

MASSACHUSETTS
ACTION COALITION
Transforming Healthcare Through Nursing



REPORT

The Advanced Practice Nurse in Massachusetts

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Contents

- About the Massachusetts Action Coalition:..... ii
- APRN Scope of Practice Work Product iv
- Introduction..... 1
- Scope of Practice Vignette: NP Practice in the Northeast 1
- NCSBN Consensus Model..... 7
 - Massachusetts Nurse Practice Act and the NCSBN Consensus Model..... 7
 - Titling and Scope of Practice 8
 - Licensure..... 8
 - Prescribing, Ordering, Dispensing, and Furnishing..... 9
 - Oversight for Nursing Practice 10
- Education and Preparation of APRNs..... 10
- Clinical Outcomes..... 11
- Certified Nurse Midwife Vignette 11
 - Certified Nurse Midwife 12
- Nurse Practitioner Vignette..... 12
 - Nurse Practitioner 13
- Certified Registered Nurse Anesthetist Vignette..... 14
 - Certified Registered Nurse Anesthetist..... 14
- Advanced Practice Psychiatric Nurses (PCNS and Psychiatric CNP) Vignette..... 15
 - Advanced Practice Psychiatric Nurses (PCNS and Psychiatric CNP)..... 16
- History and Regulation of APRN Practice in Massachusetts 17
- Massachusetts Healthcare: Systems and Physician Access 20
- APRNs: Access and Cost..... 21
- Summary and Discussion..... 24
- References..... 27

Preface

About the Massachusetts Action Coalition:

The Massachusetts Action Coalition (MAAC) is part of the nationwide Campaign for Action, a joint initiative of the Robert Wood Johnson Foundation (RWJF) and the AARP Foundation to implement the recommendations in the Institute of Medicine's 2010 landmark report on the future of nursing. With the Massachusetts Department of Higher Education and the Organization of Nurse Leaders of MA & RI as co-leaders, the MAAC is engaging health care providers, nurse educators, and public sector leaders to affect and support changes in how nurses are educated, trained, and practice in order to better serve the health care needs of the Commonwealth.

The MAAC's goals are to:

- Broadly disseminate the recommendations of the Institute of Medicine report;
- Build a statewide consensus in support of academic progression for all nurses;
- Implement a plan to increase diversity in the nursing workforce;
- Promote statewide adoption of the Nurse of the Future Nursing Core Competencies[®] in academic and practice settings;
- Use demographic data to inform health care workforce plans;
- Remove scope of practice barriers for Advanced Practice RNs; and
- Strengthen inter-professional collaboration within the health care community.

In 2014, Massachusetts became one of nine states to receive a second two-year \$300,000 grant from the RWJF for the second phase of its Academic Progression in Nursing (APIN) program to advance state and regional strategies aimed at creating a more highly educated, diverse nursing workforce.

In awarding the grant, the RWJF noted that the funding will allow Massachusetts and the other states “to continue working with academic institutions and employers to expand their work to help nurses in their states get higher degrees, so they can be essential partners in providing care and promoting health, as well as more easily continue their education and fill faculty and primary care nurse practitioner roles. The Action Coalitions in all these states have been encouraging strong partnerships between community colleges and universities to make it easier for nurses to transition to higher degrees.”

To learn more about the MAAC's progress and join our efforts to improve health care, visit <http://campaignforaction.org/state/massachusetts>.

In its efforts to implement the recommendations of the IOM report on the future of nursing, the MAAC has formed project teams of nursing professionals with specialized knowledge and expertise to explore a variety of topics.

The goal of this report is to add to the knowledge base on scope of practice issues for the Advanced Practice Nurse in Massachusetts and to stimulate further dialogue on this topic.

The authors are solely responsible for the content of the report, which does not represent the opinions or recommendations of the MAAC's co-leading organizations.

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APRN Scope of Practice Work Product

The MAAC Advanced Practice Registered Nurse (APRN) Scope of Practice Project Team (the team) met monthly for a period of sixteen months. Members included CNS, CNM, CRNA, and NP participants; as well as representatives from the following organizations: Massachusetts Association of Advanced Practice Psychiatric Nurses (MAAPPN), MA Affiliate of American College of Nurse Midwives, MA Council of Nurse Practitioners (MCNP), MA Association of Nurse Anesthetists (MANA), MA Board of Registration in Nursing, and Massachusetts Nurses Association, among others.

National standards for the education and training of APRNs were evaluated. A review of the relevant literature as it related to the Commonwealth of Massachusetts scope of practice, national health reform, quality, cost containment, access to care and APRN outcomes was conducted. The Massachusetts Nurse Practice Act is comprised of the laws and regulations that govern APRN practice and were accordingly reviewed. The Commonwealth of Massachusetts General Laws, (MGL chapter 112 including sections 80B through 80I) stipulate the conditions under which an APRN may practice. The prescriptive practice of the APRN is further governed by MGL chapter 94 C, the Controlled Substance Act. Given their relevance to practice, these items were also included in the literature review along with the National Council of State Boards of Nursing (NCSBN) Consensus Model for APRN Regulation. Finally, a survey of the New England practice environment for APRNs was conducted.

The project team's aim was to identify opportunities to contemporize Massachusetts laws and regulations related to APRN practice and further to achieve those regulatory recommendations made by national policy setting organizations which promise to position the APRN workforce to meet the evolving health care needs of patients across the Commonwealth. Considered the national standard for APRN regulation, a gap analysis between the NCSBN Consensus Model for APRN Regulation and the Massachusetts Nurse Practice Act was conducted and recommendations for alignment are made.

The Advanced Practice Nurse in Massachusetts

Massachusetts Action Coalition Report

Introduction

Every day in Massachusetts advanced practice registered nurses (APRNs) care for thousands of patients across the Commonwealth of Massachusetts, from newborns to nursing home residents, in hospitals to homes. APRNs have specialized education and preparation that expands their scope of practice beyond that of the registered nurse to include advanced practice competencies. Included under the umbrella of the APRN title are the following roles; Certified Nurse Midwife (CNM), Nurse Practitioner (CNP), Nurse Anesthetist (CRNA), and Clinical Nurse Specialist (CNS). Although a multitude of studies have demonstrated that APRNs deliver high-quality, cost-effective health care, their accessibility to health care consumers and ability to impact costs of care in Massachusetts have been limited due to unnecessary legislative barriers in an antiquated Nurse Practice Act. Unlike the autonomy normally afforded to APRN professionals in other states, restrictive regulations remain a challenge in Massachusetts.

This white paper was prepared by the Massachusetts Action Coalition (MAAC) APRN Scope of Practice Project Team seeking to address the Institute of Medicine (2010) report's first recommendation: "Advanced practice registered nurses should be able to practice to the full extent of their education and training." The paper will review the current scope of practice regulating the clinical practice of APRNs in Massachusetts, the evidence supporting fewer restrictions, and further highlight those barriers faced by this highly educated workforce that possesses significant expertise and seeks to practice to their fullest potential.

Scope of Practice Vignette: NP Practice in the Northeast

Maria has been a nurse in Concord for twenty years. After college, she worked in the intensive care unit at a large academic medical center, before returning to graduate school for an advanced practice nursing degree. After passing a national certification exam she was licensed as a Nurse Practitioner and began working for a practice that now employs 2 family practice physicians and 2 nurse practitioners. The providers in this practice all manage their own panel of patients and rely on their clinical colleagues for consultations and coverage. Every team member has the ability to provide primary care for patients to the full extent of their education and training – from initial assessment, to diagnostic studies, to prescribing medications and therapies, to managing acute and long-term treatment plans.

Margery attended graduate school with Maria and also practices in Concord in a small medical group. Despite having obtained their APRN degrees together and passing the standardized national certifying exam, Margery's practice is much different. Margery is required to have a physician colleague supervise her prescriptive management of patients. She and the supervising physician meet regularly to conduct a *retrospective* review of a subset of the prescriptions she has written and also to discuss the treatment protocols she is authorized to use.

