State of the Science of Simulation 2013

Valerie Howard EdD MSN RN

Assistant Dean of External Affairs

Professor of Nursing

Director Regional Research and Innovation in Simulation Education (RISE) Center

President: International Nursing Association of Clinical Simulation and Learning (INACSL)

howardv@rmu.edu

Objectives

The learner will be able to:

- Summarize current research findings related to simulation based educational modalities
- Identify current trends in healthcare that can be enhanced with simulation
- Describe strategies for integrating simulation based training according to the most current evidence

Disclosure

- President: International Nursing Association for Clinical Simulation and Learning
- Co-Author: Elsevier Simulation Learning System (2009)

Thanks to TeamSTEPPS© Training Program: Essentials Course for teamwork slides

http://teamstepps.ahrq.gov/

How many years of experience to you have with simulation?

Then and Now


Supplement to
Clinical Simulation in Nursing
www.nursingsimulation.org
Volume 7 • Issue 4S • August 2011
Standards of Best Practice: Simulation
INACSL
Official Online Journal
of the International Nursing Association
for Clinical Simulation and Learning


Simulation in Healthcare
Journal of the Society for Simulation in Healthcare


TRIAL AND ERROR


INACSL


SSH
Society for Simulation in Healthcare

Resources

- International Nursing Association for Clinical Simulation and Learning (INACSL):
  http://www.inacsl.org/INACSL_2010/
- Society for Simulation in Healthcare (SSH):
  http://www.ssih.org/SSIH/ssih/Home/
- Simulation Innovation Resource Center (SIRC)
  http://sirc.nln.org/
- METI: Human Patient Simulation Network (HPSN)
  http://www.hspn.com/
- Laerdal: Simulation User Network (SUN)
  http://simulation.laerdal.com/

The International Nursing Association for Clinical Simulation and Learning (INACSL)

2011

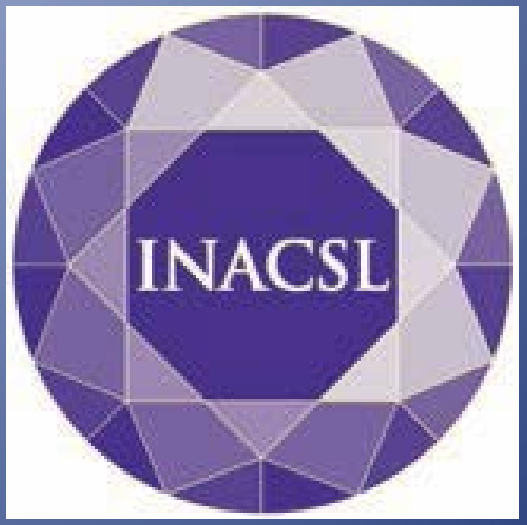
Standards of Best Practice: Simulation

Need for Standards

- Advanced the profession
- Advanced a discipline
- Developed by experts but enforced by regulatory bodies
  - Example: Aviation success

Standards of Best Practice

1. Terminology
2. Professional Integrity of Participant
   - Safe Environment; Confidentiality
3. Participant Objectives
4. Facilitation Methods
   - None, Partial, Full
5. Simulation Facilitator
   - RMU.edu/SimulationLeadership
   - Certification Programs
6. The Debriefing Process
   - DML, GAS, DASH, etc
7. Evaluation of Expected Outcomes



www.inacsl.org

New in 2013

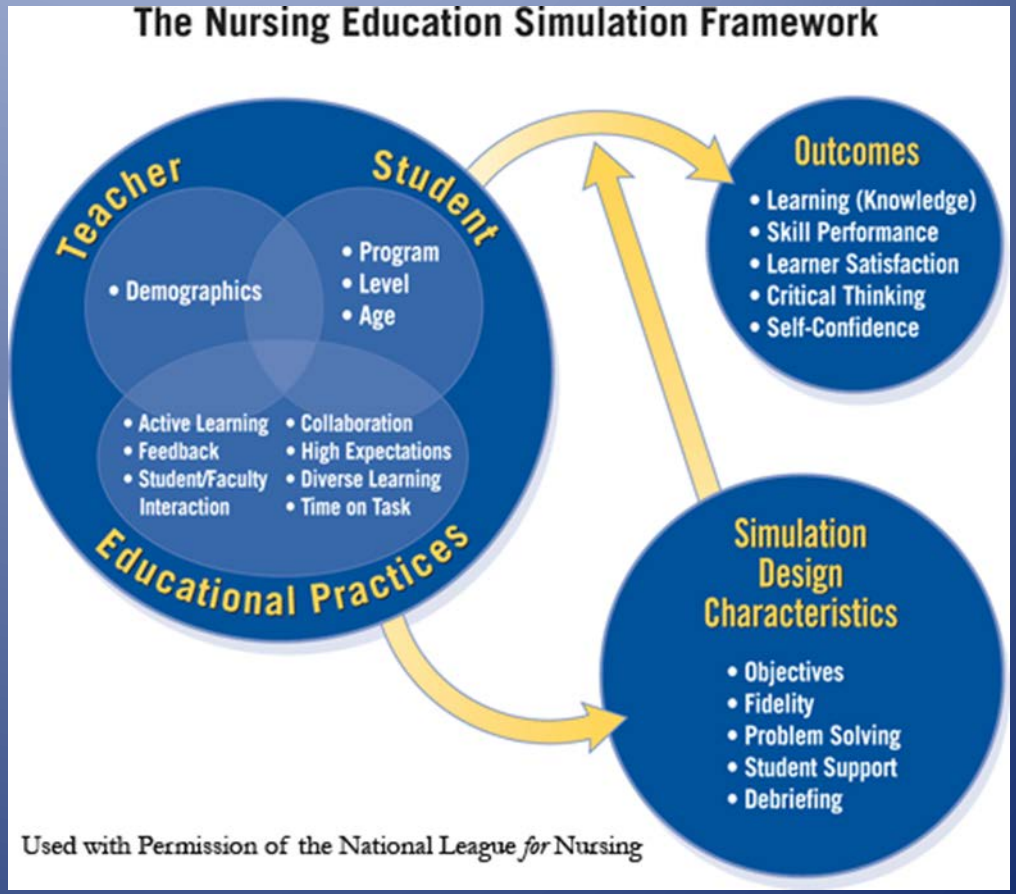
- Updated Standards
- Addition of Guidelines
- Remain Open Access

