Improve nurses' well-being and joy in work: Implement true interprofessional teams and address electronic health record usability issues

Diane K. Boyle, PhD, RN, FAAN[a], Marianne Baernholdt, PhD, MPH, RN, FAAN[a], Jeffrey M. Adams, PhD, RN, NEA-BC, FAAN[b], Susan McBride, PhD, RN-C, CPHIMS, FAAN[c], Ellen Harper, DNP, RN-BC, MBA, FAAN[c], Lusine Poghosyan, PhD, MPH, RN, FAAN[d], Kirstin Manges, PhD, RN[e]

[a]*Quality Health Care Expert Panel*
[b]*Building Health Care System Excellence Expert Panel*
[c]*Informatics and Technology Expert Panel*
[d]*Primary Care Expert Panel*
[e]*American Academy of Nursing Jonas Policy Scholar*

Executive Summary

The three components of the Triple Aim – enhancing the patient experience, improving population health, and reducing costs – have become the guide for optimizing healthcare system performance in the U.S. (Berwick, Nolan, & Whittington, 2008; Sikka, Morath, & Leape, 2015). The three aims are intrinsically intertwined and therefore need to be addressed simultaneously. However, constant efforts to maintain a harmonious balance of the Triple Aim is a challenge and often causes unintended consequences especially as it relates to a consistent change in clinician work processes, decreased joy in work, and burnout (Dyrbye et al., 2017; Shanafelt et al., 2016). Clinician burnout is emphasized in a call to action by the National Academy of Medicine (NAM) "to explore and address this unrecognized threat to safe, high-quality care" (Dyrbye et al., 2017). Burnout is associated with lower patient satisfaction, poor health outcomes, increased costs, and also threatens patient safety (Brigham et al., 2018). To address these issues, Bodenheimer and Sinsky (2014) proposed a fourth aim (hence, the Quadruple Aim) of improving the well-being of clinicians and staff. The added fourth aim addresses the complex and underdefined concept of professional practice work environments (PPWE). Optimized PPWEs are universally considered to be a key strategy to address the Triple Aim (Feeley, 2017). This brief will focus on two critical issues that would support clinician well-being and joy in work: 1) implementing *true* interprofessional teams to improve communication and quality of care while reducing costs of care; and 2) addressing the documentation burden, usability, and interoperability issues of electronic health records (EHR) through redesign so that they are care-centered.

Background

Nurses are a vital component of the health care workforce that cares for millions of Americans. Because of nurses' dynamic and central role in our healthcare system, the investigation of nurses' well-being is a significant relevant research, practice, and policy issue. Researchers have studied clinician well-being for years under the auspices of concepts such as burnout, resilience, engagement, job satisfaction, job dissatisfaction, and turnover. Further, researchers report that work environments of many nurses are characterized by high workload, time pressures, a lack of leadership support, inadequate shared organizational governance, poor nurse-physician relations, and increasing burden of electronic health records (EHR) documentation, which in turn, leads to higher job dissatisfaction, turnover intentions, and burnout (Aiken et al., 2011; Dyrbye et al. 2017; McBride, Tietze, Hanley, & Thomas, 2017; Poghosyan, Liu, Shang, & D'Aunno, 2017).

Burnout affects millions of nurses. Aiken et al. (2011) estimated that globally between 30-60% of nurses experience burnout. Recently, the Institute for Healthcare Improvement (IHI) (Perlo, Balik, Swensen, Kabcenell, Landsman, & Feeley, 2018) and the Johnson Foundation at Wingspread Center (2017)

