NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 0206 NQF Project: Patient Safety Measures-Complications Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Aug 05, 2009 Most Recent Endorsement Date: Aug 05, 2009 Last Updated Date: Apr 09, 2012

BRIEF MEASURE INFORMATION

De.1 Measure Title: Practice Environment Scale - Nursing Work Index (PES-NWI) (composite and five subscales)

Co.1.1 Measure Steward: The Joint Commission

De.2 Brief Description of Measure: Practice Environment Scale-Nursing Work Index (PES-NWI) is a survey based measure of the nursing practice environment completed by staff registered nurses; includes mean scores on index subscales and a composite mean of all subscale scores.

2a1.1 Numerator Statement: Continuous Variable Statement: For surveys completed by Registered Nurses (RN):
12a) Mean score on a composite of all subscale scores
12b) Mean score on Nurse Participation in Hospital Affairs (survey item numbers 5, 6, 11, 15, 17, 21, 23, 27, 28)
12c) Mean score on Nursing Foundations for Quality of Care (survey item numbers 4, 14, 18, 19, 22, 25, 26, 29, 30, 31)
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses (survey item numbers 3, 7, 10, 13, 20)
12e) Mean score on Staffing and Resource Adequacy (survey item numbers 1, 8, 9, 12)
12f) Mean score on Collegial Nurse-Physician Relations (survey item numbers 2, 16, 24)
12g) Three category variable indicating favorable, mixed, or unfavorable practice environments: favorable = four or more subscale means exceed 2.5; mixed = two or three subscale means exceed 2.5; unfavorable = zero or one subscales exceed 2.5.

2a1.4 Denominator Statement: Staff RNs

2a1.8 Denominator Exclusions: Not applicable

1.1 Measure Type: Structure
2a1. 25-26 Data Source: Healthcare Provider Survey
2a1.33 Level of Analysis: Clinician : Team, Facility

1.2-1.4 Is this measure paired with another measure? No

De.3 If included in a composite, please identify the composite measure (*title and NQF number if endorsed*):
Not applicable

STAFF NOTES (*issues or questions regarding any criteria*)

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*):
5. Similar/related endorsed or submitted measures (*check 5.1*):
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas *(Check all the areas that apply)*: Prevention
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Infrastructure Supports, Infrastructure Supports : Workforce, Safety : Workforce

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Frequently performed procedure, High resource use, Patient/societal consequences of poor quality

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
The nursing workforce is the largest group of caregivers in all health care settings. All health care settings have nursing practice environments that may or may not support professional nursing practice. Therefore practice environments, through their support of professional nursing practice, affect large numbers of health care providers and patients, affect the use of resources, and are the context of nursing care for patients facing all causes of morbidity and mortality and for all health care procedures.
The PES-NWI has been used extensively (70 publications) since 2002 to evaluate its instrument performance in a variety of locations internationally and to test the links between nurses' environments and nurse and patient outcomes. The evidence from the literature supports the psychometric rigor of the instrument and suggests that nurses' practice environments are part of a causal chain linking nursing care to nurse and patient outcomes. The evidence linking practice environments to nurse outcomes is sizable, comprising 26 studies. The evidence on patient outcomes is growing: of 17 studies that linked PES-NWI ratings to patient outcomes, 15 of the 17 were published since 2007. A third type of outcome that has been studied is nurse-rated quality of care and adverse event frequency. The preponderance of the literature oriented towards nursing outcomes or nurse-assessed quality and adverse events rather than patient outcomes is expected due to the relative ease of collecting nurse outcomes or their assessments of quality at the same time that practice environment ratings are collected. Linking nurses' PES-NWI ratings to patient outcome data is a considerably more difficult research endeavor.
Warshawsky and Havens, 2011, identified 37 research reports published from 2002-2010. Overall this study identified that most of the reports found significant associations between PES-NWI scores and multiple patient, nurse and organization outcomes. Since this study was published an additional 32 studies were published from 2010-2012 further strengthening the body of evidence of the nursing practice environment.

1a.4 Citations for Evidence of High Impact cited in 1a.3: References
Aiken, L. H., Sermeus, W., Heede, K. V. d., Sloane, D. M., Busse, R., McKee, M., et al. (2012). Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. BMJ, 344.
Aiken LH, Cimiotti J, Sloane DM, Smith HL, Flynn L, Neff D. (2011). The effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. Medical Care, 49:1047-53.
Aiken, L. H., Sloane, D. M., Clarke, S., Poghosyan, L., Cho, E., You, L., et al. (2011). mportance of work environments on hospital outcomes in nine countries. International Journal for Quality in Health Care.
Aiken, L. H., Clarke, S. P., Sloane, D. M., Lake, E. T., & Cheney, T. (2008). Effects of hospital care environment on patient mortality and nurse outcomes. Journal of Nursing Administration, 38(5), 223-229.
Aitken, L. M., Burmeister, E., Clayton, S., Dalais, C., & Gardner, G. (2011). The impact of Nursing Rounds on the practice environment and nurse satisfaction in intensive care: Pre-test post-test comparative study. [doi: 10.1016/j.ijnurstu.2010.10.004]. International Journal of Nursing Studies, 48(8), 918-925.
Armstrong, K. J., & Laschinger, H. (2006). Structural empowerment, magnet hospital characteristics, and patient safety culture: Making the link. Journal of Nursing Care Quality, 21(2), 124-132.

Armstrong, K., Laschinger, H., & Wong, C. (2009). Workplace empowerment and Magnet hospital characteristics as predictors of patient safety climate. Journal of Nursing Care Quality, 24(1), 55-62.
Bonneterre, V., Liaudy, S., Chatellier, G., Lang, T., & de Gaumaris, R. (2008). Reliability, validity, and health issues arising from questionnaires used to measure psychosocial and organizational work factors (POWFs) among hospital nurses: a critical review. Journal of Nursing Measurement, 16(3), 207-230.
Berndt, A. E., Parsons, M. L., Paper, B., & Browne, J. A. (2010). Preliminary evaluation of the Healthy Workplace Index. Critical Care Nursing Quarterly, 32(4), 335-344
Brooks-Carthon, M., Kutney Lee, A., Sloane, D.M., Cimiotti, J., Aiken, L.H. (2011). Quality of Care and Patient Satisfaction in Hospitals With High Concentrations of Black Patients. Journal of Nursing Scholarship, 43(3), 10.
Bruyneel L, Van den Heede K, Diya L, Aiken L, Sermeus W. Predictive validity of the International Hospital Outcomes Study questionnaire: an RN4CAST pilot study. Journal of Nursing Scholarship. 2009;41:202-10.
Chan, K., Hsu, Y.-J., Lubomski, L., & Marsteller, J. (2011). Validity and usefulness of members reports of implementation progress in a quality improvement initiative: findings from the Team Check-up Tool (TCT). Implementation Science, 6(1), 115.
Cheng, C.-Y., & Liou, S.-R. (2011). Intention to leave of Asian nurses in US hospitals: does cultural orientation matter? Journal of Clinical Nursing, 20(13-14), 2033-2042.Chiang, H., & Lin, S. (2009). Psychometric testing of the Chinese version of Nursing Practice Environment Scale. Journal of Clinical Nursing, 18(6), 919-929.
Clarke, S. P., Sloane, D. M., & Aiken, L. H. (2002). Effects of hospital staffing and organizational climate on needlestick injuries to nurses. Am J Public Health, 92(7), 1115-1119.
De Pedro-Gómez, J., Morales-Asencio, J. M., Sesé-Abad, A., Bennasar-Veny, M., Pericas-Beltran, J., & Miguélez-Chamorro, A. (2012). Psychometric testing of the Spanish version of the Practice Environment Scale of the Nursing Work Index in a primary healthcare context. Journal of Advanced Nursing, 68(1), 212-221.
Eaton-Spiva, L., Buitrago, P., Trotter, L., Macy, A., Lariscy, M., & Johnson, D. (2010). Assessing and redesigning the nursing practice environment. Journal of Nursing Administration, 40(1), 36-42.
Kelly, L. A., McHugh, M. D., & Aiken, L. H. (2011). Nurse outcomes in Magnet® and non-Magnet hospitals. Journal of Nursing Administration, in press.
Flynn, L., Liang, Y., Dickson, G. L., & Aiken, L. H. (2010). Effects of Nursing Practice Environments on Quality Outcomes in Nursing Homes. Journal of the American Geriatrics Society, 58(12), 2401-2406.Friese, C. R. (2005). Nurse practice environments and outcomes: implications for oncology nursing. Oncology Nursing Forum, 32(4), 765-772.
Friese, C. R., Lake, E. T., Aiken, L. H., Silber, J., & Sochalski, J. A. (2008). Hospital nurse practice environments and outcomes for surgical oncology patients. Health Services Research, 43(4), 1145-1163.
Gajewski, B. J., Boyle, D. K., Miller, P. A., Oberhelman, F., & Dunton, N. (2010). A multilevel confirmatory factor analysis of the Practice Environment Scale: A case study. Nursing Research, 59(2), 147-15
Gardner, J. K., Thomas-Hawkins, C., Fogg, L., & Latham, C. E. (2007). The relationships between nurses´ perceptions of the hemodialysis unit work environment and nurse turnover, patient satisfaction, and hospitalizations. Nephrology Nursing Journal, 34(3), 271-282.
Gardner, G.,Woollett, K., Daly, N.,& Richardson, B. (2009). Measuring the effect of patient comfort rounds on practice environment and patient satisfaction: A pilot study. International Journal of Nursing Practice, 15(4), 287-293.
Gasparino, R. C., de Brito Guirardello, E., & Aiken, L. H. (2011). Validation of the Brazilian version of the Nursing Work Index-Revised (B-NWI-R). Journal of Clinical Nursing, 20(23-24), 3494-3501.
Gunnarsdottir, S., Clarke, S. P., Rafferty, A. M., & Nutbeam, D. (2009). Front-line management, staffing and nurse-doctor relationships as predictors of nurse and patient outcomes. A survey of Icelandic hospital nurses. International Journal of Nursing Studies, 46(7), 920-927
Halcomb, E. J., Davidson, P. M., Caldwell, B., Salamonson, Y., & Rolley, J. X. (2010). Validation of the Professional Practice Environment Scale in Australian General Practice. Journal of Nursing Scholarship, 42(2), 207-213.
Hanrahan, N. P. (2007). Measuring inpatient psychiatric environments: psychometric properties of the practice environment scale-nursing work index (PES-NWI). International Journal of Psychiatric Nursing Research, 12(3), 1521-1527.
Hanrahan, N. P., Aiken, L. H., McClaine, L., & Hanlon, A. L. (2010). Relationship between psychiatric nurse work environments and nurse burnout in acute care general hospitals. Issues in Mental Health Nursing, 31(3), 198-207.
Harwood, L., Ridley, J., Lawrence-Murphy, J. A., Spence-Laschinger, H. K.,White, S., Bevan, J., et al. (2007). Nurses' perceptions of the impact of a renal professional practice model on nursing outcomes, characteristics of practice environments and empowerment: Part I. CANNT Journal, 17(1), 22-29.
Kanai-Pak, M., Aiken, L. H., Sloane, D. M., & Poghosyan, L. (2007). Poor work environments and nurse inexperience are associated with burnout, job dissatisfaction and quality deficits in Japanese hospitals. Journal of Clinical Nursing, 17, 3324–3329.

Kelly, L. A., McHugh, M. D., & Aiken, L. H. (2011). Nurse outcomes in Magnet® and non-Magnet hospitals. Journal of Nursing Administration, in press.
Kim, H., Capezuti, E., Boltz, M., & Fairchild, S. (2009). The nursing practice environment and nurse-perceived quality of geriatric care in hospitals. Western Journal of Nursing Research, 31(4), 480-495.
Kutney-Lee, A., Lake, E. T., & Aiken, L. H. (2009). Development of the hospital nurse surveillance capacity profile. Research in Nursing and Health, 32(2), 217-228.
Kutney-Lee, A., McHugh, M. D., Sloane, D. M., Cimiotti, J. P.Flynn, L., Neff, D. F., et al. (2009). Nursing: A key to patient satisfaction. Health Affairs, 28(4), w669-w677.
Lake, E., Rogowski, J., Horbar, J., Staiger, D., Kenny, M., Patrick, T., et al. (2009). Better VLBW infant outcomes in nursing magnet hospitals. Paper presented at the Child Health Services Research Meeting, Chicago, Illinois.
Lake, E. T. (2002). Development of the practice environment scale of the nursing work index. Research in Nursing and Health, 25, 176-188.
Lake, E. T. (2007). The nursing practice environment: Measurement and evidence. Medical Care Research and Review, 64(2), 104S-122S.
Lake, E. T., & Friese, C. R. (2006). Variations in nursing practice environments: Relation to staffing and hospital characteristics. Nursing Research, 55(1), 1-9.
Lake, E. T., & McHugh, M. (2008a). Revision of the practice environment scale of the nursing work index. Paper presented at the 2008 National State of the Science Congress in Nursing Research, Washington, DC.
Lake, E. T., & McHugh, M. (2008b). Revision of the practice environment scale of the nursing work index. Paper presented at the AcademyHealth 2008 Annual Research Meeting, Washington, DC.
Laschinger, H. K. S. (2008). Effect of empowerment on professional practice environments, work satisfaction, and patient care quality: Further testing the nursing worklife model. Journal of Nursing Care Quality, 23(4), 322-330.
Laschinger, H. K. S., Almost, J., & Tuer-Hodes, D. (2003). Workplace empowerment and magnet hospital characteristics: making the link. Journal of Nursing Administration, 33(7/8), 410-422.
Laschinger, H. K. S., & Leiter, M. P. (2006). The impact of nursing work environments on patient safety outcomes: The mediating role of burnout/engagement. Journal of Nursing Administration, 36(5), 259 - 267.
Laschinger, H. K. S., Shamian, J., & Thomson, D. (2001). Impact of magnet hospital characteristics on nurses´ perceptions of trust, burnout, quality of care, and work satisfaction. Nursing Economic$, 19(5), 209-219.
Lavoie-Tremblay, M., Paquet, M., Marchionni, C., & Drevniok, U. (2011). A Turnover Intention Among New Nurses: A Generational Perspective. Journal for Nurses in Staff Development, 27(1), 39-45 10.1097/NND.1090b1013e31819945c31819941.
Leiter, M. P., & Laschinger, H. K. S. (2006). Relationships of work and practice environment to professional burnout. Nursing Research, 55(2), 137-146.
Li, Y.-F., Lake, E. T., Sales, A. E., Sharp, N. D., Greiner, G. T., Lowy, E., et al. (2007). Measuring nurses´ practice environments with the revised nursing work index: Evidence from registered nurses in the veterans health administration. Research in Nursing & Health, 30(1), 31-44.
Liou, S. R., & Cheng, C. Y. (2009). Using the Practice Environment Scale of the Nursing Work Index on Asian nurses. Nurs Res, 58(3), 218-225.
Liou, S.-R., & Grobe, S. J. (2008). Perceptions of practice environment, organizational commitment, and intention to leave among Asian nurses working in U.S. hospitals. Journal for Nurses in Staff Development, 24(6), 276Y282.
Liu, K., You, L.-M., Chen, S.-X., Hao, Y.-T., Zhu, X.-W., Zhang, L.-F., et al. (2012). The relationship between hospital work environment and nurse outcomes in Guangdong, China: a nurse questionnaire survey. Journal of Clinical Nursing, xx-xx.
Lopez Alonso, S. R. (2005). Pilot study for the validation of a nursing practice environment scale at the San Cecilio Hospital. . Enfermeria Clinica, 15(1), 8-16.
Lucero, R. J., Lake, E. T., & Aiken, L. H. (2009). Variations in nursing care quality across hospitals. Journal of Advanced Nursing, 65(11), 2299-2310
Lucero, R., Lake, E. T., & Aiken, L. H. (2010). Nursing care quality and adverse events in U.S. hospitals. Journal of Clinical Nursing, 19, 2185-2195.
Manojlovich, M. (2005). Linking the practice environment to nurses´ job satisfaction through nurse-physician communication. Journal of Nursing Scholarship, 37(4), 367-373.
Manojlovich, M., Antonakos, C. L., & Ronis, D. L. (2009). Intensive care units, communication between nurses and physicians, and patients´ outcomes. American Journal of Critical Care, 18(1), 21-30.
Manojlovich, M., & DeCicco, B. (2007). Healthy work environments, nurse-physician communication, and patients' outcomes. American Journal of Critical Care, 16(6), 536 - 543.