NCSBN Study

- One year has passed
- Multi-Site Study
- 10%, 25%, and 50% simulation
- Preliminary results
- More to come tomorrow!!

NLN Jeffries Simulation Framework Project

- INACSL
- Examining Constructs
- Publications
- Phase II



Simulation Design

- Theoretical Frameworks
  - Kolb's Experiential Learning
  - Lave and Wenger Situated Cognition
- Essential Elements
- Standardized Approach
- Dose / Response?

Facilitator Preparation

- Certificate Programs vs. Certification
- Faculty Development Workshops
- Vendor Sponsored Events
- Standards
  - INACSL
  - SSH Accreditation

Society for Simulation in Healthcare

- Certification for Instructors
  - Certified Healthcare Simulation Educator
- Accreditation for Simulation Centers
  - Core
    - Management and Leadership
    - Policies and Procedures
  - Research
  - Teaching and Assessment
  - Evaluation
  - Systems

Evaluation

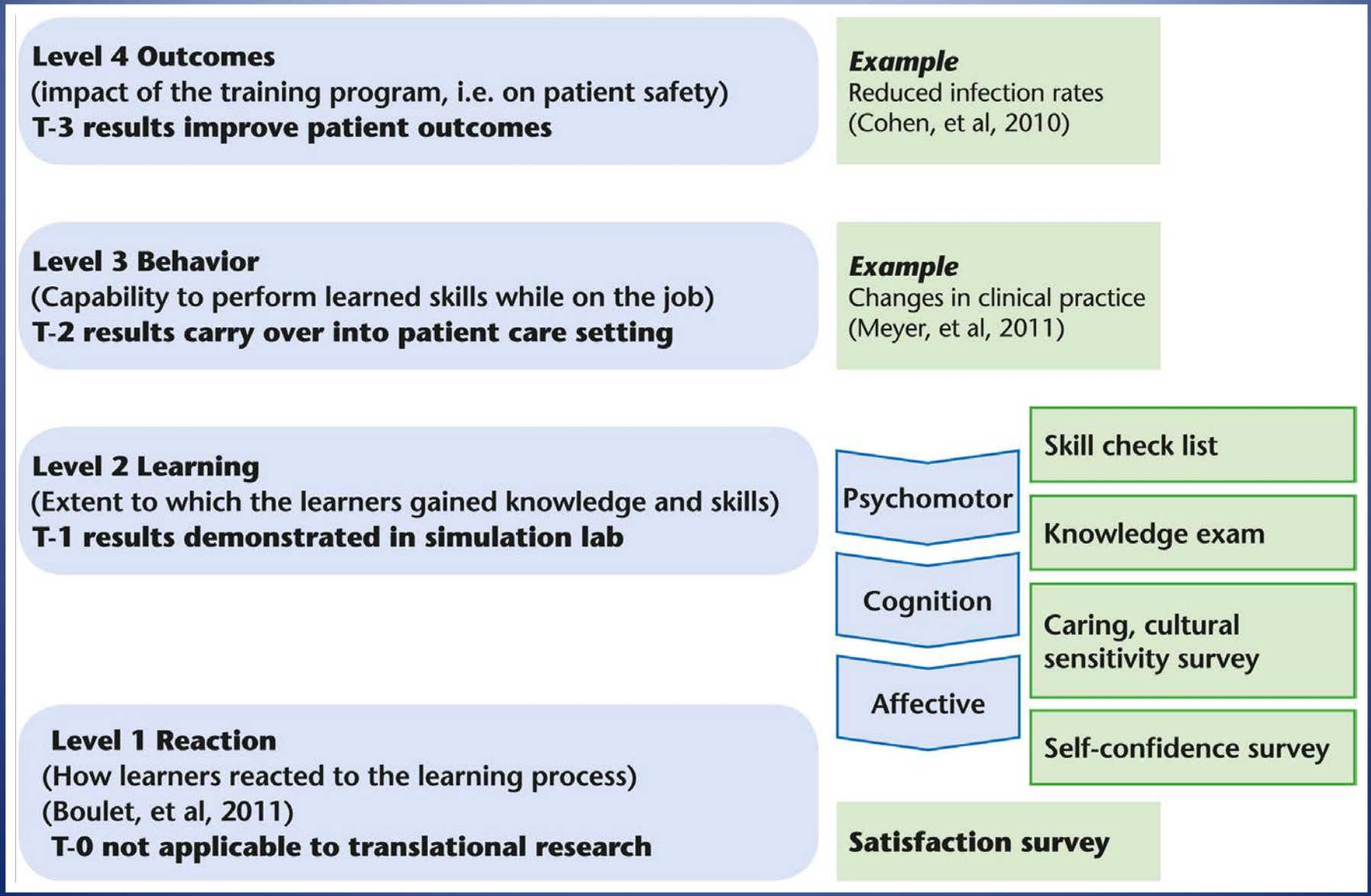
- Summative vs Formative
- Inter-rater Reliability
- Quality Improvement
  - Participant
  - Scenario
  - Program