0029-6554/$ -see front matter © 2019 Elsevier Inc. All rights reserved.
https://doi.org/10.1016/j.outlook.2019.10.002

recommended focusing on restoring joy in work rather than treating burnout. Further, the multidisciplinary NAM Action Collaborative on Clinician Well-being and Resilience (NAM, n.d.), developed the NAM Conceptual Model of Factors Affecting Clinician Well-Being and Resilience that depicts patient well-being, clinician-patient relationships, and clinician well-being as the nucleus of a concentric model (Brigham et al., 2018). The nucleus is encased by individual and external factors affecting clinician well-being and resilience. The broader focus of the NAM Action Collaborative on Clinician Well-being and Resilience is "improving well-being and alleviating fatigue, moral distress, and suffering – components that are not included in the classic definition of burnout" (Brigham et al., p. 1). The outcome is understanding the phenomenon of clinician well-being and helping clinicians "achieve a state of personal fulfillment and engagement that leads to joy in practice, and ultimately, a connection to why one went into health care in the first place" (Brigham et al., p. 1-2).

Given this recommended reframing, the fourth aim is depicted correctly as a valid partner to the existing Triple Aim. Emphasizing patient-centered care over clinician well-being – or vice-versa – will have negative consequences. "Positive engagement, rather than negative frustration" of clinicians is imperative to achieving the Triple Aim (Bodenheimer & Sinsky, 2014, p. 575). Nursing leaders have placed a significant emphasis on understanding and optimizing PPWEs and nurses' well-being for the last 40 years (Adams, Zimmerman, Cipriano, Pappas, & Batcheller, 2017). Initiatives such as the Magnet Recognition Program and the Pathway to Excellent Program (American Nurses Credentialing Center, n.d.a, n.d. b), and the Healthy Work Environments Standards (American Association of Critical-Care Nurses, 2016) have played a central role in framing the importance of PPWEs as an integral component of patient-centered care, improved patient outcomes, and lower cost. Just as critical to improving overall patient outcomes is the joy providers have in their practice individually and as a team. Thus, the evidence supports a relationship between concepts of better teamwork and a host of better outcomes for patients.

Joy in Work by Implementing True Interprofessional Teams

NAM (2013), the IHI (Perlo et al., 2017), and the Johnson Foundation at Wingspread Center (2017) emphasized restoring joy in work through fostering connectedness and true interprofessional collaborative practice. Nurses deliver care within interprofessional clinical teams in a variety of settings including acute, primary, and long-term health care. Further, the IHI has called for team-based care to be part of the curriculum in health profession programs (Brandt, 2015). However, the effectiveness of interprofessional teams is only optimized when all team members contribute fully and equally from their distinct disciplinary perspective.

Although research is limited, researchers have found that interprofessional teams comprised of nurses, physicians, respiratory therapists, clinical pharmacists, and other staff members reduce patient mortality and hospital-acquired infections, especially when leveraging the strengths of all team members (Costa, Yang, & Manojlovich, 2016; Kim, Barnato, Angus, Fleisher, & Kahn, 2010). Further, collegial surgical teams – including nurse practitioners, patient navigators, physician assistants, and/or staff – that learn from each other and have mutual respect, increase clinician satisfaction (Ahmed et al., 2012).

To that end, the focus on Interprofessional Collaborative Practice (IPP) escalated when the Interprofessional Education Collaborative (IPEC) formed, which now includes more than 60 health professional associations (IPEC, 2011, 2016). IPEC embraced four core competencies of IPP (IPEC, 2011, 2016, p.10):

1. Values & Ethics: Work with individuals in other professions to maintain a climate of mutual respect and shared values.
2. Roles & Responsibility: Use the knowledge of one's role and those of other professions to assess and address the health care needs of patients and to promote and advance the health of populations.
3. Interprofessional Communication: Communicate with patients, families, communities, and professionals in health and other fields responsively and responsibly to support a team approach to the promotion and maintenance of health and the prevention and treatment of disease.
4. Teams and Teamwork: Apply relationship-building values and the principles of team dynamics to perform effectively to plan, deliver, and evaluate patient-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable.