Manojlovich, M., & Laschinger, H. (2007). The Nursing Worklife Model: extending and refining a new theory. Journal of Nursing Management, 15(3), 256-263.
McHugh, M. D., Kutney-Lee, A., Cimiotti, J. P., Sloane, D. M., & Aiken, L. H. (2011). Nurses' Widespread Job Dissatisfaction, Burnout, And Frustration With Health Benefits Signal Problems For Patient Care. Health Affairs, 30(2), 202-210.
McCusker, J., Dendukuri, N., Cardinal, L., Laplante, J., & Bambonye, L. (2004). Nursing work environment and quality of care: differences between units at the same hospital. International Journal of Health Care Quality Assurance Incorporating Leadership in Health Services, 17(6), 313-322.
Middleton, S., Griffiths, R., Fernandez, R., & Smith, B. (2008). Nursing practice environment: how does one Australian hospital compare with magnet hospitals? International Journal of Nursing Practice, 14(5), 366-372.
Moorer, O. W., Meterko, M., Alt-White, A. C., & Sullivan, J. L. (2010). Adding a Nursing Information Technology subscale to the practice environment scale of the Nurse Work Index. Research in Nursing & Health, 33(1), 48-59.
Nantsupawat, A., Srisuphan, W., Kunaviktikul, W., Wichaikhum, O.-A., Aungsuroch, Y., & Aiken, L. H. (2011). Impact of Nurse Work Environment and Staffing on Hospital Nurse and Quality of Care in Thailand. Journal of Nursing Scholarship, 43(4), 426-432.
O´Brien-Pallas, L., Shamian, J., Thomson, D., Alksnis, C., Koehoorn, M., Kerr, M., et al. (2004). Work-related disability in Canadian nurses. Journal of Nursing Scholarship 36(4), 352-357.
Parker, D., Tuckett, A., Eley, R., & Hegney, D. (2010). Construct validity and reliability of the Practice Environment Scale of the Nursing Work Index for Queensland nurses. International Journal of Nursing Practice, 16(4), 352-358.
Patrician, P. A., Shang, J., & Lake, E. T. (2010). Organizational determinants of work outcomes and quality care ratings among ArmyMedical Department registered nurses. Research in Nursing & Health, 33(2), 99-110.
Peterson, N., Krebs, J., & Erspamer, H. S. (2004). Texas Health Resources 2004 Nurses´ Survey. Minneapolis, MN: Satisfaction Performance Research Center.
Ridley, J., Wilson, B., Harwood, L., & Laschinger, H. K. (2009). Work environment, health outcomes and Magnet hospital traits in the Canadian nephrology nursing scene. CANNT Journal, 19(1), 28-35.
Roche, M., Duffield, C., & White, E. (2011). Factors in the practice environment of nurses working in inpatient mental health: A partial least squares path modeling approach. [doi: 10.1016/j.ijnurstu.2011.07.001]. International Journal of Nursing Studies, 48(12), 1475-1486.
Roche, M. A., & Duffield, C. M. (2010). A Comparison of the Nursing Practice Environment in Mental Health and Medical-Surgical Settings. Journal of Nursing Scholarship, 42(2), 195-206.
Samuels, J. G., & Fetzer, S. J. (2009). Evidence-based pain management: Analyzing the practice environment and clinical expertise. Clinical Nurse Specialist, 23(5), 245Y251.
Schubert, M., Glass, T., Clarke, S. P., Aiken, L. H., Scaffert-Witvliet, B., Sloane, D. M., et al. (2008). Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the International Hospital Outcomes Study. International Journal for Quality in Health Care Advance Access, 1-11.
Sermeus, W., Aiken, L., Van den Heede, K., Rafferty, A., Griffiths, P., Moreno-Casbas, M., et al. (2011). Nurse forecasting in Europe (RN4CAST): Rationale, design and methodology. BMC Nursing, 10(1), 6.
Shamian, J., Kerr, M. S., Laschinger, H. K. S., & Thomson, D. (2002). A hospital-level analysis of the work environment and workforce health indicators for registered nurses in Ontario´s acute-care hospitals. Can J Nurs Res, 33(4), 35-50.
Thomas-Hawkins, C., Denno, M., Currier, H., & Wick, G. (2003). Staff nurses´ perceptions of the work environment in freestanding hemodialysis facilities. Nephrol Nurs J, 30(2), 169-178.
Tourangeau, A. E., Coghlan, A. L., Shamian, J., & Evans, S. (2005). Registered nurse and registered practical nurse evaluations of their hospital practice environments and their responses to these environments. Canadian Journal of Nursing Leadership, 18(4), 54-69.
Tullai-McGuinness, S., Riggs, J. S., & Farag, A. A. (2011). Work Environment Characteristics of High-Quality Home Health Agencies. Western Journal of Nursing Research, 33(6), 767-785.
Vahey, D. C., Aiken, L. H., Sloane, D. M., Clarke, S. P., & Vargas, D. (2004). Nurse burnout and patient satisfaction. Medical Care, 42(Suppl. 2), 57-66.
Wade, G. H., Osgood, B., Avino, K., Bucher, G., Bucher, L., Foraker, T., et al. (2008). Influence of organizational characteristics and caring attributes of managers on nurses´ job enjoyment. Journal of Advanced Nursing, 64(4), 344-353.
Walker, K., Middleton, S., Rolley, J., & Duff, J. (2010). Nurses report a healthy culture: Results of the Practice Environment Scale (Australia) in an Australian hospital seeking Magnet recognition. International Journal of Nursing Practice, 16(6), 616-623.
You, L., Aiken, L. H., Sloane, D. M., Liu, K., He, G., Hu, Y., Jiang, X., Li, X., Li, X., Liu, H.,(In press). Hospital Nursing, Care Quality, and Patient Satisfaction: Cross-Sectional Surveys of Nurses and Patients in Hospitals in China and Europe. International Journal of Nursing Studies. xx-xx

Zori, S., Nosek, L. J., & Musil, C. M. (2010). Critical Thinking of Nurse Managers Related to Staff RNs' Perceptions of the Practice Environment. Journal of Nursing Scholarship, 42(3), 305-313.

1b. Opportunity for Improvement: H☐ M☐ L☐ I ☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:
The dissemination of the PES-NWI nationally and internationally assures that nurses' practice environments will be measured in consistent fashion across different health systems to develop evidence guiding policy and management decisions. The benefit of using the PES-NWI measure for health care organizations is that organizations provide better quality patient care through improved work environments.

1b.2 Summary of Data Demonstrating Performance Gap *(Variation or overall less than optimal performance across providers)*:
[*For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.*]
As noted by Warshawsky and Havens, 2011 "Using the findings and recommendations made in this review, nurse researchers can use the PES-NWI to assess nursing practice environments and to provide meaningful comparison data".

Score Ranges (Studies Reporting Scores on a 4-Point Likert Scale, n = 22)

Measure	Score Range
Subscale	
Collegial Nurse-Physician Relations	2.32-3.26
Nursing Foundations for Quality Care	2.20-3.35
Nurse Manager Ability, Leadership, and Support	2.08-3.42
Nurse Participation in Hospital Affairs	1.98-2.98
Staffing and Resource Adequacy	1.87-2.90
Composite	2.48-3.17

Warshawsky and Havens, 2011, Table 3

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The Joint Commission pilot hospital PES-NWI measure rates:

	Median	Min	Max
12a) Mean score on a composite of all subscale scores	2.85	2.57	3.14
12b) Mean score on Nurse Participation in Hospital Affairs	2.74	2.33	3.09
12c) Mean score on Nursing Foundations for Quality of Care	2.96	2.67	3.28
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses	2.9	2.42	3.19
12e) Mean score on Staffing and Resource Adequacy	2.66	2.3	3.05
12f) Mean score on Collegial Nurse-Physician Relations	2.97	2.69	3.3

47 hospitals reported practice environment survey data, collected from August 2007 - July 2008.

In a study by the measure developer, Lake, from 794 hospitals in 4 states, the sample hospitals exhibited the full range of possible scores: 1.00 to 4.00. The average hospital-level subscale scores ranged from 2.50 to 2.84, with SDs ranging from .29 to .37. The descriptive statistics calculated from all community hospitals in four states demonstrate lower average scores than the Joint Commission pilot hospitals as well as much greater variation across hospitals, suggesting that Joint Commission accredited hospitals have better nursing environments than all hospitals (in these 4 states and perhaps throughout the U.S.) and indicating the capacity of the PES-NWI measure to provide evidence of significant and meaningful differences in practice environment performance across providers.

1b.3 Citations for Data on Performance Gap: [*For Maintenance – Description of the data or sample for measure results reported*

in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included]
Warshawsky, N. E., & Havens, D. S. (2011). Global use of the practice environment scale of the nursing work index. Nursing Research, 60(1), 17. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3021172/

1b.4 Summary of Data on Disparities by Population Group: [*For **Maintenance** –Descriptive statistics for performance results for this measure by population group*]
Disparities not applicable to this measure.

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For **Maintenance** – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome? Yes☐ No☐ If not a health outcome, rate the body of evidence.

Quantity: H☐ M☐ L☐ I ☐ Quality: H☐ M☐ L☐ I ☐ Consistency: H☐ M☐ L☐ I ☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes☐
L	M-H	M	Yes☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No☐
M-H	L	M-H	Yes☐ IF potential benefits to patients clearly outweigh potential harms: otherwise No☐
L-M-H	L-M-H	L	No ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	Does the measure pass subcriterion1c? Yes☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:
The focus of this measure is use of the PES-NWI to assess the nursing practice environment. Higher scores on the PES-NWI have been demonstrated to be associated with improved patient and nurse outcomes.

1c.2-3 Type of Evidence *(Check all that apply)*:
Selected individual studies (rather than entire body of evidence), Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:
Forty-nine studies have been conducted to evaluate the association of the practice environment, as measured by the PES-NWI, with patient and nurse outcomes, quality of care, or for other descriptive purposes. These studies are summarized here with greater detail provided on studies focusing on patient outcomes.

Warshawsky and Havens, 2011, identified 37 research reports published from 2002-2010. Overall this study identified that most of the reports found significant associations between PES-NWI scores and multiple patient, nurse and organization outcomes. Since this study was published an additional 32 studies were published from 2010-2012, further strengthening the body of evidence of the nursing environment.

Several studies have shown that patients in hospitals with better care environments as measured by the PES-NWI had significantly lower risks of death and failure to rescue (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Friese, Lake, Aiken, Silber, & Sochalski, 2008). Aiken et al. used 1999 data from 10,184 nurses and 232,342 general surgical patients in 168 Pennsylvania hospitals and

found that the likelihood of patients dying within 30 days of admission was 14% lower in hospitals with better care environments than in hospitals with poor care environments. Friese et al. studied surgical oncology patients and found that patients in hospitals with unfavorable practice environments had 37% greater odds of dying within 30 days and 48% higher odds of failure to rescue than patients in hospitals with favorable practice environments. Gardner, Thomas-Hawkins, Fogg & Latham (2007) found that kidney dialysis facilities with more favorable PES-NWI ratings had lower rates of patient hospitalizations.

Researchers focus on patient satisfaction as a key outcome of nursing care. Kutney-Lee et al. (2009) studied 430 hospitals in four states and found that hospitals with better nurse practice environments had higher patient satisfaction scores, as measured with 2006-2007 Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey Medicare data. Vahey, Aiken, Sloane, Clarke, & Vargas) (2004) studied patient satisfaction using patient interview data from 40 nursing units in 20 hospitals nationally. They found that patients were twice as likely to report high satisfaction on nursing units with better nurse work environments as rated by the PES-NWI. Similarly, Schubert and colleagues (2008) studied patient satisfaction and nurse-assessed quality of care in eight Swiss hospitals. They found a significant bivariate association between the PES-NWI subscale measuring resource adequacy and patient satisfaction, but this association was not statistically significant in a multivariate model, perhaps because the multivariate model included a measure of nurse rationing of care, which may be one way inadequate resources operate to influence patient satisfaction.

Lake et al. (2009) are studying the association of nurses' practice environments to very low birthweight infant outcomes in 101 neonatal intensive care units (NICUs) nationally. Their research focuses on infant mortality, hospital acquired infection, severe intraventricular hemorrhage (brain injury indicated by bleeding), and chronic lung disease. Preliminary findings indicate that in the two-fifths of NICUs with poorer practice environments as classified by PES-NWI scores, the chance of an infant developing an infection is 42% higher than in better practice environments.

A number of studies report significant associations between the PES-NWI subscales and nurse-reported quality of care or adverse events (Bruyneel, et al., 2009; Friese, 2005; Gunnarsdóttir, et al., 2009; Kanai-Pak, Aiken, Sloane, & Poghosyan, 2007; Laschinger & Leiter, 2006; Laschinger, Shamian, & Thomson, 2001; McCusker, et al., 2004; Nantsupawat, et al. 2011, Brooks-Carthon, Kutney-Lee, Sloane, Cimiotti, & Aiken). One study of 25 ICUs in 8 hospitals in southeastern Michigan found a significant bivariate association the PES-NWI and nurse reported adverse events (ventilator-assisted pneumonia, medication errors, and catheter-associated sepsis) but these relationships were not sustained in multivariate models (Manojlovich & DeCicco, 2007). Schubert et al. (2008) found similar findings in their evaluation of nurse-reported adverse event frequency (medication errors, nosocomial infections, patient falls, critical incidents, and pressure ulcers). Kutney-Lee et al. (2009) developed a profile to measure a hospital's nurse surveillance capacity, incorporating nurses' PES-NWI scores. The researchers found that greater nurse surveillance capacity was significantly associated with better quality of care and fewer adverse events as assessed by nurses.

Many studies provide evidence that differences in practice environments as measured by the PES-NWI are associated with differences in nurse burnout, satisfaction, intent to leave, turnover, needlestick injuries, empowerment, and work-related disability (Bruyneel, et al., 2009; Clarke, Sloane, & Aiken, 2002; Friese, 2005; Gunnarsdóttir, et al., 2009; Kanai-Pak, et al., 2007; Laschinger, Almost, & Tuer-Hodes, 2003; Laschinger, et al., 2001; Leiter & Laschinger, 2006; Manojlovich, 2005; Manojlovich & Laschinger, 2007; O´Brien-Pallas, et al., 2004 ; Shamian, Kerr, Laschinger, & Thomson, 2002; Thomas-Hawkins, Denno, Currier, & Wick, 2003; Vahey, et al., 2004; Wade, et al., 2008; Cheng & Liou 2011; Lavoie-Tramblay, Paquet, Marchionni, Drevnoik 2011; Liu, et al. 2012; Nantsupawat, et al. 2011). These studies include data sets spanning the period 1999 to 2008 and comprising large samples of nurses and hospitals in the U.S., Canada, Iceland, and Japan.

In addition, the PES-NWI has been used to describe and compare practice environments in different settings: magnet and non-magnet hospitals (Lake & Friese, 2006; Walker 2010; Kelly, McHugh & Aiken 2011), 75 acute care hospitals in Ontario (Tourangeau, Coghlan, Shamian, & Evans, 2005), and the environments of nephrology nurses in Canada (Ridley, Wilson, Harwood, & Laschinger, 2009).