An Updated Review of Published Simulation Evaluation Instruments

Katie Anne Adamson, PhD, RN, Suzan Kardong-Edgren, PhD, RN and Janet Willhaus, MSN, RN

Clinical Simulation in Nursing
DOI: 10.1016/j.ecns.2012.09.004

Figure 1



Source: Clinical Simulation in Nursing (DOI:10.1016/j.ecns.2012.09.004)

Debriefing Updates

- Importance of Training for Debriefer
- Knowledge, Skills, and Attitudes
- Safe Environment
- Participant vs Facilitator Led
- Models
  - Debriefing for Meaningful Learning (Dreifurst)
  - DASH (Harvard)
  - GAS

Standardized Patient and Hybrid Approaches

- Different Approaches
  - Mannequin
  - Standardized Patient
  - Hybrid
- Standards for each Method
- Fidelity Correlates with Objectives

Figure 29-1: Fidelity correlated with Objectives

Objective: The learner will	Type of Simulator
Accurately place central line catheter	Task-trainer
Maintain sterile technique when placing a central line	Task-trainer
Clearly communicate risks when obtaining consent from patient	Standardized patient
Use various communication techniques to calm patient's anxiety	Standardized patient
Recognize need for central line insertion during hypertensive crisis	High-fidelity simulator
Insert central line when rapid blood transfusion is required	High-fidelity simulator

Chart courtesy of Dr. Kim Leighton

From: Simulation in Graduate Education (Howard, Gore, Leighton) 2013 In Press

Interprofessional Education Teamwork and Simulation

True or False?

Interest in promoting more team-based education for US health professions is a phenomena which was introduced within the last decade

IOM Conference - 1972

- Steering Committee Recommendations
  - Organizational Level
  - Instructional Level
  - National Level

Then and Now

- Similar Recommendations (O'Neil & the Pew Health Professions Commission, 1998)
- Limiting Factors and Challenges (Schmitt, Baldwin, & Reeves, 2012)
- Continued concerns with preventable errors and quality
- Focus on teamwork training

Sue Sheridan Video

"**How** care is delivered is just as important as **what** care is delivered"

IPEC, 2011

Institute of Medicine Report

Impact of Error:

- 44,000–98,000 annual deaths occur as a result of errors
- Medical errors are the leading cause, followed by surgical mistakes and complications
- More Americans die from medical errors than from breast cancer, AIDS, or car accidents
- 7% of hospital patients experience a serious medication error

Federal Action:

By 5 years;

