Midwifery Benchmarking in Oregon: Increasing Participation to Deliver Change

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Abstract

Benchmarking is an evidence based method of quality improvement (QI) supported by the literature (Anand & Kodali, 2008; Yasin, 2002). The ACNM Benchmarking Project has been in existence since 2004, but has struggled with increasing member participation, ultimately limiting the strength of the produced data (Collins-Fulea et al., 2005; Walker et al., 2008). This project aimed to assess current benchmarking practices in Oregon, identify individual practices for benchmarking assistance, and increase Oregon participation in the national project. Oregon ACNM members were surveyed and found widespread agreement in the value of QI and benchmarking awareness. The greatest barriers cited, regardless of years submitting data, were *time* and *health system's issues* such as data collection and practice structure. Seven practices requesting practice-level assistance were identified and contacted and provided with the help, education, and reminders they needed. Thirteen practices participated this year, an increase from the ten practices last year. This project's noted strengths were quality improvement initiative among Oregon nurse-midwives and an initial assessment that can be used for future projects. Recommendations include increasing publication of success stories related to application of benchmarking data for practice improvement or advancement; reducing practice-level barriers to data collection by creating an easily accessible list of best practice for data collection; and lastly, utilization of QI efforts to drive progress in midwifery care.

Midwifery Benchmarking in Oregon: Increasing Participation to Deliver Change

The American College of Nurse-Midwives (ACNM) is the professional association representing Certified Nurse-Midwives (CNMs) and Certified Midwives (CMs) in the United States. The mission of ACNM is to support midwives and advance the practice of midwifery in order to achieve optimal health for women through their lifespan. This mission recognizes the profession's expertise in well-woman and gynecologic care, promotion of optimal pregnancy, physiologic birth, postpartum care, and care of the newborn. The ACNM mission is realized in part through the core value of evidence-based practice and use of quality measurement to improve care. A product of that value is the ACNM Benchmarking Project, a tool to collect aggregate clinical data to determine midwifery-based quality assurance. Additionally, the benchmarking project produces accurate and tangible evidence of improved outcomes and lower costs of midwifery care on a national level. Lastly, this information can be utilized to advocate for policy and clinical practice change. Data collected by the ACNM benchmarking project provides a unique opportunity to solidify the profession of midwifery as a key stakeholder in the current initiatives to improve national health care.

The Problem

While overlap exists, midwifery is a distinct discipline from medicine and nursing. Thus, the standards by which midwives are measured and reimbursed need to be able to accurately capture the care processes unique to their specialty. While the ACNM Benchmarking Project can provide a platform for such standards and data, its strength is directly dependent on the level of participation of its clinician membership in benchmarking. Any practice with at least one full time, full scope, CNM/CM member of ACNM can participate in the ACNM Benchmarking Project, yet as of 2014, participation was representative of only 20% of eligible practices.

Without a robust representation of midwifery care practices, it will be difficult to quantify the impact of midwifery care on a national level and encourage midwifery based quality improvement. Lackluster participation in the benchmarking project means the profession is less effective and vulnerable to falling short of the core value of evidence-based practice. The weight of this problem has a wide array of implications, from the individual midwife to the national population of midwifery patients.

The Population

This Doctor of Nursing Practice (DNP) project is focused specifically on the state of Oregon and will directly involve Oregon ACNM Affiliate members. By increasing participation among Oregon practices, the strength of the national ACNM Benchmarking project will also increase, thus indirectly impacting all ACNM members, along with their patients. In 2014, state participation across the nation varied from 0-30% of potential practices. Thus, the available data is clearly limited in actual representation. Oregon has already seen growth in practice Benchmarking participation, indicating a readiness for change. In 2013, six Oregon practices participated. This number rose to ten practices in 2014, a 66% increase in one year. While participation is rising, there continues to be room for greater participation. The goal of this project is to see Oregon's participation double to 20 practices, or roughly 70% of all Oregon practices.

Literature Review

A literature review was conducted to assess available literature on midwifery specific benchmarking, describe current application of benchmarking in the field of midwifery, and identify challenges to midwifery participation in the ACNM benchmarking project. This

evaluation can serve as a foundation for future work expanding the ACNM benchmarking process and member participation.

Medline, Pubmed, and CINHAL were searched with the following terms, "benchmarking"; "midwifery"; "nurse-midwifery"; and "American College of Nurse-Midwives". All types of articles and online publications were included to assess relevant research and expert opinions on the benchmarking process in the field of midwifery. A single author reviewed titles and abstracts of articles published after 1995 in English for relevance and inclusion. Duplicates and articles unavailable through the Oregon Health & Science University library were removed. References from 23 articles were reviewed for additional articles. A total of two articles were identified for inclusion in this literature review as expert opinions on ACNM benchmarking process and their specific relevance to the benchmarking process with regard to midwifery.

Given this limited return, the search was expanded to review utilization of benchmarking within improvement science, related to obstetrics and health care. Using the same method as above, Medline, Pubmed, CINHAL, and Google Scholar were searched with the following terms, "benchmarking", "quality improvement", "quality assurance, health care", "quality of health care", "health care costs", "patient satisfaction", "obstetrics". A total of nine articles were identified for inclusion in this review as background assessment of the benchmarking process.

Benchmarking introduction. Benchmarking is commonly cited as originating in the US as a competitive managerial tool when Xerox benchmarked warehouse operations with L.L. Bean to reduce production cost in the mid 1980's (Anand & Kodali, 2008; Ettorchi-Tardy, Levif, & Michel, 2012; Hong, P., Hong, W., Roh, & Park, 2012; Janakiraman & Ecker, 2010; Lovaglio, 2012; Yasin, 2002). Since then, benchmarking has been utilized as a catalyst for improvement

and innovation in an increasing number of sectors and industries, including healthcare (Anand & Kodali, 2008; Yasin, 2002). National integration of benchmarking in healthcare has increased given recent reforms. Before exploring the impact of benchmarking in maternity care and more specifically, midwifery, it is important to review benchmarking within the realm of quality improvement (QI).

Benchmarking defined. After conducting a review of the literature prior to 2002, Yasin (2002) defined benchmarking "as a multi-faceted technique that can be utilized to identify operational and strategic gaps, and to search for best practices that would eliminate such gaps." In another literature review, Anand and Kodali (2008) found the most common definition of benchmarking was "the search for the best industry practices, which lead to exceptional performance through the implementation of these best practices". While similar, these definitions demonstrate an interesting shift in focus from poor performance (gaps and outcomes) to best practices (processes and inputs) (Anand & Kodali, 2008; Yasin, 2002). Process measurements track the manner in which care is provided while outcome measurements examine direct results of care, and both are necessary performance indicators (Lovaglio, 2012).

Outcomes and processes. The value and limitation of measuring processes and/or outcomes is an important topic in the literature, and related to both QI and health care. Over the years, it has been recognized that measuring outcomes alone is limited when process is not considered (Lovaglio, 2012; Wiegers, Keirse, Berghs, & Van der Zee, 1996). However, the sole intervention of continuous QI efforts for improving process quality has been associated with a decline in patient safety outcomes (compared to a safety culture focus on outcomes) (McFadden, Stock, & Gowen III, 2015). Thus, improvement should be driven by both outcome (patient

safety) and process (efficiency) measurements (Janakiraman & Ecker, 2010; McFadden et al., 2015).

The broad field of maternity care has unique challenges when it comes to research and process and outcome measurement. Obstetrics is notorious for the lack of evidence-based processes given ethical limitations in obstetrical research (Dodd & Crowther, 2006; Janakiraman & Ecker, 2010; Rooks, 1999). Morbidity and mortality outcome driven research is challenging in obstetrics where the population represents some of the healthiest of all hospitalized patients and adverse outcomes are relatively rare (Janakiraman & Ecker, 2010). Thus, maternity care has a unique challenge of identifying relevant outcome and process standards to improve practice.