Why are Maria and Margery's practices so different? Did Margery do something wrong that requires her to have physician oversight for the care and treatment decisions she is making?

No. Maria practices in Concord, New Hampshire, and Margery practices in Concord, Massachusetts.¹

The Massachusetts APRN workforce consists of 7,752 CNPs, 868 Psychiatric CNSs (PCNS), 1252 CRNA's and 480 CNMs (Board of Registration in Nursing, 2014). While the oversight of the nursing practice of the licensed practical nurse (LPN) and registered nurse (RN) practicing in the Commonwealth of Massachusetts remains the sole responsibility of the Board of Registration in Nursing (BORN), the regulation of APRN prescriptive practice requires joint promulgation and oversight by both the BORN and the Board of Registration in Medicine (BORM).

Nurses authorized to practice in the advanced role are required to possess an unencumbered Registered Nurse license, have successfully completed rigorous, accredited post graduate education, possess current National Board Certification and must also demonstrate good moral character ("Advanced Practice Registered Nursing," 2014). The Board Certified APRN is required to demonstrate continued competency in the area of expertise and is authorized to assess, diagnose, treat and manage illness, order diagnostic tests and exams, prescribe, administer and dispense medications and therapeutic measures, as well as order and perform procedures ("Advanced Practice Registered Nursing," 2014).

Massachusetts regulations written in 1994 required the APRN to enter into an agreement with a collaborating physician; the process required developing and signing both *practice* guidelines and *prescriptive* guidelines. In 2012, legislation was passed that removed the requirement for the CNM to develop such guidelines or maintain physician supervision. In 2014, revisions were made to 244 CMR 4.00 Regulations Relative to Advanced Practice Registered Nurses, removing the requirement for *practice* guidelines for all APRNs (Talarico, 2014). Excluding the CNM, for all other APRNs seeking prescriptive practice, the requirement to develop *prescriptive* guidelines with a supervising physician continues to remain in place (Talarico, 2014).

¹ The vignettes throughout the document are fictionalized accounts intended to reflect the challenges faced by Massachusetts APRNs and their patients.

In the Commonwealth of Massachusetts, prescriptive authority is granted by the Massachusetts Department of Public Health Drug Control Program for all APRN prescribers *after* the BORN authorizes the nurse to practice (Commonwealth of Massachusetts Office of Health and Human Services, 2014). The APRN seeking prescriptive authority is required to register with the Federal Drug Enforcement Agency (DEA) (Commonwealth of Massachusetts Office of Health and Human Services, 2014). Prescriptive guidelines are mandated by statute and represent a written agreement between an individual supervising physician and an individual APRN (CNP, CRNA or PCNS). Guidelines require updating every two years and describe the scope of prescriptive care the APRN is to follow when managing medications including; limitations to prescribing, conditions both for seeking MD consultation and the management of related emergencies. Prescriptive guidelines must describe a process for the *retrospective* review of a subset of APRN prescriptions. Those Schedule II drugs prescribed by an APRN require an expedited review be completed within 96 hours of prescribing (Commonwealth of Massachusetts Office of Health and Human Services, 2014). Further, the name of the physician supervising the prescriptive practice of the APRN must appear on all prescriptions written by the nurse (“Nurse practitioners or psychiatric nurse mental health clinical specialists; power to order therapeutics and tests; issuance of written prescriptions”, 2014). When appropriate and as determined jointly by the supervising physician and the APRN, guidelines must also address procedures for the ordering of tests and therapeutics (Commonwealth of Massachusetts Office of Health and Human Services, 2014).

State scope of practice laws determine what care the advanced practice nurse is licensed and authorized to deliver. In the setting of health reform, universal access has markedly increased the number of residents seeking care. With requirements for physician oversight of APRN prescriptive practice, the antiquated Massachusetts Nurse Practice Act is a major barrier to the effective utilization of the APRN workforce to enhance access to care.

Further, the state serves as a health care hub for patients across New England, and in fact, delivers care to individuals from across the nation and beyond. Given the significant influx of patients into the Massachusetts health care system, their migration across geographies, a federal mandate for electronic health records and care delivery which is being transformed into e-visits with the electronic transmission of prescriptions across state lines, there is an imperative to contemporize APRN practice in Massachusetts.

Types of Advanced Practice Registered Nurses



| Who are they? | How many in MA | What do they do? |
|--|----------------|---|
| Nurse Practitioners (CNP) | 7,752 | CNPs provide healthcare services to individuals throughout the lifespan, including health promotion, disease prevention, health education, counseling and making referrals to other members of the health care team, as well as the diagnosis and management of acute and chronic illness and disease. CNPs order tests and therapeutics, and prescribe medications under written guidelines with a supervising physician. CNPs provide care in diverse settings, including, but not limited to home, hospital, nursing facilities, and a variety of ambulatory care settings including private offices, community and public health clinics. |
| Clinical Nurse Specialists (CNS) | Not Available | CNSs provide healthcare services to individuals throughout the lifespan, including health promotion, disease prevention, health education, counseling and making referrals to other members of the healthcare team, as well as the diagnosis and management of illness and disease. CNSs provide care in diverse settings, including, but not limited to, home, hospital, nursing facilities, and a variety of ambulatory care settings. |
| Psychiatric Clinical Nurse Specialists (PCNS) | 868 | PCNSs provide psychiatric health care services to individuals throughout the lifespan, including health promotion, disease prevention, health education, counseling and making referrals to other members of the healthcare team, as well as the diagnosis and management of acute and chronic psychiatric illness and psychiatric disease. PCNSs order tests and therapeutics, and prescribe medications under written guidelines with a supervising physician. PCNSs provide care in diverse settings, including, but not limited to, home, hospital, nursing facilities, and a variety of ambulatory care settings. |
| Certified Registered Nurse Anesthetists (CRNA) | 1,252 | CRNAs provide anesthesia care and anesthesia-related care for individuals across the lifespan, whose health status may range from healthy through all recognized levels of acuity, including persons with immediate, severe, or life-threatening illness or injury. CRNAs provide anesthesia and anesthesia-related care in diverse settings, including, but not limited to, hospital surgical suites and obstetrical delivery rooms; critical access hospitals; acute care; ambulatory centers; and the offices of dentists, podiatrists, and physicians. CRNAs order tests and therapeutics for the immediate peri-operative period and prescribe medications for the immediate peri-operative period under written guidelines with a supervising physician. |
| Certified Nurse Midwives (CNM) | 480 | CNMs provide primary health care services to women throughout the lifespan including gynecologic care, family planning services, preconception care, prenatal and postpartum care, childbirth, care of the newborn and treatment of the partner of their clients for sexually transmitted disease and reproductive health. CNMs are responsible and accountable for engaging in the practice of midwifery; including interpretation of laboratory and diagnostic data, only within the CNM's scope of practice and in accordance with American College of Nurse Midwives (ACNM) standards. CNMs practice within a healthcare system and develop clinical relationships with obstetrician-gynecologists to provide care in diverse settings, including, but not limited to, home, hospital, birth center, and a variety of ambulatory care settings. CNMs do not require a supervising physician or written guidelines to prescribe medications. |

New England Practice Environment



| New England Practice Environment | MA | | CT | | ME | | NH | | RI | | VT | |
|---|-----|----|-----|----|-----|----------|-----|----|-----|----|-----|----|
| | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| Written agreement of Physician supervision of prescriptive practice | X | | | X* | | X* & X** | | X | | X | | X* |
| Physician name must appear on prescription | X | | | X | | X | | X | | X | | X |
| Joint promulgation of regulations with Board of Medicine | X | | | X | | X | | X | | X | | X |

*VT and ME APRNs who have been licensed and practicing in collaboration with a physician for two years may subsequently practice independently and in CT, after three years.