The focus on leveraging the roles of each team member, mutual respect, relationship-building, and communication suggests that if these four competencies were fully implemented in healthcare settings, nurses' and other team members' well-being would increase. Overarching to these core competencies, IPEC (2011), in partnership with NAM, proposed a patient-centered framework of interprofessional teamwork that included utilizing informatics, employing evidenced-based practice, and applying quality improvement. Hence the need to redesign Health Information Technology (Health IT) and electronic health records as a key indicator of success in true interprofessional teams and ultimately provider joy.

Joy in Work by Redesign of Electronic Health Records that are Care-Centered

Health Information Technology (Health IT) is a significant stressor contributing to clinician burnout with the massive adoption, implementation, and updates

of technology infrastructure under the 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act (Batcheller, Zimmermann, Pappas, & Adams, 2017; Ommaya et al., 2018; Shanafelt et al., 2016). EHRs provide many benefits to patients and clinicians, but in their current state often create issues with interoperability and usability. For example, interoperability can create a situation where nurses operate with incomplete information to guide decisions on care for patients who transverse acute and long-term care settings. These situations often are associated with distress (McBride, Tietze, Robichaux, Stokes, & Weber, 2018).

The usability issues of EHRs are well documented and include the inability of proper team communication and nursing care documentation concerns. EHRs do not consistently support effective and efficient collaboration and communication across the interprofessional team (Staggers, Elias, Makar, & Alexander, 2018), which in turn results in stressful work environments (McBride, et al., 2018) and clinician burnout (Batcheller et al., 2017). Further, the inability of EHRs to facilitate collaboration and communication among team members has caused patient safety issues (Bloomrosen et al., 2011; McBride, et al., 2017). For example, the public health crisis in Dallas, Texas occurred when the lack of team communication within the EHR failed to identify and treat the first patient with Ebola in the U.S. (Upadhyat, Sittig, & Singh, 2014). Bidirectional exchange of information in team-based activities has been recognized as a gap in quality by the Centers for Medicare & Medicaid Services (CMS) and NQF (National Quality Forum, 2018).

Staggers et al. (2018) note that the usability problems with EHRs are exacerbated further for nurses given that certified EHRs were not designed with nursing care documentation as a priority. Ommaya et al. (2018) propose a solution to burnout by addressing EHR usability issues through redesign of documentation systems that are care-centered. The care-centered EHRs envisioned to address these issues are clinical systems that are easy to understand and have seamless usability for both patients and the interprofessional teams that care for them (Horvath et al., 2018). These recommendations include restoring autonomy and purpose to clinical care-centered documentation that adds value and returns clinicians to meaningful and essential care activities.

Responses and Policy Actions

There have been numerous calls to action and initiatives focused on achieving the fourth aim of the Quadruple Aim - improving well-being and restoring joy in work for healthcare clinicians and staff. The resource section at the end of this brief includes them in chronological order.

The Academy's Position

The American Academy of Nursing (Academy) promotes the need to address a healthy and joyful work environment for the interprofessional team— the fourth aim. The Academy's position is that in order to accomplish the triple aim, we must take care of the caregivers. The Academy's 2017 – 2020 Strategic Plan includes Goal 2: Influence practice design through nursing science to improve the health of populations (American Academy of Nursing 2017). Therefore, policy issues of great interest to the Academy are (a) accelerating interprofessional practice through enhancements in educational infrastructure, and (b) improvements in care-centered clinical documentation for the digital age to increase usability, interoperability, and reduce burdens of documentation.

Recommendations

Interprofessional Practice

Academic Institutions

- Provide adequate training, resources, and continuing education to implement practice redesign founded on team-based care. Provide *true* interprofessional education programs from Baccalaureate through continuing education with the makeup of participants by profession or discipline. Utilize the new Interprofessional Professionalism Assessment for professionals-in-training in order to develop essential professionalism and collaboration behaviors (Frost, Hammer, Nunez, et al., 2018).
- Promote the implementation of the four IPEC interprofessional practice competencies (values and ethics, roles and responsibilities, interprofessional communication, and teamwork) among nurses and other health care professions and health organizations in order to ensure optimal team-based care.