Benchmarking and health care. As benchmarking has proliferated it has become more collaborative in industries like healthcare (Anand & Kodali, 2008). Benchmarking as an effective form of QI in a diverse range of medical specialties has been published in the literature. Smith, Piland, and Burchell (1999) provided a case study of benchmarking use in the ambulatory setting to improve patient satisfaction and provider-patient relations. Stern et al. (2014) found implementing benchmarking practices had a specific positive impact on cystic fibrosis health outcomes. Edwards et al. (2014) documented increased breastfeeding rates in a high-risk perinatal setting by initiating benchmarking practices. Benchmarking is demonstrated as applicable across healthcare in the collaborative effort to improve patient care, and midwifery is no exception.

Benchmarking limitations. Benchmarking is not exempt from limitations. Yasin (2002) noted that benchmarking was often cited as being driven by individual divisions of an organization, e.g. accounting or operations, as opposed to a system wide effort from the entire organization. This “piecemeal” approach limits the capacity of benchmarking given its

multifaceted nature and involvement of various entities within an organization (Yasin, 2002). Benchmarking can be a major investment of resources and time (Anand & Kodali, 2008; Janakiraman & Ecker, 2010). Additional barriers to effective benchmarking include uncooperative sources, strained relationships, overemphasis on innovation, late adopters, and poor collaboration (Hong et al., 2012). Given these limitations and the level of investment, fostering system wide priorities of continuous improvement, flexibility, and good communication are essential (Anand & Kodali, 2008).

ACNM benchmarking project. The ACNM benchmarking project is an example of collaborative benchmarking designed to drive QI and define standard measurements specific to midwifery care. Collins-Fulea, Mohr, and Tillet (2005), provide a historical description of the ACNM benchmarking project and its development, 2004 project data, and two examples of practical application in midwifery care. The benchmarking project was intentionally built to consist of quality indicators that encompassed process and outcomes including; functional status (e.g. Apgar score), cost (e.g. length of stay), and clinical (e.g. vaginal births and cesarean-sections) (Collins-Fulea et al., 2005). Aggregate data is collected as opposed to raw data because most practices already collected data but lacked a tool for reporting and comparing data (Collins-Fulea et al., 2005). Participating practices report data annually and anonymously, variables are summarized by region, and 25th-90th percentile range is calculated (Collins-Fulea et al., 2005). Reports are generated and provided to practices who can judge their standing and self-identify "best practice" by practice type and region. Only 45 practices participated in 2004, comprising 227 CNMs in hospital, birth center, and homebirth settings (Collins-Fulea et al., 2005).

Collins-Fulea et al. (2005) provide two examples of the use of benchmarking to create change; one to improve breastfeeding rates and the other for provider profiling related to rates of

third and fourth-degree lacerations. In both examples, the practices reviewed their benchmarking data, recognized an area for improvement, contacted a practice or individual already performing well in that chosen area, and used a Plan Do Study Act (PDSA) cycle to effectively improve the practice accordingly. These are ideal examples of ACNM benchmarking data used by individual practices to improve organizational or individual practice within an established system.

Data collection & ACNM midwifery clinical practice data survey. Data collection is an integral part of the ACNM benchmarking project and an antecedent process dependent on individual practices. Walker, Visger, and Levi (2008) reviewed information of the ACNM Division of Research Midwifery Clinical Practice Data (MCPD) Survey of data collection practices and available data collection tools, their best uses, applications to practice, and future directions. The majority of ACNM members reported using a self-designed paper log or computerized system followed by those using the ACNM birth log (Walker et al., 2008). Only 19.1% of respondents had participated in the ACNM benchmarking project (Walker et al., 2008).

Birth logs have been the traditional form of midwifery data collection. The historical use of birth logs as a traditional form of midwifery data collection is represented in these results (Walker et al., 2008). However, birth logs usually do not capture midwifery structure or process and are not easy to analyze and evaluate requiring significant time investment and are subject to error (Walker et al., 2008). Survey respondents also noted that the availability of a personal digital assistant would be most helpful to collect clinical data, though most also admitted to not currently using such a device (Walker et al., 2008). Other sources of data include institutional birth logs or electronic health records, which are not designed to capture midwifery specific data points and processes, limiting application of the data collected. This data usually contains

demographic data and outcome data that can be helpful for QI but is rarely midwifery specific (Walker et al., 2008).

Advantages and limitations of the ACNM benchmarking project. Both articles identified advantages and disadvantages of the ACNM benchmarking project. Avoidance of reinventing what already exists in another practice and overall awareness of current capabilities compared to "best practice" were primary advantages cited by both articles (Collins-Fulea et al., 2005; Walker et al., 2008). The establishment of ongoing measurement and analysis of quality, encouragement to move people into action with the creation of tension for change were also noted (Walker et al., 2008).

Minimal participation was the primary limitation of the ACNM benchmarking project identified by both articles with only 10% of the country participating in 2005 (Collins-Fulea et al., 2005; Walker et al., 2008). In almost 10 years, the level of participation has reached roughly 20% (ACNM Department of Research, 2013). Lack of time was the greatest barrier to collecting clinical practice data, a key requirement for participation (Walker et al., 2008). The early ACNM benchmarking project did not collect gynecologic nor newborn care because beginning and end points of care were difficult to define at the time of project development (Collins-Fulea et al., 2005). The current benchmarking project still lacks any metrics related to gynecologic care but has added newborn metrics including apgars, breastfeeding on discharge and at six weeks postpartum, and delayed cord clamping. This limited breadth of the project and subsequent lack of understanding of current practices relative to the full scope of midwifery care including women's health was seen as a limitation related to potential policy change (Farley, Tharpe, Miller, and Ruxer, 2006). Accordingly, recommendations for the benchmarking project include increase midwifery awareness for the project, increase participation to improve representation of

all practice types, use of achievable benchmarks to reduce variance based on practice size, continuous evaluation of benchmarks for relevancy, survey participants to identify areas of improving benchmark process, and lastly publishing detailed examples of "best practice" (Collins-Fulea et al., 2005).

Discussion. The ACNM utilization of benchmarking as an effective method to drive improvement is well founded in the literature. This method has been successfully applied to a wide array of industries including healthcare (Anand & Kodali, 2008; Yasin, 2002). Not only is benchmarking directly applicable to midwifery, there is the key potential to articulate the current competitive advantage of midwifery in the costly field of obstetrics in terms outcomes and processes (e.g. cesarean delivery) that is a focus of health care reform.

While there is clearly a lack of literature on the topic of benchmarking specific to midwifery, which needs to be addressed going forward, Collins-Fulea et al. (2005) and Walker et al. (2008) provide expert opinions on the development and significance of the ACNM benchmarking project. Their 2005 and 2008 publication dates limit current application, but consideration is worthwhile. Comparison to the present and progress made or still needed is a valuable contribution. For example, Collins-Fulea et al. (2005) cited the need for an online submission portal, which was eventually realized and has continued to be improved upon with a new portal introduced in 2015 that generates automatic benchmarking reports. In 2008, midwives viewed technology as a key opportunity for routine data collection but limited access to such technology was a barrier (Walker et al., 2008). Given the significant technological advances and arguably increased access to technology in the past eight years, consolidation of available data collection methods could be helpful to aid in this step of benchmarking.