A 2012 study by Aiken et al. included 33,659 nurses and 11,318 patients in Europe and 27,509 nurses and more than 120,000 patients in the United States. This study concluded "Hospital care quality deficits were common in all countries. Improving hospital work environments may be a relatively low cost lever to produce safer and higher quality hospital care and higher patient satisfaction."

The PES-NWI has been used to study the effects of the nurse environment on other organizational considerations and patient outcomes. A 2011 study by Aiken, Cimiotti, Sloane, Smith, Flynn & Neff, included over 100,000 nurses from 665 hospitals in 4 states. This study concluded that "Although the positive effect of increasing percentages of Bachelors of Science in Nursing Degree nurses is consistent across all hospitals, lowering the patient-to-nurse ratios markedly improves patient outcomes in hospitals with good work environments, slightly improves them in hospitals with average environments, and has no effect in hospitals with poor environments."

Flynn, Liang, Dickson, Aiken, 2010 studied sixty-three Medicare- and Medicaid-certified nursing homes in New Jersey, and the nurse survey sample comprised 340 registered nurses providing direct resident care "Findings indicate that administrative initiatives to create environments that support nursing practice may hold promise for improving quality indicators in nursing homes."

McHugh, Kutney-Lee, Cimiotti, Sloane, Aiken, 2011, survey data from 95,499 nurses "Patient satisfaction levels are lower in hospitals with more nurses who are dissatisfied or burned out—a finding that signals problems with quality of care. Improving nurses' working conditions may improve both nurses' and patients' satisfaction as well as the quality of care."

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: There are at least 70 studies published in peer reviewed journals that address the use of the PES-NWI.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events*): The study by Warshawsky and Havens, 2011, includes 37 articles that were published in 23 peer-reviewed journals, 14 in the U.S. and 9 internationally. The articles were published from 2002-2010.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* The number of studies is increasing, Warshawsky and Havens note that 9 of the 37 were published in the years 2002-2006, and 28 were published 2007-first quarter of 2010 and there are at least 32 additional studies that have been published in peer-reviewed journals since. Studies consistently identify associations between the PES-NWI scale scores and patient, nurse and organizational outcomes.

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
Warshawsky and Havens, 2011, identified 37 research reports published from 2002-2010. Overall this study identified that most of the reports found significant associations between PES-NWI scores and multiple patient, nurse and organization outcomes. Since this study was published an additional 32 studies published from 2010-2012 further strengthening the body of evidence of the nursing environment
The required minimum number of nurse respondents per organization unit is small and not burdensome or costly to collect. Overall the net benefit of performing the survey has been shown to outweigh the cost of administering and evaluating the results, particularly considering the cost of negative patient, nurse or organization outcomes.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: none

1c.13 Grade Assigned to the Body of Evidence:

1c.14 Summary of Controversy/Contradictory Evidence:

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:
Warshawsky, N. E., & Havens, D. S. (2011). Global use of the practice environment scale of the nursing work index. Nursing Research, 60(1), 17. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3021172/

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

1c.17 Clinical Practice Guideline Citation:

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: none

1c.23 Grade Assigned to the Recommendation:

1c.24 Rationale for Using this Guideline Over Others:

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: High 1c.26 Quality: High1c.27 Consistency: High
1c.28 Attach evidence submission form:
1c.29 Attach appendix for supplemental materials:

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*) Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? Yes

S.2 If yes, provide web page URL: http://www.jointcommission.org/national_quality_forum_nqf_endorsed_nursing-sensitive_care_performance_measures/

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I ☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)*:
Continuous Variable Statement: For surveys completed by Registered Nurses (RN):
12a) Mean score on a composite of all subscale scores
12b) Mean score on Nurse Participation in Hospital Affairs (survey item numbers 5, 6, 11, 15, 17, 21, 23, 27, 28)
12c) Mean score on Nursing Foundations for Quality of Care (survey item numbers 4, 14, 18, 19, 22, 25, 26, 29, 30, 31)
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses (survey item numbers 3, 7, 10, 13, 20)
12e) Mean score on Staffing and Resource Adequacy (survey item numbers 1, 8, 9, 12)
12f) Mean score on Collegial Nurse-Physician Relations (survey item numbers 2, 16, 24)
12g) Three category variable indicating favorable, mixed, or unfavorable practice environments: favorable = four or more subscale means exceed 2.5; mixed = two or three subscale means exceed 2.5; unfavorable = zero or one subscales exceed 2.5.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
Annual staff nurse survey

2a1.3 Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses*:
Included Populations:
•Registered Nurses with direct patient care responsibilities for 50% or greater of their shift
•All hospital units
•Full time, part time, and flex / pool RNs employed by the hospital

Excluded Populations
•New hires of less than 3 months
•Agency, traveler or contract nurses
•Nurses in management or supervisory roles with direct patient care responsibilities less than 50% of their shift, whose primary responsibility is administrative in nature

Data Elements by Subscale (with survey question/item number)

Nurse Participation in Hospital Affairs
PES-NWI Career Development (5)
PES-NWI Participation in Policy Decisions (6)
PES-NWI Chief Nursing Officer Visibility (11)
PES-NWI Chief Nursing Officer Authority (15)
PES-NWI Advancement Opportunities (17)
PES-NWI Administration Listens and Responds (21)
PES-NWI Staff Nurses Hospital Governance (23)
PES-NWI Nursing Committees (27)
PES-NWI Nursing Administrators Consult (28)

Nursing Foundations for Quality of Care
PES-NWI Continuing Education (4)
PES-NWI High Nursing Care Standards (14)
PES-NWI Philosophy of Nursing (18)
PES-NWI Nurses Are Competent (19)
PES-NWI Quality Assurance Program (22)
PES-NWI Preceptor Program (25)
PES-NWI Nursing Care Model (26)
PES-NWI Patient Care Plans (29)
PES-NWI Continuity of Patient Assignments (30)

PES-NWI Nursing Diagnosis (31)

Nurse Manager Ability, Leadership, and Support of Nurses
PES-NWI Supportive Supervisory Staff (3)
PES-NWI Supervisors Learning Experiences (7)
PES-NWI Nurse Manager and Leader (10)
PES-NWI Recognition (13)
PES-NWI Nurse Manager Backs up Staff (20)

Staffing and Resource Adequacy
PES-NWI Adequate Support Services (1)
PES-NWI Time to Discuss Patient Problems (8)
PES-NWI Enough Nurses for Quality Care (9)
PES-NWI Enough Staffing (12)

Collegial Nurse-Physician Relations
PES-NWI Nurse and Physician Relationships (2)
PES-NWI Nurse and Physician Teamwork (16)
PES-NWI Collaboration (24)

Composite Score
Mean of subscale scores

Three Category Variable
Favorable = four or more subscale means exceed 2.5
Mixed = two or three subscale means exceed 2.5
Unfavorable = zero or one subscales exceed 2.5

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
Staff RNs

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*:

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
Not applicable

2a1.7 Denominator Details (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Not applicable

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
Not applicable

2a1.9 Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Not applicable

2a1.10 Stratification Details/Variables *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
12a) Mean score on a composite of all subscale scores
12b) Mean score on Nurse Participation in Hospital Affairs (survey item numbers 5, 6, 11, 15, 17, 21, 23, 27, 28)
12c) Mean score on Nursing Foundations for Quality of Care (survey item numbers 4, 14, 18, 19, 22, 25, 26, 29, 30, 31)
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses (survey item numbers 3, 7, 10, 13, 20)
12e) Mean score on Staffing and Resource Adequacy (survey item numbers 1, 8, 9, 12)

12f) Mean score on Collegial Nurse-Physician Relations (survey item numbers 2, 16, 24)
12g) Three category variable indicating favorable, mixed, or unfavorable practice environments: favorable = four or more subscale means exceed 2.5; mixed = two or three subscale means exceed 2.5; unfavorable = zero or one subscales exceed 2.5.

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: No risk adjustment or risk stratification 2a1.12 If "Other," please describe:

2a1.13 Statistical Risk Model and Variables *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:
Not applicable

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

2a1.17-18. Type of Score: Continuous variable

2a1.19 Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*: Better quality = Higher score

2a1.20 Calculation Algorithm/Measure Logic*(Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)*:
1. Start processing.

2. Check Survey Date
a. If the Survey Date is missing or invalid the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b. If Survey Date is valid, continue and proceed to initialization.

3. Initialization. Initialize NurseParticipationScore to 0; NursingFoundationScore to 0; NurseMgrAbilityScore to 0; StaffingScore to 0; RelationsScore to 0; TotalScore to 0; ExceedCounter to 0. Continue and proceed to PES-NWI Career Development.

4. Check PES-NWI Career Development
a. If the PES-NWI Career Development is missing or zero, the case will proceed to PES-NWI Participation in Policy Decisions.
b. If the PES-NWI Career Development equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Career Development to the NurseParticipationScore and proceed to PES-NWI Participation in Policy Decisions.

5. Check PES-NWI Participation in Policy Decisions
a. If the PES-NWI-Participation in Policy Decisions is missing or zero, the case will proceed to PES-NWI Chief Nursing Officer Visibility.
b. If the PES-NWI Participation in Policy Decisions equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Participation in Policy Decisions to the NurseParticipationScore and proceed to PES-NWI Chief Nursing Officer Visibility.

6. Check PES-NWI Chief Nursing Officer Visibility
a. If the PES-NWI- Chief Nursing Officer Visibility is missing or zero, the case will proceed to PES-NWI Chief Nursing Officer

Authority.
b. If the PES-NWI Chief Nursing Officer Visibility equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Chief Nursing Officer Visibility to the NurseParticipationScore and proceed to PES-NWI Chief Nursing Officer Authority.

7. Check PES-NWI Chief Nursing Officer Authority
a. If the PES-NWI- Chief Nursing Officer Authority is missing or zero, the case will proceed to PES-NWI Advancement Opportunities.
b. If the PES-NWI Chief Nursing Officer Authority equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Chief Nursing Officer Authority to the NurseParticipationScore and proceed to PES-NWI Advancement Opportunities.

8. Check PES-NWI Advancement Opportunities
a. If the PES-NWI- Advancement Opportunities is missing or zero, the case will proceed to PES-NWI Administration Listens and Responds.
b. If the PES-NWI Advancement Opportunities equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Advancement Opportunities to the NurseParticipationScore and proceed to PES-NWI Administration Listens and Responds.

9. Check PES-NWI Administration Listens and Responds
a. If the PES-NWI Administration Listens and Responds is missing or zero, the case will proceed to PES-NWI Staff Nurses Hospital Governance.
b. If the PES-NWI Administration Listens and Responds equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Administration Listens and Responds to the NurseParticipationScore and proceed to PES-NWI Staff Nurses Hospital Governance.

10. Check PES-NWI Staff Nurses Hospital Governance
a. If the PES-NWI- Staff Nurses Hospital Governance is missing or zero, the case will proceed to PES-NWI Nursing Committees.
b. If the PES-NWI Staff Nurses Hospital Governance equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Staff Nurses Hospital Governance to the NurseParticipationScore and proceed to PES-NWI Nursing Committees.

11. Check PES-NWI Nursing Committees
a. If the PES-NWI Nursing Committees is missing or zero, the case will proceed to PES-NWI Nursing Administrators Consult.
b. If the PES-NWI Nursing Committees equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Committees to the NurseParticipationScore and proceed to PES-NWI Nursing Administrators Consult.

12. Check PES-NWI Nursing Administrators Consult
a. If the PES-NWI Nursing Administrators Consult is missing or zero, the case will proceed to calculate mean score on Nurse-Participation in Hospital Affairs.
b. If the PES-NWI Nursing Administrators Consult equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Administrators Consult to the NurseParticipationScore and proceed to calculate mean score on Nurse-Participation in Hospital Affairs.

13. Calculate Mean Score on Nurse-Participation in Hospital Affairs. Mean Score of Nurse-Participation in Hospital Affairs equals mean of NurseParticipationScore. Assign the calculated mean score to NSC-12b. Continue and proceed to PES-NWI Continuing Education.

14. Check PES-NWI Continuing Education
a. If the PES-NWI Continuing Education is missing or zero, the case will proceed to PES-NWI High Nursing Care Standards.
b. If the PES-NWI Continuing Education equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Continuing Education to the NurseFoundationScore and proceed to PES-NWI High Nursing Care Standards.

15. Check PES-NWI High Nursing Care Standards
a. If the PES-NWI High Nursing Care Standards is missing or zero, the case will proceed to PES-NWI Philosophy of Nursing.
b. If the PES-NWI High Nursing Care Standards equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI High Nursing Care Standards to the NurseFoundationScore and proceed to PES-NWI Philosophy of Nursing.

16. Check PES-NWI Philosophy of Nursing
a. If the PES-NWI Philosophy of Nursing is missing or zero, the case will proceed to PES-NWI Nurses Are Competent.
b. If the PES-NWI Philosophy of Nursing equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Philosophy of Nursing to the NurseFoundationScore and proceed to PES-NWI Nurses Are Competent.

17. Check PES-NWI Nurses Are Competent
a. If the PES-NWI Nurses Are Competent is missing or zero, the case will proceed to PES-NWI Quality Assurance Program.

b. If the PES-NWI Nurses Are Competent equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurses Are Competent to the NurseFoundationScore and proceed to PES-NWI Quality Assurance Program.

18. Check PES-NWI Quality Assurance Program
a. If the PES-NWI Quality Assurance Program is missing or zero, the case will proceed to PES-NWI Preceptor Program.
b. If the PES-NWI Quality Assurance Program equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Quality Assurance Program to the NurseFoundationScore and proceed to PES-NWI Preceptor Program.

19. Check PES-NWI Preceptor Program
a. If the PES-NWI Preceptor Program is missing or zero, the case will proceed to PES-NWI Nursing Care Model.
b. If the PES-NWI Preceptor Program equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Preceptor Program to the NurseFoundationScore and proceed to PES-NWI Nursing Care Model.

20. Check PES-NWI Nursing Care Model
a. If the PES-NWI Nursing Care Model is missing or zero, the case will proceed to PES-NWI Patient Care Plans.
b. If the PES-NWI Nursing Care Model equals 1, 2, 3, or 4, add the allowable value scored for Nursing Care Model to the NurseFoundationScore and proceed to PES-NWI Patient Care Plans.

21. Check PES-NWI Patient Care Plans
a. If the PES-NWI Patient Care Plans is missing or zero, the case will proceed to PES-NWI Continuity of Patient Assignments.
b. If the PES-NWI Patient Care Plans equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Patient Care Plans to the NurseFoundationScore and proceed to PES-NWI Continuity of Patient Assignments

22. Check PES-NWI Continuity of Patient Assignments
a. If the PES-NWI Continuity of Patient Assignments is missing or zero, the case will proceed to PES-NWI Nursing Diagnosis.
b. If the PES-NWI Continuity of Patient Assignments equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Continuity of Patient Assignments to the NurseFoundationScore and proceed to PES-NWI Nursing Diagnosis.

23. Check PES-NWI Nursing Diagnosis
a. If the PES-NWI Nursing Diagnosis is missing or zero, the case will proceed to calculate mean score on Nursing Foundations for Quality of Care.
b. If the PES-NWI Nursing Diagnosis equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Diagnosis to theNurseFoundationScore and proceed to calculate mean score on Nursing Foundations for Quality of Care.

24. Calculate Mean Score on Nursing Foundations for Quality of Care. Mean Score of Nursing Foundations for Quality of Care equals mean of NurseFoundationScore. Assign the calculated mean score to NSC-12c. Continue and proceed to PES-NWI Supportive Supervisory Staff.