Federal Government

- Payment systems should be aligned to incentivize team-based care. For example, fee-for-service payment systems should move towards reimbursing team members for time spent coordinating patient services and care. Additionally, alternative payment models that shift payment from volume to rewarding value should be embraced.
- The National Institutes of Health, CMS, and Agency for Healthcare Research and Quality (AHRQ) should provide funding opportunities for research that investigates more fully the relationship between IPP, team-based care, provider well-being, and patient outcomes

Electronic Health Record

Federal Government

- AHRQ should provide funding opportunities to produce research and quality improvement initiatives aimed at addressing the redesign of Health IT supporting all components of the Quadruple Aim.
- CMS should support and design electronic clinical quality measures (eCQMs) based on priorities established by clinical teams relevant to their practice setting. Development strategies should align with the clinical workflow and not add unnecessary documentation burden.

National Engagement

- Technology industry partners should optimize technology to address usability issues, documentation burden, and support evidence-based practice within the workflow of clinical teams.
- Health care organizations should base health IT purchasing decisions on the ability of the EHR to enable interoperability within and across organizations promoting care-centered and team-based activities.
- A nationwide study should be conducted on improving nurses' satisfaction with EHRs.

These efforts will strengthen interprofessional practice, communication, and increase joy in work. The ultimate success will be a continued upswing in positive patient outcomes.

Resources

Interprofessional Practice

- *Core Competencies for Interprofessional Collaborative Practice (IPEC)* (IPEC, 2011) and *Core Competencies for Interprofessional Collaborative Practice: 2016 Update* (IPEC, 2016). IPEC released and then updated a framework of interprofessional teamwork and core competencies that are described above.
- *National Center for Interprofessional Practice and Education*. The National Center for Interprofessional Practice and Education (n.d.), founded in 2012, is a public-private partnership charged with providing leadership, evidence, and resources to guide the nation on using interprofessional education and collaborative practice. The Center collaborates with local centers and initiatives across the country.
- *Interprofessional Education for Collaboration: Learning How to Improve Health from Interprofessional Models Across the Continuum of Education to Practice: Workshop Summary* (NAM, 2013). The report focused on actions for implementing interprofessional education to achieve collaborative interprofessional practice - and the importance of interprofessional practice in achieving the Triple Aim.
- *Health IT Safety Center Roadmap* (ONC, 2015). The report stressed the need to "develop new educational resources and training materials to build health IT-related competencies" as part of the solution for safe use of Health IT (p. 13). The roadmap also recommends that interprofessional teams' Health IT education strategies include simulation.
- *Envisioning the Optimal Interprofessional Clinical Learning Environment: Initial Findings from an October 2017 NCICLE Symposium*. (Hawkins, Silvester, Passiment, Riordan, & Weiss, 2018). The National Collaborative for Improving the Clinical Learning Environment (NCICLE) report provides recommendations on how clinical learning environments can ensure that clinical learners embrace interprofessional collaborative practice and learning throughout their careers.
- *Improving Environments for Learning in Health Professions: Recommendations from the Macy Foundation Conference* (Macy Foundation, 2018). The Macy Foundation report provides actionable recommendations for health professions education in six areas: engaging academic and health care organization governance; engaging executive leadership in providing organizational support; creating physical and virtual spaces for learning; providing faculty and staff development; promoting research and scholarship; and setting policy. The report includes recommendations for interprofessional collaboration.
- *The Interprofessional Professionalism Collaborative (IPC)* (IPC, n.d.). The IPC represents 12 entry-level health professions and one medical education assessment organization. In 2018 the IPC released the Interprofessional Professionalism Assessment (IPA) (Frost, Hammer, Nunez, et al., 2018), which measures observable behaviors of healthcare professionals-in-training that demonstrate professionalism and collaboration that are essential to person-centered care.

