Be a Graphic Artist for a Day: How to Present Posters that Grab Your Attention

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Objectives

After attending this session, participants will be able to:

1. Apply the psychology of attention and interest in poster sessions to poster design
2. Incorporate graphical design principles to maximize the impact of a scientific poster
3. Give a successful poster session presentation
The Oscars of Posters
Hyperthermia, Not Hyperoxia, Exacerbates Hypoxic-Ischemic Brain Injury in the Term-Equivalent Neonatal Rat

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Introduction
- Hypoxic-ischemic encephalopathy (HIE) occurs in 1-3 per 1,000 live term births
- HIE is one of the most commonly recognized causes of severe, long-term neurologic deficits in children
  - Developmental delay
  - Mental retardation
  - Cerebral palsy
  - Seizures and epilepsy
- Damage occurs in two phases: during the acute insult and a recovery period
- Clinical and experimental data suggest that variations in both oxygen and temperature may modulate the extent of brain injury during recovery

Objective
- To examine the effects of hyperoxia and hyperthermia on seizures and brain injury immediately following resuscitation of the asphyxiated newborn

Hypothesis
- Neonatal rats recovered in hyperoxia and/or hyperthermia after a hypoxic-ischemic insult will have
  - More seizures
  - Larger infarcts
  - Than those recovered in a normoxic-normothermic environment

Methods: Injury Assessment
- Animals returned to dam and sacrificed at 72 hours
- Brains extracted and flash frozen (isopentane, T -30°C)
- Coronal cryosections (18µm) from bregma -1.80 to -4.30mm, H&E stained
- Percent infarct area of isplateral hemisphere calculated (ImageJ, NIH software)
- Infarct (%) = 100 × (Vc - Vl)/Vc
  - Vc - Volume of control hemisphere
  - Vl - Volume of tissue in the hypothermic hemisphere
- Data was analyzed using ANOVA and Wilcoxon rank-sum tests

Results: Brain Injury
- Recovery group
- Average infarct area (%) ± SEM
- Deaths during recovery

- Normal-normothermia
  - 35 61.0 ± 2.9 0
- Hyperoxia
  - 10 59.4 ± 6.7 0
- Hyperthermia
  - 10 73.2 ± 3.1* 0
- Hyperoxia-hyperthermia
  - 17 77.3 ± 2.4**

- *P < 0.05 vs. normoxia-normothermia
- **P < 0.001 vs. normoxia-normothermia
- Rats recovered in a hyperthermic or combined hyperthermic/hypoxic environment had similar mean infarcts that were larger than those recovered in normoxia-normothermia (P < 0.02)
- Rats recovered in a hyperoxic environment showed no difference in infarct versus the normothermic-normoxic recovered rats
- Two rats in the combined group died during the recovery period

Methods: Seizure Detection
- EEG head mounted application
  - Surgically attached to skull
  - One day prior to HI insult
- Data acquisition
  - Pinnaclip 8200, 3 channel video
  - EEG/TMG system
  - Sirena software package
- Seizure definition
  - Rhythmic or repetitive tracing with an amplitude that increased to more than 3 times the baseline level and lasted at least 10 seconds
  - Clinical correlated with repetitive movements
  - Subclinical - no association with movement

Results: Seizure Activity
- Seizures were present in all groups during recovery
- Two rats had status epilepticus in the combined group

Methods: HI and Recovery
- Term equivalent (P10-P11) Wistar rat pups underwent permanent surgical ligation of the right common carotid artery
- Hypoxia (8% O2, balance N2) for 60 min
- Separated into two groups for 2 hour recovery period
  - Control (T 36.5°C, FiO2 21%)
  - Treatment
    - Hypoxia (T 36.5°C, FiO2 95%)
    - Hyperthermia (T 38.5°C, FiO2 21%)
    - Combined hyperoxia & hyperthermia (T 38.5°C, FiO2 95%)

Sample EEG tracing demonstrating seizure onset
- Evolution of tracing to hypoxic islanding
- Flat EEG seen with subclinical seizure

Conclusions
- Elevated temperature following HI resulted in a significant increase in infarct
- Brain injury did not appear to be exacerbated by increased oxygen concentration
- Seizures were apparent within all recovery groups post-HI
- Death and status epilepticus were seen with recovery in combined hyperoxia-hyperthermia

References

Note: This presentation contains information that needs to be cited with proper references and may not fully represent the complete study.
Increasing Influenza Vaccination Rates in Children attending an Urban Family Health Clinic: A Pilot Project.
Jacqueline Renner-Bangura, DNP, FNP, NP-C

Abstract

Purpose
To examine the effect of an educational intervention on the knowledge, skills, beliefs, and attitud of clinical staff at an urban family health clinic toward offering the influenza vaccine to children.