25. Check PES-NWI Supportive Supervisory Staff
a. If the PES-NWI Supportive Supervisory Staff is missing or zero, the case will proceed to PES-NWI Supervisors Learning Experience.
b. If the PES-NWI Supportive Supervisory Staff equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Supportive

Supervisory Staff to the NurseMgrAbilityScore and proceed to PES-NWI Supervisors Learning Experience.

26. Check PES-NWI Supervisors Learning Experience
a. If the PES-NWI Supervisors Learning Experience is missing or zero, the case will proceed to PES-NWI Nurse Manager and Leader.
b. If the PES-NWI Supervisors Learning Experience equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Supervisors Learning Experience to the NurseMgrAbilityScore and proceed to PES-NWI Nurse Manager and Leader.

27. Check PES-NWI Nurse Manager and Leader
a. If the PES-NWI Nurse Manager and Leader is missing or zero, the case will proceed to PES-NWI Recognition.
b. If the PES-NWI Nurse Manager and Leader equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse Manager and Leader to the NurseMgrAbilityScore and proceed to PES-NWI Recognition.

28. Check PES-NWI Recognition
a. If the PES-NWI Recognition is missing or zero, the case will proceed to PES-NWI Nurse Manager Backs up Staff
b. If the PES-NWI Recognition equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Recognition to the NurseMgrAbilityScore and proceed to PES-NWI Nurse Manager Backs up Staff.

29. Check PES-NWI Nurse Manager Backs up Staff
a. If the PES-NWI Nurse Manager Backs up Staff is missing or zero, the case will proceed to calculate mean score on Nurse Manager Ability, Leadership, and Support of Nurses.
b. If the PES-NWI Nurse Manager Backs up Staff equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse Manager Backs up Staff to the NurseMgrAbilityScore and proceed to calculate mean score on Nurse Manager Ability, Leadership, and Support of Nurses.
Calculate Mean Score on Nurse Manager Ability, Leadership, and Support of Nurses. Mean Score of Nurse Manager Ability, Leadership, and Support of Nurses equals mean of NurseMgrAbilityScore. Assign the calculated mean score to NSC-12d. Continue and proceed to PES-NWI Adequate Support Services.

30. Check PES-NWI Adequate Support Services
a. If the PES-NWI Adequate Support Services is missing or zero, the case will proceed to PES-NWI Time to Discuss Patient Problems.
b. If the PES-NWI Adequate Support Services equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Adequate Support Services to the StaffingScore and proceed to PES-NWI Time to Discuss Patient Problems.

31. Check PES-NWI Time to Discuss Patient Problems
a. If the PES-NWI Time to Discuss Patient Problems is missing or zero, the case will proceed to PES-NWI Enough Nurses for Quality Care.
b. If the PES-NWI Time to Discuss Patient Problems equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Time to Discuss Patient Problems to the StaffingScore and proceed to PES-NWI Enough Nurses for Quality Care.

32. Check PES-NWI Enough Nurses for Quality Care
a. If the PES-NWI Enough Nurses for Quality Care is missing or zero, the case will proceed to PES-NWI Enough Staffing.
b. If the PES-NWI Enough Nurses for Quality Care equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Enough Nurses for Quality Care to the StaffingScore and proceed to PES-NWI Enough Staffing.

33. Check PES-NWI Enough Staffing
a. If the PES-NWI Enough Staffing is missing or zero, the case will proceed to calculate mean score on Staffing and Resource Adequacy.
b. If the PES-NWI Enough Staffing equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Enough Staffing to the StaffingScore and proceed to calculate mean score on Staffing and Resource Adequacy.

34. Calculate Mean Score on Staffing and Resource Adequacy. Mean Score of Staffing and Resource Adequacy equals mean of StaffingScore. Assign the calculated mean score to NSC-12e. Continue and proceed to PES-NWI Nurse and Physician

Relationships.

35. Check PES-NWI Nurse and Physician Relationships
a. If the PES-NWI Nurse and Physician Relationships is missing or zero, the case will proceed to PES-NWI Nurse and Physician Teamwork.

b. If the PES-NWI Nurse and Physician Relationships equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse and Physician Relationships to the RelationsScore and proceed to PES-NWI Nurse and Physician Teamwork.

36. Check PES-NWI Nurse and Physician Teamwork
a. If the PES-NWI Nurse and Physician Teamwork is missing or zero, the case will proceed to PES-NWI Collaboration.
b. If the PES-NWI Nurse and Physician Teamwork equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse and Physician Teamwork to the RelationsScore and proceed to PES-NWI Collaboration.

37. Check PES-NWI Collaboration
a. If the PES-NWI Collaboration is missing or zero, the case will proceed to calculate mean score on Collegial Nurse-Physician Relations.
b. If the PES-NWI Collaboration equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Collaboration to the RelationsScore and proceed to calculate mean score on Collegial Nurse-Physician Relations.

38. Calculate Mean Score on Collegial Nurse-Physician Relations. Mean Score of Collegial Nurse-Physician Relations equals mean of RelationsScore. Assign the calculated mean score to NSC-12f. Continue and proceed to calculate the Total Score on composite of all subscale scores.

39. Calculate Total Score on a composite of all subscale scores. Total Score of a composite of all subscale scores equals the sum of NurseParticipationScore, NursingFoundationScore, NurseMgrAbilityScore, StaffingScore, and RelationsScore. Continue and proceed to calculate Mean Score on a composite of all subscale scores.

40. Calculate Mean Score on a composite of all subscale scores. Mean Score of a composite of all subscale scores equals the mean of Total Score on a composite of all subscale scores. Assign the calculated mean score to NSC-12a. Continue and proceed to Mean Score on NurseParticipationScore.

41. Check Mean Score on NurseParticipationScore
a. If the score of Mean Score on NurseParticipationScore is less than or equal to 2.5, the case will proceed to Mean Score on NursingFoundationScore.
b. If the score of Mean Score on NurseParticipationScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on NursingFoundationScore.

42. Check Mean Score on NursingFoundationScore
a. If the score of Mean Score on NursingFoundationScore is less than or equal to 2.5, the case will proceed to Mean Score on NurseMgrAbilityScore.
b. If the score of Mean Score on NursingFoundationScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on NurseMgrAbilityScore.

43. Check Mean Score on NurseMgrAbilityScore
a. If the score of Mean Score on NurseMgrAbilityScore is less than or equal to 2.5, the case will proceed to Mean Score on StaffingScore.
b. If the score of Mean Score on NurseMgrAbilityScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on StaffingScore.

44. Check Mean Score on StaffingScore
a. If the score of Mean Score on StaffingScore is less than or equal to 2.5, the case will proceed to Mean Score on RelationsScore.

b. If the score of Mean Score on StaffingScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on RelationsScore.

45. Check Mean Score on RelationsScore
a. If the score of Mean Score on RelationsScore is less than or equal to 2.5, the case will proceed to ExceedCounter.
b. If the score of Mean Score on RelationsScore is greater than 2.5, add 1 to ExceedCounter and proceed to ExceedCounter.

46. Check ExceedCounter
a. If ExceedCounter is greater than or equal to 4, the case will proceed to a Measure Category Assignment of "Favorable". Stop processing.
b. If ExceedCounter is greater than or equal to 2 and less than 4, the case will proceed to a Measure Category Assignment of "Mixed". Stop processing.
c. If ExceedCounter is greater than or equal to 0 and less than 2, the case will proceed to a Measure Category Assignment of "Unfavorable". Stop processing.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
Attachment
PES_NWI_algorithm.doc

2a1.24 Sampling (Survey) Methodology. If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):
According to Lake and Friese (2006) the minimum number of completed surveys per hospital for satisfactory estimates is 15, therefore considering a typical response rate of 60%, a random sample of at least 25 nurses needs to be surveyed annually. For purposes of public reporting the measure a minimum of 30 completed surveys is desired, therefore hospitals that choose to sample should sample a minimum of 50 nurses annually. While a random sample may be used at the hospital-level, it is recommended that hospitals survey all eligible nurses to allow all nurses the opportunity to complete the practice environment survey instrument.

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Healthcare Provider Survey

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): Practice Environment Scale-Nursing Work Index (PES-NWI) Survey

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment: URL
http://www.jointcommission.org/national_quality_forum_nqf_endorsed_nursing-sensitive_care_performance_measures/

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
URL
http://www.jointcommission.org/national_quality_forum_nqf_endorsed_nursing-sensitive_care_performance_measures/

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Clinician : Team, Facility

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Hospital/Acute Care Facility

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Twenty studies have evaluated the psychometric performance of the PES-NWI since its development.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:

See 2a2.3 below

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Of the 32 articles published from 2010-2012 that were reviewed, 17 articles addressed reliability and validity. 13 studies used Cronbach's alphas, coefficients ranged from 0.71 – 0.96, with exception of one 0.67, and one 0.53 in a small sample size. For 8 the studies the unit of analysis was the nurse and the sample size ranged from 46 - 98,116 nurses.

The PES-NWI was developed in 2002 to measure nursing practice environments through factor analysis of 1986 survey data from staff nurses in 16 original magnet hospitals, and confirmed in 1999 data from 11,636 nurses throughout Pennsylvania (Lake, 2002). The five PES-NWI subscales can be combined into a composite measure of the practice environment, as either a continuous variable or a three-category variable indicating favorable, mixed, or unfavorable practice environments (Lake & Friese, 2006).

The PES-NWI factor structure has been confirmed in multiple North American data sets spanning the period 1999 to 2004. The PES-NWI was confirmed with 1998 data from 8,597 nurses from Ontario and Alberta (Leiter & Laschinger, 2006), with 1999 data from 456 psychiatric nurses in 103 Pennsylvania hospitals (Hanrahan, 2007), with 2001 data from 243 nurses in a Quebec hospital using a French translation of the PES-NWI (McCusker, Dendukuri, Cardinal, Laplante, & Bambonye, 2004), with 2003 data from 7,666 RNs in 123 Veterans Health Administration hospitals nationally (Li, et al., 2007), with 2004 data from 2,900 nurses in 14 hospitals in Texas (Peterson, Krebs, & Erspamer, 2004), and in 230 Asian nurses working in the US (Liou & Cheng, 2009).

The Joint Commission conducted a Robert Wood Johnson Foundation funded 24 month testing project completed in December 2008.
The Joint Commission Pilot Project Reliability Findings:
Pilot test sites were given the option to collect the data via paper and pencil and enter data in an automated tool, use the Survey Monkey tool created for the project, or share their data collected for NDNQI. Of the sites visited the majority used the survey monkey tool, followed by the NDNQI tool. One site loaded the tool into their Net-Learning intra-net program. There was one site that included APN's and one site included LPN's.
In a study by the measure developer, Lake, from 794 hospitals in 4 states, the sample hospitals exhibited the full range of possible scores: 1.00 to 4.00. The average hospital-level subscale scores ranged from 2.50 to 2.84, with SDs ranging from .29 to .37.
The descriptive statistics calculated from all community hospitals in four states demonstrate lower average scores than the Joint Commission pilot hospitals as well as much greater variation across hospitals, suggesting that Joint Commission accredited hospitals have better nursing environments than all hospitals (in these 4 states and perhaps throughout the U.S.) and indicating the capacity of the PES-NWI measure to provide evidence of significant and meaningful differences in practice environment performance across providers.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:
Measure specifications were taken directly from the survey tool used as the basis of the studies included in the body of evidence. Calculation of the measure rates was written in collaboration with the original survey developer.

In the review by Warshawsky and Havens, 2011 it was noted that there was variation in the scoring and reporting of the measure which did limit the ability to make comparisons. They recommend that future research make use of standardized methods of reporting and scoring. Additionally they recommend testing subscale and composite performance at the level of the nurse, nursing unit and the organization.
However, for purposes of public reporting the Technical Advisory Panel for the Nursing-Sensitive Care Measure Set (of which this measure is a component) testing project recommended that measure rates be reported at the organization level only, due to small sample size that could occur at smaller levels of analysis.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
See 2b2.3

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
See 2b2.3

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:
The PES-NWI has been adapted, translated into 23 languages or their variants, and the psychometrics tested in multiple groups of international nurses: 67 nurses in four wards from Sydney, Australia (Middleton, Griffiths, Fernandez, & Smith, 2008), 1192 nurses in Queensland, Australia (Parker, Tuckett, Eley, & Hegney 2010), 112 nurses in Spain (Lopez Alonso, 2005), 377 nurses in Spain (Pedro-Gomez, Morales-Asencio, Sese-Abad, Bennasar-Veny, Pericas-Beltran, & Miguelez-Chmorro) and 695 nurses in a hospital in Iceland in data from 2002 (Gunnarsdóttir, Clarke, Rafferty, & Nutbeam, 2009). Chiang and Lin (2009) tested their Chinese version (C-NEPS) in 2006 on 842 nurses in five Taiwanese acute care hospitals, confirming construct and criterion-related validity and acceptable reliability. A pilot study conducted in Dutch in December 2007 in 179 nurses in 4 Belgian hospitals confirmed key factors of the PES-NWI, supporting its predictive validity (Bruyneel, Van den Heede, Aiken, & Sermeus, 2009). The pilot study was conducted in preparation for a major international study funded by the European Union, RN4CAST (acronym for Registered Nurse Forecasting), consisting of 11 European countries (Belgium, Finland, Germany, Greece, Ireland, Poland, Spain, Sweden, Switzerland, The Netherlands, and the UK).

The consistency in PES-NWI results from several countries and continents reflecting diverse health care systems and the forthcoming dissemination throughout Europe supports the instrument's international relevance.

Two critical reviews concluded that the PES-NWI was the preferred instrument for measurement of the organization of nurses' work (Bonneterre, Liaudy, Chatellier, Lang, & de Gaumaris, 2008; Lake, 2007). Lake evaluated seven instruments to measure the nursing practice environment using the criteria of theoretical relevance, ease of use, and dissemination. She synthesized 54 studies on the instruments. The PES-NWI was proposed as the most useful instrument due to its content, length, and dissemination. Lake recommended continued use of the PES-NWI to generate consistent and comparable evidence. She also recommended improvements in the instrument and evidence: expand the content to reflect all conceptual domains; develop a short form; test the instrument in different care settings; expand the evidence of the practice environment's influence on patient outcomes; and test interventions for practice environment improvements. Bonneterre et al. evaluated the validity of questionnaires to measure psychological and organizational work factors in nursing staff in a review of articles published between 1980 and 2008 found the PES-NWI to possess the most robust aspects of content, construct, discriminant and concurrent validity as compared to three other measures.

Lake, the instrument developer, evaluated the PES-NWI factor structure in 2006 survey data from acute care nurses (n = 16,591) and non-acute care nurses (n = 2,373) working in Pennsylvania, California, and New Jersey community hospitals (Lake & McHugh, 2008a, 2008b). A 4 factor solution was identified as theoretically consistent and empirically optimal across acute and non-acute nurse samples. The 4 factors are similar to the original PES.

A subscale of Nursing Information Technology was suggested and validated (n=422) by a recent study (Morrer, Meterko, Alt-White & Sullivan 2010).

Warshawsky and Havens, 2011 in Table 4 documents 32 studies that provide evidence of concurrent and predictive validity for the PES-NWI, demonstrating statistically significant associations between PES-NWI scores and nurse and patient outcomes and organizational variables.
Warshawsky notes it is important that scoring and reporting of the PES-NWI be done consistently. There was inconsistency in reporting of subscales and composites across the many studies. There has also been variation in the unit of analysis for reporting, specifically nurse, nursing unit and organizational levels. They conclude that "nurse researchers can use the PES-NWI to assess nursing practice environments and to provide meaningful comparison data".
Consistency in measure reporting can be accomplished by using the published measure specifications guide available on the Joint Commission web site.