Electronic Health Record

- *Technology Informatics Guiding Education Reform (TIGER) Initiative Foundation* (TIGER, n.d.): In 2006. the TIGER Foundation started as an international initiative focused on education reform, interprofessional teams, and competencies to realize full investments in Health IT. TIGER provides reports on reducing EHR burden, interprofessional e-competencies, and other competencies relevant to the Quadruple Aim.
- *Health Information Technology for Economic and Clinical Health (HITECH) Act* (2009). The HITECH Act established the Office of the National Coordinator for Health IT (ONC) to support adoption of Health IT, including EHRs, and promote health information exchange to improve health care quality, safety, and efficiency. The ONC also sets standards and certifies EHRs to assure they are capable of performing certain functions.

- *21st Century Cures Act* (2016). The law includes provisions that push for greater interoperability and adoption of EHRs. The law instructs the ONC to assist public-private partnerships in creating trusted exchange frameworks, including a common agreement among health information networks. Further, ONC is working with the National Institute of Standards and Technology (NIST) and other federal agencies to ensure full network to network exchange of health information. Finally, ONC is helping set up a provider directory for those that have adopted the agreement and data exchange standards. The law also tasks the U.S. Department of Health and Human Services to educate healthcare providers on ways of leveraging the capabilities of health information exchanges and clarify misunderstandings on health information.
- *Connecting Health and Care for the Nation: A 10 Year Vision to Achieve an Interoperable Health IT Infrastructure* (ONC, 2014). The document is a call to action to "focus on a nationwide, interoperable health IT infrastructure" (p. 1-2). The report includes guiding principles, agendas, and building blocks for achieving interoperability of health IT infrastructure.
- *Nursing Knowledge and Big Data Science* (Center for Nursing Informatics, 2018; Westra, Clancy, Sensmeier, Warren, Weaver, & Delaney, 2015). This initiative is an evolving national action plan that includes nursing data in Big Data science, spearheaded by the University of Minnesota School of Nursing. Started in 2013, diverse stakeholders from practice, industry, education, research, and professional organizations have collaborated to create and act on recommendations for inclusion of nursing data, integrated with patient-generated, interprofessional, and contextual data.
- *Care-Centered Clinical Documentation in the Digital Environment: Solutions to Alleviate Burnout* (Ommaya et al., 2018). This NAM discussion paper explores the linkages among clinical documentation, the EHRs that support documentation, and clinician burnout, and provides recommendations for addressing these issues.
- *American Nurses Association/ONC Documentation Burden/ Standardization and Care Planning Workgroups* (Cochran, Freeman, & Moore, 2018). This initiative was a partnership with the American Nurses Association (ANA) and the ONC to make recommendations and initiate plans to address usability, documentation burden, and nursing documentation challenges with current EHRs. There were two virtual EHR work groups: one focused on documentation burden and standardization and the other on care plans. As of 2019, these activities have moved into the Nursing Knowledge and Big Data Science Work Groups to take action on recommendations.

Acknowledgments

The authors express appreciation for guidance and assistance by Ramon Lavandero, MA, MSN, FAAN, Board Liaison to the Quality Health Care Expert Panel and Matthew J. Williams, JD, MA, Policy Manager and Academy Staff Liaison to the Quality Health Care Expert Panel.

REFERENCES

Adams, J. M., Zimmermann, D., Cipriano, P. F., Pappas, S., & Batcheller, J. (2017). Improving the work life of health care workers: Building on nursing's experience. *Medical Care, 56*(1), 1–3, doi:10.1097/MLR.0000000000000839.

Ahmed, N., Conn, L. G., Chiu, M., Korabi, B., Qureshi, A., Nathens, A. B., & Kitto, S. (2012). Career satisfaction among general surgeons in Canada: A qualitative study of enablers and barriers to improve recruitment and retention in general surgery. *Academic Medicine, 87,* 1616–1621, doi:10.1097/ACM.0b013e31826c81b6.