According to the MCPD Survey, most ACNM members continued to use self-designed paper logs or computerized systems, indicating a foundational level of innovation but a potential redundancy of effort in implementation and/or maintenance. Considering time is repetitively identified as a significant barrier to routine data collection and benchmarking, redundancy in data collection could be addressed to minimize time & effort. Learning, sharing information, and adopting best practice are vital components of the voluntary and active collaboration aspect of benchmarking, which should be applied to data collection (Ettorchi-Tardy et al., 2012). Increasing access to established data collection methods and publication of midwifery benchmarking and current case studies would increase awareness for the project and accessibility of QI in everyday practice. Publication of examples from all birth settings and practice sizes demonstrate feasibility of participation in benchmarking and QI for all settings in which CNMs and CMs practice. Increased ACNM member engagement in benchmarking and QI drives the maintenance and improvement of the quality of midwifery care as a whole and strengthens the ability to articulate value of midwifery practice.

The benchmarking process is not passive and requires regular input and investment from participants (Ettorchi-Tardy et al., 2012). Benchmarking provides the opportunity for positive and proactive goal setting processes used to create change in practice, regardless of the industry. Collins-Fulea et al. (2005) made the argument that midwives who value autonomy must respect the responsibility for maintaining high standards of practice. Additionally, the process of improving care reduces medical errors and liability risk (Collins-Fulea et al., 2005; Walker et al., 2008). Participation in data collection and the ACNM benchmarking project is then also an issue of beneficence and nonmaleficence for midwives in addition to individual and professional autonomy.

As mentioned early, process and outcome measurement is difficult in maternity care due to ethical ramifications and rare occurrence of adverse outcomes among the relatively healthy patient population. Additionally, while overlap exists, midwifery is an individual discipline from medicine and nursing. Adequately developing standard measurements for midwifery specific processes and outcomes is thus an ongoing issue. An important distinction is made in the measurement of the midwifery care process that is influenced by the midwifery philosophy, which differs from other care providers and affects outcomes. All the more important that standards by which midwives are measured and reimbursed accurately capture the care provided.

When midwives participate in benchmarking and quality measurement and then respond to the data reported, measures can be refined as needed (Janakiraman & Ecker, 2010). As health care reform progresses with a vested interest in improving quality care and reimbursement is tied to improved health care stats, there is a need for midwives to be at the table in the definition and refining of clinical measurements. This allows midwives to participate in the ongoing dialogue with third parties, government agencies and payors on the metrics that will/are being used for value based purchasing (Janakiraman & Ecker, 2010). The documentation of midwifery clinical data, processes, and outcomes is essential to keeping midwifery visible in the general public, health care, and legislative activities (Walker et al., 2008). Policy can often be the outcome of societal, economic, or emotional pressures. Benchmarking provides crucial updated and relevant data specific to these pressures that inform legislative change (Uddin & Martin, 1997).

Relate Literature to the Problem

Quality improvement is not a new concept to health care and benchmarking as an effective form of QI is a well documented in the literature. Birth logs have been an historical tradition of midwifery practice. Benchmarking builds from these traditions to drive continuous

improvement of midwifery care and advocate for the profession and individual practices and midwives. The ACNM benchmarking project is one method to address the need for establishing midwifery specific standards for measurement and reimbursement, and apply those standards to improve practice and create legislative change. This review of the literature demonstrated a clear need for further research and publication related to midwifery benchmarking and data collection. That said, the available studies by Collins-Fulea et al. (2005) and Walker et al. (2008) provided important insight into midwifery benchmarking and areas for improvement. The midwifery profession continues to have the potential to be a key player in improving women's health care in the U.S. The ability to articulate the value of midwifery through the use of benchmarking is an opportunity that cannot be missed. Continuing to increase participation in the benchmarking project will dictate the strength of that potential.

This project surveyed of Oregon ACNM Affiliate members on current understanding, facilitators, and barriers to Benchmarking participation, followed by dissemination of detailed Benchmarking instructions, and individual practice benchmarking coaching to help increase awareness and participation. The purpose of this project was three-fold: first, to assess current benchmarking practices and understanding among Oregon ACNM Affiliate members; second, to identify specific Oregon midwifery practices for individualized assistance with benchmarking participation at a practice level; third, to indirectly increase participation in the national ACNM benchmarking project among Oregon Affiliate members. With increased participation in the state of Oregon, the national participation would also be expected to rise as an indirect result of the project.

Methods

Setting

This project took place in the state of Oregon and the survey was sent to all Oregon ACNM Affiliate members. The follow-up survey was targeted for those practices that indicated an interest in customized practice level assistance with benchmarking participation. The project proposal was reviewed by the Oregon Health & Science University Institutional Review Board (IRB) and deemed not to be considered research, therefore no Institutional Review Board (IRB) approval was required.

Facilitators

The primary anticipated facilitator was the support of the Oregon Affiliate and its executive board. The project received board approval for the surveying of affiliate members and offered extended support related to email logistics. As the project unfolded, this was found to be accurate, as affiliate support was a primary facilitator. The second anticipated facilitator was a current general readiness to change related to the natural 66% increase in participation from 2013 to 2014 without any directed or specific intervention, indicating a baseline interest and opportunity for growth in benchmarking to expand upon.

Barriers

The often overwhelming and busy schedules of nurse-midwives was the primary anticipated barrier to the success of this project. Limited time is a known barrier to benchmarking itself (Walker et al., 2008), thus it was a suspected barrier to participation in this project's surveys. While the surveys were intentionally designed to be concise, limiting the burden of additional work, the email software indicated that far more survey recipients opened

the email than clicked the survey link. This may support a sense of interest but a lack of investment to commit to survey participation.

Participants and Sample

The inclusion criterion was current Oregon ACNM members. ACNM members affiliated from other states and other types of obstetric providers were excluded. The survey was only offered in English, thus excluding any non-English speakers.

Recruitment Plan

An email was sent to the Oregon Affiliate list-serve email system, MailChimp, which is managed by the Oregon Affiliate executive board and includes Oregon nurse-midwives with current ACNM membership [APPENDIX A, B]. A list of all members was made for the purpose of this project, 231 members. Members are able to remove themselves from the list-serve, and after the final survey email was sent there was a remaining total of 227 survey recipients on the list-serve. Contact information was requested from anyone interested in individual practice-level assistance with benchmarking [APPENDIX C].

Protection of Participants

This project was a quality improvement project and was not considered research. Due to the inclusion of human subject participants however, a Request for Determination form was submitted and the project was deemed ‘Exempt’ by the OHSU IRB given the QI nature of the project. Additionally, ACNM Oregon Affiliate Board approval of the proposed survey is mandated prior to use with members. This approval was received. The survey specifically gathered practice level data and did not collect or request Health Protected Information. Contact information identical to the contact information collected in the benchmarking project was

submitted on a voluntary basis and was not nor will be dispersed other than for specific purpose of assisting with benchmarking participation [APPENDIX C].

Intervention

Benchmarking assessment survey. The initial tool of assessment and intervention was an online anonymous Survey Monkey survey with Likert style and open field questions to gather current degree of knowledge, participation level, barriers and motivations related to benchmarking, and practice level demographic data. Optional submission of practice level contact information was included. [APPENDIX C].

