Evidenced-based Teaching: Gaming

ROXANNE SABATINI, MSN, RN-BC

Evidenced Based Teaching Strategies

- Goal of learning:
  - Facilitate change in learners
  - Encourage discovery leading to critical thinking
  - Facilitate self-directed activities
  - Teaching strategies that are evidence-based
  - Actively engage learners
- Despite above, lecture-based teaching remains top strategy used

(Breytenbach, Ham-Baloyi, & Jordan, 2017)

Evidenced-based teaching strategies

- **8** Evidenced-based teaching strategies
  - E-learning*
  - Concept mapping
  - Internet-based learning *
  - Web-based learning *
  - Educational/ computer gaming *
  - Problem-based learning (PBL)
  - Case study
  - EB interactive strategies

Breytenbach et al. (2017)

- **7** meaningful & engaging teaching strategies
  - Technology & on-line teaching *
  - Simulation *
  - Gaming
  - Art teaching
  - Narrative teaching
  - Problem-based teaching
  - Reflection teaching

Crookes et al. (2013)

Focus on Gaming

Enhanced learner experience

- Interactive
- Competitive
- Promotes teamwork
- More meaningful for learners
- More enjoyable-better learning retention
- Can simulate real-life situations
- Allows for incremental milestone attainment
- Motivation

Purposes for game-based teaching

- Bridge the gap between theory & practice
- Disseminate new information
- Reinforce/Review learning outcomes
- Challenge learners to think more critically
- Influence/ persuade decision
- Practice decision making
- Skill practice (communication)
- Data collection: research & innovation

(Breyenbach et al., 2017; Crookes et al., 2013; Davidson & Candy, 2016; De Lope & Medina-Medina, 2016)

Types of Gaming

- Computer-based gaming (individual)
  - Quest-based learning (Davidson et al., 2016)
- Internet-based gaming/ competitive (Davidson et al., 2016)
- Board Games (Yoon, Rodriguez, Faselis, & Lippis, 2014).
- Card Games
- Team-based games
  - Debate
  - Mock Trials
  - Game Show
  - Power point games

Gaming in healthcare education

- Language teaching
- Sex education
- Inter-professional communication
- Addiction prevention in adolescents

(De Lope & Medina-Medina, 2016)

Barriers to the use of gaming

- Technology (NLN, 2015)
  - Competence/ confidence of educator
  - Time to create and practice
  - Cost
  - Accessibility
- Low technology
  - Same as above except accessibility

Gaming to learn EBP

- Quest type of computer based gaming
  - TED Talk information introduction
  - Quest badges earned for completion of milestones
  - Learners compete against each other
  - (Davidson et al., 2016)
- Board Games to teach EBP for CAUTI reduction
  - Practical knowledge application
  - Can be used in fair type of venue or in a classroom
  - (Crookes et al., 2014)
- Card Games
  - Used to learn new knowledge
  - To reinforce learning in lieu of quizzes….

Team Dynamics: Shared Mental Model

- Characteristics of highly effective teams:
  - Known to ech other
  - Worked previously together
  - Practiced as a team
  - Need a shared objective or goal –Shared vision
  - Communicate effectively