Aiken, L. H., Sloane, D. M., Clarke, S., Poghosyan, L., Cho, E., You, L., Finlayson, M., Kanai-Pak, M., & Aungsuroch, Y. (2011). Importance of work environments on hospital outcomes in nine countries. *International Journal for Quality in Health Care, 23*(4), 357–364.

American Academy of Nursing. (2017). STRATEGIC GOALS 2017 – 2020. http://www.aannet.org/about/strategic-plan-2017-20

American Association of Critical-Care Nurses (AACN). (2016). *AACN Standards for Establishing and Sustaining Healthy Work Environments: A Journey to Excellence*. Aliso Viejo, CA: Author. https://www.aacn.org/store/books/130600/aacn-standards-for-establishing-and-sustaining-healthy-work-environments-a-journey-to-excellence-2nd-ed.

American Nurses Credentialing Center (ANCC). (n.d.a) Magnet Recognition Program. https://www.nursingworld.org/organizational-programs/magnet/

American Nurses Credentialing Center (ANCC). (n.d.b) Pathway to Excellence Program. https://www.nursingworld.org/organizational-programs/pathway/overview/

Batcheller, J., Zimmermann, D., Pappas, S., & Adams, JM. (2017). Nursing's leadership role in addressing the Quadruple Aim. *Nurse Leader, 15*(2), 203–206.

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The Triple Aim: Care, health, and cost. *Health Affairs, 27*(3), 759–769. https://doi.org/10.1377/hlthaff.27.3.759.

Brigham, T., Barden, C., Dopp, A. L., Hengerer, A., Kaplan, J., Malone, B., Martin, C., McHugh, M., & Nora, L. M. (2018). *A journey to construct an all-encompassing conceptual model of factors affecting clinician well-being and resilience*. Washington, DC: National Academy of Medicine, doi:10.31478/201801b. NAM Perspectives. Discussion Paper https://nam.edu/journey-construct-encompassing-conceptual-model-factors-affecting-clinician-well-resilience/.

Bodenheimer, T., & Sinsky, C. (2014). From Triple to Quadruple Aim: Care of the patient requires care of the provider. *Annals of Family Medicine, 12*(6), 573–576, doi:10.1370/afm.1713.

Bloomrosen, M., Starren, J., Lorenzi, N. M., Ash, J. S., Patel, V. L., & Shortliffe, E. H. (2011). Anticipating and addressing the unintended consequences of health IT and policy: A report from the AMIA 2009 Health Policy Meeting. *Journal of the American Medical Informatics Association, 18*(1), 82–90, doi:10.1136/jamia.2010.007567.

Brandt, B. (2015). Interprofessional education and collaborative practice: Welcome to the “new” forty-year-old field. *Journal of the National Association of Advisories for the Health Professions*, 9–17. https://nexusipe-resource-exchange.s3-us-west-2.amazonaws.com/IPECP%20-%20Welcome%20to%20the%20New%2040-Year-Old%20Field%20-%20Brandt%3B%20The%20Advisor.pdf.

Center for Nursing Informatics (2018). Big Data. Retrieved from https://www.nursing.umn.edu/centers/center-nursing-informatics/center-projects

Cochran, K., Freeman, R., & Moore, E. (2018). Health IT for nursing: Now What? *American Nurse Today*, *13*(10). Retrieved from https://www.americannursetoday.com/healthit-nursing/.

Costa, D. K., Yang, J. J., & Manojlovich, M. (2016). The critical care nurse work environment, physician staffing, and risk for ventilator-associated pneumonia. *American Journal of Infection Control*, *44*, 1181–1183. http://dx.doi.org/10.1016/j.ajic.2016.03.028.