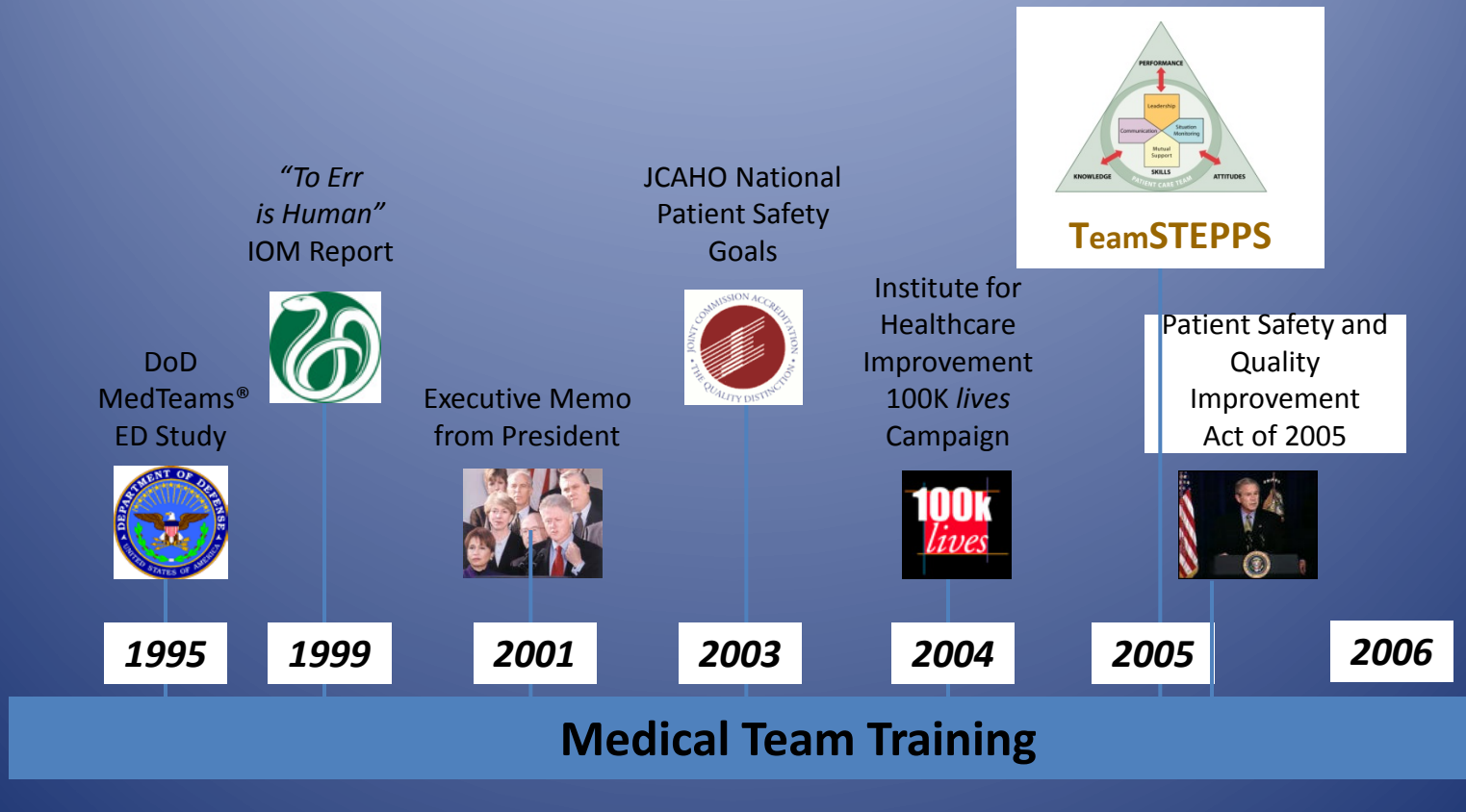
↓ medical errors by 50%,

↓ nosocomial by 90%; and

eliminate "never-events" (such as wrong-site surgery)

Cost associated with medical errors is $8–29 billion annually.

Patient Safety Movement



Today

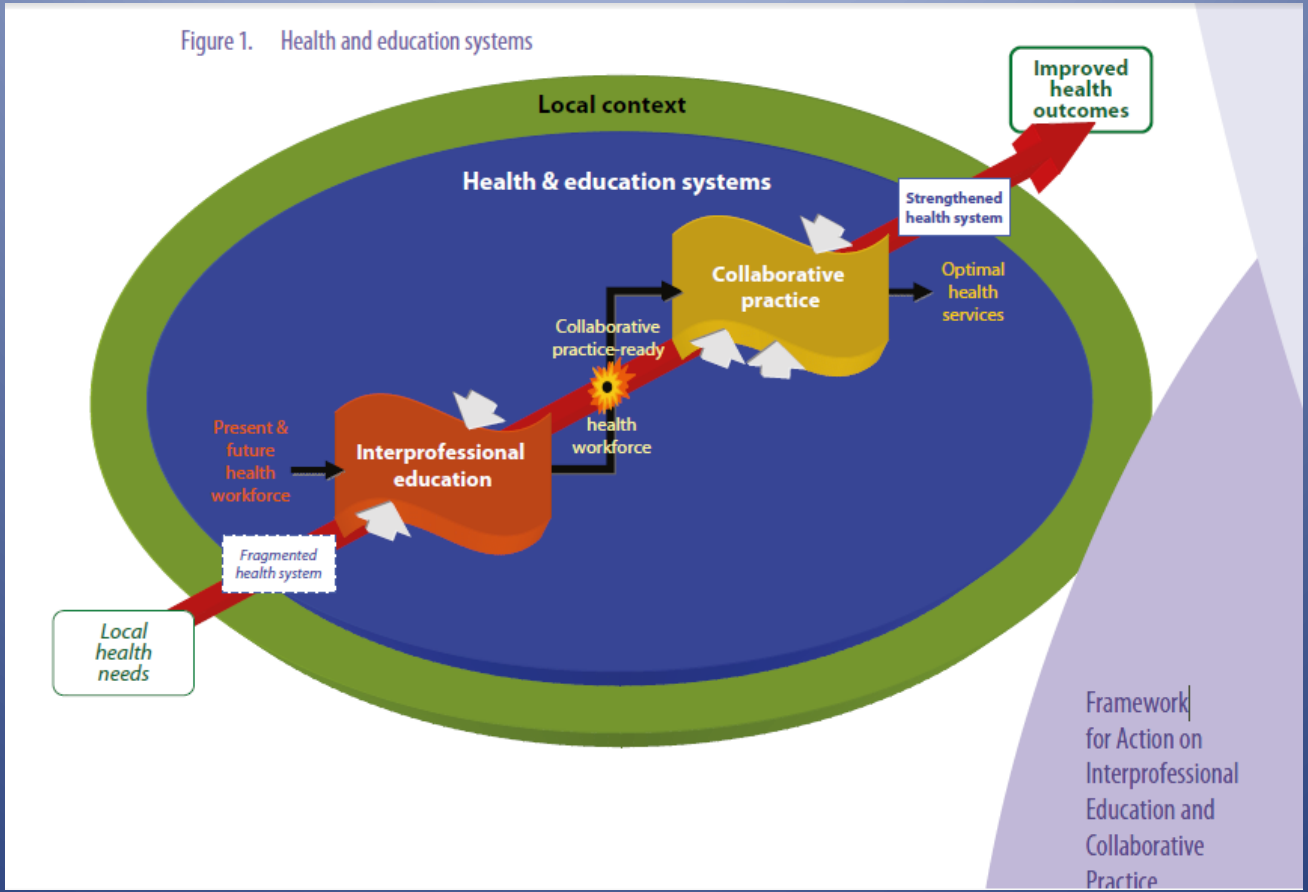
- Medical Mistakes – third leading cause of death in the US (Gupta, 2012)
- Harms remain
  - Little improvement in widespread patient safety efforts
  - Small improvements in focused efforts with nosocomial infections and surgical safety
    - Landrigan, et al. Temporal Trends in Rates of Patient Harm Resulting from Medical Care, New England Journal of Medicine, November 25, 2010: 363(22); 2124-34.)