Benchmark coaching, tutorials, and follow-up survey. Specific practice level assistance with benchmarking participation would be provided to those practices that requested assistance in the form of emails, phone calls, and one in-person consult for 20 minutes (Table 1). One PDF poster, and two voice-over power point presentations 'Benchmarking Nutshell' and 'Benchmarking Basics' (2 minutes and 5:04 minutes, respectively) were created with explanations of the value and use of benchmarking, including instructions for minimal required participation in the benchmarking project. These PowerPoints would then be disseminated to practices that requested assistance (PRA) with benchmarking. Two emails were sent to the entire Oregon Affiliate member list-serve as general reminders of the 2015 Benchmarking deadline. Facebook-post reminders were posted by the Oregon Affiliate board secretary. Two opportunities for any Oregon Affiliate member to attend a group gathering to submit data and get individualized data collection and benchmarking assistance were organized. Following the 2015 benchmarking deadline, the PRAs received a follow-up survey (over three emails, and reminder phone calls) to assess the effectiveness of the assistance they received [APPENDIX D]. Practices

would be contacted and surveyed for their participation in survey, re-evaluation of baseline benchmarking understanding questions, and impact of benchmarking coaching.

Table 1

Benchmark coaching by frequency of types of assistance

Types of Assistance	**Frequency**
Education (Instructions, Minimum Required Variables, Overview)	5
Data Collection Systems ***Questions pertaining to specific data collection systems used by a given practice i.e. How to improve a current system.***	2
Third Party Data Collection & Submission ***Questions regarding input or submission of data collected through an independent, third party collection system i.e. MANAstats or PDR***	2
Reminder(s) to Submit	1
ACNM Quality Section ***Questions required connection to ACNM Quality Section***	1
Unknown ***Unable to contact participant***	1

Note. Types of assistance provided as part of benchmarking coaching was logged and noted by use for each practice that requested assistance.

Timeline. The project was initiated in October 2015 with an IRB application. Survey creation followed by administration ran from November 2015 to January 2016. Identification of interested practices, subsequent customized assistance (coaching), and a final post-intervention survey were completed over a two-month period, from February to April 2016 (Figure 1).

Figure 1

Project procedure and timeline

Timeline	Procedure
10/2015	Received IRB 'Exempt' or 'Minimal Risk' status
11/30/15	Created Monkey Survey version
12/11/15	Emailed Benchmarking Assessment Survey to Oregon ACNM list serve with electronic link to survey on Survey Monkey. Open for 6wks. [APPENDIX A, B, C]
12/2015	Created Benchmarking Tutorial
12/28/15	Reminder email #1
1/26/16	Reminder email #2
1/31/16	Closed Survey
2/1/16-4/15/16	Identified individual practices requesting specific assistance with benchmarking participation, and provide follow-up emails, benchmarking tutorials, phone calls, and one-on-one consults to provide practice level assistance with benchmarking (Benchmarking Deadline 4/17/16)
3/26/2016	Emailed Benchmarking Deadline Reminder to Oregon Affiliate list-serve
4/7/2016	Emailed Benchmarking Deadline Reminder
4/22/16 – 5/7/16	Emailed Follow-Up Survey to practices that received individualized assistance.
May 2016	Data analysis of Benchmarking participation, comparison of 2014 participation rate with 2015 rate.

Results

The Purpose

The purpose of this project was three-fold. First, to assess current benchmarking practices and understanding among Oregon ACNM Affiliate members. Second, to identify specific Oregon midwifery practices for individualized assistance with benchmarking participation at a practice level. Third, to indirectly increase participation in the national ACNM benchmarking project among Oregon Affiliate members. With increased participation in the state of Oregon,

the national participation would also rise as an indirect result of the project. When presenting the results related to these objectives, it is important to note that the survey represents individual level data. Given the scope of this project and the logistical barriers of contacting each unduplicated Oregon midwifery practice (with at least one affiliate member) compared to simply contacting individual members, it was decided to survey at individual level only. The intervention of assistance through coaching, however, was conducted at the practice level. This will be discussed further in consideration of the limitations and strengths of this project.

Population Surveyed

The initial survey was sent to all Oregon ACNM affiliate members, as opposed to all Oregon midwives, in order to limit the scope of the assessment to only those potentially eligible for participation in the ACNM Benchmarking Project. Participation is viewed as a benefit of ACNM membership and requires that there is, at minimum, one full scope CNM or CM in the practice. Thus, the entire list of Oregon ACNM members received the initial survey (*N*=227), of which 24% responded (n=55) (Table 2). Using the email system by which the survey was sent, participant emails (unattached to actual survey responses) were reviewed and cross-checked in the ACNM membership directory and or Google to account for individual practices represented. This method yielded approximately 30 individual practices represented, with variation due to the 16% of survey participants who did not provide full-scope midwifery care (including retired CNMs, faculty, students, and midwives currently practicing outside of Oregon) (Table 3). A total of seven survey participants indicated a request for practice level benchmarking assistance and represented seven unique practices (these seven practices will be referred to as Practices who Requested Assistance or PRA). Of those, six pracices (86%) responded to the post intervention follow up-survey (Table 2). It is of note that one practice was unable to be reached for the

intervention and it is likely that this accounts also for the missing follow-up survey response (Table 2).

Table 2

Survey response rate

	Survey Recipients	Survey Responses	Rate
Initial Survey	226	55	24%
Follow Up Survey	7	6	86%

Note. The total number of ACNM Oregon Affiliate members who received the initial survey of all members and the follow up survey of only those who requested assistance, and the total number that participated in either survey.

Survey Responses (n=55): Benchmarking History

Of the practices with a history of benchmarking, one-third had participated for ≥ 5 years (36%) and one-third for ≤ 3 years (36%). The remaining third of practices represented a variety of participation experience including, ≤ 1 year, 3 - 5 years, or it was not known how long the practice had been benchmarking (5%, 14%, and 9% respectively) (Table 3.). Recent benchmark experience varied with only 46% of survey participants reporting having benchmarked in 2014, followed by 30% who had not, and 15% who were unsure (Table 3). Uncertainty regarding history of benchmarking participation was an unavoidable outcome of surveying individual midwives about practice behavior. Of the practices that had not benchmarked in 2014, there was a roughly equal distribution of responses related to intent to benchmark for 2015; 27% intended to benchmark, 38% did not intend to benchmark, and 35% were undecided (Table 3).

Table 3

Project survey: demographics of all participants

Question	n	Yes	Unsure or Undecided	No
Q7: Did your practice participate in the ACNM Benchmarking Project for last year (submitted data in April 2015)?	52	46%	15%	38%
Q8: If your practice did not participate last year, does your practice plan to do so this year (submit data in April 2016)?	26	27%	35%	38%
Q9: Has your practice participated in ACNM Benchmarking Project in the past?	52	42%	21%	37%
Q11: Does your practice provide full scope maternity care? (AP, IP, PP)	51	84%	*	16%
Q13: Is there at least one FTE CNM/CM in your current practice?	50	88%	4%	8%

Question	n	≤ 1 year	≤ 3 years	≤ 5 years	> 5 years	I don't know
Q10: If Yes, how long has your practice been participating in the ACNM Benchmarking Project?	22	5%	36%	14%	36%	9%

Question	n	<50	>50 - <199	200 - <499	500	Does not provide IP care.
Q12: My practice typically delivers the following number of births per year.	50	4%	12%	30%	40%	14%

Note. Demographics described by responses to survey of all ACNM Oregon affiliate members.
** 'Unsure or Undecided' was not an option for response to Question 11.*

Survey Responses (n=55): Practice Size

The majority of practices were of the largest practice size of 200 - <499 and 500+ births per year (30% and 40% respectively) (Table 3). The other 30% included the smaller practice sizes of < 50, > 50 - < 199 births per year, and those who do not provide intrapartum care (4%,

12%, and 14%) (Table 3). The vast majority cited having at least one FTW CNM/CM in their current practice (88%). Likewise, the majority also reported full scope maternity care (84%) (Table 3).