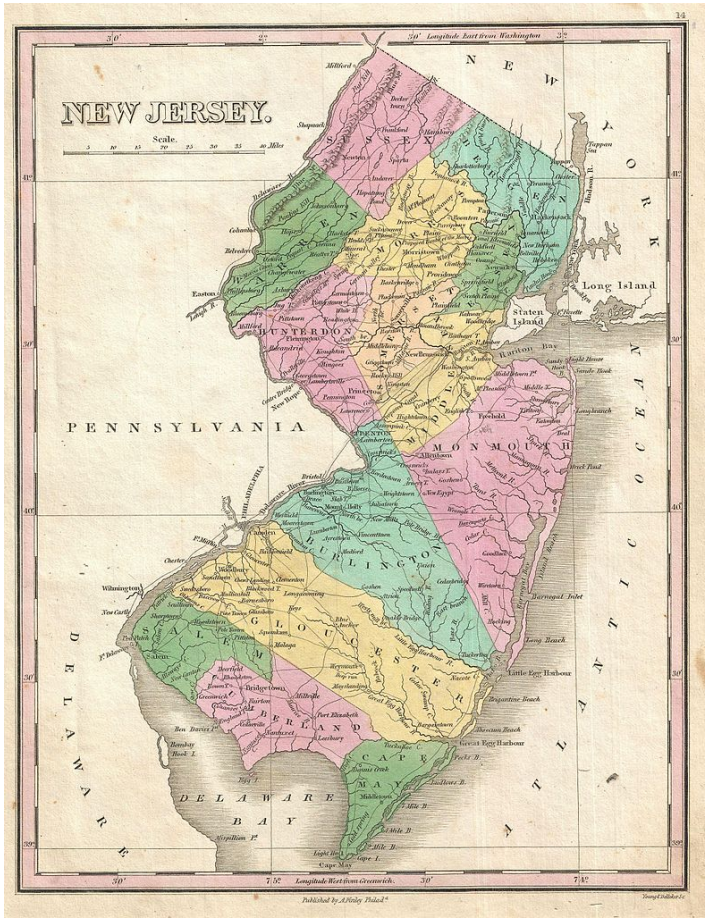
- Shared mental model –explains the framework for highly effective teams

(Espevik, Johnson, & Eid, 2011; Lancaster, Westphal, & Jambunathan, 2015; McComb & Simpson, 2014; Razzouk & Johnson, 2013; Takahashi & Saito, 2013).

Gaming/ Team-based learning

HOW CAN THIS BE APPLIED TO LEARNING EBP?

The PICO Question



A well-constructed PICO question serves as a roadmap to research and EBP

Pre-quiz: Which of the following refers to the “P” in PICO?

A.

Medication Education

B.

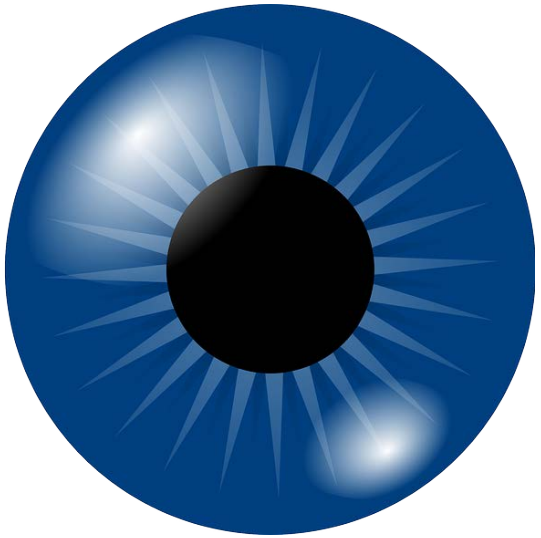
Reduced Infection Rates

C.