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
None - the measure was originally developed as a tool to assess the work setting of nurses providing direct patient care, so that comparisons could be made across organizations. These exclusions are intended to guide organization to the appropriate survey population. Nurses who have been employed at an organization less than 3 months or who are not permanent employees would not have sufficient knowledge of the environment.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
Not applicable

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
None

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Not applicable

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
Not applicable

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:
Not applicable

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: Not applicable

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Table 3 from Warshawsky and Havens, 2011 includes 22 studies where the report included scores based on a 4-point Likert Scale from 2002-2010.

The Joint Commission results include 47 hospitals that reported practice environment survey data, collected from August 2007 - July 2008.

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
The reports from Warshawsky and Havens, 2011 and The Joint Commission pilot study below indicate that on a 4 point Likert scale score ranges leave room for improvement in the nursing environment of care.
In a study by the measure developer, Lake, from 794 hospitals in 4 states, the sample hospitals exhibited the full range of possible scores: 1.00 to 4.00. The average hospital-level subscale scores ranged from 2.50 to 2.84, with SDs ranging from .29 to .37.
The descriptive statistics calculated from all community hospitals in four states demonstrate lower average scores than the Joint Commission pilot hospitals as well as much greater variation across hospitals, suggesting that Joint Commission accredited hospitals have better nursing environments than all hospitals (in these 4 states and perhaps throughout the U.S.) and indicating the capacity of the PES-NWI measure to provide evidence of significant and meaningful differences in practice environment

performance across providers.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Score Ranges (Studies Reporting Scores on a 4-Point Likert Scale, n = 22)

Measure	Score Range
Subscale	
Collegial Nurse-Physician Relations	2.32-3.26
Nursing Foundations for Quality Care	2.20-3.35
Nurse Manager Ability, Leadership, and Support	2.08-3.42
Nurse Participation in Hospital Affairs	1.98-2.98
Staffing and Resource Adequacy	1.87-2.90
Composite	2.48-3.17

Warshawsky and Havens, 2011, Table 3

The Joint Commission pilot hospital PES-NWI measure rates:

	Median	Min	Max
12a) Mean score on a composite of all subscale scores	2.85	2.57	3.14
12b) Mean score on Nurse Participation in Hospital Affairs	2.74	2.33	3.09
12c) Mean score on Nursing Foundations for Quality of Care	2.96	2.67	3.28
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses	2.9	2.42	3.19
12e) Mean score on Staffing and Resource Adequacy	2.66	2.3	3.05
12f) Mean score on Collegial Nurse-Physician Relations	2.97	2.69	3.3

47 hospitals reported practice environment survey data, collected from August 2007 - July 2008.

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Multiple data sources are not used.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
Not applicable

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:
Not applicable

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: Not applicable

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
Not applicable

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

C.1 Intended Actual/Planned Use *(Check all the planned uses for which the measure is intended)*: Payment Program, Professional Certification or Recognition Program, Public Reporting, Quality Improvement (Internal to the specific organization), Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Public Reporting, Payment Program, Professional Certification or Recognition Program, Quality Improvement with Benchmarking (external benchmarking to multiple organizations), Quality Improvement (Internal to the specific organization)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]
Centers for Medicare & Medicaid Services (CMS)
Hospital Inpatient Quality Reporting (Hospital IQR) program
Structural Measure: Participation in a Systematic Clinical Database Registry for Nursing Sensitive Care
URL:
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1228732621592

The trend in hospitals reporting to Medicare is that they participate in a Nursing-Sensitive Registry to comply with Medicare requirements:

For FY2011 (CY 2009):
1402 PPS providers participated in a Nursing sensitive registry
8 Non-PPS providers participated a Nursing sensitive registry

For FY2012 (CY 2010):
1491 PPS providers participated a Nursing sensitive registry
11 Non-PPS providers participated a Nursing sensitive registry

****

Many states have mandated collection and reporting of nursing-sensitive measures, for example:

Colorado: The Colorado Hospital Report Card
http://www.cohospitalquality.org/corda/dashboards/COLORADO_REPORT_CARD_BY_MEASURE/main.dashxml#cordaDash=1030

PES-NWI data reported:

2009 = 28 hospitals reported, range for Overall Composite Score 2.71 to 3.08

2011 = 29 hospitals reported, range for Overall Composite Score 2.69 to 3.25

****

NDNQI (National Database of Nursing Quality Indicators, ANA): began in 1994, per NDNQI data is collected by more than 1500 hospitals nationwide. The annual RN survey is conducted in about half of the NDNQI hospitals. The PES-NWI was added to the annual RN survey in October 2006. Since its introduction, the number of hospitals that use of the PES-NWI in the National Database hospitals has increased on average 50% each year.
https://www.nursingquality.org/

NDNQI Annual RN Survey Data:

Year	PES Hospital	Unit	RNs
2006	97	1915	27255
2007	242	4845	81377
2008	330	6685	109100
2009	421	8532	142071
2010	524	10712	186566
2011	553	11513	206085

****

VANOD (Veterans Administration Nursing Outcomes Database): began development in 2002, this database includes data from all 153 VA facilities. The annual staff satisfaction survey includes the PES for RNs.
www.inqri.org/uploads/INQRIVANODPanel41309FINAL.ppt

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The PES-NWI is used internationally for quality improvement initiatives and research. There is great interest in using the survey in a variety of settings, the period 2004 to Spring 2012 includes 72 hospital administrators, 78 researchers, and 121 doctoral students, who notified the measure developer of use. Each year about 30 individuals seek advice and resources to use the PES. Over the eight year period, these inquiries have come from 34 states in the U.S. and 30 countries.

The PES-NWI has been translated into French (Swiss and Belgian variants), Spanish (Spain; Mexico due summer 2009), German (regular and Swiss variants), Japanese, Chinese, Korean, Dutch (Netherlands and Belgium) Russian, Armenian, Turkish, Portuguese (Brazilian only), Greek, Italian (Swiss variant), Finnish, Swedish, Polish, Flemish, and Arabic (due Summer 2009 via Jordan). In addition, validation of the UK English version is expected in summer 2009.

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: Through the Interdisciplinary Nursing Quality Research Initiative (INQRI) of the Robert Wood Johnson Foundation a project "Developing and Testing Nursing Quality Measures with Consumers and Patients" was initiated in 2005. The results were presented in June, 2009 by Shoshanna Sofaer for the INQR project team from Baruch College School of Public Affairs and George Washington University School of Medicine and Health Sciences. The project team conducted nine focus groups to gauge the response of the public to the NQF endorsed Nursing-Sensitive Measures. The project team reported that the PES-NWI was one of the nursing quality measures that consumers and patients found to be most relevant to their care experience, one that 80% of the participants found very important.

URL to Power Point Presentation:
http://nursing.gwumc.edu/staticfile/SON/Research/INQRI/INQRI_nursing_sensitive_quality_measures_presentation.pdf

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s): Centers for Medicare & Medicaid Services (CMS)
Hospital Inpatient Quality Reporting (Hospital IQR) program
Structural Measure: Participation in a Systematic Clinical Database Registry for Nursing Sensitive Care
URL:
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1228732621592

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****

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PES-NWI data reported:

2009 = 28 hospitals reported, range for Overall Composite Score 2.71 to 3.08

2011 = 29 hospitals reported, range for Overall Composite Score 2.69 to 3.25

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement*].
Currently the following initiatives utilize nursing-sensitive care measures and benchmarking:
- NDNQI
- VANOD
- State nursing-sensitive measure programs
- The Collaborative Alliance for Nursing Outcomes, CALNOC plans to begin offering in 2012

Nursing-sensitive care measures collected through such databases are a required component for organizations to achieve Magnet designation through the American Nurses Credentialing Center (ANCC) Magnet Recognition Program®.

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
PES has recently been used to evaluate the effectiveness of interventions such as the effect of nursing grand rounds on nursing work life satisfaction and work environment (Gardner, Woolett, Daly, Richardson, & Aitken 2010). Although statistical results were inconclusive, the expansion of the PES measure into evaluating performance improvement is a viable practice that can be expanded in the future.

Overall, to what extent was the criterion, *Usability*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I ☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are:
Other
Survey tools are provided to nurses to complete themselves; most are done through electronic survey software, but the survey can be collected via paper.

4b. Electronic Sources: H☐ M☐ L☐ I ☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)*:

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I ☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
As noted by Warshawsky and Havens, 2011 it is important that scoring and reporting of the PES-NWI be done consistently. There was inconsistency in reporting of subscales and composites across the many studies. There has also been variation in the unit of analysis for reporting, specifically nurse, nursing unit and organizational levels.

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I ☐

A.2 Please check if either of the following apply (*regarding proprietary measures*):
4d.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues *(e.g., fees for use of proprietary measures)*:
In the Joint Commission testing project pilot test sites were given the option to collect the data via paper and pencil and enter data in the NSC tool, use the Survey Monkey tool created for the project, or share their data collected for NDNQI. Of the sites visited the majority used the survey monkey tool, followed by the NDNQI tool. One site loaded the tool into their Net-Learning intra-net program. Other large Nursing-Sensitive Care databases have used web-based tools and provide the link as well as a login for each nurse to allow for only one survey to be completed by each nurse.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

5.1 If there are related measures *(either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized?

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:

5b. Competing Measure(s)

5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures *(e.g., a more valid or efficient way to measure quality);* OR provide a rationale for the additive value of endorsing an additional measure. *(Provide analyses when possible)*:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): The Joint Commission, One Renaissance Boulevard, Oakbrook Terrace, Illinois, 60181

Co.2 Point of Contact: Ann, Watt, awatt@jointcommission.org, 630-792-5944-

Co.3 Measure Developer if different from Measure Steward: University of Pennsylvania, 420 Guardian Drive, Philadelphia, Pennsylvania, 19104-6096

Co.4 Point of Contact: Eileen, Lake, PhD, RN, FAAN, elake@nursing.upenn.edu, 215-898-2557-

Co.5 Submitter: Susan, Yendro, syendro@jointcommission.org, 630-792-5079-, The Joint Commission

Co.6 Additional organizations that sponsored/participated in measure development:

Co.7 Public Contact: Susan, Yendro, syendro@jointcommission.org, 630-792-5079-, The Joint Commission

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward:

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released: 2004
Ad.4 Month and Year of most recent revision: 08, 2009
Ad.5 What is your frequency for review/update of this measure? Annual
Ad.6 When is the next scheduled review/update for this measure? 09, 2012

Ad.7 Copyright statement:
Ad.8 Disclaimers:
Ad.9 Additional Information/Comments:
Date of Submission (*MM/DD/YY*): 04/09/2012

Nursing-Sensitive Care (NSC)-12: Practice Environment Scale-Nursing Work Index (PES-NWI)

Continuous Variable Statement: For surveys completed by Registered Nurses (RN).

Variable Key:
NurseParticipationScore
NursingFoundationScore
NurseMgrAbilityScore
StaffingScore
RelationsScore
TotalScore
ExceedCounter

Stratification Table:

Set Measure ID#	Stratified Measure Name
NSC-12a	Mean score on a composite of all subscale scores
NSC-12b	Mean score on Nurse Participation in Hospital Affairs
NSC-12c	Mean score on Nursing Foundations for Quality of Care
NSC-12d	Mean score on Nurse Manager Ability, Leadership, and Support of Nurses
NSC-12e	Mean score on Staffing and Resource Adequacy
NSC-12f	Mean score on Collegial Nurse-Physician Relations

1. Start processing.

2. Check Survey Date
   a. If the Survey Date is missing or invalid the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
   b. If Survey Date is valid, continue and proceed to initialization.

3. Initialization. Initialize NurseParticipationScore to 0; NursingFoundationScore to 0; NurseMgrAbilityScore to 0; StaffingScore to 0; RelationsScore to 0; TotalScore to 0; ExceedCounter to 0. Continue and proceed to PES-NWI Career Development.

4. Check PES-NWI Career Development
   a. If the PES-NWI Career Development is missing or zero, the case will proceed to PES-NWI Participation in Policy Decisions.
   b. If the PES-NWI Career Development equals 1, 2, 3, or 4, add the allowable value scored for *PES-NWI Career Development* to the NurseParticipationScore and proceed to *PES-NWI Participation in Policy Decisions*.

5. Check PES-NWI Participation in Policy Decisions
   a. If the PES-NWI-Participation in Policy Decisions is missing or zero, the case will proceed to PES-NWI Chief Nursing Officer Visibility.
   b. If the PES-NWI Participation in Policy Decisions equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Participation in Policy Decisions to the NurseParticipationScore and proceed to PES-NWI Chief Nursing Officer Visibility.

6. Check PES-NWI Chief Nursing Officer Visibility
   a. If the PES-NWI- Chief Nursing Officer Visibility is missing or zero, the case will proceed to PES-NWI Chief Nursing Officer Authority.

b. If the *PES-NWI* Chief Nursing Officer Visibility equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Chief Nursing Officer Visibility to the NurseParticipationScore and proceed to PES-NWI Chief Nursing Officer Authority.

7. Check PES-NWI Chief Nursing Officer Authority
   a. If the PES-NWI- Chief Nursing Officer Authority is missing or zero, the case will proceed to PES-NWI Advancement Opportunities.
   b. If the PES-NWI Chief Nursing Officer Authority equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Chief Nursing Officer Authority to the NurseParticipationScore and proceed to PES-NWI Advancement Opportunities.

8. Check PES-NWI Advancement Opportunities
   a. If the PES-NWI- Advancement Opportunities is missing or zero, the case will proceed to PES-NWI Administration Listens and Responds.
   b. If the PES-NWI Advancement Opportunities equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Advancement Opportunities to the NurseParticipationScore and proceed to PES-NWI Administration Listens and Responds.

9. Check PES-NWI Administration Listens and Responds
   a. If the PES-NWI Administration Listens and Responds is missing or zero, the case will proceed to PES-NWI Staff Nurses Hospital Governance.
   b. If the PES-NWI Administration Listens and Responds equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Administration Listens and Responds to the NurseParticipationScore and proceed to PES-NWI Staff Nurses Hospital Governance.

10. Check PES-NWI Staff Nurses Hospital Governance
    a. If the PES-NWI- Staff Nurses Hospital Governance is missing or zero, the case will proceed to PES-NWI Nursing Committees.
    b. If the PES-NWI Staff Nurses Hospital Governance equals 1, 2, 3, or 4, add the allowable value scored for *PES-NWI* Staff Nurses Hospital Governance to the NurseParticipationScore and proceed to PES-NWI Nursing Committees.

11. Check PES-NWI Nursing Committees
    a. If the PES-NWI Nursing Committees is missing or zero, the case will proceed to PES-NWI Nursing Administrators Consult.
    b. If the PES-NWI Nursing Committees equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Committees to the NurseParticipationScore and proceed to PES-NWI Nursing Administrators Consult.

12. Check PES-NWI Nursing Administrators Consult
    a. If the PES-NWI Nursing Administrators Consult is missing or zero, the case will proceed to calculate mean score on Nurse-Participation in Hospital Affairs.
    b. If the PES-NWI Nursing Administrators Consult equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Administrators Consult to the NurseParticipationScore and proceed to calculate mean score on Nurse-Participation in Hospital Affairs.

13. Calculate Mean Score on Nurse-Participation in Hospital Affairs. Mean Score of Nurse-Participation in Hospital Affairs equals mean of NurseParticipationScore. Assign the

calculated mean score to NSC-12b. Continue and proceed to PES-NWI Continuing Education.

14. Check PES-NWI Continuing Education
    a. If the PES-NWI Continuing Education is missing or zero, the case will proceed to PES-NWI High Nursing Care Standards.
    b. If the PES-NWI Continuing Education equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Continuing Education to the NurseFoundationScore and proceed to PES-NWI High Nursing Care Standards.