Methodology
Educational sessions on the Efficacy and Prevention of Influenza [Vaccine] were conducted with doctors and medical assistants in a clinic located in Nashville. Knowledge of providers was assessed with a pre-test question. A test battery of the evaluation for the final educational session was administered with providers and medical assistants. Providers and medical assistants were offered the influenza vaccine and were followed up for any adverse reactions or complications. The data was analyzed using descriptive statistics and statistical software (SPSS). The data was evaluated with the use of a pre and post test questionnaire. The Theory of Planned Behavior (TPB) was used to evaluate the framework for the questions.

Results
There was a statistically significant increase of influenza knowledge and improved skills for vaccination post intervention. In addition, there was a positive change in the attitudes of the clinical staff toward offering the vaccine to patients. These results were consistent in the use of the expectation of normative influence. This was not consistent in the relationships with respect to the use of anticipated behavior. The providers and medical assistants all reported a statistically significant change in belief toward offering the vaccine to patients. The results also demonstrated a decrease in the perception of barriers to offering the influenza vaccine to patients.

Implications for Practice
The study demonstrated the importance of education of clinical staff on the importance of the influenza vaccine in children. The findings of this study contribute to the existing literature on the importance of educational interventions which target clinical staff in urban communities to increase influenza vaccine administration to children.

Methods

Introduction

Purpose
To examine the effect of an educational intervention on the knowledge, skills, beliefs, and attitudes of clinical staff at an urban family health clinic toward offering the influenza vaccine to children.

Background
In 2016, the Centers for Disease Control and Prevention reported that influenza vaccination coverage was low among children aged 6 months to 19 years. The data was collected from the National Immunization Survey (NIS) and the influenza vaccine coverage among children aged 6 months to 19 years was 50%. This study was conducted at a private medical practice in Nashville, Tennessee. The purpose of this study was to evaluate the effect of an educational intervention on the knowledge, skills, beliefs, and attitudes of clinical staff at an urban family health clinic toward offering the influenza vaccine to children.

Methods

Conclusions

The project demonstrated the importance of educational interventions on the importance of the influenza vaccine in children.

References
Project Description

WIC and many local pediatric providers share clientele. A challenge for providers in both settings is to integrate obesity screening and client-centered counseling due to time constraint and need for user friendly office tools/system in place. “Catch 5 for a Healthy Weight” offers tools and guidance for brief client centered office based consultation with parents of overweight or obese children.

Project Goal: Build partnership between WIC and local pediatric clinics to:

- Promote parental awareness about their children’s BMI
- Provide consistent and unified obesity messages to parents
- Assist parents with goal to healthy eating habits and increased physical activity

Target population: Parents of children who are overweight or obese (BMI > 85th percentile)

Setting: WIC centers and pediatric clinics

Project Activities and Time Line

May – Nov. 2008: Obtained support from the Texas Pediatric Society and HHDBHS. April 2009: Harris County Hospital District Weight Management Clinic initiated the project.

May 2008 – Jan. 2009: Developed first draft of “Catch 5 for Healthy Weight” client centered tools (posters, handouts and prescription pads) for office consultation.

Jan. 2009: Conducted “Catch 5 Workshop/training”. A preview of 2007 expert guidelines for the care of overweight obese children, introduction to “Catch 5” project concept and hands-on training on Motivational Interviewing. Three hour continuing education were approved for physicians, nurses and dietitians.

Jan. – May 2009: “Catch 5 materials were reviewed by many professionals, including obesity experts such as Dr. Bonnie Spann, RD, PhD and Sam Butow MD and by the Harris County Hospital District Patient Education Committee.

April – Aug. 2009: Project implemented into 15 WIC sites and pilots clinics 7 pediatric clinics.

Suggested Office Consultation Procedure

1. Measure Weight and Height
2. Ask parent/guardian to fill out survey in exam room or waiting area.
3. Brief Client-Centered Counseling
4. Follow up in 1 – 2 months
5. Evaluation at 2 – 3 months
6. Referral to advances if needed

Target Risk Behaviors

- High Fat and Sugar snacks > 3/week
- Sugary drinks > 2/week
- 100% fruit juice < 2/week
- Fast and vegetable intake < 2 cups/day
- Freshness of school meals
- TV watching time/day > 1 hour/day
- Active play < 15 minutes/day
- Askbehind the “5” original messages
- Eating out (that foods) > 3/week
- Family meals > 5/6 times
- TV on mindless during meals or snacks

“Catch 5” Office Screening and Consultation Tools

- Catch 5 Action Step 5: Minute and 20 Minute Office Consultation Protocols
- Office Consultation Flow Chart
- Catch 5 For a Healthy Weight Flyer
- Healthy Lifestyle Prescription Pad
- Healthy Behavior Goal Setting Worksheet
- Healthy Behavior Survey

Results

Provider Evaluation Survey

Client Phone Follow Up Survey

What Did We Learn?