Table 4

Project survey: demographics of PRAs

Question	n	Yes	Unsure or Undecided	No
Q7: Did your practice participate in the ACNM Benchmarking Project for last year (submitted data in April 2015)?	7	29%	14%	57%
Q8: If your practice did not participate last year, does your practice plan to do so this year (submit data in April 2016)?	5	60%	20%	20%
Q9: Has your practice participated in ACNM Benchmarking Project in the past?	7	29%	29%	43%
Q11: Does your practice provide full scope maternity care? (AP, IP, PP)	7	100%	*	0%
Q13: Is there at least one FTE CNM/CM in your current practice?	7	100%	0%	0%

Question	n	≤ 1 year	≤ 3 years	≤ 5 years	> 5 years	I don't know
Q10: If Yes, how long has your practice been participating in the ACNM Benchmarking Project?	2	0%	50%	50%	0%	0%

Question	n	<50	>50 - <199	200 - <499	500	Does not provide IP care.
Q12: My practice typically delivers the following number of births per year.	7	29%	43%	0%	29%	0%

Note. Demographics described by participants who 1) responded to survey of all ACNM Oregon affiliate members and 2) requested practice level assistance, or coaching, with benchmarking participation.

** 'Unsure or Undecided' was not an option for response to Question 11.*

Survey Responses of Practices that Requested Assistance (PRA) (*n*=7): Demographics

Of the survey respondents who requested assistance, only two practices had benchmarked in the past, one for ≤ 3 years, and one for ≤ 5 years (Table 4). Of the combined 71% who did not benchmark last year or were unsure if they had, the majority planned to do so this year (60%), and only one respondent did not plan to do so (20%) (Table 4). Overall, a smaller practice size was represented in this cohort; two practices had < 50 births per year, three practices had > 50 to < 199 births per year, and two practices had 500 or more births per year (Table 4). All of the survey participants in this cohort provided full scope midwifery care (100%) and had at least one FTE CNM/CM in their practice (Table 4).

Purpose #1: Assess Current Benchmarking Practices and Understanding in Oregon

Quantitative data. The responses to the questions measuring awareness and understanding of benchmarking and quality improvement were recoded to a numeric value 4.0 (*strongly agree*) to 1.0 (*strongly disagree*). The frequency of each response was counted and used to calculate an agreement score for each question. In the entire cohort of the initial survey, all of the Likert-style questions had a positive agreement score (Table 5). *'I am aware of the ACNM benchmarking project'* and *'I believe QI is important to midwifery* care' both yielded a rounded positive agreement score of 4.00, correlating to Strongly Agree (Table 5). When compared to years of experience, *'Participating in the ACNM benchmarking project is a priority for my practice or organization'* and *'Helping my practice participate in the ACNM benchmarking project is a priority"* were the only two metrics with a positive correlation (0.24 and 0.04 respectively), however the values are notably small and close to a null correlation (Table 6). While all the agreement scores in the cohort of respondents requesting assistance were lower than those in the entire cohort, there was a similar trend with all agreement scores

equivalent to 3.00 or higher (Table 5). The one exception was that the statement *'I believe quality improvement is important to midwifery care'* was the only metric to score 4.00 (Table 5).

Table 5

Description of benchmarking awareness, understanding, and motivation

Question	Entire Survey (55)	PRA Pre-Survey (7)	PRA Post-Survey (6)
I am aware of the ACNM Benchmarking project.	3.53	3.00	*
I understand the purpose of the ACNM Benchmarking project.	3.45	2.86	3.50
I understand the relationship between the ACNM benchmarking project and national quality improvement metrics in maternal and child health.	3.20	2.71	3.67
Participating in the ACNM Benchmarking Project is a priority for my practice or organization.	2.94	2.86	2.67
Helping my practice participate in the ACNM Benchmarking Project is a priority.	3.13	3.00	3.33
I believe quality improvement is important to midwifery care.	3.83	3.71	4.00

Note. Likert-style answers were converted to numeric values and an agreement score was calculated for each question; 4.0 (*strongly agree*) to 1.0 (*strongly disagree*). Questions are listed here without number as each survey had different number of total questions.

** 'I am aware of the ACNM Benchmarking project' was not assessed in the PRA post-survey given inclusion in the PRA group required benchmarking awareness.*

Table 6

Benchmarking understanding and awareness by years of experience (n=50)

Question	Correlation Co-efficient
Q1: I am aware of the ACNM Benchmarking project.	-0.01
Q2: I understand the purpose of the ACNM Benchmarking project.	-0.01
Q3: I understand the relationship between the ACNM benchmarking project and national quality improvement metrics in maternal and child health.	-0.12
Q4: Participating in the ACNM Benchmarking Project is a priority for my practice or organization.	0.24
Q5: Helping my practice participate in the ACNM Benchmarking Project is a priority.	0.04
Q6: I believe quality improvement is important to midwifery care.	-0.07

Note: Length of experience benchmarking (years) was compared to level of agreement. Questions 4 and 5 were the only two that had positive correlations, though relatively small.

Qualitative data. The open-ended questions of the survey were analyzed by a single reviewer through open coding. Responses to the inquiry of barriers to benchmarking were reviewed and labeled with descriptive terms that were used as 16 initial categories (Table 7). These were then grouped into six larger themes and sample statements deemed representative of each category were selected (Table 7).

Overall, the response *"time"* was the single most common barrier directly cited in the entire survey and was the only theme to be referenced by all participants regardless of length of benchmarking participation in years (Table 7, Table 8). Additionally, the themes of *time* and *health system's issues* were the most common referenced barriers to benchmarking (40% and 26% respectively) (Table 7). While several themes could be seen to overlap with the theme of *time*, this theme was represented by those who had simply noted *"time"* and those that had specified a time related issue to collecting data (*n*=6) or cleaning data (*n*=1) i.e. "*...verifying and*

cleaning data always takes time" (Table 7). When the barriers to participation were analyzed by years of practice, *time* and *health system's issues* were the most common barriers cited by all the groups with a known benchmarking history, and were the only barriers cited by those with the longest benchmarking practice, 3-5 years and 5+ years (Table 8). Practices with less experience benchmarking tended to reference a greater variety of barriers to benchmarking (Table 8). The other themes included barriers related to data collection systems, lack of administrative support, practice structure dynamics, and distribution of responsibility for quality improvement related tasks (Table 7).

Table 7

Qualitative survey data by themes and categories

Theme: Added Responsibility (14%)				
Categories (5)				
Large Practice (1) ***"...there are very few people in large organizations who can actually program these changes."***	Small Practice (1) "*More paper work and documentation in a very small practice."*	New Practice (3) *"New practice and we can't add to the chaos our company provides"*	Practice Changes (1) *"too many changes at present"*	Added Responsibility (2) *"No one wants to be responsible for more data entry and data collection."*
Theme: Health System's Issues (26%)				
Categories (4)				
Practices Structure (2) ***"Two practice clinics: one which enters data…the other which does not."*** **and** ***"Physician/midwifery clients are all shared--hard to break up numbers."***	Lack of Support (1) *"adequate support with data gathering"*	Duplicated Effort (2) *"Data obtained on paper and transferred to computer, it's cumbersome"*	Data Collection (10) *"No agreement on which data to collect within the team."*	
Theme: Time (40%)				
Categories (3)				
Data Collection (6) ***"Midwives don't like to fill out any data sheets for births in order to compile the data."***	Time (16) *"Time"*	Cleaning (1) *"verifying and cleaning data always takes time."*		
Theme: Miscellaneous (11%)				
Categories (2)				
None (2) ***"None."***	Not Applicable (4) *"No clinical practice"*			
Theme: Priority Issue (4%)				
Category (1)				
Priority Issue (2) ***"Many on my team don't think it is important."***				
Theme: Unaware (5%)				
Category (1)				
Unaware (3**)** ***"Did not know about it. "***				

Note: Themes and categories of barriers to participation cited by practices in qualitative open field questions. Percentage of response by theme is noted, followed by number of categories within a theme, then the number of responses per category.