15. Check PES-NWI High Nursing Care Standards
    a. If the PES-NWI High Nursing Care Standards is missing or zero, the case will proceed to PES-NWI Philosophy of Nursing.
    b. If the PES-NWI High Nursing Care Standards equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI High Nursing Care Standards to the NurseFoundationScore and proceed to PES-NWI Philosophy of Nursing.

16. Check PES-NWI Philosophy of Nursing
    a. If the PES-NWI Philosophy of Nursing is missing or zero, the case will proceed to PES-NWI Nurses Are Competent.
    b. If the PES-NWI Philosophy of Nursing equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Philosophy of Nursing to the NurseFoundationScore and proceed to PES-NWI Nurses Are Competent.

17. Check PES-NWI Nurses Are Competent
    a. If the PES-NWI Nurses Are Competent is missing or zero, the case will proceed to PES-NWI Quality Assurance Program.

    b. If the PES-NWI Nurses Are Competent equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurses Are Competent to the NurseFoundationScore and proceed to PES-NWI Quality Assurance Program.

18. Check PES-NWI Quality Assurance Program
    a. If the PES-NWI Quality Assurance Program is missing or zero, the case will proceed to PES-NWI Preceptor Program.
    b. If the PES-NWI Quality Assurance Program equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Quality Assurance Program to the NurseFoundationScore and proceed to PES-NWI Preceptor Program.

19. Check PES-NWI Preceptor Program
    a. If the PES-NWI Preceptor Program is missing or zero, the case will proceed to PES-NWI Nursing Care Model.
    b. If the PES-NWI Preceptor Program equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Preceptor Program to the NurseFoundationScore and proceed to PES-NWI Nursing Care Model.

20. Check PES-NWI Nursing Care Model
    a. If the PES-NWI Nursing Care Model is missing or zero, the case will proceed to PES-NWI Patient Care Plans.
    b. If the PES-NWI Nursing Care Model equals 1, 2, 3, or 4, add the allowable value scored for Nursing Care Model to the NurseFoundationScore and proceed to PES-NWI Patient Care Plans.

21. Check PES-NWI Patient Care Plans
    a. If the PES-NWI Patient Care Plans is missing or zero, the case will proceed to PES-NWI Continuity of Patient Assignments.
    b. If the PES-NWI Patient Care Plans equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Patient Care Plans to the NurseFoundationScore and proceed to PES-NWI Continuity of Patient Assignments

22. Check PES-NWI Continuity of Patient Assignments
    a. If the PES-NWI Continuity of Patient Assignments is missing or zero, the case will proceed to PES-NWI Nursing Diagnosis.
    b. If the PES-NWI Continuity of Patient Assignments equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Continuity of Patient Assignments to the NurseFoundationScore and proceed to PES-NWI Nursing Diagnosis.

23. Check PES-NWI Nursing Diagnosis
    a. If the PES-NWI Nursing Diagnosis is missing or zero, the case will proceed to calculate mean score on Nursing Foundations for Quality of Care.
    b. If the PES-NWI Nursing Diagnosis equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nursing Diagnosis to theNurseFoundationScore and proceed to calculate mean score on Nursing Foundations for Quality of Care.

24. Calculate Mean Score on Nursing Foundations for Quality of Care. Mean Score of Nursing Foundations for Quality of Care equals mean of NurseFoundationScore. Assign the calculated mean score to NSC-12c. Continue and proceed to PES-NWI Supportive Supervisory Staff.

25. Check PES-NWI Supportive Supervisory Staff
    a. If the PES-NWI Supportive Supervisory Staff is missing or zero, the case will proceed to PES-NWI Supervisors Learning Experience.
    b. If the PES-NWI Supportive Supervisory Staff equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Supportive Supervisory Staff to the NurseMgrAbilityScore and proceed to PES-NWI Supervisors Learning Experience.

26. Check PES-NWI Supervisors Learning Experience
    a. If the PES-NWI Supervisors Learning Experience is missing or zero, the case will proceed to PES-NWI Nurse Manager and Leader.
    b. If the PES-NWI Supervisors Learning Experience equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Supervisors Learning Experience to the NurseMgrAbilityScore and proceed to PES-NWI Nurse Manager and Leader.

27. Check PES-NWI Nurse Manager and Leader
    a. If the PES-NWI Nurse Manager and Leader is missing or zero, the case will proceed to PES-NWI Recognition.
    b. If the PES-NWI Nurse Manager and Leader equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse Manager and Leader to the NurseMgrAbilityScore and proceed to PES-NWI Recognition.

28. Check PES-NWI Recognition
    a. If the PES-NWI Recognition is missing or zero, the case will proceed to PES-NWI Nurse Manager Backs up Staff

b. If the PES-NWI Recognition equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Recognition to the NurseMgrAbilityScore and proceed to PES-NWI Nurse Manager Backs up Staff.

29. Check PES-NWI Nurse Manager Backs up Staff
    a. If the PES-NWI Nurse Manager Backs up Staff is missing or zero, the case will proceed to calculate mean score on Nurse Manager Ability, Leadership, and Support of Nurses.
    b. If the PES-NWI Nurse Manager Backs up Staff equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse Manager Backs up Staff to the NurseMgrAbilityScore and proceed to calculate mean score on Nurse Manager Ability, Leadership, and Support of Nurses.

    Calculate Mean Score on Nurse Manager Ability, Leadership, and Support of Nurses. Mean Score of Nurse Manager Ability, Leadership, and Support of Nurses equals mean of NurseMgrAbilityScore. Assign the calculated mean score to NSC-12d. Continue and proceed to PES-NWI Adequate Support Services.

30. Check PES-NWI Adequate Support Services
    a. If the PES-NWI Adequate Support Services is missing or zero, the case will proceed to PES-NWI Time to Discuss Patient Problems.
    b. If the PES-NWI Adequate Support Services equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Adequate Support Services to the StaffingScore and proceed to PES-NWI Time to Discuss Patient Problems.

31. Check PES-NWI Time to Discuss Patient Problems
    a. If the PES-NWI Time to Discuss Patient Problems is missing or zero, the case will proceed to PES-NWI Enough Nurses for Quality Care.
    b. If the PES-NWI Time to Discuss Patient Problems equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Time to Discuss Patient Problems to the StaffingScore and proceed to PES-NWI Enough Nurses for Quality Care.

32. Check PES-NWI Enough Nurses for Quality Care
    a. If the PES-NWI Enough Nurses for Quality Care is missing or zero, the case will proceed to PES-NWI Enough Staffing.
    b. If the PES-NWI Enough Nurses for Quality Care equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Enough Nurses for Quality Care to the StaffingScore and proceed to *PES-NWI Enough Staffing.*

33. Check PES-NWI Enough Staffing
    a. If the PES-NWI Enough Staffing is missing or zero, the case will proceed to calculate mean score on Staffing and Resource Adequacy.
    b. If the PES-NWI Enough Staffing equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Enough Staffing to the StaffingScore and proceed to calculate mean score on Staffing and Resource Adequacy.

34. Calculate Mean Score on Staffing and Resource Adequacy. Mean Score of Staffing and Resource Adequacy equals mean of StaffingScore. Assign the calculated mean score to NSC-12e. Continue and proceed to PES-NWI Nurse and Physician Relationships.

35. Check PES-NWI Nurse and Physician Relationships

a. If the PES-NWI Nurse and Physician Relationships is missing or zero, the case will proceed to PES-NWI Nurse and Physician Teamwork.

b. If the PES-NWI Nurse and Physician Relationships equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse and Physician Relationships to the RelationsScore and proceed to PES-NWI Nurse and Physician Teamwork.

36. Check PES-NWI Nurse and Physician Teamwork
    a. If the PES-NWI Nurse and Physician Teamwork is missing or zero, the case will proceed to PES-NWI Collaboration.
    b. If the PES-NWI Nurse and Physician Teamwork equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Nurse and Physician Teamwork to the RelationsScore and proceed to PES-NWI Collaboration.

37. Check PES-NWI Collaboration
    a. If the PES-NWI Collaboration is missing or zero, the case will proceed to calculate mean score on Collegial Nurse-Physician Relations.
    b. If the PES-NWI Collaboration equals 1, 2, 3, or 4, add the allowable value scored for PES-NWI Collaboration to the RelationsScore and proceed to calculate mean score on Collegial Nurse-Physician Relations.

38. Calculate Mean Score on Collegial Nurse-Physician Relations. Mean Score of Collegial Nurse-Physician Relations equals mean of RelationsScore. Assign the calculated mean score to NSC-12f. Continue and proceed to calculate the Total Score on composite of all subscale scores.

39. Calculate Total Score on a composite of all subscale scores. Total Score of a composite of all subscale scores equals the sum of NurseParticipationScore, NursingFoundationScore, NurseMgrAbilityScore, StaffingScore, and RelationsScore. Continue and proceed to calculate Mean Score on a composite of all subscale scores.

40. Calculate Mean Score on a composite of all subscale scores. Mean Score of a composite of all subscale scores equals the mean of Total Score on a composite of all subscale scores. Assign the calculated mean score to NSC-12a. Continue and proceed to Mean Score on NurseParticipationScore.

41. Check Mean Score on NurseParticipationScore
    a. If the score of Mean Score on NurseParticipationScore is less than or equal to 2.5, the case will proceed to Mean Score on NursingFoundationScore.
    b. If the score of Mean Score on NurseParticipationScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on NursingFoundationScore.

42. Check Mean Score on NursingFoundationScore
    a. If the score of Mean Score on NursingFoundationScore is less than or equal to 2.5, the case will proceed to Mean Score on NurseMgrAbilityScore.
    b. If the score of Mean Score on NursingFoundationScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on NurseMgrAbilityScore.

43. Check Mean Score on NurseMgrAbilityScore
    a. If the score of Mean Score on NurseMgrAbilityScore is less than or equal to 2.5, the case will proceed to Mean Score on StaffingScore.

b. If the score of Mean Score on NurseMgrAbilityScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on StaffingScore.

44. Check Mean Score on StaffingScore
    a. If the score of Mean Score on StaffingScore is less than or equal to 2.5, the case will proceed to Mean Score on RelationsScore.
    b. If the score of Mean Score on StaffingScore is greater than 2.5, add 1 to ExceedCounter and proceed to Mean Score on RelationsScore.

45. Check Mean Score on RelationsScore
    a. If the score of Mean Score on RelationsScore is less than or equal to 2.5, the case will proceed to ExceedCounter.
    b. If the score of Mean Score on RelationsScore is greater than 2.5, add 1 to ExceedCounter and proceed to ExceedCounter.

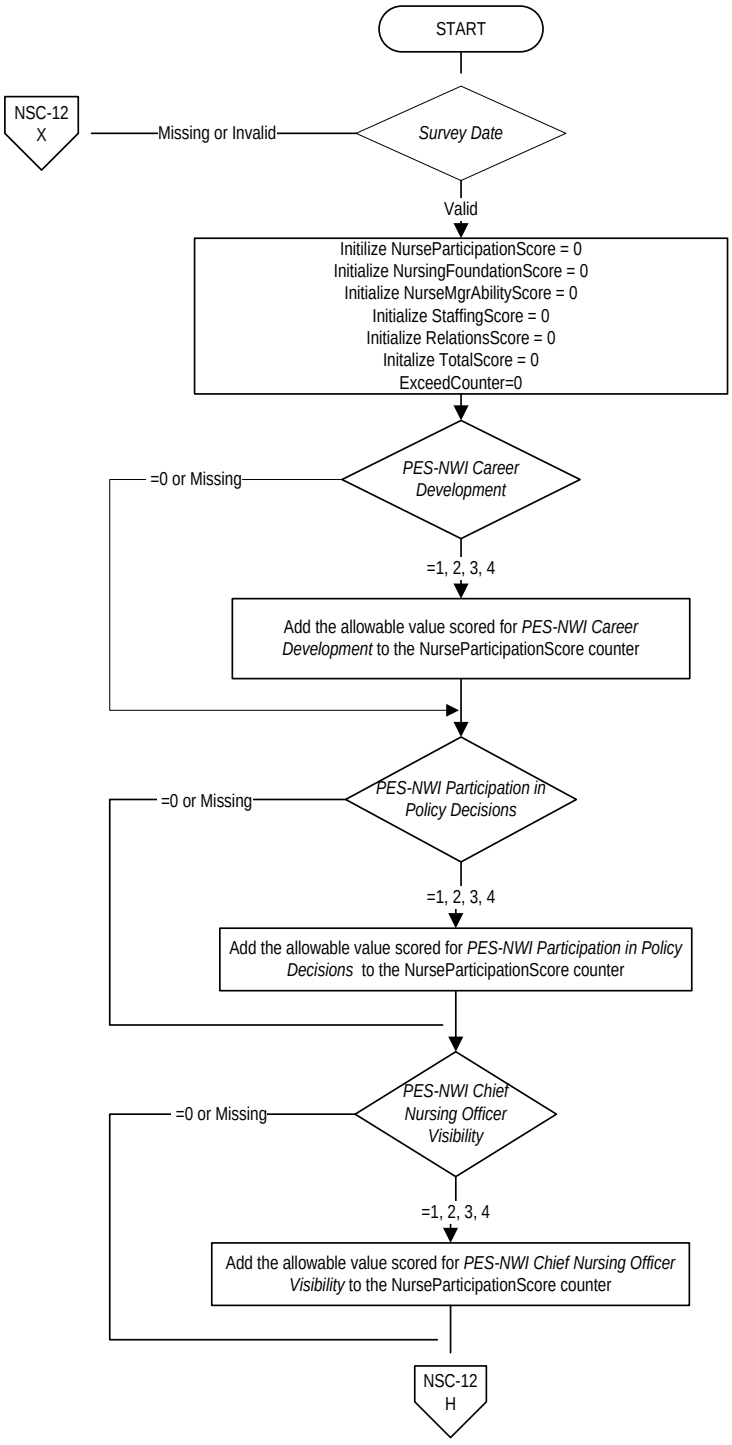
46. Check ExceedCounter
    a. If ExceedCounter is greater than or equal to 4, the case will proceed to a Measure Category Assignment of “Favorable”. Stop processing.
    b. If ExceedCounter is greater than or equal to 2 and less than 4, the case will proceed to a Measure Category Assignment of “Mixed”. Stop processing.
    c. If ExceedCounter is greater than or equal to 0 and less than 2, the case will proceed to a Measure Category Assignment of “Unfavorable”. Stop processing.