Pre-teen mothers in rural communities

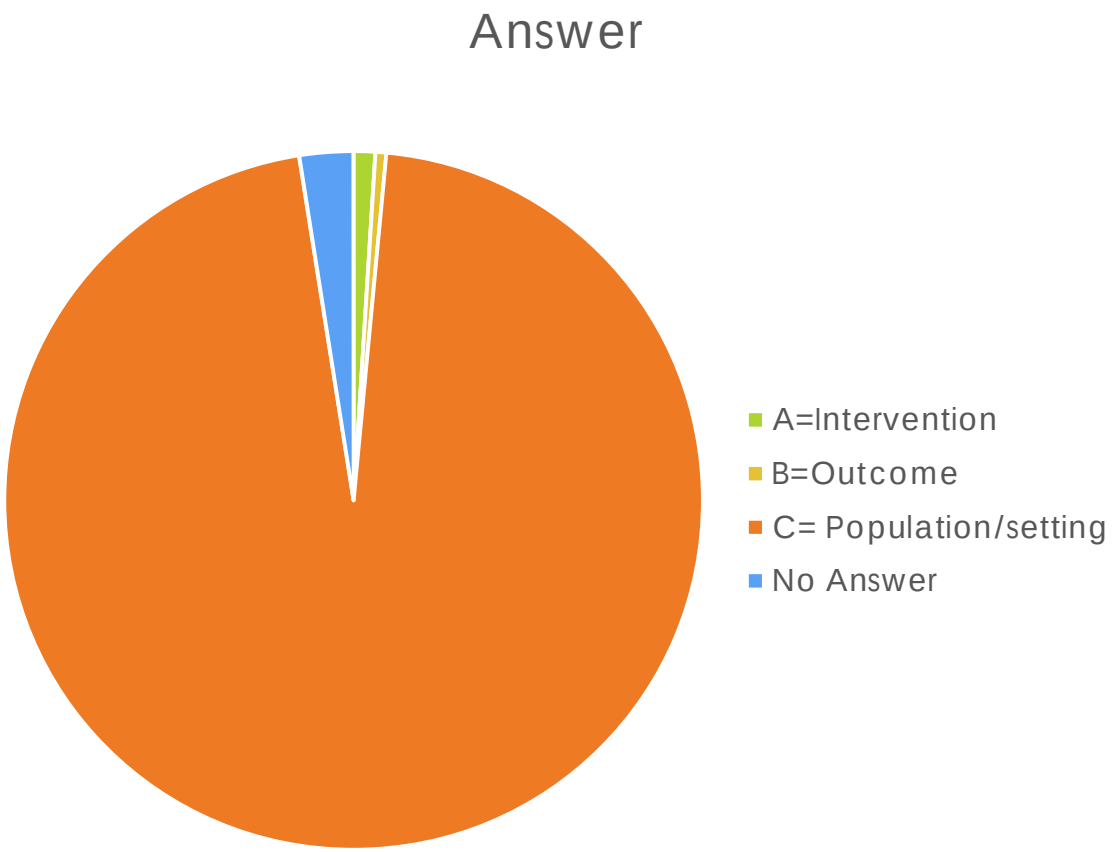
Scanning for the answer.....

- Hold your “A” Card, “B” card, or “C” card over your head
- We will scan your answers....



P= Answer C

Population/ Problem/ Setting



PICO: A well constructed question

- Population/ Problem
- Intervention
- Comparison
- Outcome

Asking a PICO question

- **P:** Patient/Population/Problem – specific/ focused (age, sex, setting, ethnicity, condition, disease, type of patient, or population)

Asking a PICO question

- **I:** Intervention or change which is of interest. Treatment, medications, education, diagnostic tests or best practice

Asking a PICO question

- **C**: comparison with other interventions or current practice
- different treatment, placebo or control group – absence of risk factor or condition.
- What is the main alternative?

Asking a PICO Question

- **O:** Outcome: written in measurable terms, expected outcomes based on the intervention identified, e.g., decrease in fall rate, decrease in length of stay, increase in patient satisfaction.
- desired measure, improvement in condition, (BP, Pulse), length of stay, quality of life, decreased mortality

Asking a PICO Question

- **T**: Time is another factor identified by Dr. Koshar. What is the time it takes to demonstrate the outcome after an intervention is initiated?

Hastings, C. & Fisher, C. A. (2014). Searching for proof: Creating and using an actionable PICO question. Nursing Management, 45(8), 9-12. doi: 0.1097/01.NUMA.0000452006.79838.67.

Guide to Creating a Strong PICO Question

Among (what patient/group population/problem)_____

Does (Intervention) _____

Compared to or versus _____

Will the (outcome) _____ be observed

Adapted from Cincinnati's Children's Hospital
http://www.cincinnatichildrens.org/assets/0/78/176/4711/4715/fca30651-b07c-43be-a28a-80e171e7cca4.pdf; accessed 09/02/2013

PICO Questions

- What patient's do best after LVAD for end stage HF?