Interprofessional Education (IPE)

When students from two or more professional learn about, from and with each other to enable effective collaboration and improve health outcomes

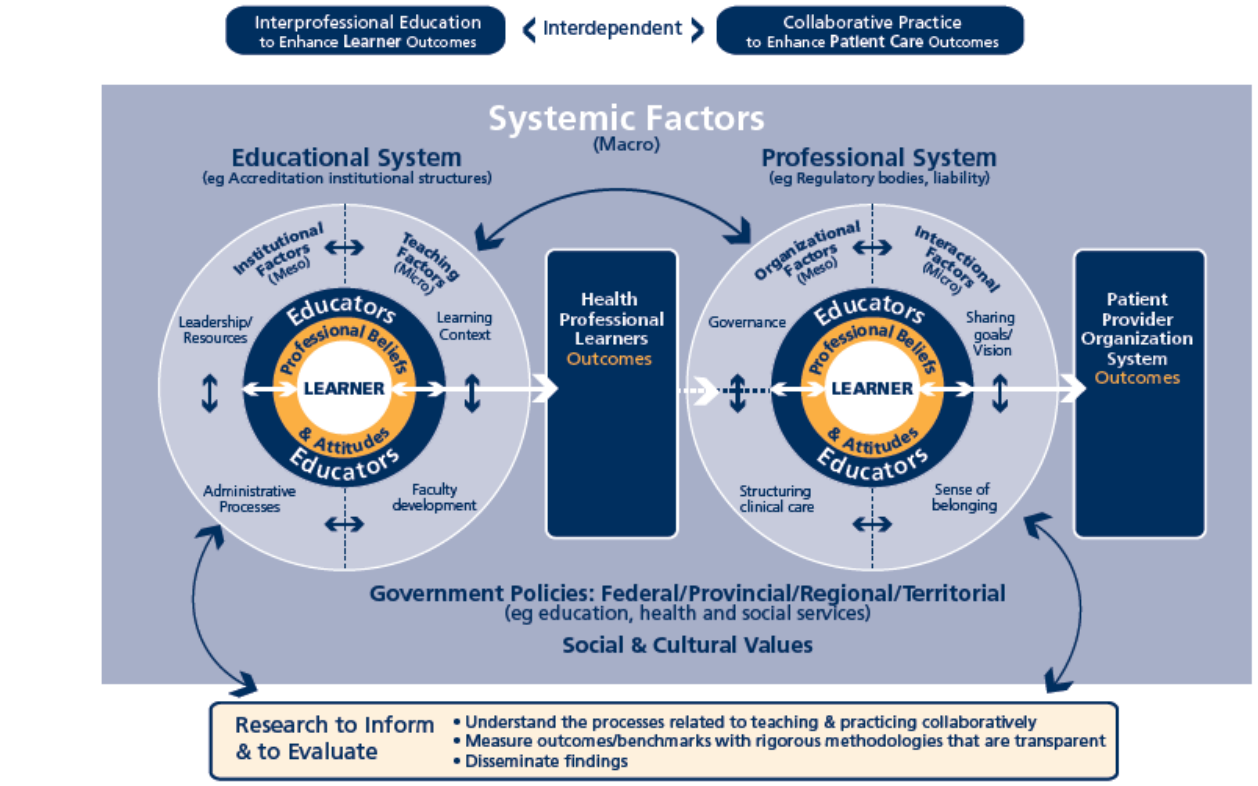
WHO, 2010

WHO Framework (2010)

