Notes on Selected Research Studies Relevant to Pathway to Excellence® Standards

The tables below list selected research studies that found a favorable association between a variable we interpret to be consistent with a Pathway to Excellence characteristic and patient, nurse, or organizational outcomes.

Standard 1. Shared Decision-Making		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Clarke (2007) — 11,512 nurses in 188 hospitals in Pennsylvania	higher nurse participation in hospital affairs	lower needle or sharps injuries
Flynn et al. (2012) — 686 RNs in 82 medical-surgical units in 14 hospitals in New Jersey	higher nurse participation in hospital affairs	higher error interception practices, which linked to lower medication errors
Friese & Himes-Ferris (2013) – 242 outpatient oncology nurses in a large southeastern state	higher nurse participation in practice affairs	higher intent to stay
Gregory et al. (2010) — 548 acute care nurses in Canada	higher control/empowerment and input into decision-making	higher nurse perceptions of quality of care, standards of care, and safety issues
Hanrahan, Aiken, et al. (2010) — 353 direct inpatient care psychiatric nurses in 67 hospitals in Pennsylvania	higher nurse participation in hospital affairs	lower emotional exhaustion
Kutney-Lee et al. (2016) — 20,674 RNs in 425 hospitals in California, New Jersey, Pennsylvania, and Florida	higher engagement in shared governance	lower nurse reports of • high burnout • high job dissatisfaction • intent to leave • poor quality of care and patient safety higher patient reports of • experience of care • hospital rating • willingness to recommend hospital
Laschinger (2008) — 234 nurses in tertiary care hospitals in Ontario	higher nurse participation in hospital affairs	• higher job satisfaction • higher RN ratings of quality of care on unit

Standard 1. Shared Decision-Making		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Laschinger et al. (2009) — 247 new graduate nurses from hospital inpatient units in Ontario	higher nurse participation in hospital affairs	lower emotional exhaustion
Laschinger & Leiter (2006) — 8,597 acute care nurses in Ontario and Alberta	higher nurse participation in hospital affairs	lower nurse-reported adverse events
Leineweber, Chungkham, et al. (2014) — 8,948 medical/surgical RNs in 53 hospitals in Sweden	higher nurse participation in hospital affairs	lower work-family conflict
Leiter & Laschinger (2006) — 8,597 nurses in acute care hospitals in Ontario and Alberta	higher nurse participation in hospital affairs	lower burnout
Nowrouzi et al. (2015) — 506 registered practical nurses in Ontario, Canada	higher involvement in decision making	higher intent to stay in current position for next 5 years
Papastavrou et al. (2015) — 1,163 RNs and LPNs in 91 wards in 34 hospitals in Cyprus, Finland, Greece, Portugal, Sweden, Turkey, and the state of Kansas	higher control over practice	higher nurse perceptions of individualized care successfully provided to patients in latest shift
Zaheer et al. (2015) — 2,495 nurses (81%), physicians (13%), and pharmacists (6%) in 13 hospitals in Ontario, Canada	higher levels of participative leadership	stronger frontline staff perceptions of patient safety climate (senior and supervisory leadership support for patient safety)

Standard 2. Leadership		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Boev (2012) — 671 nurses and 1,532 discharged patients from 4 critical care units in a New York hospital	higher perceptions of nurse manager ability, leadership, and support	higher patient reports of satisfaction with nursing care
Carter & Tourangeau (2012) — 17,707 RNs and midwives at 147 acute and 20 specialist hospitals in England	better relationships with and support from manager	less intention to leave

Standard 2. Leadership		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Duffield et al. (2010) — 1,559 nurses in 91 wards in 21 public hospitals in 2 Australian states	higher perceptions of • senior nursing administrator who is highly visible and accessible to staff • nurses actively participating in efforts to control costs • a nurse manager who is a good manager and leader	higher job satisfaction
Flynn et al. (2012) — 686 RNs in 82 medical-surgical units in 14 hospitals in New Jersey	higher perceptions of nurse manager ability, leadership, and support	higher error interception practices, which linked to lower medication errors
Friese (2005) — 1,956 nurses in 22 hospitals	higher perceptions of nurse manager ability, leadership, and support	• lower emotional exhaustion • lower job dissatisfaction • higher RN ratings of quality of care
Hanrahan, Aiken, et al. (2010) — 353 direct inpatient care psychiatric nurses in 67 hospitals in Pennsylvania	higher perceptions of nurse manager ability, leadership, and support	lower nurse reports of • emotional exhaustion • depersonalization of patients
Hanrahan, Kumar, et al. — 353 direct inpatient care psychiatric nurses in 67 hospitals in Pennsylvania	higher perceptions of nurse manager ability, leadership, and support	lower nurse-reported frequency of • work-related staff injuries • patient falls with injuries
Jourdain & Chenevert (2010) — 1,636 RNs working in hospitals in Canada	higher support from supervisor	lower depersonalization of patients, which in turn related to higher professional commitment and lower intent to leave the profession
Laschinger (2008) — 234 nurses in tertiary care hospitals in Ontario	higher perceptions of nurse manager ability, leadership, and support	• higher job satisfaction • higher RN ratings of quality of care on unit
Laschinger et al. (2009) — 247 new graduate nurses from hospital inpatient units in Ontario	higher perceptions of nurse manager ability, leadership, and support	lower emotional exhaustion
Laschinger & Leiter (2006) — 8,597 acute care nurses in Ontario and Alberta	higher perceptions of nurse manager ability, leadership, and support	lower nurse-reported adverse events
Leineweber, Westerlund, et al. (2014) — 8,620 RNs in 53 hospitals in Sweden	better leadership and support for RNs	reduced risk of • emotional exhaustion • depersonalization of patients