- Project implementation facilitated discussion about children’s weight/BMI between provider and parents.
- The simplicity of consultation tools and client-centered approach fostered client understanding, encouraged changes and reduced counseling time.
- Additional Motivational Interviewing training is needed to improve counseling/goal setting skills.
- To show benefit of focused and unified obesity prevention messages, more pediatric providers in the HHDBHS-WIC should be recruited.

Acknowledgements

Sponsorship by NCI. Support for this project is gratefully acknowledged by the authors. April 26, 2026.
The State of Reflective Practice in Pediatric Medical Education: A National Survey of Educators

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BACKGROUND
- Reflective practice defined as a strategy of “slow-moving” and critically examining one’s thoughts, actions, and conceptual frameworks to facilitate understanding of the “why” of things and promote meaningful learning.
- Little data exists on whether educators understand and value the concept of reflective practice and the barriers they face in teaching it.
- Limited data exists on how widespread reflective practice curricula are and the methods most frequently being used to teach it.

OBJECTIVES
- To assess:
  1. Level of understanding of, and the value given to, reflective practice among pediatric medical educators.
  2. Perceived barriers to incorporating reflective practice into medical curricula from educator perspective, and
  3. Extent and formats of reflective practice curricula in undergraduate medical education.

METHODS

Survey Design:
- 9 questions related to reflective practice developed by investigators using comprehensive literature review.
- Questions were pilot tested, revised and approved, by experts in pediatric medical education and COMSEP executive committee.
- 5-point Likert-type scale used for closed-ended questions assessing level of agreement/disagreement.
- One open-ended question asking educators to convey their understanding of reflective practice in four phrases.

Analysis:
- Quantitative data analyzed using descriptive statistics (IBM SPSS 22 software, IBM, Armonk, NY).
- Open-ended responses coded by two independent researchers, consolidated into 6 thematic categories, frequencies analyzed using descriptive statistics.
- Word cloud used to generate visual display of free-text responses.

142 respondents, representing 99 distinct medical schools answered at least one question related to reflective practice.
75% of respondents: clerkship directors, assistant clerkship directors.

Conceptual Understanding of Reflective Practices:
- 57% agree or strongly agree they have a good understanding of reflective practice.
- 38% agree or strongly agree they feel confident teaching reflection.

Respondents Value of Reflective Practice:
- 93% feel it is “somewhat important” or “essential” that medical students are taught reflective practice skills.
- 88% state that it is “somewhat important” or “essential” for practicing physicians to gain skills in reflective practice.
- 44% feel it is “somewhat important” to “essential” for physician educators to role-model reflective practice.

Qualitative Analysis of Conceptual Understanding:
- 254 codes consolidated into 39 categories, and then into 6 themes.
- 14 thematic clusters created based on recent systematic reviews that identified essential components of reflective practices:
  - Reflective content.
  - Reflective process.
  - Contextual factors.
  - Conceptual framework.
  - Teachable moments.

Additional sixth theme created by investigators for data related to “Strategies, Logistics, and Learning Environment.”

RESULTS

Barriers to teaching reflective practices:
- 45% of respondents do not feel confident in their schools’ capability to teach reflective practice effectively.

DISCUSSION
- An overwhelming majority of leaders in pediatric medical education value reflective practice as an essential component of undergraduate medical education.
- Educators report relatively low self-confidence in ability to teach reflection, and nearly half report lack of skilled educators to teach reflective practice at their institutions (Figure 1).
- Narrative writing is the most common method to teach reflective practice. Literature also describes narrative writing as an effective tool to promote critical thinking and professional development in learners.
- Faculty development is necessary to increase role modeling of reflective practice by educators. While the importance of faculty guidance and role modeling has been described in the literature, the actual use of this instructional strategy is relatively limited (Figure 1).
- Majority of educators describe reflective practice as related to the process of reflection and self. Faculty development on the meaning and use of reflective practice is necessary to help educators understand the function of reflective practice and support learners in the development of skill.

REFERENCES
Decreasing Time to Antibiotic Delivery for Febrile Immunocompromised Patients in a Pediatric Emergency Department

Allison Ast, M.D., Jennifer Light, M.D., William Stayton, M.D., Erik Black, Ph.D., Carolyn Holland, M.D.

