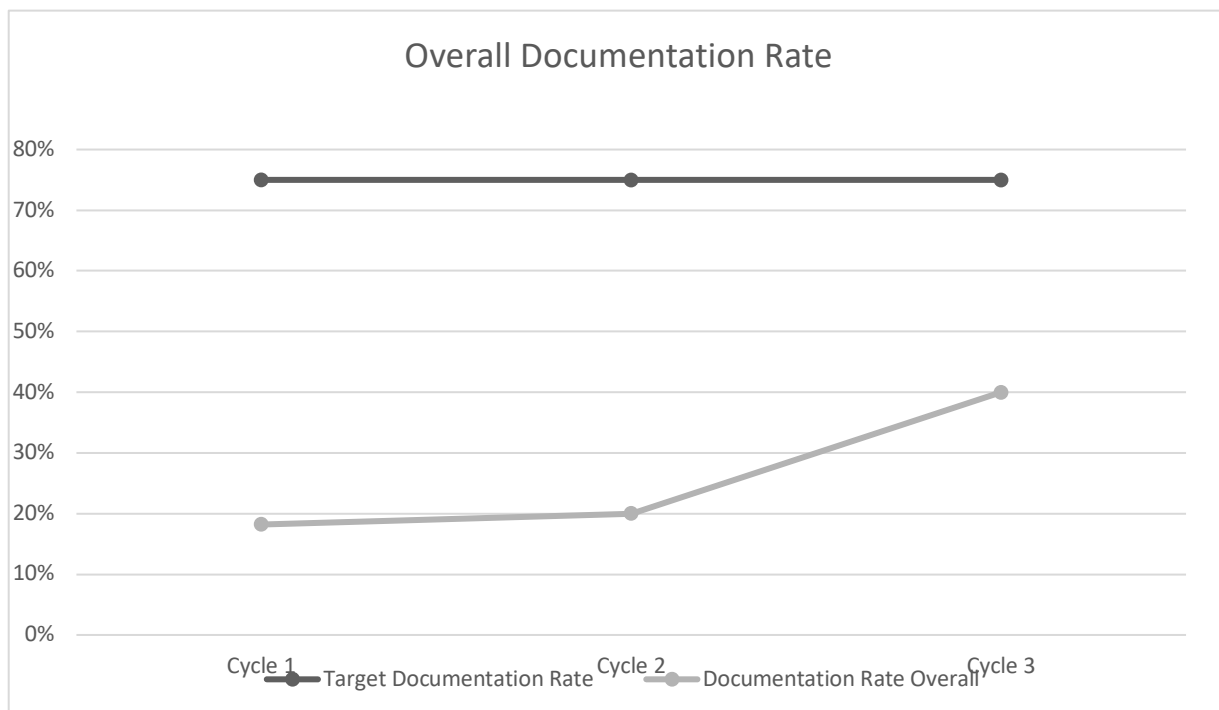
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Figure 1*Patient characteristics*

	Nulliparous (n=19)	Multiparous (n=11)
Second Stage < 1 hour	5	10
Second Stage >1 hour	14	1
Prolonged Second Stage of Labor	1	0

Figure 2

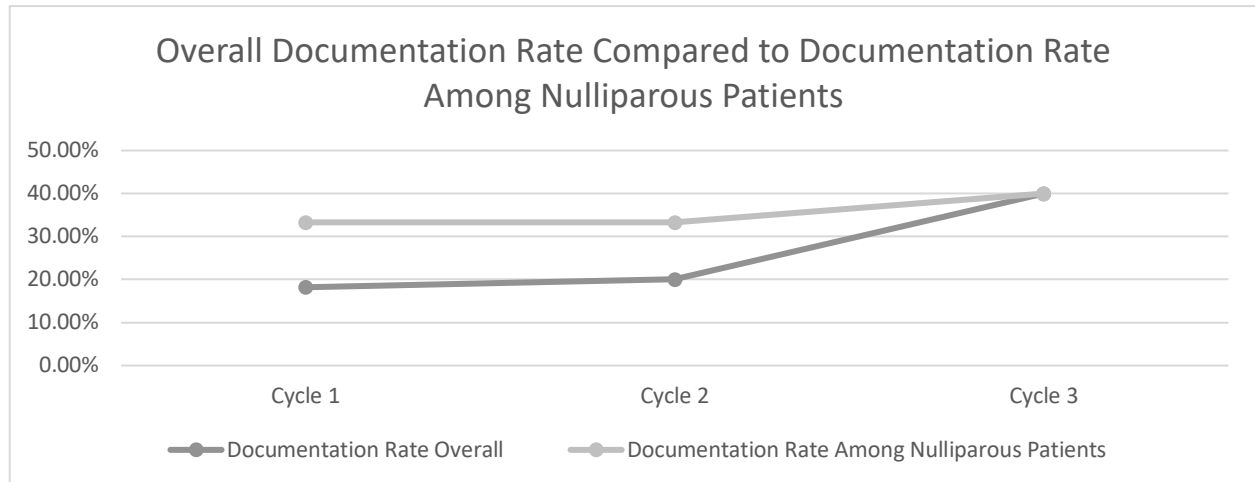
Run chart showing overall documentation rate in comparison to target rate of 75%.



Note. Cycle 3 data only included nulliparous patients.