Table 8

Barriers to benchmarking by years of experience

Years Bench-marked	Themes Cited (n)	Added Respon-sibility (7)	Health System's Issues (15)	Time (23)	Misc. (6)	Priority Issue (2)	Un-aware (3)	Total
5+ years	9		11%	89%				100%
3-5 years	3		67%	33%				100%
1-3 years	9		33%	44%	11%	11%		100%
<1 year	1			100%				100%
I don't know	2	50%		50%				100%
Never Bench-marked	40	15%	23%	38%	13%	5%	8%	100%

Note: Time and *health system's issues* were the most common barriers to benchmarking, regardless of length of experience benchmarking. Practices that had benchmarked the longest only cited barriers in these two themes, while practices with less experience cited a greater variety of barriers.

Purpose #2: Identify Specific Oregon Midwifery Practices for Individualized Assistance with Benchmarking

Benchmarking coaching (n=7). The type of assistance provided was primarily educational, including instructions on how to benchmark, the minimum required variables, or general overview of what the ACNM benchmarking project is and it's importance (Table 1). Questions specific to data collection systems or third-Party (i.e. MANAstats) data collection and submission were the next most common type of assistance provided. One participant simply needed a reminder to submit their data and another had data submission questions specific to her practice model and needed assistance with contacting the ACNM quality section (Table 1).

Pre and post intervention. Pre and post intervention, the only agreement scores that changed were for 'I *understand the purpose of the ACNM benchmarking project'* and 'I *understand the relationship between the ACNM benchmarking project and national quality improvement metrics'*, which both went from rounded 3.00 to 4.00 (Table 5). Overall, agreement for all indicators. from 3.71 to 4.00 for *'I believe QI is important to midwifery care'* (Table 5). Most of the PRA felt that the intervention had a direct impact on their submission of benchmarking data this year, however the majority did not watch either of the two voice-over Power Point presentations (Table 9). Interestingly, of those who did not respond positively to the impact of the intervention, one participant responded 'Strongly Disagree' and one responded 'Not Applicable' (Table 9).

Intent to benchmark. According to the initial survey, of the five practices who had not benchmarked in the past, three intended to do so this year, one was unsure, and two indicated they did not intend to benchmark (Table 4). Only two participants knew they had benchmarked last year and in the past (Table 4). In the follow-up survey, while only 50% of participants participated this year, 83% planned to do so next year, 17% were undecided, and 0% indicated that they would not benchmark next year (Table 10).

Table 9

Impact of direct contact and personalized assistance

Question	n	Strongly Agree	Agree	Dis-agree	Strongly Disagree	N/A	Score
Did the contact and/or assistance by Molly MacMorris-Adix, CNM influence your submission of benchmarking data (i.e. where and how to submit data)?	6	17%	50%	0	17%	17%	2.80

Note: Majority found customized assistance helpful. Likert-style answers were converted to numeric values and an agreement score was calculated for each question; 4.0 (*strongly agree*) to 1.0 (*strongly disagree*).

Table 10

Impact of benchmark coaching

Question	n	Yes	Unsure	No	Total	Score
Did you submit benchmarking data this year?	6	50%	*	50%	100%	2.00
Do you plan to submit benchmarking data next year?	6	83%	17%	0%	100%	2.83
Were you contacted by Molly MacMorris-Adix, CNM regards to participation in benchmarking?	6	100%	*	0%	100%	3.00
Did you watch either voice-over PowerPoint presentations; Benchmarking Basics or Benchmarking Nutshell?	6	33%	*	67%	100%	1.67

Note: Follow up survey results regarding impact of benchmark coaching.
* *'Unsure' was not an option for response to survey questions.*

Purpose#3: Increase Participation in the National ACNM Benchmarking Project in Oregon

In 2013, there were a total of six Oregon practices that participated in the ACNM Benchmarking Project. That number rose to ten practices in 2014. This year (2015 data) there were 13 unduplicated practices accounted for in the most recent Benchmarking cycle, an

increase of 30% (Table 11). Overall, the rate of national participation in the ACNM benchmarking project had an identical number of unduplicated and complete submissions from 286 practices compared with the previous year.

Table 11

Oregon practice participation in the ACNM benchmarking project 2013-2015

Year	Number of Practices
2013	6
2014	10
2015	13

Note: The number of practices in Oregon continues to rise. Total number of practices in a given year is unknown given dynamic nature of practice environment.

Discussion

Strengths

The strength of this project is defined by its quality improvement approach and related assessment of Oregon ACNM members. Benchmarking is a quality improvement method that can be applied to various levels of practice from the individual up to the national professional body (Anand & Kodali, 2008; Yasin, 2002). This project was an attempt at improving the national benchmarking process among Oregon ACNM members by increasing state level participation.

Another strength was increasing participation of Oregon practices in ACNM Benchmarking. While an initial goal of increasing participation to 20 practices was not achieved, the Oregon practice participation did rise from 10 to 13 practices, thus achieving the general purpose of increasing Oregon participation (Table 9). Additionally, this was the first survey of its kind to assess Oregon ACNM members on their current awareness and understanding of

ACNM's Benchmarking process and their level of current and past participation. As a primary assessment, it has strength as an informative foundation for future improvement efforts. There are important lessons to be learned from not only the project process itself (i.e. improving survey questions), but also from the overall benchmarking process in Oregon. The purpose of identifying practices ready for change and desiring benchmarking assistance was also achieved. Seven PRAs were identified and coach assistance offered through the Benchmarking process.

It is important to note that this project included a general assessment survey of individual Oregon ACNM affiliate members, but was aimed to understand practice level information. Direct assessment of practice level awareness and understanding of the ANCM benchmarking project would have been preferred, but relatively impossible while also maintaining anonymity. The aspect of anonymity is crucial, creating a non-competitive climate within the ACNM benchmarking project and for receiving honest, unbiased, responses from survey respondents. The accuracy of closely individual responses were representative of practice opinions of benchmarking is debatable, but the information holds value as initial insight for further assessment and quality improvement efforts in this area. The assessment at the individual level was also used to identify practices that were interested in practice level assistance for the QI intervention. The intervention in this quality improvement project was then directed to the practice level. Seven individual participants requested practice level assistance from seven unduplicated practices (2.a). Though some of these practices were represented by more than one survey participant, the practice level assistance was only requested by one participant from within any given practice.

Limitations

The overall high frequency of 'Strongly Agree' responses, makes it unlikely that this survey was subject to central tendency bias. The survey questions were not designed to balance positive and negative statements or questions; thus, acquiescence bias is possible (Van Herk, Poortinga, & Verhallen, 2004). The anonymity of the initial survey was maintained to avoid or prevent participants from feeling pressured to respond in a manner that portrayed their organization in a negative light. That said, social desirability bias is difficult to control for, and general awareness of ACNM core values could be sufficient for participants to assume a preferred response (Van Herk, Poortinga, & Verhallen, 2004). For example, the knowledge that quality improvement as a part of evidence based care *should be* important as defined by ACNM core measures could dictate participant response over actual perspective. Ultimately, anonymity allows participants to respond honestly without regard to influence by ACNM values.

The specific statements *'I am aware of the ACNM Benchmarking project'* and *'I understand the purpose of the ACNM Benchmarking project'* had similar agreement scores in the entire survey group (3.53 and 3.45, respectively) indicating possible overlap in the statements. Also, the statement *'Participating in the ACNM Benchmarking Project is a priority for my practice or organization* could have been answered with consideration of the practice's benchmarking climate or perspective (as intended) or the perspective of the individual's practice. Because the survey was an assessment at the individual level, it is possible that some responses referenced the individual's priority of participating. Future surveys can better investigate these topics through statement refinement.