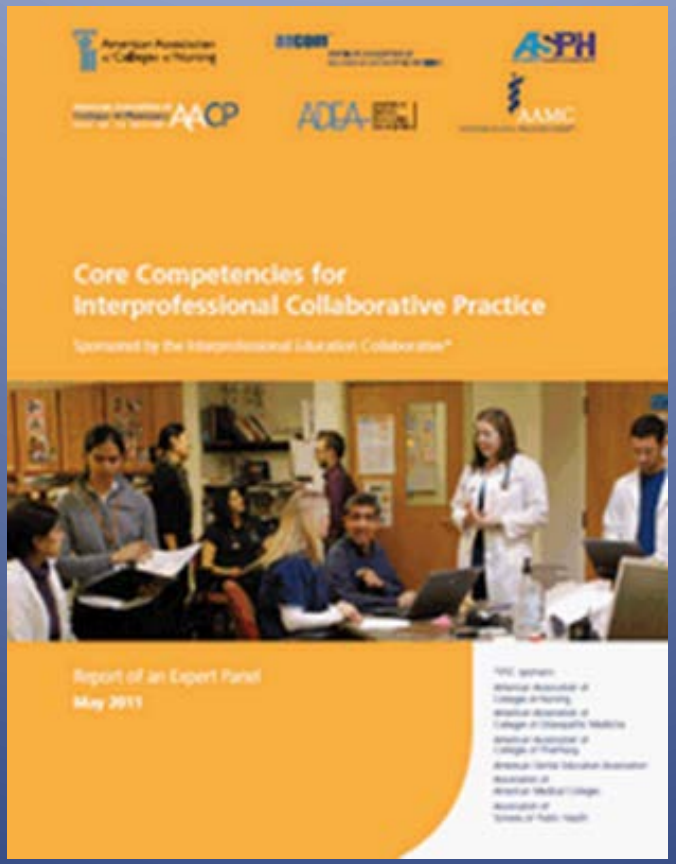


D'Amour, D. & Oandasan, I. (2005)

FIGURE 1: Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept.



IPEC Core Competencies



RMU Regional RISE Center
INACSL

Core Competencies for Interprofessional Collaborative Practice

- May, 2011
- Expert Panel
  - American Association of Colleges of Nursing
  - American Association of Colleges of Osteopathic Medicine
  - American Association of Colleges of Pharmacy
  - American Dental Education Association
  - Association of Medical Colleges
  - Association of Schools of Public Health

Interprofessional Competencies in Healthcare

Integrated enactment of knowledge, skills, and values / attitudes that define working together across the professions, with other healthcare workers, and with patients, along with families and communities, as appropriate to improve health outcomes in specific care contexts

IPEC Report, 2011

Core Competencies for Interprofessional Collaborative Practice

- Four Competency Domains
  - Values/Ethics for Interprofessional Practice
  - Roles / Responsibilities
  - Interprofessional Communication
  - Teams and Teamwork

"Work with individuals of other professions to maintain a climate of mutual respect and shared values"

- Place the interests of patients and populations at the center of interprofessional health care delivery.
- Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of team-based care.
- Embrace the cultural diversity and individual differences that characterize patients, populations, and the health care team.
- Respect the unique cultures, values, roles/responsibilities, and expertise of other health professions.
- Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services.
- Develop a trusting relationship with patients, families, and other team members (CIHC, 2010).
- Demonstrate high standards of ethical conduct and quality of care in one's contributions to team-based care.
- Manage ethical dilemmas specific to interprofessional patient/ population centered care situations.
- Act with honesty and integrity in relationships with patients, families, and other team members.
- Maintain competence in one's own profession appropriate to scope of practice.

"Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served"

- Communicate one's roles and responsibilities clearly to patients, families, and other professionals.
- Engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs.
- Explain the roles and responsibilities of other care providers and how the team works together to provide care.
- Use the full scope of knowledge, skills, and abilities of available health professionals and healthcare workers to provide care that is safe, timely, efficient, effective, and equitable.
- Communicate with team members to clarify each member's responsibility in executing components of a treatment plan or public health intervention.
- Forge interdependent relationships with other professions to improve care and advance learning.
- Engage in continuous professional and interprofessional development to enhance team performance.
- Use unique and complementary abilities of all members of the team to optimize patient care.
- Recognize one's limitations in skills, knowledge, and abilities.