**CRNAs in ME practice under the supervision of a physician or dentist.

Source CT - <http://www.ct.gov/dph/cwp/view.asp?a=3121&q=389398>

Source ME - <http://www.maine.gov/boardofnursing/Licensing/APRN/index.htm>

Source NH - <http://www.nh.gov/nursing/nurse-practice-act/index.htm>

Source RI - <http://www.health.ri.gov/for/nurses/>

Source VT - <https://www.sec.state.vt.us/professional-regulation/professions/nursing.aspx>

Source MA - <http://www.mass.gov/dph/boards/rn>

In order to better understand the Commonwealth of Massachusetts' scope of APRN practice in relation to neighboring states, a survey of the New England practice environment was conducted. Comparison states included Connecticut, Maine, New Hampshire, Rhode Island, and Vermont. The areas of APRN practice that were assessed included; the requirement for an APRN seeking prescriptive authority to develop prescriptive practice guidelines and enter into an agreement with a supervising physician for oversight; the mandate that APRN prescriptions display the name of a supervising physician; and the requirement that the BORN and BORM jointly promulgate regulations related to APRN prescriptive practice.

Survey findings are described as follows: New Hampshire and Rhode Island have no requirements for supervision of the APRN for any element of practice including prescriptive (New Hampshire Board of Nursing, 2013; State of Rhode Island Department of Health, 2014). For those APRNs seeking prescriptive practice in Connecticut, Maine and Vermont, there is a requirement for a time limited period of collaboration with a physician, prior to the state granting independent prescriptive authority (Maine State Board of Nursing, 2005; State of Connecticut Department of Public Health, 2014; Vermont Secretary of State, 2014). Maine has an additional exception; in this state, CRNAs are required to have physician or dentist supervision (Maine

NCSBN Consensus Model

Across the nation, the regulation of nursing practice occurs at the state level, and in most instances is the sole responsibility of the BORN. In a minority of states, the Board of Medicine has a shared responsibility for the oversight of nursing practice and works with the Board of Nursing to jointly promulgate nursing regulations. This model of joint regulation, referred to as joint promulgation, remains only in Alabama, Delaware, and Massachusetts (Buppert, 2014; Buppert 2015)

As each state individually determines and regulates nursing practice, the National Council of the State Boards of Nursing (NCSBN) launched the Campaign for Consensus in 2000, as a means to reduce variation in how nurses are licensed and practice, and further, to enhance their mobility across geographies (National Council of State Boards of Nursing, 2014). The overarching goal of the campaign is to assist the individual states to align state regulation for APRN practice within the NCSBN Consensus Model for APRN Regulation (the model) which establishes standards for licensure, accreditation, certification, and education of nurses in four designated APRN roles; CNS, CNP, CRNA and CNM (National Council of State Boards of Nursing, 2014).

The Campaign for Consensus has received broad support from some 48 nursing organizations (National Council of State Boards of Nursing, 2014). Nationally considered the regulatory standard for the discipline, individual states are filing legislation to align nursing practice with the model (APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee, 2008). As such, the state practice landscape is rapidly evolving and during the most recent legislative cycle, twelve states initiated legislative reform seeking full practice authority including; Connecticut, Florida, Kansas, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, Pennsylvania, Utah, and West Virginia (Kopanos, 2014).

Massachusetts Nurse Practice Act and the NCSBN Consensus Model

Recognizing that meeting the contemporary health care needs of patients requires the Commonwealth of Massachusetts to align with national regulatory standards, upon completing a review of Massachusetts' General Laws and regulations governing the practice of APRNs and a survey of the New England practice environment, the committee conducted a gap analysis to examine the issues more closely. The Massachusetts Nurse Practice Act with related statutes and regulations was evaluated in relation to the *NCSBN Consensus Model for APRN Regulation*. The analysis addressed four major domains including; titling and scope of practice; APRN licensure; APRN prescribing, ordering, dispensing and furnishing; and oversight for nursing practice. Given the prescriptive component of APRN practice, those sections of Massachusetts' General Laws related to APRN prescribing were included in the analysis. Results follow with identified action items to guide the Commonwealth of Massachusetts to become aligned with the NCSBN Consensus Model for APRN Regulation.

Titling and Scope of Practice

With a requirement for standards around protected titling including; CNM, CNP, CNS and CRNA coupled with six population specific areas of concentration (Family, Adult-Gerontology, Neonatal, Pediatrics, Women’s Health and Psychiatric Mental Health) Massachusetts aligns well with the titling requirements of the NCSBN (2012) model. However, opportunities do exist around scope of practice. In addition to conducting assessments, developing diagnoses and plans of care, the NCSBN model (2012) specifically allows the APRN to order *and interpret* diagnostic procedures. While the state permits the APRN to order such diagnostic procedures, Massachusetts General Laws have an inherent limitation in that they do not expressly allow for APRN *interpretation* (“Nurse practitioners or psychiatric nurse mental health clinical specialists; power to order therapeutics and tests; issuance of written prescriptions”, 2014). Clearly interpretation is necessary and in fact, all APRNs do this routinely when delivering care and assessing laboratory data and critical pieces of health information. This exception, while perhaps seeming insignificant, has the potential to contribute to the misdirection of APRN ordered test results to physician colleagues who may never have seen the patient and thus have no knowledge of current condition and care needs. In such instances, this rerouting of results away from the ordering APRN, poses a risk for treatment delays, diagnostic errors and fragmentation of care.

Again, benchmarking against the national model, state standards for the APRN to conduct assessments and develop diagnoses and plans of care remains in synch. An additional opportunity to expand access to care does exist. At present, women in Massachusetts may not designate a CNM as a Primary Care Provider (PCP). The delivery of such care is well within the CNM scope of practice. As obstetrical care is such an important entry point into the health care system for women, legislative support for consumer choice of the CNM is critical to ensuring that women have adequate access to primary care across the state and across the lifespan.

Action:

- ***Broaden legislative language to permit APRN interpretation of diagnostics within the scope of their education, training and competencies.***
- ***Enact legislation to require third party payers to recognize CNMs as PCPs.***

Licensure

With the NCSBN (2012) regulatory model, APRNs are independently licensed practitioners. Licensure is granted to those who graduate from an accredited master’s or doctoral program, have successfully passed a national certification exam, meet requirements for an unencumbered license, and a mandate for moral character (NCSBN, 2012). The Commonwealth of Massachusetts requirements for education, national certification, licensure and character are in alignment with the NCSBN model. There are no action requirements for licensure.

Prescribing, Ordering, Dispensing, and Furnishing

The NCSBN (2012) model states that the BORN shall grant prescriptive authority through licensure and further specifies that prescriptive scope will permit the APRN to independently prescribe, order, administer, dispense and furnish therapeutic measures. This includes over the counter medications, legend drugs and controlled substances. Massachusetts permits those APRNs (CNP, PCNS, and CRNA) who have a prescriptive practice agreement with a supervising physician to prescribe schedules II – VI ("Advanced Practice Registered Nursing," 2014). Additionally, the state requires Schedule II drug reviews within 96 hours of an APRN prescribing, and also mandates a retrospective review of a random subset of those prescriptions written by the APRN. The CRNA prescriptive practice is further limited to a specific period of time; immediately pre and post-operative ("Advanced Practice Registered Nursing," 2014). While the CRNA has responsibility for the intraoperative monitoring and safety of patients receiving anesthesia, time restrictions impact their ability to conduct a pre-operative history and physical as they are often done a month in advance and may require pre-procedural medications be prescribed. In fact, few Massachusetts CRNAs have been able to achieve prescriptive authority as institutional credentialing barriers remain in effect.

With respect to ordering and dispensing medications, the Commonwealth of Massachusetts regulations permit the CNP or PCNS to order controlled substances in schedule VI from a drug wholesaler, manufacturer, laboratory, or distributor ("Implementation of M.G.L. c. 94C ", 2014). However, if these same nurses seek to procure medications in schedules II-V to dispense or administer for immediate treatment, it is permissible only when the drug is supplied by a supervising physician or alternately, when obtained through a written prescription for a specific patient ("Implementation of M.G.L. c. 94C ", 2014). CNMs however, have no such physician supervision requirements and therefore are permitted to independently prescribe and procure medications in all schedules for the immediate treatment of their patients.