LVAD

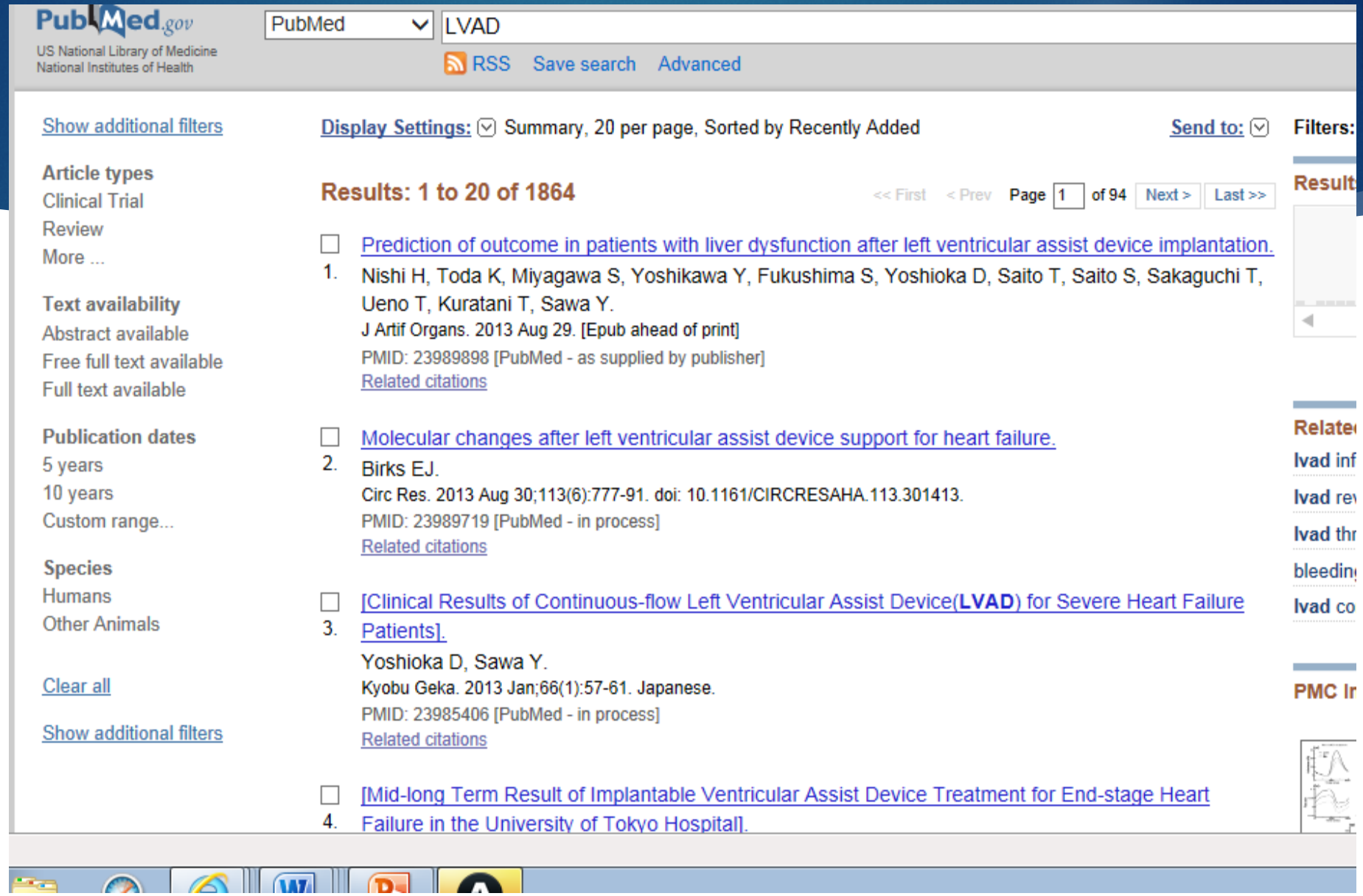
1864

- For patients (50-70 years) with end stage HF undergoing LVAD, do patients with family members as caregivers have a better quality of life?