Standard 2. Leadership		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Leiter & Laschinger (2006) — 8,597 nurses in acute care hospitals in Ontario and Alberta	higher perceptions of nurse manager ability, leadership, and support	lower burnout
Roche et al. (2015) — 1,673 nurses in 62 wards in 11 hospitals in 3 states in Australia	higher perceptions of nurse unit manager leadership skills	lower intent to leave within 12 months
Sawatzky & Enns (2012) — 261 RNs in adult emergency departments in Manitoba, Canada	higher perceptions of nursing management	higher engagement, which in turn related to lower intent to leave current position
Van Bogaert et al. (2013) — 1,201 RNs in 116 units in 8 hospitals in Belgium	higher perceptions of nurse management at the unit level	• higher nurse-assessed quality of care • higher nurse job satisfaction, intent to stay in the hospital, and intent to stay in nursing

Standard 3. Safety		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Chang & Mark (2011) — 4,954 medical-surgical RNs in 286 units in 146 US hospitals	stronger learning climate (communication and thinking about errors)	lower medication errors
Houser et al. (2012) — 420 nurses in 54 units in 9 hospitals in Colorado	higher RN involvement in planning for staffing	higher unit-level indicators of patient satisfaction with nursing care
Mark et al. (2007) — approx. 4,000 nurses in 143 hospitals	stronger safety climate	fewer back injuries
Richter et al. (2016) — 237,409 clinical staff in 1,046 hospitals	higher perceptions of management support for safety	higher perceptions of successful handoffs
Rosen et al. (2010) — 4,581 VA hospital workers in 29 hospitals	higher overall emphasis on safety	lower rates of • decubitus ulcer • iatrogenic pneumothorax
Steyrer et al. (2013) — 549 nurses, 185 physicians, and ICU 378 patients in 57 hospitals in Austria, Germany, and Switzerland	more positive safety climate (management commitment to patient safety, organizational learning, communication and cooperation, and attitude toward safety management)	lower rates of medical errors

Standard 3. Safety		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Tvedt et al. (2012) — 3,618 nurses in surgical and medical wards in 35 hospitals in Norway	higher patient safety management	nurse-reported: • higher quality of nursing care • higher patient safety ratings • higher ratings of patients' self-care ability • lower frequency of adverse events
Vaughn et al. (2004) — 1,454 healthcare workers (1,047 RNs) in 84 Iowa hospitals	higher management support for safety	more consistent adherence to safe needle precautions
Zaheer et al. (2015) — 2,495 nurses (81%), physicians (13%), and pharmacists (6%) in 13 hospitals in Ontario, Canada	higher ease for reporting events	stronger frontline staff perceptions of patient safety climate (senior and supervisory leadership support for patient safety)

Standard 4. Quality		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Brooks et al. (2009) — 1,578 patients in 12 Midwest acute care hospitals	intervention of evidence-based pain management practices	lower total cost per inpatient stay, cost per day, and length of stay
Doran et al. (2014) — 338 nurses and 939 clients from 13 home care offices in Ontario, Canada	higher number of nursing sensitive EBP interventions documented in client records	improvements in • risk of dyspnea on discharge • pain frequency • number of falls • pressure ulcer occurrences
Gittell et al. (2000) — 338 care providers (nurses and physicians) from 9 hospitals, 878 orthopedic patients	higher mutual respect, shared goals, and frequency of communication (dimensions of "relational coordination")	• lower length of stay • higher quality of care • higher postoperative freedom from pain • higher postoperative functioning
Gregory et al. (2010) — 548 acute care nurses in Canada	higher satisfaction with managerial and interdisciplinary relations	higher nurse perceptions of quality of care, standards of care, and safety issues
Hickey et al. (2013) — 3,413 pediatric critical nurses with 26,158 congenital heart disease patients in 38 children's hospitals	participation in national quality metric benchmarking	lower odds of in-hospital mortality