From primary care to the operating suites, retrospective reviews and time restrictions offer limited value, if any, to the patient or the health care system. APRNs with their advanced training and expertise should be permitted to engage in the full scope of medication-related activities including prescribing, ordering, dispensing, and furnishing without physician supervision. In fact, if Massachusetts patients are to benefit, full optimization of the state's APRN workforce requires this. Independently licensed professionals do not require a legislative mandate for external oversight and consultation. All health care providers are responsible and accountable to the patient and their respective disciplines. All health care providers consult – including physicians for whom no legislative requirement exists. Removal of these artificial barriers to care is likely to enhance patient safety and access to care across a variety of specialties, geographies, and practice settings.

Action:

- ***Contemporize the Massachusetts Nurse Practice Act, the Massachusetts Controlled Substance Act and related regulations to permit the following:***
 - ***Expand the legal definition of “Practitioner” in MGL 94 C to specifically include those APRNs engaged in prescriptive practice, thus ensuring APRNs practice to the full extent of their education, training and competencies.***
 - ***Remove the mandate for physician supervision of APRN prescriptive practice, ensure that APRNs may independently prescribe medications, order, administer, dispense and furnish as appropriate and within the scope of their education, training and competencies.***
 - ***Remove time limiting restrictions for CRNA prescriptive practice.***
 - ***Remove the legislated requirement for APRNs to secure clinical relationships; mandating consultation is neither necessary nor should it be a legislative requirement for health care professionals.***

Oversight for Nursing Practice

Throughout the NCSBN (2012) model of regulation, the oversight and accountability for APRN practice was addressed and attributed in the following manner: accountability to the patient, to the discipline of nursing and to the Board of Registration in Nursing. With a mandate for physician oversight for APRN prescriptive practice and joint promulgation requirements between the BORN and BORM, the Commonwealth does not align with the national model. Such oversight requirements are inherently and unnecessarily restrictive to practice and trade and further have been shown to have a detrimental impact on access and cost of care (FTC, 2014).

Action:

- ***Create regulatory equity; remove the joint promulgation regulatory model that mandates the practice of independently licensed nurses be overseen by another discipline, thus restoring accountability of APRN practice to patient, the discipline of nursing and the BORN.***

Implementation of the identified action items will ensure that Massachusetts aligns with national regulatory standards for advanced practice nursing. The case for contemporizing practice is shaped around a discussion of the national standards for APRN education and a summary of the growing body of peer-reviewed evidence that supports APRNs provide high quality, cost effective care to broad populations.

Education and Preparation of APRNs

Since the inception of early advanced practice roles, the education and training of the APRN has evolved significantly. APRNs are prepared at either the masters or doctoral level in academic programs which meet rigorous national accreditation standards. Building upon the education and training received in pre-licensure education where nurses learn to perform physical assessments, the APRN student must complete comprehensive graduate courses in advanced

physiology/pathophysiology, advanced health assessment and advanced pharmacology (American Association of Colleges of Nursing, 2011). These courses comprise the core curriculum of APRN education as they are educated in one of four roles (CRNA, CNM, CNS, and CNP) and in at least one of six population foci: family/individual across the lifespan, adult-gerontology, neonatal, pediatrics, women's health/gender-related or psychiatric mental health (American Association of Colleges of Nursing, 2011).

Additional coursework incorporated into the curriculum includes: research, health policy, organization of the health care system, health care finance, ethics, professional role development, theoretical foundations of nursing, human diversity and social issues, as well as health promotion and disease prevention (American Association of Colleges of Nursing, 2011). APRN preparation as a direct care provider requires role-specific clinical experiences and criteria for APRN clinical practicums have been well defined by national nursing organizations and accrediting bodies. Varying according to role and population, all APRN academic programs are required to meet national standards. Upon graduation, advanced practice nurses are well prepared to address both the health maintenance and the health promotion needs of patients. Skilled at assessing and diagnosing, APRNs manage both acute and chronic disease, deliver primary care and also manage the complex care of one who is critically ill. Prior to entering into practice, APRNs are required to pass a national certification examination that assesses knowledge of APRN role specific competencies (American Association of Colleges of Nursing, 2011). The breadth and scope of APRN education and training is foundational to the care and outcomes they deliver.

Clinical Outcomes

Clinical outcomes data provides the reader with a brief summary of the evidence supporting that APRNs are delivering high quality clinical outcomes across diverse practice settings. Each APRN role discussed is preceded by a brief vignette which, while fictional, provides the reader with context around role expression. Importantly, these vignettes also illustrate those regulatory, institutional and third party payer barriers, which directly impact APRN effectiveness and care.

Certified Nurse Midwife Vignette

Julia's practice has changed considerably since she moved from Burlington Vermont, where she was able to practice to the full extent of her education and training, as a certified nurse-midwife. She followed her patients throughout their lifespan; admitting patients for deliveries at the local hospital and continuing to treat them thereafter for well-women care. She received her patients' test results and her individual outcomes were tracked and measured alongside other providers.

In Massachusetts, the laboring patients Julia cares for are admitted and tracked under the name of a physician. As a result, care responsibilities often become confusing for staff and laboratory personnel as the identity of the provider with accountability for the

patient is obscured. While the care Julia delivers is excellent, her markedly low cesarean-section rates and cost-saving care have become invisible as her outcomes are aggregated in the hospital's cesarean birth rate. Further, unlike physician colleagues, Julia has no standing as a voting member of the hospital staff and her ability to advocate on behalf of her patients is therefore limited. Julia would like to admit and efficiently care for her own patients, however the Massachusetts obstacles are challenging.

Why is Julia unable to admit her own patients or even be selected as a primary care provider? Significant institutional and legislative barriers exist that restrict patient's access to midwifery and well-women's health care. When Midwives are permitted to practice to the full extent of their scope of practice they will fill the obstetric workforce shortage gap, enhance access to care for all women across the lifespan and thus contribute to improved outcomes, increased patient satisfaction, and reduced overall health care costs.

Certified Nurse Midwife

Outcomes of care delivered by CNMs have been well studied and measured against care delivered by physician colleagues. When assessing the effectiveness of CNM care during childbearing, both maternal and newborn outcomes are reported.

Multiple studies have shown that as compared with care provided by physicians, CNM care results in higher rates of vaginal birth and lower rates of both cesarean births and perineal lacerations, without compromising the wellbeing of newborns (Newhouse et al., 2011). The evidence demonstrates with a high degree of confidence that rates of induction and augmentation of labor and the use of forceps or vacuum to effect operative vaginal birth are lower or comparable with CNM care (Johantgen et al.; Newhouse et al., 2011)

Both infant APGAR scores measured at one and five minutes after birth and the rate of newborn admission to intensive care provide an assessment of newborn well-being. Higher APGAR scores correspond to greater infant wellbeing, and lower scores indicate compromise in health status. The rates of infants delivered by CNMs with low APGAR scores are comparable to those of physicians. Similarly, the rates of infants admitted to newborn intensive care units are also comparable to those of physicians or perhaps lower in patient groups cared for by CNMs (Johantgen et al.; Newhouse et al., 2011).

Nurse Practitioner Vignette

Almas is a Family Nurse Practitioner working in community health. She visits frail elders confined in the home, providing individualized, patient-centered care in a comfortable setting for the patient and family.

Prompted by a call from the patient's son, Almas visited Mrs. Washington at home to evaluate a cough she had been experiencing for several days. Knowing this patient's constellation of co-morbidities and upon completing a physical assessment, Almas identified a change in health status including; mild shortness of breath, swelling in the patient's legs, abnormal heart sounds - all indicating heart failure. The patient required an admission to the hospital to remove the extra fluid to decrease the workload of the heart and to evaluate cardiac function.