Figure 3

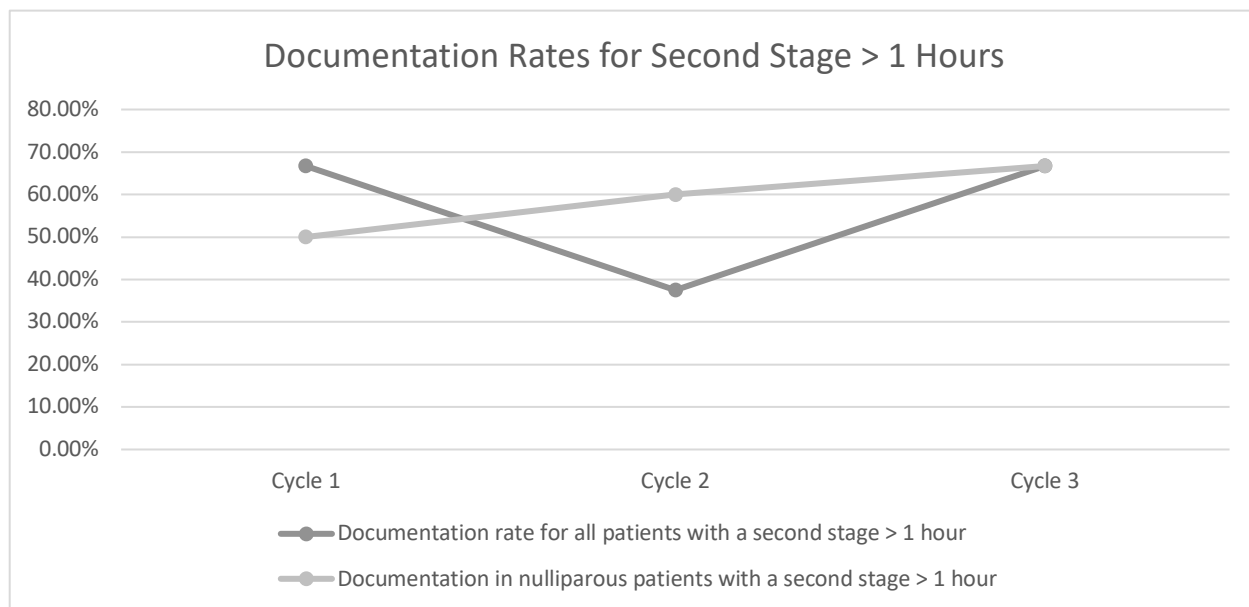
Run chart illustrating the documentation rate among nulliparous patients compared to the documentation rate overall.



Note. Cycle 3 data only included nulliparous patients.

Figure 4

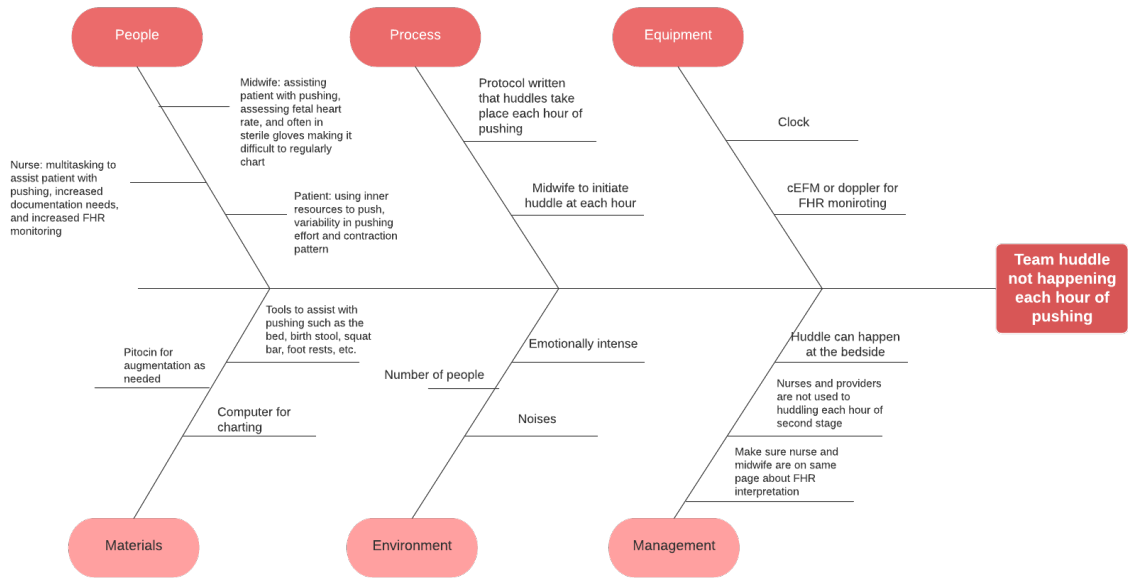
Run chart illustrating the documentation rate for second stages greater than one hour



Note. Cycle 3 data only included nulliparous patients.

Appendix 1

Fishbone diagram exploring why time-outs are not occurring at this site.



Appendix 2

The template provided for second stage time-outs.

SECOND STAGE TIME-OUT

Pushing start time: ***

Fetal Descent: {YES***/NO:60}

FHT: *** BL, *** variability, *** accelerations, *** decelerations with nadir to ***

UCs: q *** mins x *** secs, *** to palpation.

Pushing effort: {GOOD/FAIR/POOR:311127}

Positions utilized: ***

Does patient consent to AMSTL? {YES***/NO:60}

Are postpartum hemorrhage medications indicated: {YES/NO:63}. Which medications are in the room: ***

Should the peds team be called for delivery: {YES/NO:63}

Should cord gasses be collected: {YES/NO:63}

Assessment/Plan: ***