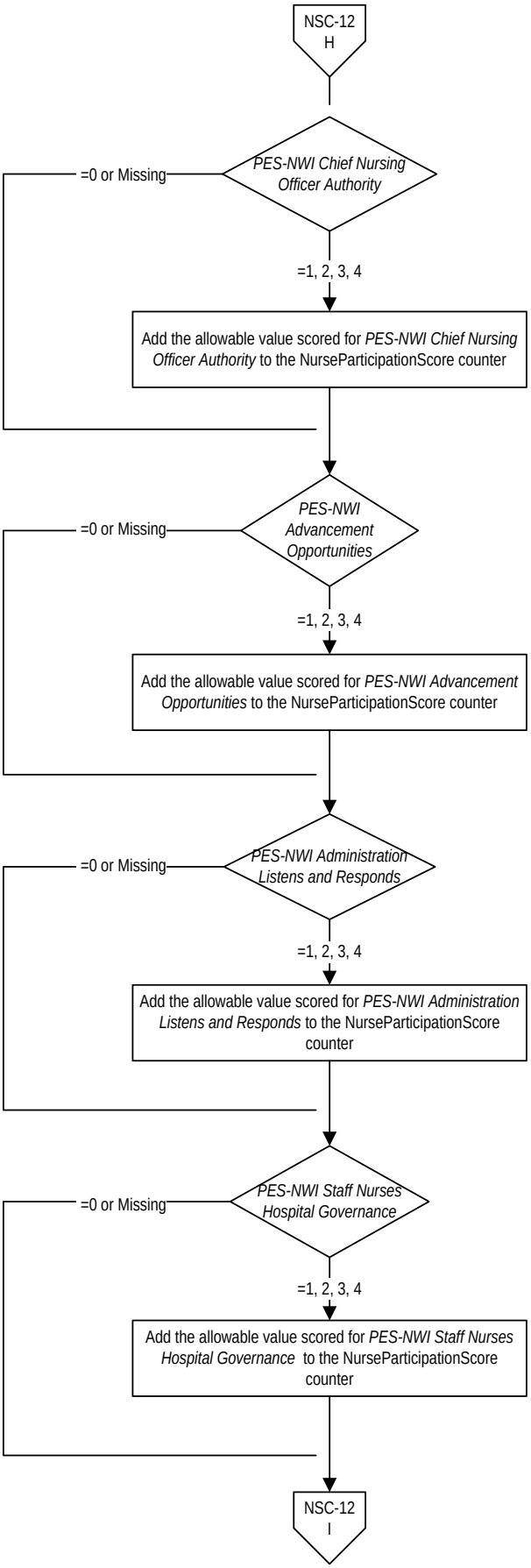
NSC-12: Practice Environment Scale-Nursing Work Index (PES-NWI)

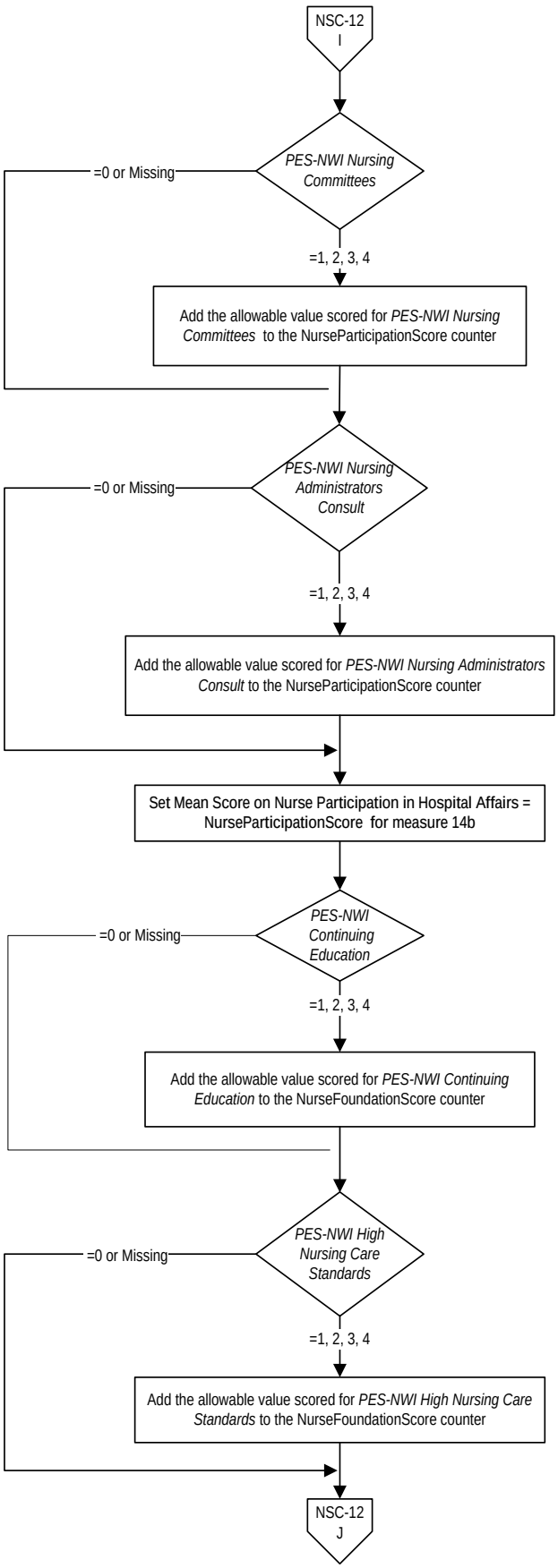
Continuous Variable Statement: For surveys completed by Registered Nurses (RN)

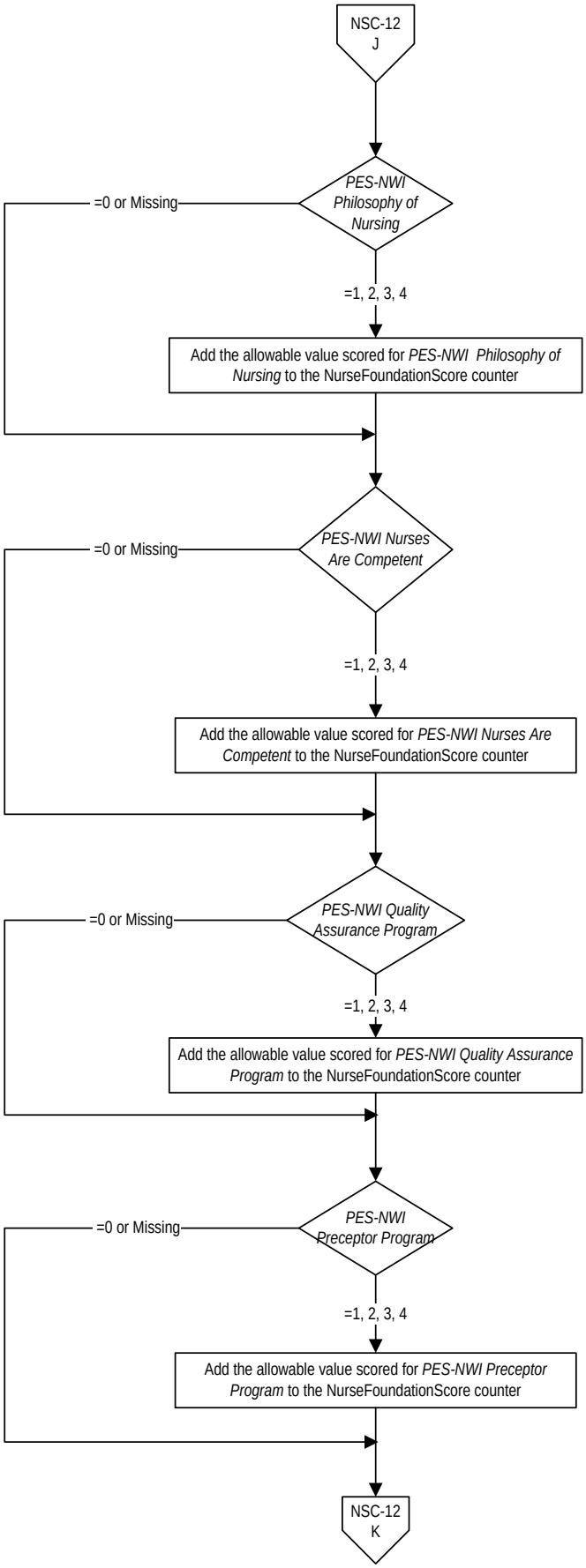
12a: Mean score on a composite of all subscale scores
12b: Mean score on Nurse Participation in Hospital Affairs
12c: Mean score on Nursing Foundations for Quality of Care
12d: Mean score on Nurse Manager Ability, Leadership, and Support of Nurses
12e: Mean score on Staffing and Resource Adequacy
12f: Mean score on Collegial Nurse-Physician Relations

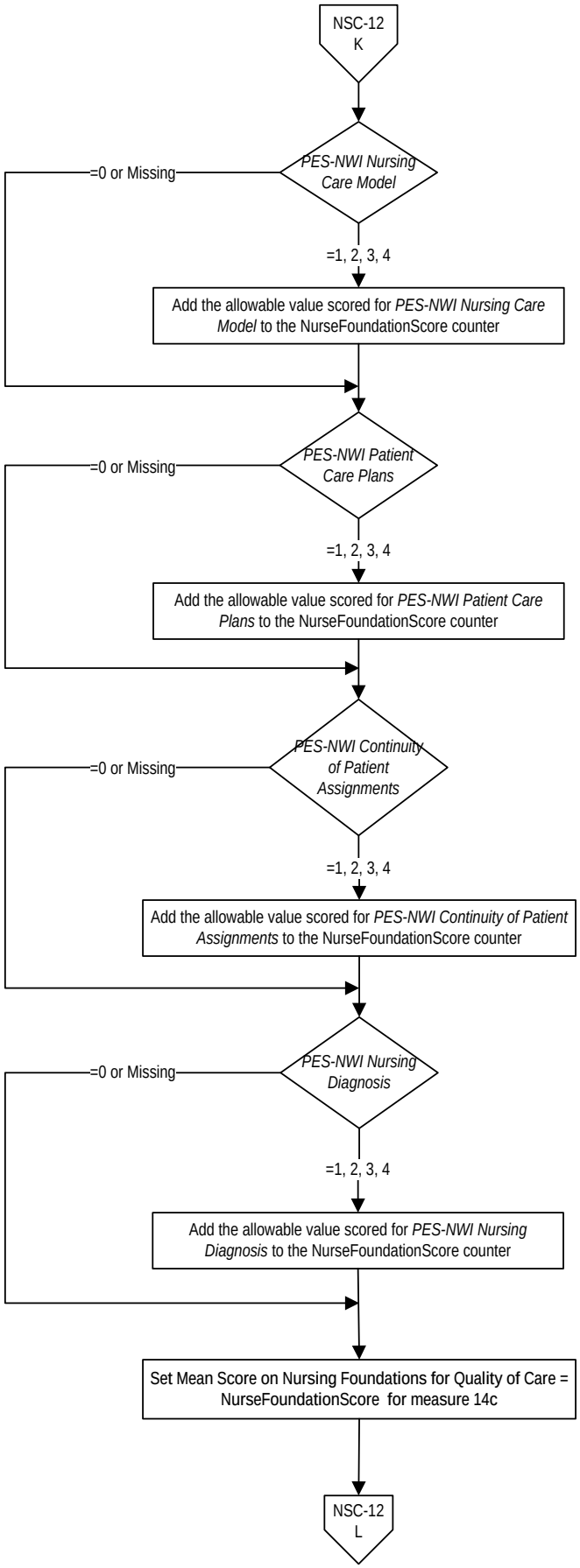
Variable Key:
NurseParticipationScore
NursingFoundationScore
NurseMgrAbilityScore
StaffingScore
RelationsScore
TotalScore
ExceedCounter

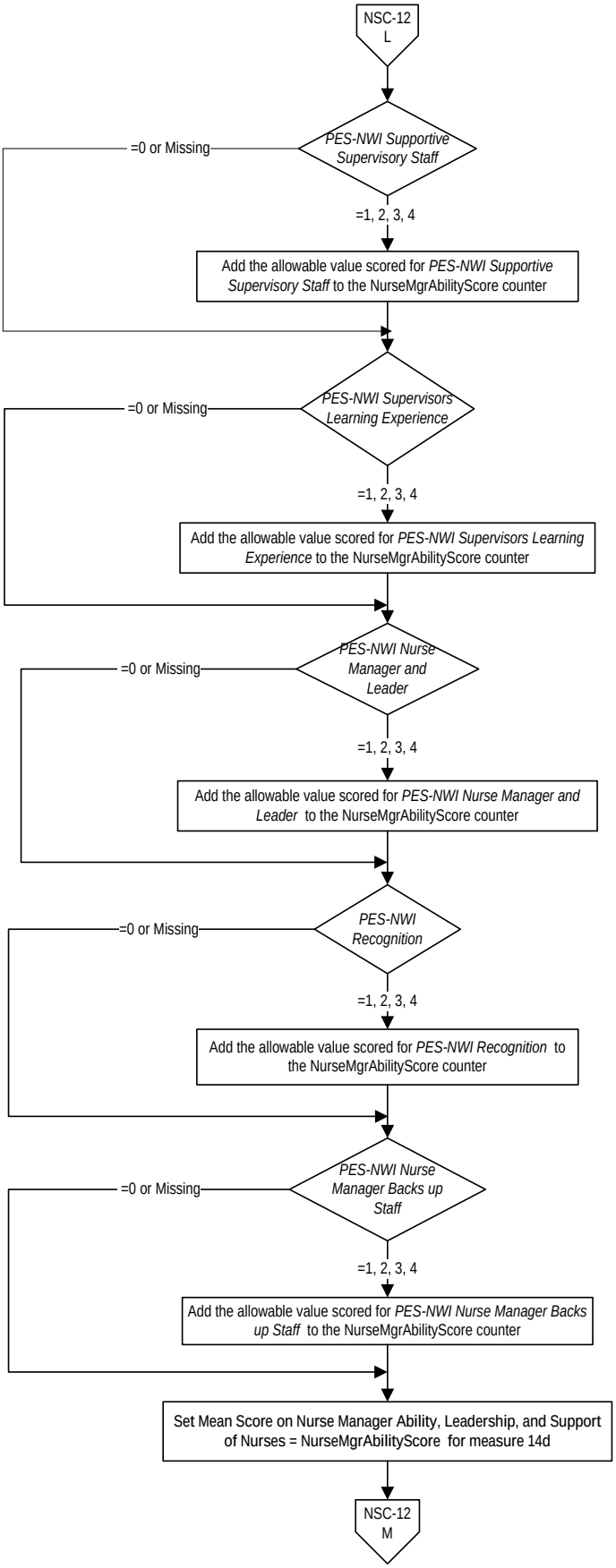


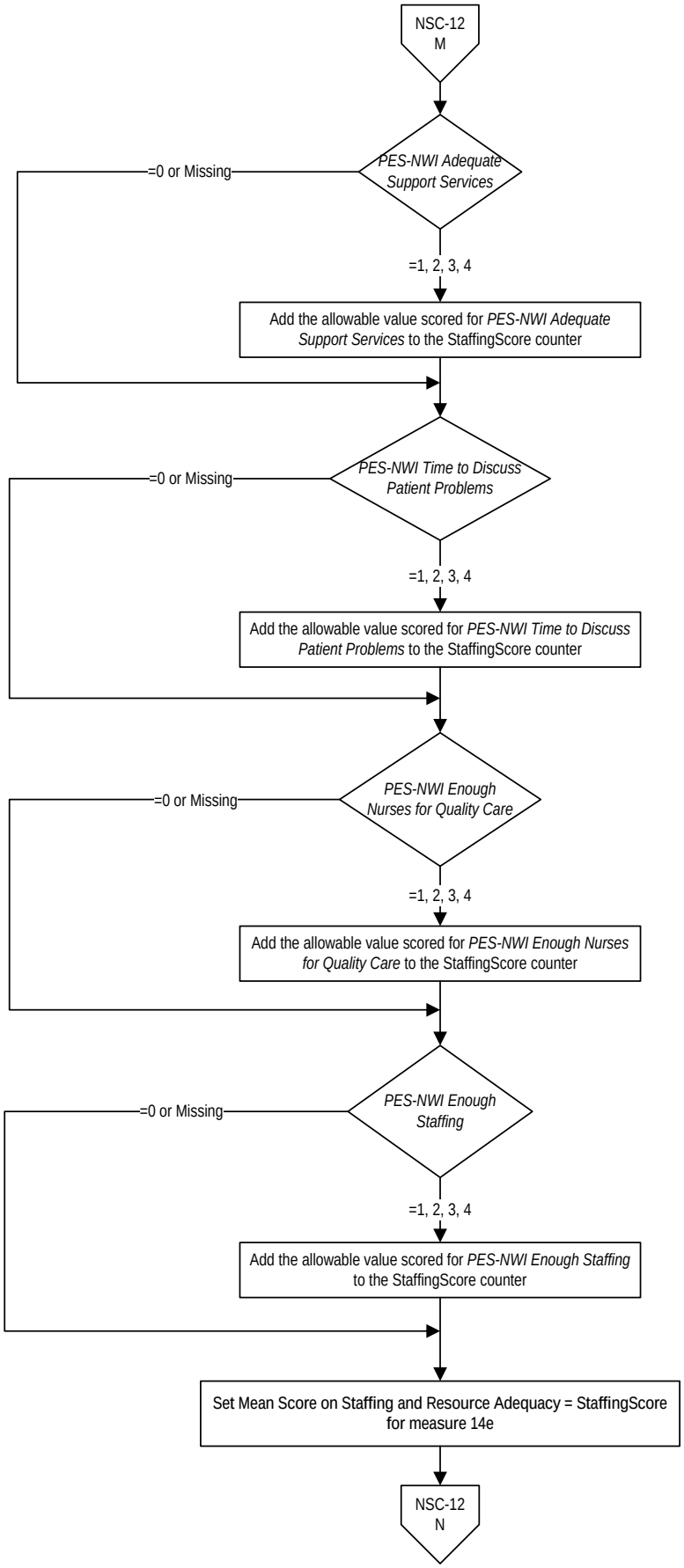

NSC-12 H
PES-NWI Chief Nursing Officer Authority
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Chief Nursing Officer Authority to the NurseParticipationScore counter
PES-NWI Advancement Opportunities
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Advancement Opportunities to the NurseParticipationScore counter
PES-NWI Administration Listens and Responds
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Administration Listens and Responds to the NurseParticipationScore counter
PES-NWI Staff Nurses Hospital Governance
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Staff Nurses Hospital Governance to the NurseParticipationScore counter
NSC-12 I