Almas discussed the changes in the physical exam, current treatment strategies and the plan with both the patient and her son. She then called the local emergency department (ED) to provide the ED physician with the clinical information necessary to facilitate care and an admission. Due to Almas' early detection of changes in Mrs. Washington's status, she rapidly received the appropriate treatment and the hospitalization was brief. At discharge, labs were drawn with follow up to be done by the PCP. While seeming to progress well in the hospital, the patient deteriorated again at home and was readmitted for an exacerbation of her symptoms.

Why was the patient readmitted? As Almas was not listed at the PCP, she was never notified of the discharge. There was no coordination of care, medications or follow up appointments. Abnormal laboratory findings were routed to a care provider who had no relationship with the patient, resulting in fragmented care, treatment delay and a costly readmission. Not unimportantly, for Mrs. Washington, the care received during her transition was suboptimal.

Nurse Practitioner

Studies of nurse practitioner clinical outcomes also reflect high quality care. As CNPs deliver care to a broad range of patients across a variety of primary, specialty, acute, and long-term care settings, this role is perhaps the most studied of the APRN roles; their clinical outcomes have been well assessed in comparison with care delivered by physicians and other colleagues.

CNPs are widely engaged in chronic disease management, including diabetes and cardiovascular disease, amongst others. The evidence demonstrates with a high degree of confidence that the glucose control of patients receiving CNP-directed care was at least comparable and perhaps better than that of patients receiving treatment by other care providers (Newhouse et al., 2011). Patients treated by a CNP also demonstrated better management of serum lipid levels and equivalent levels of blood pressure control than those achieved by the MD comparison groups. Emergency department (ED), urgent care (UC) utilization, hospitalization and readmission rates are important determinants of effective care. The data supports with a high degree of confidence that from pediatrics to geriatrics, including both healthy and chronically ill patients in residential to long-term care settings, the ED, UC, hospitalization and readmissions rates for CNP treated patients are equivalent to those rates amongst an MD comparison group. Importantly, and again across populations, settings and specialties including patients with varying degrees of disease acuity, patient mortality rates were also equivalent between the CNP and MD comparison

groups. Patient satisfaction, self-reported perceptions of health and functional status including activities of daily living (ADL) and instrumental activities of daily living (IADL) were also measured as equivalent in both the CNP and MD comparison groups (Newhouse et al., 2011).

Certified Registered Nurse Anesthetist Vignette

*As a certified registered nurse anesthetist (CRNA), Kareem has been practicing for over 20 years and primarily provides anesthesia care for labor and delivery obstetrical patients in a community hospital. On a daily basis, Kareem develops an anesthesia care plan, which includes choice of anesthesia delivery that is patient-centered. He manages his patient's labor pain by inserting an epidural catheter into the spine of the patient for whom he is directing care and closely monitoring. The catheter is used to deliver pain relieving medications. As a CRNA, Kareem is able to **administer** medications for continuous infusions through an epidural catheter; however, he is not able to **order** the medications.*

Why can't Kareem order the medications his patient needs, is this not within the scope of his practice? No – while Commonwealth of Massachusetts laws have evolved to permit Kareem to obtain prescriptive authority, the credentialing committee at the community hospital has not followed suit. Kareem, like the majority of his CRNA colleagues does not have privileges to order medications. As a result, he must rely on a physician colleague to place orders for the patient, not infrequently the ordering physician is a less experienced resident in training. As a result, the gap in CRNA privileging for prescriptive practice often contributes to delays in care for Kareem's patients and also poses a potential safety issue as the prescriber is less familiar with the patient's history and course of care.

Certified Registered Nurse Anesthetist

In the United States, the administration of anesthesia may be delivered by a physician anesthesiologist (MDA), a CRNA, or an anesthesiologist's assistant (AA), a role that remains unrecognized in Massachusetts. Historically, the Centers for Medicare and Medicaid Services (CMS) have prohibited anesthetic care reimbursement directly to a CRNA for Medicare part A and the oversight for the CRNA clinical practice has been the responsibility of an MDA or a surgeon under Part B. In 2001, a change in CMS regulations allowed individual states to petition for exemption from adhering to supervision requirements for billing purposes. Resultantly, as of 2014, seventeen governors in states opted out of those supervision requirements, thus allowing the solo practice of CRNAs. This policy change created an opportunity for an in-depth analysis of Medicare data from the "opt out" states. A national study (Dulisse & Cromwell, 2010) conducted by RTI International showed no difference in patient outcomes when anesthesia services are provided by a CRNA, physician, or CRNA supervised by a physician. Seven years of data comprising 481,000 surgical discharges was examined and supported that the solo practice of CRNAs increased in both the opt-out states and the non-opt-out states. The study,

however, specifically examined mortality and complications as measured by the presence of Agency for Healthcare Research and Quality-developed patient safety indicators including: death in low mortality diagnoses, failure to rescue, pneumothorax, post-operative physiologic and chemical imbalance, post-operative respiratory failure, and transfusion reactions. While adverse event rates tend to be low regardless of which discipline is delivering anesthetic care, the final analyses demonstrated no difference in patient outcomes and concluded that allowing CRNAs to administer anesthesia services without physician supervision does not put patients at risk. In fact, the authors found no increase in patient deaths or the experience of complications existed in those states that had opted out. Of note, similar outcomes have been supported in previous studies (Pine, Holt & Lou, 2003; Needleman & Minnick, 2008) from which the conclusions were that patients are just as safe receiving their anesthesia care from CRNAs or anesthesiologists working individually as from CRNAs and anesthesiologists working together, including when delivering obstetrical anesthesia care.

Advanced Practice Psychiatric Nurses (PCNS and Psychiatric CNP) Vignette

Susan is an advanced practice psychiatric nurse who works in a large private mental health practice consisting of ten prescribing psychiatric clinical nurse specialists, three psychologists and six social workers. A psychiatrist is contracted to provide clinical oversight for prescriptive management. Together, the group serves the mental health needs of more than 1300 patients north of Boston.

After working at the practice for only a year, Susan was faced with an unexpected situation that threatened the continuity of mental health care for the practice patients. Due to illness, the contract with the supervising physician was abruptly terminated, resulting in an immediate halt of care involving the prescribing of medications. A large number of patients continued to seek appointments with their usual provider—an advanced practice nurse, who remained available onsite. However, because Massachusetts law requires APRNs to receive physician supervision for their prescriptive practice, no patients could be prescribed necessary medications. Given the general lack of availability of psychiatrists willing to provide clinical supervision, the replacement process took over a month. Disenfranchised patients were forced to seek care in other settings including the Emergency Department, representing a higher cost alternative, in a care setting that is ill positioned to meet the ongoing psychiatric needs of patients.

Were Susan and her colleagues less capable of providing for the psychiatric care needs of their patients after the psychiatrist had terminated affiliation with the practice? No, in this instance, the legal mandate for physician supervision for APRN prescriptive practice impeded access to care and potentially compromised the mental health stability of patients. Had such an event taken place in Maine, where there is no law requiring prescriptive supervision for APRN practice, there would have been no disruption in care as the APRNs would have the legal authority to independently meet the psychiatric care needs of patients, including management of psychotropic medications.

Advanced Practice Psychiatric Nurses (PCNS and Psychiatric CNP)

The mental health needs of patients are served by both the psychiatric clinical nurse specialist (PCNS) and the psychiatric nurse practitioner (Psychiatric CNP). The psychiatric nurse practitioner role emerged in the 1990's and while there was overlap in the academic preparation and practice of both roles, there has been a migration away from the PCNS title in favor of creating congruence with nurse practitioner titling and population foci. Over time, the PCNS role and title will be phased out while the Psychiatric NP role remains in practice. Both the PCNSs and the Psychiatric CNPs share the same core clinical and professional competencies (American Psychiatric Nurses Association & International Society of Psychiatric Mental Health Nurses, 2014). In current practice, virtually no difference exists in the role expression of either of these advanced practice categories.