In attempting to accurately quantify growth in practice participation, the denominator is not precise given the inability to account for fluctuations in new practices and the closure of practices. The ACNM website Practice Directory lists 25 midwifery practices in Oregon as of

May 2016, yet there are noted areas of overlap and inaccuracies in this document. The survey in this project identified approximately 30 unduplicated practices. Additionally, this project can account for two first time benchmarkers, yet the national level of benchmarking participation was identical to last year.

Barriers to Participation

The theme of *time* was the most commonly cited barrier, regardless of experience, which is consistent with the literature (Anand & Kodali, 2008; Janakiraman & Ecker, 2010; Walker et al., 2008). Practices without benchmarking experience cited more barriers to participation overall compared to those with the most experience benchmarking (Table 8). Given the relatively small difference in amount of time benchmarking and small sample size it is difficult to draw conclusions, for example if time and experience themselves limit barriers to participation. With the purpose of clarity around this issue, future studies could investigate how barriers to initiating benchmarking participation compared to barriers to continuation of participation (Table 8).

Overall, the barriers identified in this project are consistent with the literature regardless of experience with benchmarking and quality improvement because an inherent limitation of benchmarking is the unavoidable requirement of time and resources (Anand & Kodali, 2008; Janakiraman & Ecker, 2010). The general need for clearer data collection systems and administrative support was noted within a couple of themes including *time, health systems' issues, added responsibility* and *priority issues*. This is not surprising given the barriers to benchmarking cited in the literature that are themselves are inter-related (i.e. uncooperative sources, strained relationships, overemphasis, no innovation, late adopters, and poor collaboration (Hong et al., 2012)). While data collection has historically been performed by midwives, the profession has struggled to create and integrate into practice a standardized

method (Collins-Fulea et al., 2005; Walker et al., 2008). Given the overall high agreement score of the value of QI and benchmarking awareness or understanding and the well-articulated barriers, it is likely that the biggest challenge in increasing participation is helping practices overcome the hurdle between intent and the act of of submitting data.

Impact of Benchmarking Coaching

The practical application and complete submission of benchmarking data was a key part of benchmarking coaching. Following benchmarking coaching, all six practices that were successfully contacted provided verbal intent to submit their benchmarking data, yet only three reported doing so in the follow up study. While the actual rate of data submission is disappointing, it is heartening to note that most practices responded positively in the post survey that they planned to benchmark next year. It is difficult to say if this is a result of the benchmarking coaching intervention, or simply the result of anticipating the desired response. Ultimately, this also underscores that the primary challenge is in the actual data collection and submission. The minimal participation of respondents who viewed the benchmarking tutorials is difficult to interpret. It underscores the need for continued efforts aimed at increasing awareness for the value of benchmarking, as well as attempts to better understand the overall value of benchmarking to members' practices. The variety of barriers within the theme of Health Systems' Issues (i.e. large and small practice size) demonstrates that the limitation of resources and time is not unique to practice characteristics. It is difficult to know the influence of personalized coaching at the practice level when only 50% of follow up survey participants (n=6) stated it was helpful. Moreover, the range of responses to this variable among all participants (n=6) included both extremes of 'strongly agree' and 'strongly disagree' (Table 9). Regardless

of awareness, understanding, and intent to participate, the systems in place and support for them appears to be the most influential factors in determining participation.

Recommendations

Systems approach to making benchmarking more accessible

There is a clear need for standardizing and consolidating data collection options to prevent re-invention of the wheel for practices new to data collection or those who find their current system to be redundant, cumbersome, or un-related to benchmarking variables. Providing information about data collection and examples options on the ACNM website with instructions for customization or links to free and fee-based data collection software could be a solution to this issue. This would increase accessibility of data collection options for all practice types without reinvention of new methods-inventing the wheel and reflect the documented variation in desired data collection methods (Walker et al., 2008). As indicated by survey respondents, Oregon midwives value quality improvement. Additional campaigns to demonstrate and inform members how to collect data and how to submit data is likely a better use of resources than explaining why benchmarking is of value. The latter could be referenced as needed, but may not need to be a main focus of benchmarking campaigns. If personnel allowed, connecting with individual practices in the months preceding the final deadline to provided submission assistance may also be of value. Regardless, It is clear that a state or national system's approach could be used to help practices with data collection and benchmarking submission in the moment it is being set up, and ultimately move the practice beyond intent to action.

Moving forward with QI

The 100% agreement that quality improvement is important in midwifery care is resounding evidence that midwives in Oregon, at minimum, value quality improvement. This could be taken as further evidence that focused attention on education campaigns to improve benchmarking as related to QI may not be effective in increasing overall participation. However, with improved systems for data collection and awareness, reducing cumbersome responsibility and duplicated efforts could be effective (which may or may not save time, but a sense of efficiency may be sufficient). One tangible recommendation would be creating an easily accessible resource list of best practices for data collection methods. Given the clear connection between benchmarking participation and membership-related initiatives within ACNM, another recommendation would be using benchmarking data to maintain an updated practice directory. This step could then provide for improved statistics and data to drive quality improvement. Overall, the challenge is making the active engagement and required regular input and investment of benchmarking (Ettorchi-Tardy et al., 2012) feel worthwhile. The application of benchmarking data and reports for ongoing quality improvement processes within a practice, state, or nation validates the effort and motivate new participation. While the focus of this project was to strengthen benchmarking as QI method by increasing participation, the underlying ongoing goal is to increase overall QI in midwifery.

Increasing awareness through publication of benchmarking's potential to improve practice, increase practice size, improve reimbursement with third party insurance, and/or support midwifery related legislation will be beneficial two-fold. First, success stories of the benefit of participating (despite regular investment) will help increase participation, further improving the data and the strength of benchmarking as a QI tool or method. The literature

review in this project found only two such examples published over 10 years ago (Collins-Fulea et al., 2005), indicating opportunities for improvement in publication rates. Second, increased publication of successful QI efforts related to the economic value of midwifery can serve as examples for over-burdened midwifery practices that benchmarking also carries the potential to address underlying health system's issues. A data driven demonstration of the capacity to provide evidence-based, economical care can provide substance to an argument for retention of or hiring an additional midwife, blocked administration time for QI, legislative change, or increased re-imbursement (Uddin & Martin, 1997). Solutions to health systems' issues do not need to be re-invented and can be shared among the membership of the ACNM. The umbrella initiative is to increase QI projects and efforts within midwifery to keep practice evidence-based and of the highest quality; benchmarking is a crucial step to achieving this initiative.

Summary

Benchmarking is an evidence-based method of quality improvement that is supported in the literature (Anand & Kodali, 2008; Yasin, 2002). The ACNM Benchmarking Project has been in existence since 2004, but as struggled with increasing the necessary practice-level participation, ultimately limiting the strength of the produced data (Collins-Fulea et al., 2005; Walker et al., 2008). Oregon ACNM members were surveyed regarding an assessment of benchmarking understanding and previous participation. Seven practices requesting benchmarking practice-level assistance were identified. The assistance provided, or benchmark coaching, entailed emails and phone calls to answer questions and provided education or reminders as needed. The entire ACNM Oregon affiliate was also reminded to submit their benchmarking data via mass email reminders and affiliate-related Facebook posts. Ultimately, 13

Oregon practices participated this year, a noted increased from the 10 practices last year. There was widespread agreement among respondents related to the value of quality improvement and benchmarking awareness. The greatest barriers cited, regardless of years submitting data, were *time* and *health system's issues* such as those related to practice size and data collection. This project's noted strengths was quality improvement initiative among Oregon nurse-midwives and an initial assessment that can be used for future projects. Recommendations include increasing publication of success stories related to application of benchmarking data for practice improvement or advancement; reducing practice-level barriers to data collection by creating an easily accessible list of best practice for data collection; and lastly, utilization of QI efforts to drive progress in midwifery care.