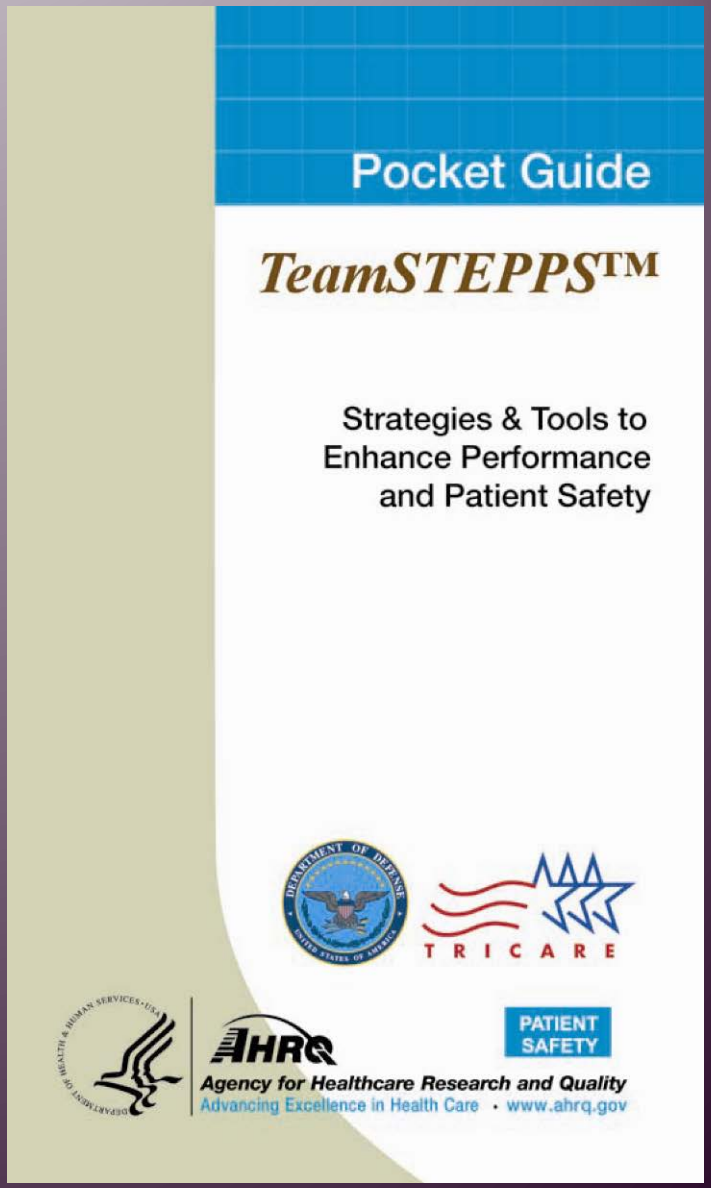
"Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease."

- Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function.
- Organize and communicate information with patients, families, and healthcare team members in a form that is understandable, avoiding discipline-specific terminology when possible.
- Express one's knowledge and opinions to team members involved in patient care with confidence, clarity, and respect, working to ensure common understanding of information and treatment and care decisions.
- Listen actively, and encourage ideas and opinions of other team members.
- Give timely, sensitive, instructive feedback to others about their performance on the team, responding respectfully as a team member to feedback from others.
- Use respectful language appropriate for a given difficult situation, crucial conversation, or interprofessional conflict.
- Recognize how one's own uniqueness, including experience level, expertise, culture, power, and hierarchy within the healthcare team, contributes to effective communication, conflict resolution, and positive interprofessional working relationships (University of Toronto, 2008).
- Communicate consistently the importance of teamwork in patient-centered and community-focused care.

"Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient / population centered care that is safe, timely, efficient, effective, and equitable"

- Describe the process of team development and the roles and practices of effective teams.
- Develop consensus on the ethical principles to guide all aspects of patient care and team work.
- Engage other health professionals—appropriate to the specific care situation—in shared patient-centered problem-solving.
- Integrate the knowledge and experience of other professions— appropriate to the specific care situation—to inform care decisions, while respecting patient and community values and priorities/ preferences for care.
- Engage self and others to constructively manage disagreements about values, roles, goals, and actions that arise among healthcare professionals and with patients and families.
- Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care.
- Reflect on individual and team performance for individual, as well as team, performance improvement.
- Use process improvement strategies to increase the effectiveness of interprofessional teamwork and team-based care.
- Use available evidence to inform effective teamwork and team-based practices.
- Perform effectively on teams and in different team roles in a variety of settings.
- Apply leadership practices that support collaborative practice and team effectiveness.

Essentials Course



AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov
PATIENT SAFETY
TRICARE

Key Principles

Team Structure

Delineates fundamentals such as team size, membership, leadership, composition, identification and distribution

Leadership

Ability to coordinate the activities of team members by ensuring team actions are understood, changes in information are shared, and that team members have the necessary resources

Situation Monitoring

Process of actively scanning and assessing situational elements to gain information, understanding, or maintain awareness to support functioning of the team

Mutual Support

Ability to anticipate and support other team members' needs through accurate knowledge about their responsibilities and workload

Communication

Process by which information is clearly and accurately exchanged among team members

How does this relate to simulation?