Data evaluating the psychiatric treatment delivered by advanced practice psychiatric nurses is limited (Parrish & Peden, 2009) however, where studied, no difference in prescribing practices between the advanced practice nurses and psychiatrists have been appreciated (Feldman, Bachman, Cuffel, Friesen, & McCabe, 2003; Fisher & Vaughan-Cole, 2003). Similarly, in a study of patients with depressive disorders (Jacobs, 2005), no difference in patient adherence to treatment regimens was appreciated; regardless if the prescriber was a psychiatrist or an APRN. Advanced practice psychiatric nurses integrate psychotherapeutic approaches with psychotropic treatment. Studies which assess the efficacy of the APRN role in psychotherapy demonstrate improvement in symptoms and quality of life domains as well as high degree of patient satisfaction with care provided. (Baradell & Bordeaux, 2001).

In a study comparing psychiatrists and psychiatric nurse practitioners managing patients with schizophrenia, both groups were comparable in employing psychotropic medications but the psychiatric nurse practitioner group employed more supportive education and cognitive behavioral therapy than psychiatrists (Williamson, Glauser, Garick, & Samenow, 2011). The addition of these interventions provides a more comprehensive approach to the care of patients with schizophrenia. In addition, these advanced practice psychiatric nursing roles have shown the promotion of higher quality of care and improved outcomes in patients with serious mental illness and Human Immunodeficiency Virus within a home based model of intervention (Hanrahan, Wu, Kelly, Aiken, & Blank, 2011).

In a climate of health care reform and with a trend toward integration of mental health interventions in primary and specialty care, there is currently a growing recognition of the need for development of models of care based on measures of outcome associated with psychiatric advanced practice nursing roles in collaboration with other members of the health care team (Hanrahan, Delaney, & Merwin, 2010).

History and Regulation of APRN Practice in Massachusetts

In 1975, the Commonwealth of Massachusetts passed initial legislation recognizing and authorizing registered nurses with appropriate education to practice in advancing roles involving the evaluation, diagnosis and treatment of patients (Massachusetts Board of Registration in Nursing, 2014). This development set the stage for the evolution of advanced nursing practice in Massachusetts. In 1977, legislation was passed that authorized the practice of nurse midwifery. Subsequently, the Board of Registration in Nursing and the Board of Medicine (collectively “the boards”) jointly developed regulations in 1980 that cautiously governed the practice of nurses engaged in the expanded care delivery role. With this gradual broadening of traditional nursing roles and related care delivery models, a need for nurses with prescriptive privileges soon emerged. In 1983, nurse practitioners were authorized to prescribe in long term care settings. Nurse midwives became authorized to prescribe in 1990 and shortly thereafter, in 1992, in direct response to the increased care demands of Massachusetts citizens, nurse practitioners and psychiatric clinical nurse specialists were authorized to prescribe broadly across all practice settings (Massachusetts Board of Registration in Nursing, 2014). These early roles developed into the fully evolved nurse practitioner, nurse midwife and psychiatric clinical nurse specialist roles that are practicing today.

As mandated by law, both the BORN and BORM engaged in dialogue and jointly updated regulations as state laws expanded the scope of APRN practice. In 1994, a regulatory revision was enacted which mandated BORN authorization prior to legal APRN practice, and further articulated requirements for competency-based education and national certification (Massachusetts Board of Registration in Nursing, 2014). With a paucity of data to describe the outcomes of these evolving roles with expanded nursing practice, the boards proceeded cautiously. Mandates beyond those required by law remained in effect, including physician supervision over APRN practice with strict requirements for written guidelines.

In 2005, responding to national efforts to improve access to care and reduce health care expenditures, the BORN convened an inter-professional taskforce to review and contemporize existing regulation for APRN practice (APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee, 2008). There was recognized value in aligning the Massachusetts Nurse Practice Act with the NCSBN Consensus Model. Through implementation of legislative and regulatory changes that removed unnecessary barriers to care, the model provided a solution to driving health care challenges, including access and cost. By this time, APRN practice had become more clearly defined and the care related outcomes scrutinized nationally. There was an evolving body of data that supported the roles of APRNs in providing safe, cost effective health care across diverse practice settings and meeting the

preventative, acute and chronic health needs of patients (APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee, 2008). Despite the mounting evidence, it required seven years of dialogue for the BORN and the BORM to achieve consensus and agree to contemporize APRN regulations by reducing those practice barriers not mandated by law. While the dialogue continued, additional legislation broadening APRN practice continued to be enacted. In 2008, legislation was passed mandating third party payers include nurse practitioners as primary care providers, thus enabling patient choice of the CNP to oversee their primary health care needs (Massachusetts Board of Registration in Nursing, 2014). Subsequently, CRNAs achieved limited prescriptive authority in 2010 and were authorized to prescribe in the perioperative period. Later, in 2012, legislation was passed which eliminated the requirement of physician supervision over CNM practice, removing the requirement for practice guidelines. This legislation represented a significant advancement for CNM practice and was closely followed by the Acts of 2012, which ensured Global Signatory Authority for Nurse Practitioners, allowing the CNP to sign death certificates, physical examinations for the Department of Transportation, and other documents which historically required physician signature (Massachusetts Board of Registration in Nursing, 2014). This act enhanced both access to care and the timeliness of required documentation, both likely to improve overall patient and family satisfaction.

Throughout the years, the BORN and BORM continued to meet and dialogue about contemporizing APRN practice and regulation. With concurrence of the BORM, proposed revisions to 244 CMR 4.00: Advanced Practice Registered Nurse Regulations were promulgated effective August 1st, 2014 (Talarico, 2014). The revised regulations updated APRN titles, creating a non-psychiatric Clinical Nurse Specialist APRN role and also clarified guideline and physician supervision requirements for non-CNM APRNs engaged in prescriptive practice.

This recent revision represents a first step toward contemporizing APRN practice. While promulgation of the revised regulations has reduced some barriers, others will require legislative approval, including removal of outdated guideline requirements for physician supervision for APRN prescriptive practice and the elimination of joint promulgation requirements. Recognizing the need for true *regulatory equity*, APRN professional groups convened and regularly discuss those legislative efforts that would better position the Massachusetts APRN workforce for the future.

Recent Legislative Efforts

Seeking better alignment with the NCSBN model legislation, and to further enhance access to care and contain escalating costs, several of the advanced practice professional nursing organizations filed legislation for the 2013 legislative session.

HB 939: An Act to Increase Consumer Choice of Nurse-Midwifery Services proposed to require insurers in the state of Massachusetts to recognize nurse midwives as primary care providers for women, listing them in provider directories and further allowing beneficiaries to select CNMs as primary care providers. The legislation was filed by Representative Kay Khan on behalf of the Massachusetts Affiliate of the American College of Nurse Midwives. It was heard before the Joint Committee on Financial Services and ultimately, was sent to study.

HB 1793: An Act to Increase Access to Mental Health Services proposed the removal of the mandate for psychiatry MD supervision for the psychiatric clinical nurse specialist. The legislation was filed by Representative Kay Kahn on behalf of the Massachusetts Association of Advanced Practice Psychiatric Nurses. The bill was heard before the Joint Committee on Mental Health and Substance Abuse in and was sent to study.

HB 2009/SB 1079: An Act Improving the Quality of Health Care and Reducing Costs proposed the removal of requirements for collaborative practice agreements for CNPs and CRNAs, physician oversight of prescriptive practice, broadening of CRNA prescriptive authority beyond the perioperative period and the removal of joint promulgation requirements. The bill was filed by Representative Kay Kahn and Senator Richard T. Moore on behalf of the Massachusetts Coalition of Nurse Practitioners and the Massachusetts Association of Nurse Anesthetists. The bill was heard before the Joint Committee on Public Health in November, 2013. The committee deferred judgment and granted the bill an extension through March of 2014 but thereafter died in committee. Filed as amendment # 935 by Senator Moore, the bill was revised on the senate floor during budget debates and subsequently sent to Conference Committee where there too, it failed to progress.