Standard 4. Quality		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Titler et al. (2009) — 669 hospitalized older adults in 12 Midwest acute care hospitals	intervention of evidence-based pain management practices	lower mean pain intensity

Standard 5. Well-Being		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Carter & Tourangeau (2012) — 17,707 RNs and midwives at 140 acute and 20 specialist hospitals in England	better ability to achieve good work-life balance	lower intention to leave
Duffield et al. (2010) — 1,559 nurses in 91 wards in 21 public hospitals in 2 Australian states	• higher availability of flexible or modified work schedules • higher praise and recognition for a job well done	higher job satisfaction
Estryn-Behar et al. (2010) — 866 nurses in Belgium, Germany, Finland, France, Italy, the Netherlands, Poland, and Slovakia	work schedule difficulties	exited organization in past year
Leineweber et al. (2016) — 23,076 RNs Belgium, England, Finland, Germany, Greece, Ireland, the Netherlands, Norway, Poland, Spain, Sweden, and Switzerland	higher satisfaction with scheduling flexibility	less likely to • leave hospital • leave nursing profession
Penz et al. (2008) — 944 RNs in rural hospitals in Canada	higher satisfaction with scheduling and shifts	higher job satisfaction
Tourangeau & Cranley (2006) — 6,856 RNs and 1,325 RPNs in Ontario, Canada	higher satisfaction with praise and recognition	higher intention to remain employed in current hospital

Standard 6. Professional Development		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Boyle et al. (2016) — 5,144 patient care units in 857 hospitals	higher unit-level rates of specialty certification	better quality on a composite index of pressure ulcer and fall rates

Standard 6. Professional Development		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Boltz et al. (2013) — 44 medical and medical-surgical units serving older adults in 25 hospitals	higher percent unit RNs certified in any specialty	lower fall rates
Carter & Tourangeau (2012) — 17,707 RNs and midwives at 140 acute and 20 specialist hospitals in England	more perceived developmental opportunities	lower intention to leave
Covell & Sidani (2013) — 91 units in 6 hospitals in Ontario and Quebec	higher unit-level proportion of RNs with specialty certification	• lower rates of hospital-acquired infection • lower vacancy rates (less unfilled positions) • lower reruitment rates (less need to hire nurses)
Estryn-Behar et al. (2010) — 866 nurses in Belgium, Germany, Finland, France, Italy, The Netherlands, Poland, and Slovakia	dissatisfied with development opportunities	exited organization in past year
Flinkman et al. (2008) — 147 nurses in 6 hospital districts in Finland	lower rating of development opportunities	more frequent thoughts of leaving nursing in the last 12 months
Kendall-Gallagher & Blegen (2009) — 48 ICUs in 29 hospitals	higher proportion of certified staff RNs in unit	lower annualized rate of falls
Rondeau et al. (2009) — 680 CNOs and others responsible for nursing function at 232 hospitals and 473 long-term care facilities in Canada	higher intensity of staff training and development across 10 broad areas (e.g., workplace safety, clinical skills, quality improvement, and team effectiveness)	lower turnover (percentage of RNs that voluntarily left the organization in the past year)
Rush et al. (2015) — 245 new graduate nurses in acute care settings in British Columbia	participation in formal new graduate transition program	higher scores on transition experience (workplace integration)
Spector et al. (2015) — 486 new graduate nurses in 51 hospitals in Illinois, North Carolina, and Ohio	participation in established (vs. limited) onboarding/transition program	nurse self-reports of: • fewer patient care errors • fewer negative safety practices employed • higher competency levels • lower work stress • better job satisfaction organization reports of: • higher retention rates

Standard 6. Professional Development		
Study:	***Pathway-relevant measure(s):***	***Associated outcome(s):***
Trinchero et al. (2013) — 827 nurses in 6 public and private hospitals in Italy	higher satisfaction with training and development provided by the hospital	higher employee engagement
Unruh & Zhang, 2014a — 533 newly licensed RNs in Florida	higher perceptions of having a good orientation	lower turnover (nurse reports of leaving a job within 1.5-2.5 years of graduating)
Unruh & Zhang, 2014b — 414 newly licensed RNs in Florida	more positive orientation experience	higher job satisfaction
Vander Elst et al. (2016) — 633 nurses from a large home healthcare organization in Belgium	more opportunities provided in the job situation to learn and to develop	• higher work engagement • lower burnout
Warshawsky et al. (2016) — 348 nurse managers working in 9 healthcare systems	organizational support for ongoing development of nursing leaders (culture of generativity)	• higher job satisfaction • lower intent to leave

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