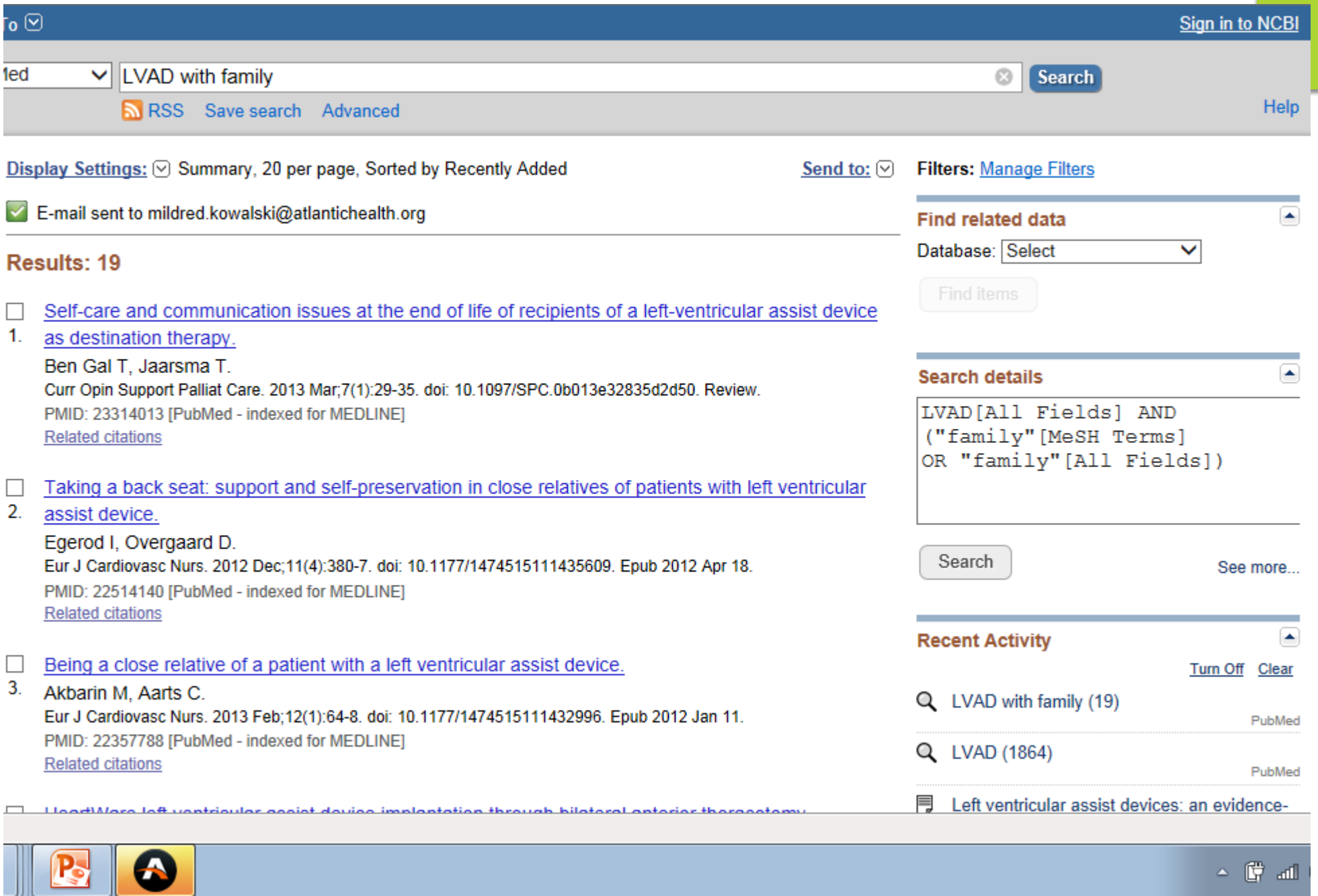
LVAD with Family

19

Pubmed search: LVAD



Pubmed search: LVAD with family



PICO Criteria

- Population
- Intervention
- Comparison
- Outcome
- Time

- HF, 50 – 70 years of age
- LVAD for end stage HF
- Patients with family members as caregivers and patients without family caregivers
- Quality of life
- Within three months of the LVAD

Post-quiz: Which of the following refers to the “I” in PICO?