With an acknowledgment that optimization of the APRN workforce is fundamental to improving the nation's health care delivery system and thus ensuring access to care for millions of newly insured Americans, the Institute of Medicine (IOM) prioritized the removal of unnecessary scope of practice barriers (2011). Further, the IOM identified the Federal Trade Commission (FTC) and the Anti-Trust Division of the Department of Justice (DOJ) as resources that could be engaged by states who like Massachusetts, were seeking to promote scope of practice reform. With a history of failed legislative attempts and the likelihood that organized medicine's opposition to contemporizing the Nurse Practice Act would continue to be strong, engagement of the FTC whose primary charge is consumer protection and the prevention or elimination of anticompetitive, unsafe and or deceptive business practices (2014b) became a necessary step to aligning advanced practice in Massachusetts with the NCSBN Model Legislation for APRN Regulation.

Federal Trade Commission Responds to Massachusetts

In January of 2014, the FTC responded to a request from Massachusetts State Representative Kay Khan to comment on the competitive impact of ***HB 2009: An Act Improving the Quality of Health Care and Reducing Costs***. Sponsored by Khan and Senator Richard T. Moore, the bill was filed jointly in 2013 by the Massachusetts Coalition of Nurse Practitioners (MCNP) and the Massachusetts Association of Nurse Anesthetists (MANA). The bill addressed the CNP and CRNA roles and proposed to remove requirements for physician oversight for prescriptive practice, remove the mandate for collaborative practice agreements, broaden the prescriptive privileges of the CRNA, allow for the interpretation of diagnostics and remove joint promulgation requirements.

Reflecting on the Massachusetts landscape in relation to known national trends, the FTC (2014a) acknowledged the state is experiencing a provider shortage and challenges with access to care; these are the primary drivers of the IOM's national call to action to ease scope of practice barriers. Commenting that state mandates for excess supervision have been known to exacerbate provider shortages and access challenges, particularly for populations that are vulnerable and underserved, the FTC recommended implementation of provisions which align the practice of the CNP and CRNA workforce with their education and training (Federal Trade Commission, 2014a).

Highlighting that restrictive Massachusetts CNP and CRNA supervision requirements indeed raise anticompetitive concerns, the FTC (2014a) suggested that such impediments to competition further affect the cost and quality of health care and serve to restrict innovation. Encouraging the Massachusetts legislature to ease unnecessary restrictions, the FTC (2014b) cited potential benefits to the state, including improved access to primary care, health care cost and price control and further, the promotion of innovation in health care delivery models.

Massachusetts Healthcare: Systems and Physician Access

Massachusetts has a long-standing history as a national health care leader. The Commonwealth is home to top rated medical schools, nursing schools, academic medical centers, community hospitals and a robust system of community health centers well positioned to provide convenient access to high quality health care for residents across the state.

In 2006, with a legislated mandate for universal health care coverage, the Commonwealth of Massachusetts set the standards which informed national health reform agendas. The initial aim was to expand health care coverage to all residents across the state and further contain rising

costs. The state legislature passed numerous bills to address cost containment, quality, innovation, and consumer health care transparency. The most notable, An Act Improving the Quality of Health Care and Reducing Costs through Increased Transparency, Efficiency and Innovation, Chapter 224 of the Acts of 2012 was signed into law by Governor Deval Patrick on August 4th, 2012. Linking health care cost increases to growth in the state's economy, this landmark legislation promised to save Massachusetts an estimated \$200 billion over 15 years (Eibner, Hussey, Ridgely, & McGlynn, 2009).

It is undeniable that health care coverage represents a significant benefit for Massachusetts residents; however, health care *coverage* and health care *access* are not synonymous. A recent study suggests that documented wait times in Massachusetts across primary care and specialty care practices are now the lengthiest in the nation (Gold, 2014). Massachusetts residents continue to experience significant challenges when seeking access to care across a variety of specialties including internal medicine and pediatrics (Massachusetts Medical Society, 2013a). These are two areas where the primary care needs of patients and families are most frequently met. In some Massachusetts communities, new patients seeking family medicine appointments may wait up to 106 days for an appointment while those seeking an internal medicine appointment may wait up to 128 days. Attempting to mitigate the impact of care delays, the Massachusetts Medical Society reports that physicians are requiring new patients to see a nurse practitioner prior to scheduling visits with a physician (Massachusetts Medical Society, 2013a). With a physician-centric approach, Massachusetts has been unable to meet the rising care demands of patients. There are 76 health care provider shortage areas documented in the Commonwealth (Health Resources and Services Administration, 2014). Physician workforce studies (Massachusetts Medical Society, 2013b) indicate greatest difficulty filling physician vacancies in Pittsfield/Western Massachusetts, followed by the Springfield, Worcester, and the New Bedford/Barnstable regions. With more accessible care in Suffolk and Middlesex counties, disparities in the ability of patients to access care in some communities appears to be an unintended consequence of the state's efforts to provide universal coverage.

APRNs: Access and Cost

With the number of insured Americans anticipated to exceed 30 million by 2016 (National Governors Association, 2012), there is an increased focus on the outcomes of APRNs who will likely have a larger role in meeting the health care needs of the nation. Well recognized for quality clinical outcomes, APRNs represent a solution that meets the triple aim of health reform - care that is high quality, accessible, and importantly, cost-effective. Indeed, evidence suggests that the cost of producing care can be markedly reduced by APRN roles (Bauer, 2010). The aforementioned is predicted to markedly expand access which can be directly linked to cost savings; patients with unmet care needs often resort to seeking care solutions at higher cost points in the health care system.

Cost-effectiveness in health care has been defined as the least costly means of producing a good or service (Bauer, 2010). This basic economic principle, requires an assessment of all methods by which the good or service is capable of being rendered. With respect to health care delivery, advanced practice nurses and physicians have overlapping scopes of practice and as such, principles of input substitution may be employed; substituting one provider type for another. However, input substitution is only possible in instances where the substitution is done without impacting the quality of the product (Bauer, 2010). Decades of randomized controlled studies and an abundance of peer reviewed data support that APRNs deliver a broad range of care and services that not only overlap with those offered by physician colleagues, but further, that the outcomes of such care are at least comparable, and at times, better (Newhouse et al., 2011).

The cost-effectiveness of the nurse practitioner has been studied across a variety of populations and practice settings, including retail clinics. By 2015 there will be an estimated 5,000 US based retail clinics and the number of nurse practitioners employed in these settings is likely to double (Spetz et al., 2013). Care delivered in the retail model is largely nurse practitioner driven and documented to be more cost-effective than care delivered in other settings. Retail clinic care costs range from 30 – 40% less than the cost of similar services delivered in a physician’s office and up to 80% less than costs for care for delivered in an ED setting (Shell, 2013). It has been estimated that between 13.7% and 27.1% of such ED visits could be treated at retail clinics where patients have saved \$279 to \$460 per visit compared to the cost of going to an ED (Weinick, Burns, & Mehrotra, 2010).

Another study assessed multistate insurance claims data from a large health insurer from 2004–2007, a period in which the trend toward retail clinic driven care was rapidly emerging (Spetz, Parente, Town, & Bazarko, 2013). In the data analysis, the authors sought to understand if the cost per episode in retail clinic settings was lower in states where the Nurse Practitioner practiced independently compared to costs in those states where the nurse practitioner had both independent practice and independent prescriptive authority (Spetz et al., 2013). Claims data supported that the elimination of scope of practice restrictions for nurse practitioners significantly impacts the cost of a care episode. The weighted average for a fourteen day episode cost for non-retail visits was \$704 when adjusted to 2013 dollars. Similarly and not surprisingly, the average fourteen-day episode cost for care at a retail clinic in states where the nurse practitioner was not practicing independently was still less costly at \$543. However, in states where the nurse practitioner could both practice and prescribe independently, the cost per care episode dropped to \$509. In this context, without any practice independence, Nurse practitioner driven visits alone were predicted to generate a \$2.2 billion dollar cost savings – that figure was projected to increase an additional 472 million dollars in those states where nurse practitioners have independent practice and full prescriptive authority (Spetz et al., 2013).