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APPENDIX A

Cover Letter

My name is Molly MacMorris-Adix, I am a current Doctorate of Nursing Practice (DNP) Student at Oregon Health & Science University, and a Certified Nurse-Midwife (CNM) with Silverton Women's Health. My practice improvement project is aimed at increasing practice participation in the American College of Nurse-Midwives (ACNM) Benchmarking Project among Oregon nurse-midwives, and I am requesting a quick 2-3 minutes of your time to complete a quick survey (see the below link).

https://www.surveymonkey.com/r/VP3GNPP

What: A 13-16 question online survey that takes an average 2-3 minutes to complete.

Who: In attempting to get the largest data sample of Oregon practices eligible for the ACNM benchmarking project, I am asking each CNM to complete the survey (regardless of specific level of benchmarking engagement, past or present). *Midwives responsible for benchmarking or those interested benchmarking for the first time, are especially encouraged to complete the survey.*

Why: It only takes 2-3 minutes, you needed a break from charting anyway, and your participation, as well as your opinions about benchmarking will contribute to furthering our affiliate's understanding and work with ACNM's Benchmarking Project.

Thank you for taking a moment from your busy schedule to complete this survey!!

Molly MacMorris-Adix, MN, CNM, DNP-Student

Oregon Health & Science University

APPENDIX B

Reminder Letter

Hello again! This is the reminder email to complete the attached (very short) survey in efforts to increase practice participation in the American College of Nurse-Midwives (ACNM) Benchmarking Project among Oregon nurse-midwives (and also for my DNP project!).

https://www.surveymonkey.com/r/VP3GNPP

What: A 13-16 question online survey that takes an average 2-3 minutes to complete and assesses current understanding of and engagement with the benchmarking project.

Who: In attempting to get the largest data sample of Oregon practices eligible for the ACNM benchmarking project, I am asking each CNM to complete the survey (regardless of specific level of benchmarking engagement, past or present). *Midwives responsible for benchmarking or those interested in benchmarking for the first time, are especially encouraged to complete the survey.*

Why: It only takes 2-3 minutes, you needed a break from charting anyway, and your participation, as well as your opinions about benchmarking will contribute to furthering our affiliate's understanding and work with ACNM's Benchmarking Project.

Thank you for taking a moment from your busy schedule to complete this survey!!

Molly MacMorris-Adix, MN, CNM, DNP-Student

Oregon Health & Science University

APPENDIX C
Benchmarking Assessment Survey

This information is being collected to help increase benchmarking participation among members of the Oregon Affiliate of the ACNM. Outcomes from this survey will additionally support the quality improvement efforts of all midwives who currently participate or anticipate participating in the established ACNM Benchmarking Project.

If your practice desires follow-up assistance, practice contact information is requested. (Providing this information would be the same information required in the Benchmarking Project.)

Please circle/select one response.

1. I am aware of the ACNM Benchmarking project.
   Strongly disagree. Disagree. Agree. Strongly agree.

2. I understand the purpose of the ACNM Benchmarking project.
   Strongly disagree. Disagree. Agree. Strongly agree

3. I understand the relationship between the ACNM benchmarking project and national quality improvement metrics in maternal and child health.
   Strongly disagree. Disagree. Agree. Strongly agree.

4. Participating in the ACNM Benchmarking Project is priority for my practice or organization.
   Strongly disagree. Disagree. Agree. Strongly agree.

5. Helping my practice participate in the ACNM Benchmarking Project is a priority.
   Strongly disagree. Disagree. Agree. Strongly agree.

6. I believe quality improvement is important to midwifery care.
   Strongly disagree. Disagree. Agree. Strongly agree.

7. Did your practice participate in the ACNM Benchmarking Project for last year (submitted data in April 2015)?
   Yes No Unsure

8. If your practice did *not* participate last year, does your practice plan to do so this year (submit data in April 2016)?
   Yes No Undecided

9. Has your practice participated in ACNM Benchmarking Project in the past?

   Yes No Unsure

10. If Yes, how long has your practice been participating in the ACNM Benchmarking

Project?
N/A ≤ 1 year ≤ 3 years ≤ 5 years > 5 years
I don't know

11. Does your practice provide full scope maternity care (AP, IP, PP)?
Yes No

12. My practice typically delivers the following number of births per year.
<50 >50 - <199 200 - <499 500+ My practice does not provide intrapartum care.

13. Is there at least one FTE CNM/CM in your current practice?
Yes No Unsure

14. What are your primary motivations for participating in the ACNM Benchmarking project?
Open Field:

15. What are the primary obstacles for participating in the ACNM benchmarking project?
Open Field:

16. *Optional.* If you are interested in individualized practice assistance with participating in the ACNM Benchmarking Project, please provide your practice contact information.

The contact information provided is voluntary and not a required part of the survey. Shared information will not be distributed beyond the specific purpose of assistance with ACNM Benchmarking.

Contact Name:
Practice Name:
Phone Number:
Email:

APPENDIX D

This winter you participated in a survey to assess current understanding and participation in the ACNM Benchmarking. In that survey, you indicated you would like to be contacted for additional individual practice assistance with benchmarking. This short (less than < 2min) survey of multiple choice questions is the follow up to that request. *This is the final step of my DNP project and I really appreciate your time and patience in taking this survey!!*

1. Did you submit benchmarking data this year?
   Yes No

2. Do you plan to submit benchmarking data next year?
   Yes No Undecided

3. I understand the purpose of the ACNM Benchmarking project.
   Strongly Agree Agree Disagree Strongly Disagree

4. I understand the relationship between the ACNM benchmarking project and national quality improvement metrics in maternal and child health.
   Strongly Agree Agree Disagree Strongly Disagree

5. Participating in the ACNM Benchmarking Project is a priority for my practice or organization.
   Strongly Agree Agree Disagree Strongly Disagree

6. Helping my practice participate in the ACNM Benchmarking Project is a priority.
   Strongly Agree Agree Disagree Strongly Disagree

7. I believe quality improvement is important to midwifery care.
   Strongly Agree Agree Disagree Strongly Disagree

8. Were you contacted by Molly MacMorris-Adix, CNM regards to participation in benchmarking?
   Yes No

9. Did the contact and/or assistance by Molly MacMorris-Adix, CNM influence *your submission* of benchmarking data (i.e. where and how to submit data)?
   Strongly Agree Agree Disagree Strongly Disagree Not Applicable

10. Did you watch either voice-over power point presentations; Benchmarking Basics or Benchmarking Nutshell?
    Yes No

11. If Yes, did the presentation(s) (check all that apply)
    a) Increase your understanding of the ACNM Benchmarking Project.
    b) Increase your knowledge of the relationship between ACNM Benchmarking and national quality improvement metrics.

c) Increase your motivation to participate in the ACNM Benchmarking Project.
d) None of the above.

12. Questions I still have about the ACNM benchmarking project are…
Open Field:

13. Are there any areas where you could have used additional assistance or where the provided assistance could have been more effective?
Open Field:

Thank you for your participation in my DNP project and your engagement with ACNM's benchmarking project! This work is integral to moving midwifery forward here in Oregon and across the nation.

Molly MacMorris-Adix, CNM, DNP-student