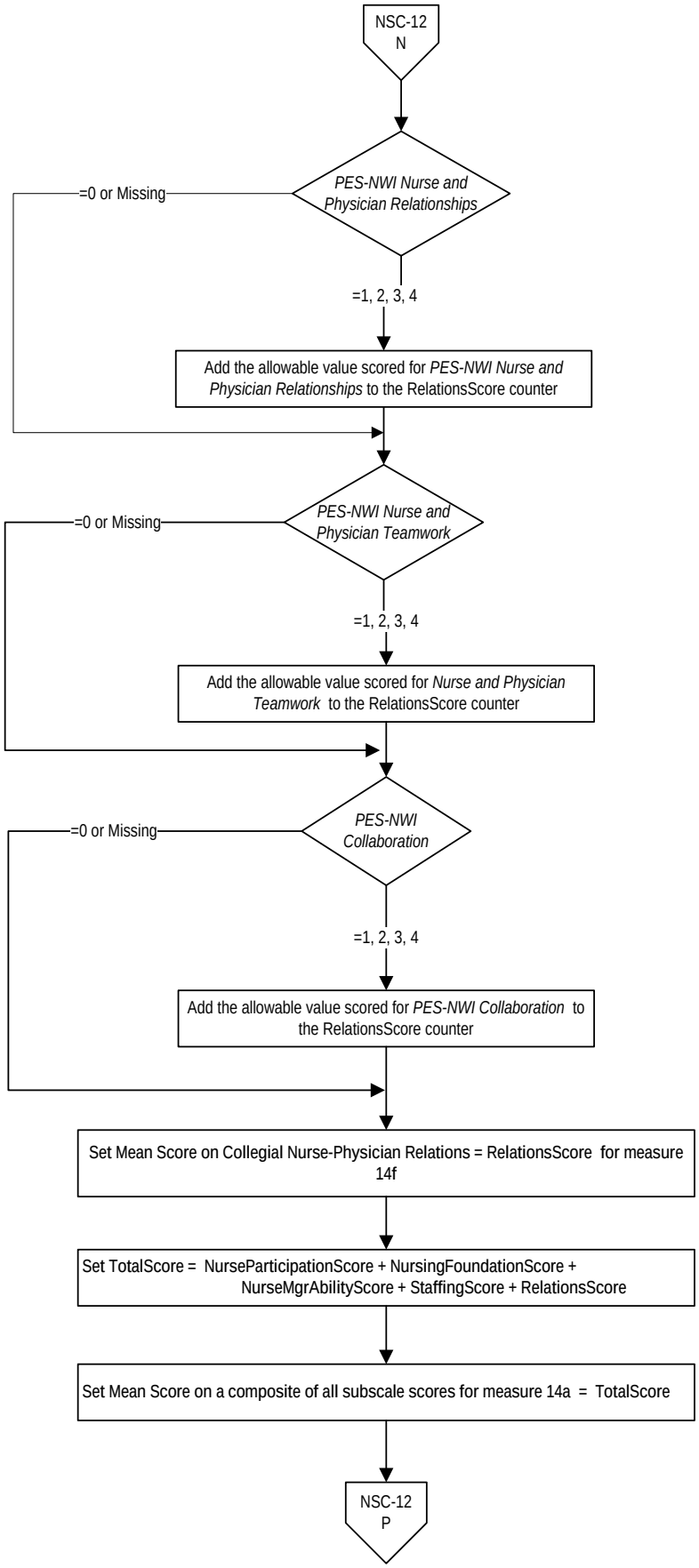

NSC-12 I
PES-NWI Nursing Committees
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nursing Committees to the NurseParticipationScore counter
PES-NWI Nursing Administrators Consult
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nursing Administrators Consult to the NurseParticipationScore counter
Set Mean Score on Nurse Participation in Hospital Affairs = NurseParticipationScore for measure 14b
PES-NWI Continuing Education
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Continuing Education to the NurseFoundationScore counter
PES-NWI High Nursing Care Standards
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI High Nursing Care Standards to the NurseFoundationScore counter
NSC-12 J

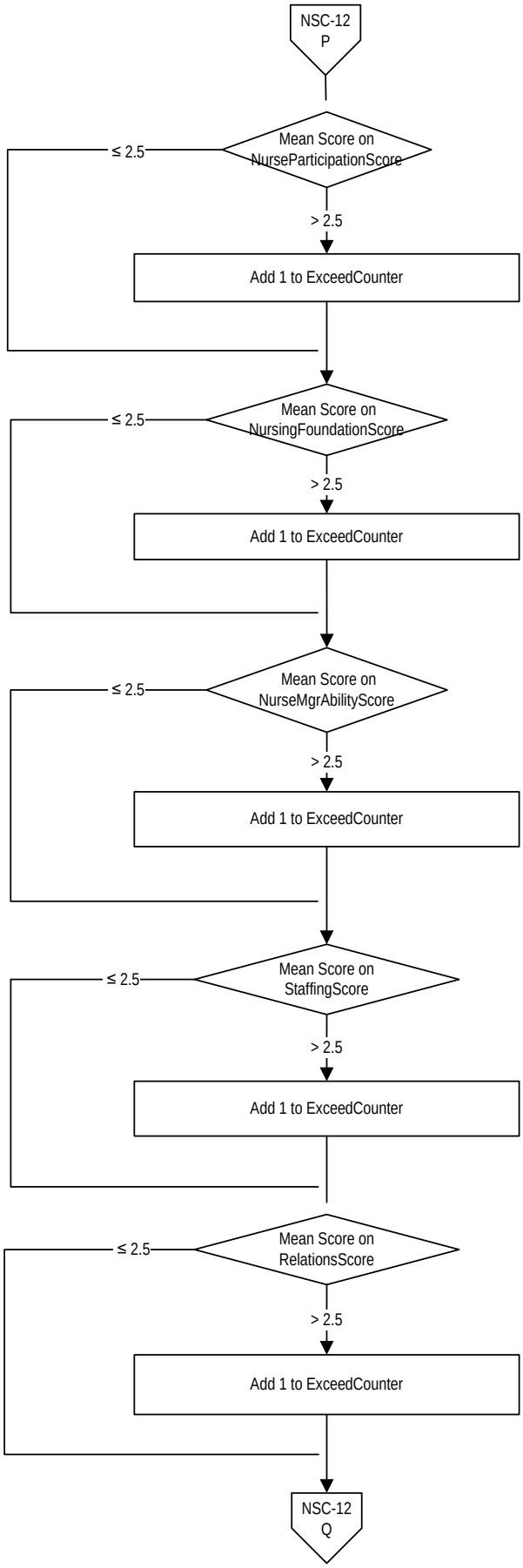

NSC-12 J
PES-NWI Philosophy of Nursing
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Philosophy of Nursing to the NurseFoundationScore counter
PES-NWI Nurses Are Competent
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nurses Are Competent to the NurseFoundationScore counter
PES-NWI Quality Assurance Program
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Quality Assurance Program to the NurseFoundationScore counter
PES-NWI Preceptor Program
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Preceptor Program to the NurseFoundationScore counter
NSC-12 K

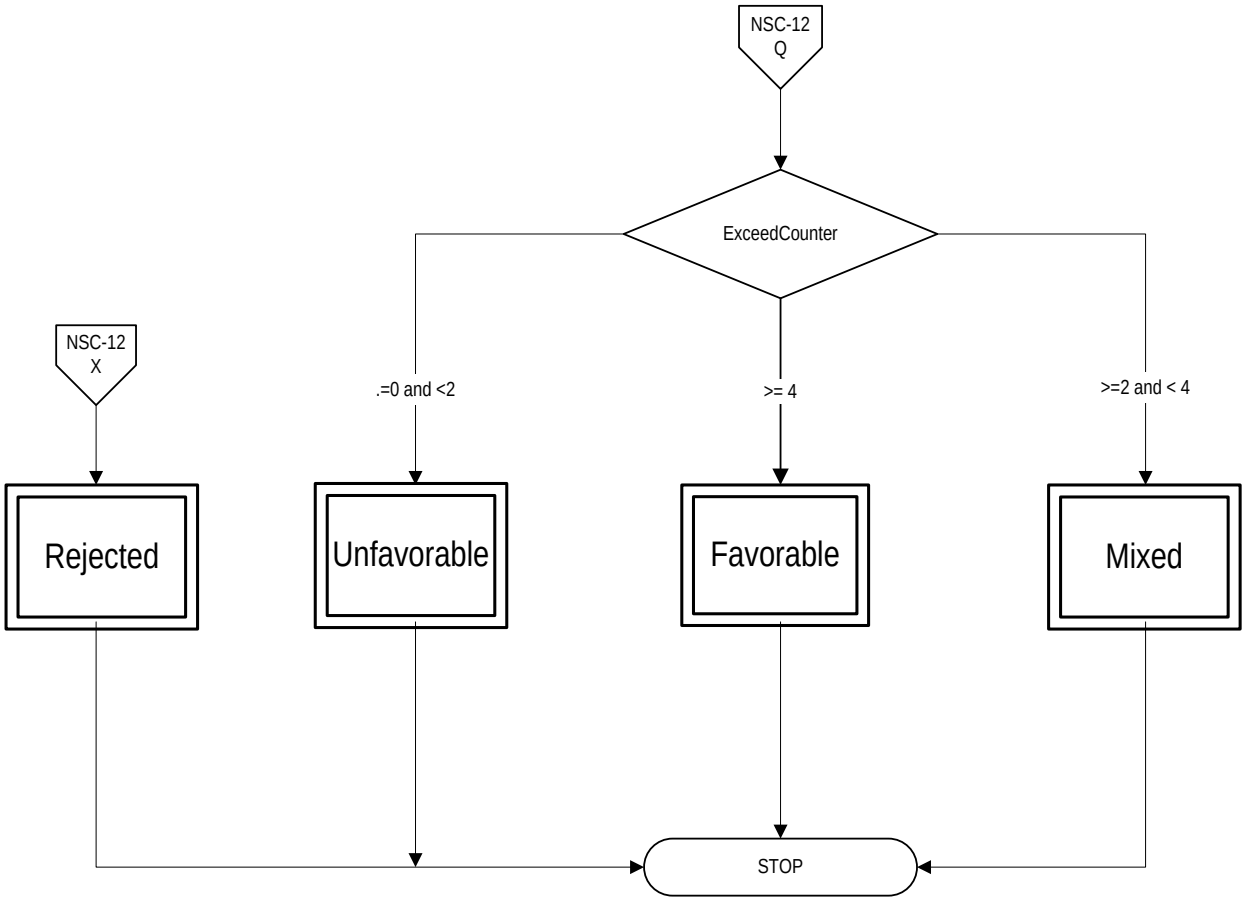

NSC-12 K
PES-NWI Nursing Care Model
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nursing Care Model to the NurseFoundationScore counter
PES-NWI Patient Care Plans
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Patient Care Plans to the NurseFoundationScore counter
PES-NWI Continuity of Patient Assignments
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Continuity of Patient Assignments to the NurseFoundationScore counter
PES-NWI Nursing Diagnosis
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nursing Diagnosis to the NurseFoundationScore counter
Set Mean Score on Nursing Foundations for Quality of Care = NurseFoundationScore for measure 14c
NSC-12 L


NSC-12 L
PES-NWI Supportive Supervisory Staff
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Supportive Supervisory Staff to the NurseMgrAbilityScore counter
PES-NWI Supervisors Learning Experience
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Supervisors Learning Experience to the NurseMgrAbilityScore counter
PES-NWI Nurse Manager and Leader
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nurse Manager and Leader to the NurseMgrAbilityScore counter
PES-NWI Recognition
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Recognition to the NurseMgrAbilityScore counter
PES-NWI Nurse Manager Backs up Staff
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nurse Manager Backs up Staff to the NurseMgrAbilityScore counter
Set Mean Score on Nurse Manager Ability, Leadership, and Support of Nurses = NurseMgrAbilityScore for measure 14d
NSC-12 M


NSC-12 M
PES-NWI Adequate Support Services
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Adequate Support Services to the StaffingScore counter
PES-NWI Time to Discuss Patient Problems
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Time to Discuss Patient Problems to the StaffingScore counter
PES-NWI Enough Nurses for Quality Care
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Enough Nurses for Quality Care to the StaffingScore counter
PES-NWI Enough Staffing
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Enough Staffing to the StaffingScore counter
Set Mean Score on Staffing and Resource Adequacy = StaffingScore for measure 14e
NSC-12 N


NSC-12 N
PES-NWI Nurse and Physician Relationships
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Nurse and Physician Relationships to the RelationsScore counter
PES-NWI Nurse and Physician Teamwork
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for Nurse and Physician Teamwork to the RelationsScore counter
PES-NWI Collaboration
=0 or Missing
=1, 2, 3, 4
Add the allowable value scored for PES-NWI Collaboration to the RelationsScore counter
Set Mean Score on Collegial Nurse-Physician Relations = RelationsScore for measure 14f
Set TotalScore = NurseParticipationScore + NursingFoundationScore + NurseMgrAbilityScore + StaffingScore + RelationsScore
Set Mean Score on a composite of all subscale scores for measure 14a = TotalScore
NSC-12 P


NSC-12
P
Mean Score on
NurseParticipationScore
≤ 2.5
> 2.5
Add 1 to ExceedCounter
Mean Score on
NursingFoundationScore
≤ 2.5
> 2.5
Add 1 to ExceedCounter
Mean Score on
NurseMgrAbilityScore
≤ 2.5
> 2.5
Add 1 to ExceedCounter
Mean Score on
StaffingScore
≤ 2.5
> 2.5
Add 1 to ExceedCounter
Mean Score on
RelationsScore
≤ 2.5
> 2.5
Add 1 to ExceedCounter
NSC-12
Q


NSC-12
Q
ExceedCounter
NSC-12
X
.=0 and <2
>= 4
>=2 and < 4
Rejected
Unfavorable
Favorable
Mixed
STOP