Dyrbye, L. N., Shanafelt, T. D., Sinsky, C. A., Cipriano, P. F., Bhatt, J., Ommaya, A., West, C. P., & Meyers, D. (2017). Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high quality care. Discussion Paper, *NAM Perspectives* Discussion Paper. 2017Washington, DC: National Academy of Medicine, doi:10.31478/201707b. https://nam.edu/wp-content/uploads/2017/07/Burnout-Among-Health-Care-Professionals-A-Call-to-Explore-and-Address-This-Underrecognized-Threat.pdf.

Feeley, D. (November 28, 2017). *The Triple Aim or the Quadruple Aim? Four points to help set your strategy*. Retrieved from http://www.ihi.org/communities/blogs/the-triple-aim-or-the-quadruple-aim-four-points-to-help-set-your-strategy

Frost, J. S., Hammer, D. P, Nunez, L. M., Adams, J. L., Chesluk, B., & Grus, C. (2018). The intersection of professionalism and interprofessional care: Development and initial testing of the Interprofessional Professionalism Assessment. *Journal of Interprofessional Care*1–15. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/13561820.2018.1515733?journalCode=ijic20.

Hawkins, R., Silvester, J.A., Passiment, M., Riordan, L., & Weiss, K.B. (2018). *Envisioning the optimal interprofessional clinical learning environment: Initial findings from an October 2017 NCICLE symposium*. http://ncicle.org/resources

Health Information Technology for Economic and Clinical Health [HITECH] Act. (2009). Public Law 111−5—FEB. 17, 2009, 123 STAT. 227.https://www.hhs.gov/sites/default/files/ocr/privacy/hipaa/understanding/coveredentities/hitechact.pdf

Horvath, K., Sengstack, P., Opelka, F., Kitts, A. B., Basch, P., Hoyt, D., et al. (2018). A vision for a person-centered health information system. *NAM Perspectives*. Washington, DC: National Academy of Medicine. Discussion Paper https://doi.org/10.31478/201810a.

Interprofessional Education Collaborative [IPEC] Expert Panel. (2011). *Core competencies for interprofessional collaborative practice: Report of an Expert Panel*. Washington, D.C.: Interprofessional Education Collaborative. Retrieved from https://www.aacom.org/docs/default-source/insideome/ccrpt05-10-11.pdf?sfvrsn=77937f97_2.

Interprofessional Education Collaborative [IPEC]. (2016). *Core competencies for interprofessional collaborative practice: 2016 update*. Washington, D.C.: Author. Retrieved from https://aamc-meded.global.ssl.fastly.net/production/media/filer_public/70/9f/709fedd7-3c53-492c-b9f0-b13715d11cb6/core_competencies_for_collaborative_practice.pdf.

Interprofessional Professionalism Collaborative. (n.d.). http://www.interprofessionalprofessionalism.org

Johnson Foundation’s Wingspread Center. (2017). *A gold bond to restore joy in nursing: A collaborative exchange of ideas to address burnout* [White paper]. Retrieved August 20, 2018, from The Johnson Foundation’s Wingspread Center: https://ajnoffthecharts.com/wp-content/uploads/2017/04/NursesReport_Burnout_Final.pdf

Kim, M. M, Barnato, A. E., Angus, D. C., Fleisher, L. F., & Kahn, J. M. (2010). The effect of multidisciplinary care teams on intensive care unit mortality. *Archives of Internal Medicine*, *170*, 369–376.

Macy Foundation. (2018). *Improving Environments for Learning in Health Professions: Recommendations from the Macy Foundation Conference*. http://macyfoundation.org/publications/publication/conference-summary-improving-environments-for-learning-in-the-health-profes

McBride, S., Tietze, M., Robichaux, C., Stokes, L., & Weber, E. (2018). Identifying and addressing ethical issues with use of electronic health records. *The Online Journal of Issues in Nursing*, *23*(1), doi:10.3912/OJIN.Vol23No01Man05.