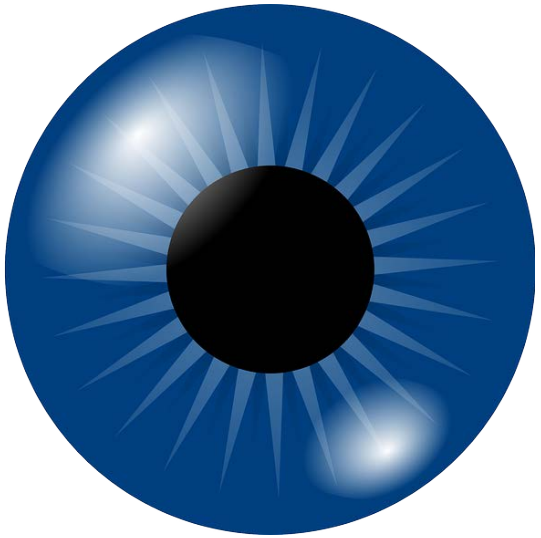
A. Hemodialysis patients in the outpatient setting

B. Chlorhexidine bathing

C. Catheter associated blood stream infections

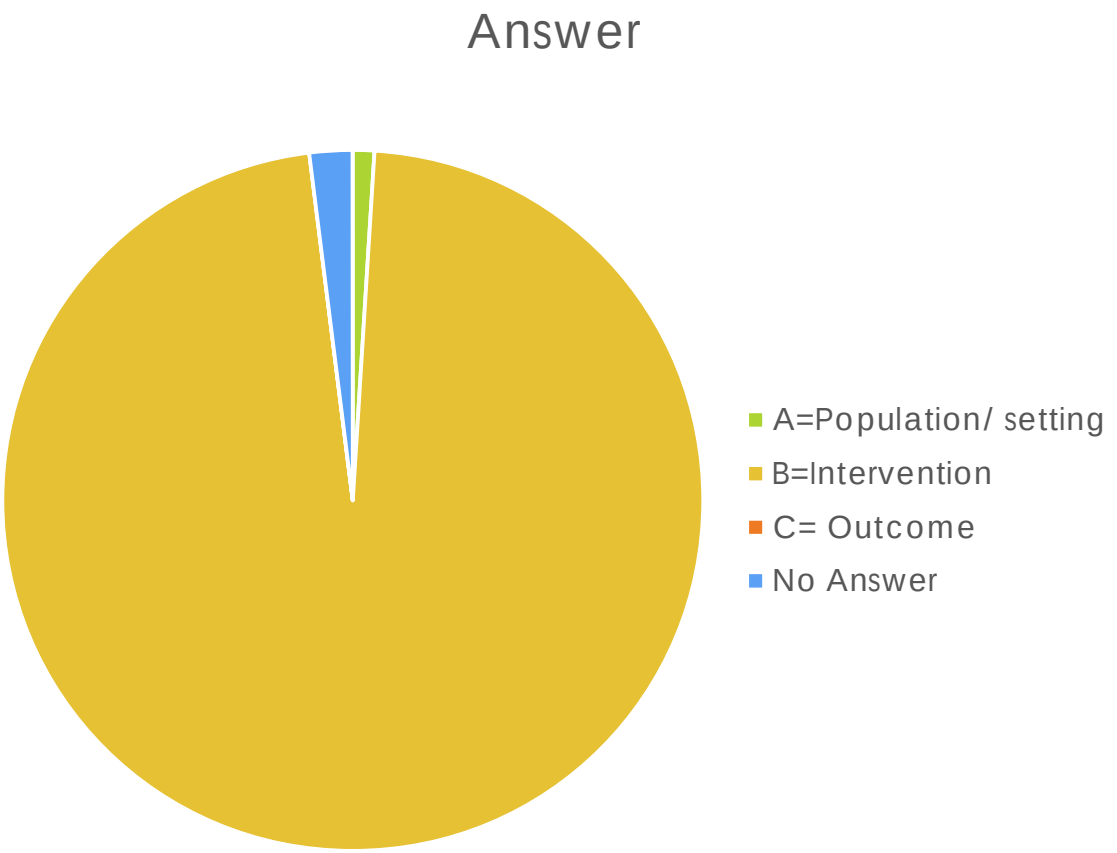
Scanning for the answer.....

- Hold your “A” Card, “B” card, or “C” card over your head
- We will scan your answers....