Similarly, the cost effectiveness of nurse-midwifery care was demonstrated in a review by the U.S. Congress Office of Technology Assessment (1986). This report suggested that patterns of midwifery care were of high quality, and were a significant source of cost savings. One example is the lower rate cesarean birth, which has a significant effect as cesarean birth is associated with a 50% increase in cost over vaginal birth. Although this early report has not had substantial additional study, it is well known that the increase in cesarean birth rates over the past decade represent a major increase in costs.

An understanding of the cost effectiveness associated with advanced practice psychiatric nursing care involves parameters related to both financial remuneration and quality of practice. These APRNs earn 51% of Psychiatrists' wages (Heisler, and Bagalman, 2013). From a quality perspective, cost effectiveness for treatment delivered by the advanced practice psychiatric nurse centers on the *integration* of psychotherapeutic, preventive, and prescriptive interventions. Today psychiatrists primarily prescribe medications. In addition to diagnosing and prescribing, these advanced practice nurses also provide a variety of behavioral health interventions. The advantage for patients to have integrated care from a single provider provides efficiency and creates a comprehensive treatment experience. Further, nursing employs a holistic approach to patient care, incorporating physical, psychological, developmental, family, social, and community systems' dimensions in managing patient experiences. This is a vital perspective given the complexity of issues in psychiatric illness and mental health.

Given equivalent quality and outcomes, costs for education and annual compensation should also be considered. A study that focused on cost effectiveness in anesthesia providers concluded that while maintaining quality as measured by complications and mortality, CRNAs are competent to perform the same set of anesthesia services as anesthesiologists (Hogan, Seifert, Moore, & Simonson, 2010). The estimated cost of educating a CRNA is approximately \$162,000, which does not include any federal funding. The cost to educate an anesthesiologist exceeds \$1 million and includes Graduate Medical education (GME) funding from the Centers of Medicare and Medicaid Services (CMS). The mean salary for a practicing CRNA upon graduation in the US is \$158,587 and represents a significant savings when compared to the mean anesthesiologist salary of \$366,649 (Hogan, Seifert, Moore, & Simonson, 2010). Similarly, in 2008, the average CNP compensation was \$92,000 whereas the annual salary for a primary care physician during the same period was \$165,000 (Bauer, 2010). Given disparities in the cost of education and salary, similar savings can be predicted across a variety of nursing roles when compared to those same costs for physicians.

In such instances where the quality and outcomes are uncompromised, the economic principles of input substitution principles should prevail. APRNs are one of the most critical elements to ensuring successful implementation of Massachusetts health reform goals and objectives. With health reform, the costs of care will increasingly be shifted to the consumer. Accordingly,

significant reductions in cost can be achieved by allowing APRNs, the less expensive of health care professionals, to function to the full extent of their education and training. Policies that have incentivized only the reimbursement of higher cost professionals in the setting of equally qualified options have contributed to the skyrocketing cost of health care expenditures (Bauer, 2010). Eliminating those statutory requirements and institutional rules which impede APRNs from functioning both as individual practitioners, team leaders and when appropriate, fully qualified members of health care delivery teams (Bauer, 2010) is essential to ensuring Massachusetts residents not only have access to health care coverage, but most importantly, access to care.

Summary and Discussion

At present, the national landscape for the regulation of APRNs is changing dramatically. APRNs in 19 states and the District of Columbia enjoy full practice authority while APRN practice in another 19 states reflects the reduced practice model (American Association of Nurse Practitioners, 2014). At present, only 12 states continue to practice in what is considered a restricted practice model (American Association of Nurse Practitioners, 2014). With a dual mandate for physician oversight of APRN prescriptive practice and joint promulgation, Massachusetts practice environment ranks as one of the three most restrictive states in the nation.

Nursing education and role development have evolved significantly since the inception of the discipline's professional migration into what are now considered advance practice nursing roles. This evolution of education and practice in nursing is consistent with a discipline that is constantly growing and responding to advances in science and changes in patient care needs. At one time, given the absence of data relative to APRN outcomes, physician oversight may have offered a sense of comfort to regulators. However, just as education and practice evolve with those advances in science and the discipline, so too must regulation. The national model, outcomes and economic data broadly support that maintaining overly restrictive regulatory requirements is unnecessary, fails to serve the public interest, and in fact, may interfere with the right of the patient to choose their desired health care provider.

Further, given current circumstances related to access to care, Massachusetts can no longer afford to maintain the regulatory status quo. Despite proximity to premiere health care institutions and a well-established health system infrastructure, with the increase in covered lives, Massachusetts residents are challenged to access basic health care. While such challenges are greater in some communities including western Massachusetts and Cape Cod and the islands (Massachusetts Medical Society, 2013a), even physician-dense geographies such as Suffolk and Middlesex Counties are likely to be impacted given dire predictions of a national physician shortage (American Association of Medical Colleges, 2012).

As care solutions are considered, there is a growing appreciation both nationally and at the state level for advanced practice nursing roles. The Institute of Medicine (IOM, 2011), the National Governor's Association (2012) and others have recognized the value that the APRN workforce can play in providing health care to residents and have recommended removing artificial regulatory barriers; those that are not evidence-based and therefore considered essential to ensuring patient safety. In addition to scope of practice reform at the state level, solutions must also include the removal of institutional barriers, as well as those unnecessarily implemented by third party payers.

- Those APRNs working in hospital settings should be credentialed and privileged as full members of the hospital staff, thus ensuring continuity of care as well as transparency and accountability for clinical outcomes
- Hospital by-laws should not be unnecessarily restrictive, aligning with state law and APRN education and training
- Organizational efforts must be made to promote inter-professional teamwork and collegiality
- APRNs must be full partners with physicians and other colleagues in care redesign, thus opportunities must be sought to position APRNs on key organizational committees and boards
- APRNs should not be impeded institutionally from practicing as individual practitioners or leaders of the health care team, the aforementioned is particularly important where organizations are striving to meet Accountable Care Organization standards
- Consumer choice of APRN care must be supported; consumers and members of the health care team should be educated to the roles, scope of care and outcomes of APRNs, and further, the Nurse Practitioner should be listed in provider directories so that beneficiaries may select them as PCPs
- Insurance reform must be undertaken; reimbursement equity must be achieved and barriers to APRN reimbursement must be removed, both at the state level and with third party payers
- The Center for Health Information Analysis (CHIA) must ensure that claims data reported through the All Payer Claims Database (APCD) accurately reflects the *renderer of care*, not only the provider under which a claim was submitted. In this manner APCD will serve as an accurate resource to improve quality, reduce costs, create transparency and promote the public interest. It is incumbent upon insurers to submit such data and at the time of publication, that submission is inconsistent and developmental

As the IOM (2011) considered the future of health care, an important recommendation was made that nurses should be full partners with physicians and other health care professionals in the redesign of the American health care system. While Massachusetts has led the nation in health reform, the laws and regulations that serve as the foundation for APRN practice are outdated and no longer appropriate in the contemporary health care environment. If Massachusetts is to achieve the overarching goals of health reform initiatives, including access to quality health care and cost containment, then true scope of practice reform must be undertaken and include regulatory equity. Gaps in the physician workforce are impacting care delivery in broad

geographies across the Commonwealth. Solutions to the state's health care ills cannot be fashioned solely around a single workforce with insufficient numbers and a documented inability to meet current care demands. Today, more than ever, we are presented with an opportunity to extend ourselves beyond professional interests, and gather ourselves around that which is most important – *the patient*. Massachusetts has more than 10,000 APRNs who remain committed to the patient and therefore positioned to assume full partnership with physicians, legislators, regulators, insurers and other stakeholders as together we build a healthier future for all residents of the Commonwealth.

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