McBride, S., Tietze, M., Hanley, M., & Thomas, L. (2017). Statewide study to assess nurses’ experience with Meaningful-Use based Electronic Health Records. *Computers, Informatics, Nursing*, *35*(1), 18–28, doi:10.1097/CIN.0000000000000290.

National Academy of Medicine. (2013). *Interprofessional Education for Collaboration: Learning How to Improve Health from Interprofessional Models Across the Continuum of Education to Practice: Workshop Summary*. Washington, DC: The National Academies Press. https://www.nap.edu/catalog/13486/interprofessional-education-for-collaboration-learning-how-to-improve-health-from.

National Center for Interprofessional Practice and Education. (n.d.). *About the National Center*. https://nexusipe.org/informing/about-national-center

National Quality Forum. (2018). *MAP 2018 consideration for implementing measures in federal programs: Post-acute and long-term care*. February 15, 2018 Washington, DC: Author.

Office of the National Coordinator for Health Information Technology. (2014). *Connecting health and care for the nation: A 10 year vision to achieve an interoperable health IT infrastructure*. https://www.healthit.gov/sites/default/files/ONC10yearInteroperabilityConceptPaper.pdf

Office of the National Coordinator for Health Information Technology (2015) *Health IT Patient Safety Center Roadmap: Collaborate on solutions, informed by evidence*. Retrieved from http://www.healthitsafety.org/

Ommaya, A. K., Cipriano, P. F., Hoyt, D. B., Horvath, K. A., Tang, P., Paz, H. L., & Sinsky, C. A. (2018). Care-Centered Clinical Documentation in the Digital Environment: Solutions to Alleviate Burnout. *NAM Perspectives*. *https://nam.edu/care-centered-clinical-documentation-digital-environment-solutions-alleviate-burnout/*.

Perlo, J., Balik, B., Swensen, S., Kabcenell, A., Landsman, J., & Feeley, D. (2017). *IHI Framework for Improving Joy in Work*. from Institute for Healthcare Improvement. [White paper]. Retrieved August 20, 2018 http://www.ihi.org/resources/Pages/IHIWhitePapers/Framework-Improving-Joy-in-Work.aspx.

Poghosyan, L., Liu, J., Shang, J., & D’Aunno, T. (2017). Practice environments and job satisfaction and turnover intentions of nurse practitioners: Implications for primary care workforce capacity. *Health Care Management Rev*, *42*(2), 162–171, doi:10.1097/HMR.0000000000000094.

Shanafelt, T. D., Dyrbye, L. N., Sinsky, C., Hasan, O., Satele, D., Sloan, J., & West, C. P. (2016). Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clinic Proceedings, 91*(7), 836–848.

Sikka, R., Morath, J., & Leape, L. (2015). The Quadruple Aim: Care, health, cost and meaning in work. *BMJ Quality and Safety, 24*, 608–610. http://dx.doi.org/10.1136/bmjqs-2015-004160.

Staggers, N., Elias, B., Makar, E., & Alexander, G. L. (2018). The imperative of solving nurses usability problems with health information technology. *The Journal of Nursing Administration, 48*(4), 191–196.

Technology Informatics Guiding Education Reform (TIGER) Initiative Foundation. (n.d.) https://www.himss.org/professionaldevelopment/tiger-initiative

21 Century Cures Act. (2016). Public Law 114-255, 130 STAT. 1033. https://www.gpo.gov/fdsys/pkg/PLAW-114publ255/pdf/PLAW-114publ255.pdf

Upadhyay, D. K., Sittig, D. F., & Singh, H. (2014). Ebola US Patient Zero: Lessons on misdiagnosis and effective use of electronic health records. *Diagnosis, 1*(4), 283–287.

Westra, B. L., Clancy, T. R., Sensmeier, J., Warren, J. J., Weaver, C., & Delaney, C. W. (2015). Nursing knowledge: Big data science—implications for nurse leaders. *Nursing Administration Quarterly, 39*(4), 304–310.