P= Answer B

Intervention



How to play the PICO Game

- Everyone is issued an envelope with either P, I C, or O
- Please locate 3 partners to pool your knowledge
- Once you assembled team: Please share name, place of employment, and one interesting fact about self
- Create a name for your team
- Now pick your leader!
- Leader assigns roles: Scribe, Communicator, Runner, & Leader

Send the runner to collect game

- Place your team name on the top of the scenario form
- Piece together some strong PICO questions to match with scenarios
- Write down a well-formulated PICO question for each scenario
- Once complete, send leader up to submit answers

PICO question development

- Individually and in group brainstorm a burning question from your practice
- Work as a team to formulate one or more PICO questions
- Share your question….
- Text to # 973-309-6270
- Take selfie of team with question as picture title and text to self & team

References

Breytenbach, C., Ham-Baloyi, W., & Jordan, P. J. (2017). An integrative literature review of evidence-based teaching strategies for nurse educators. *Nursing Education Perspectives, 38*(4), 193-197. doi:http://dx.doi.org.library.capella.edu/10.1097/01.NEP.0000000000000181.

Crookes, K., Crookes, P. A., & Walsh, K. (2013). Meaningful and engaging teaching techniques for student nurses: A literature review. *Nurse Education in Practice, 13*(4), 239-43. doi:http://dx.doi.org.library.capella.edu/10.1016/j.nepr.2013.04.008.

Davidson, S. J., & Candy, L. (2016). Teaching EBP Using Game-Based Learning: Improving the Student Experienc. *Worldviews On Evidence-Based Nursing, 13*(4), 285-293. doi:10.1111/wvn.12152.

De Lope, R. P. & Medina-Medina, N, (2016). A Comprehensive Taxonomy for Serious Games. *Journal of Educational Computing Research, 55*(5), 629 – 672. https://doi- org.library.capella.edu/10.1177%2F0735633116681301.

Espevik, R., Johnsen, B.H., & Eid, J. (2011). Outcomes of Shared Mental Models of Team Members in Cross Training and High-Intensity Simulations. *Journal of Cognitive Engineering and Decision Making, 5*(4), 353-376.

Hastings, C. & Fisher, C. A. (2014). Searching for proof: Creating and using an actionable PICO question. *Nursing Management, 45*(8), 9-12. doi: 0.1097/01.NUMA.0000452006.79838.67

References continued

Johns Hopkins Hospital/University. (2018). Johns Hopkins Nursing Evidence-Based Practice Appendix B: Question Development Tool. Retrieved from

Lancaster, R. J., Westphal, J., & Jambunathan, J. (2015). Using SBAR to promote clinical judgment in undergraduate nursing students. Journal of Nursing Education, 54(3), S31-34. doi:http://dx.doi.org.library.capella.edu/10.3928/01484834-20150218-08

McComb, S., & Simpson, V. (2014). The concept of shared mental models in healthcare collaboration. Journal Of Advanced Nursing, 70(7), 1479-1488. doi:10.1111/jan.12307.

Milner, K. A. & Cosme, S. (2017). The PICO Game: An Innovative Strategy for Teaching Step 1 in Evidence-Based Practice. *Worldviews on Evidence-Based Nursing, 14*(6), 514–516.

National League for Nursing. (2015). National League Of Nursing. (2015). A vision for the changing faculty role: Preparing students for the technological world of health care. NLN Vision Series. Retrieved on March 13, 2016 from: https://www.nln.org/docs/default-source/about/nln-vision-series- (position-statements)/a-vision-for-the-changing-faculty-role-preparing-students-for-the-technological-world-of-health-care.pdf?sfvrsn=0.

Razzouk, R., & Johnson, T. E. (2013). Case studies' effect on undergraduates' achievement, attitudes, and team shared mental models in educational psychology. *Educational Technology, Research and Development, 61*(5), 751-766. doi:http://dx.doi.org.library.capella.edu/10.1007/s11423-013-9307-4.

Takahashi, S., & Saito, E. (2013). Unraveling the process and meaning of problem-based learning experiences. *Higher Education, 66*(6), 693-706. doi:http://dx.doi.org.library.capella.edu/10.1007/s10734-013-9629-5

Yoon, B., Rodriguez, L., Faselis, C. J., & Liappis, A. P. (2014). Using a board game to reinforce learning. The Journal of Continuing Education in Nursing, 45(3), 110-1. doi:http://dx.doi.org.library.capella.edu/10.3928/00220124-20140224-14.