Examples

- Teamwork training throughout the curriculum

- IPE Collaborative Simulation Project
  - Physicians, BSN and DNP Nurses, NMT
  - Three scenarios incorporating IPEC
  - Teambuilding Activity
  - Evaluation using RIPLS, Sim Perspective, and Leadership and Team Behavior Measurement Tool
  - Canadian Interprofessional Health Collaborative
  - http://www.cihc.ca/resources/evaluation_instruments

Integrating Teamwork / IPE Training through Simulation

- Develop the Plan
- Use Current Evidence and Standards
- Curricular Map
- Include the IPE Team with Planning
- Utilize Standards
- Involve Experts
  - Content
  - Simulation
  - Teamwork
- Pilot Test

Simulation Design Using the Standards

- Standard 2
  - Confidentiality Statements
  - Professionalism
- Standard 3
  - Curricular Map RISE
  - Mental Health / Med Surg Scenario
- Standard 4
  - Facilitation Methods based upon Objectives
- Standard 5
  - Facilitator Development Activities (next slide)
- Standard 6
  - Methods of Debriefing
    - DASH
    - G.A.S
  - Evidence based
- Standard 7
  - Evaluation of Scenario
  - METI SET
  - Evaluation of Participant

New Uses for Simulation

- Different Environments
  - In situ
  - Long Term Care
    - RAVEN Initiative
- QSEN
- NCLEX Remediation

Faculty Development Resources

- **Organizations**
  - INACSL www.inacsl.org
  - SSH www.ssih.org
- **Corporate Workshops**
  - Laerdal SUN
  - METI HPSN
- **Academic Programs**
  - Harvard Center for Medical Simulation
    - http://www.harvardmedsim.org/
  - Robert Morris University Leadership in Simulation Instruction and Management Certificate Program (online)
    - www.rmu.edu/simulationleadership
  - BryanLGH Simulation Certificate Program (online)
    - http://www.bryanhealth.com/simulationeducation

References

Agency for Healthcare Research and Quality. TeamSTEPPS National Implementation. TeamSTEPPS curriculum tools and materials. Rockville, MD. Retrieved from http://teamstepps.ahrq.gov/

Carpenter, J. (1995). Interprofessional education for medical and nursing students: evaluation of a programme. Medical Education, 29(4), 265-272.

D'Amour, D. & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. J

Eppich, W., Howard, V., Vozenilek, J., & Curran, I. (2011). Simulation based team training in healthcare. Simulation in Healthcare, 6(7), 14-19.ournal of Interprofessional Care, Supplement 1, 8-20

INACSL Board of Directors (2011a). Standards of Best Practice: Simulation. Clinical Simulation in Nursing, 7(4S), s1-s2.

Institute of Medicine. (1972). Educating for the heath team. Washington, D.C.: National Academy of Sciences.

Institute of Medicine. (2000). To err is human: Building a safer health system. Washington DC: National Academy Press.

Institute of Medicine. (2001). Crossing the quality chasm. Washington DC: National Academy Press.

Institute of Medicine. (2003). Health Professions Education: A Bridge to Quality. Washington, DC: The National Academies Press.

Kaakinen, J., & Arwood, E. (2009). Systematic review of nursing simulation literature for use of learning theory. International Journal of Nursing Education Scholarship, 6(1), 1-20

Landrigan, et al. Temporal Trends in Rates of Patient Harm Resulting from Medical Care, New England Journal of Medicine, November 25, 2010: 363(22); 2124-34.)

Lapkin, S., Levett-Jones, T., Bellchambers, H., & Fernandez, R. (2010, November). Effectiveness of patient simulation manikins in teaching clinical reasoning skills to undergraduate nursing students: A systematic review. Clinical Simulation in Nursing, 6(6), e207-e222. doi:10.1016/j.ecns.2010.05.005

Interprofessional Education Collaborative Expert Panel. (2011).Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative. The Joint Commission's Annual Report on Quality and Safety 2007: Improving America's Hospitals

McFadyen, A. K., Maclaren, W. M., & Webster, V. S. (2007). The Interdisciplinary Education Perception Scale (IEPS): An alternative remodeled sub-scale structure and its reliability. Journal of Interprofessional Care, 21(4), 433-443.

McGaghie, W., Issenberg, S. B., Petrusa, E., &Scalese, R. (2009). A Critical Review of Simulation-based Medical Education Research: 2003-2009. Medical Education. 44, 50-63.

Mickan & Rodger (2000). Characteristics of Effective Teams: A Literature Review. Australian Health Review 23(3).

Nance, J. (2008) Why Hospitals Should Fly: The ultimate flight plan to patient safety and quality care. Second River Healthcare Press

O'Neil, E.H. & the Pew Health Professions Commission. (1998). Recreating health professional practice for a new century-The fourth report of the Pew Health Professions Commission. San Francisco, CA: Pew Health Professions Commission.

Parsell, G. & Bligh, J. (1999). The development of a questionnaire to assess the readiness for health care students for interprofessional learning (RIPLS). Medical Education, 33, 95-100.

Salas, Cooke, & Rosen (2004). On Teams, Teamwork, and Team Performance: Discoveries and Developments. HUMAN FACTORS,Vol. 50, No. 3, June 2008, pp. 540–547.

Schmitt, M.H., Baldwin, D.C. Jr., & Reeves, S. (2012). Continuing interprofessional education: Collaborative learning for collaborative practice. In D.K. Wentz (Ed.). Continuing medical education: Looking back, planning ahead. Hanover, NH: Dartmouth College Press.

Sidle, C. Clinton (2005). The Leadership Wheel: Five Steps for Achieving Individual and Organizational Greatness. Palgrave Macmillan.

World Health Organization (WHO), (2010). Framework for action on interprofessional education& collaborative practice. Geneva: World Health Organization.