**BACKGROUND**

Infections are common complications in immunocompromised patients (ICPs). Morbidity and mortality are increased in ICPs with fever if antibiotics are not received in a timely manner. Although the causes of fever in ICPs can be many, the risk of severe bacterial infection makes rapid detection and urgent intervention essential. It is recommended that patients have prompt evaluation for source of infection and rapid initiation of empirical broad spectrum intravenous antibiotics. The Infectious Diseases Society of America has recommended that antibiotic therapy be administered promptly to these patients but no specific time window has been recommended. The nationwide consensus among institutions is delivery of antibiotics in 60 minutes or less.

**PURPOSE**

We designed a quality improvement project to reduce antibiotic delivery time to less than 60 minutes for all febrile immunocompromised patients presenting to the pediatric emergency department (ED).

**METHODS**

**ICP QUALIFYING CONDITIONS**

- Cancer
- Bone Marrow Transplant within last year or taking immunosuppressive therapy within last 6 months or taking immunosuppressive therapy within last 3 months
- Any organ transplant
- Myelodysplastic/acute myelogenous leukemia
- Any chronic immunosuppressive therapy
- Any malignancy
- Any infection
- Any immunocompromised patient

**BACKGROUND (cont.)**

**BENCHMARKS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre-Implementation (September 18-5, 2013)</th>
<th>Post-Implementation (September 5-11, 2013)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time to antibiotics (min)</td>
<td>93.32</td>
<td>33.83</td>
<td>59.49</td>
</tr>
<tr>
<td># ICP’s receiving antibiotics in 60 minutes or less</td>
<td>56/168 (33.3%)</td>
<td>87/90 (96.0%)</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

**CHANGES MADE**

- Patient knowledge
- Patient identification
- Primary and secondary drivers
- Antibiotic prescription/delivery

**MEASURES**

Two key measures used to evaluate the effectiveness of interventions included mean time to antibiotic delivery in febrile ICPs and the percentage of febrile ICPs meeting the target for time to antibiotic administration. Data was collected and abstracted from the hospital electronic medical record for the twelve months prior to the intervention and four months following the intervention. During the pre-intervention period the ED saw, on average, 14 febrile ICPs (range: 10-19 monthly). During the post-intervention period, the ED saw, on average, 15 febrile ICPs (range: 8-19) monthly.

**CONCLUSIONS**

Our study demonstrates that education of healthcare providers and standardization of a process of care reduced antibiotic delivery time for febrile ICPs. Timely delivery of antibiotics can be achieved through implementation of a multi-faceted approach. Administering antibiotics in less than one hour is feasible and should become the standard of care for all febrile ICPs.
Purpose of Poster Sessions

• Visually communicate research finding while interacting with individual viewers
• Viewers quickly grasp essential information
• Networking and collaboration
• Get feedback from the scientific community
• Develop your national reputation
• Helps with manuscript preparation
Posters Compared to Oral Platform Presentations

• Visual representation of your study

• More personal interaction

• Content and Display are important
Activity: Table Discussion

1. How do you decide which posters to view beforehand?

2. What makes you stop and view a poster?

3. What makes you walk right on by a poster?
Psychology of Poster Sessions

• Overall visual appeal is important: layout, colors, figures, clutter, white space

• Most people will read the Title first

• If interested, they will read the Conclusions

• Then the rest of the poster if interested
Rule of 10s

• The average person scans your poster for **10 seconds from 10 feet away**.

• Introduce your poster in **10 seconds**.

• The content of the poster should be easily assimilated within **10 minutes**.
Poster Basics

• Tell a simple, clear story
• Have 2-3 key take-home messages
• Poster content supports take-home messages
• Use bulleted text
• Avoid long stretches of prose
• Use charts and figures
• Avoid clutter
• Make use of empty space to highlight content
Title

- Very important! – often the 1st and only thing viewed
- Accurate promise of the poster’s contents
- Description of what was investigated and how
- NOT summary of results: many stretch data implications (debatable)
- Case study: clearly describe the issue the case raises
- Length: no more than 10-12 words
- Easy to understand
- Like a headline: short, sharp, compelling
Activity: Title Critique

1. For each title, identify strengths & weaknesses.

2. What would you change?

3. Which would you choose to view if they were lined up side-by-side?
1. Do we adequately prepare our pediatric residents to manage type 1 diabetes?

2. A child with severe metabolic bone disease and hypophosphatemia associated with elemental formula

3. Insulin pump back-up plans for pediatric patients with type 1 diabetes are associated with decreased admissions for diabetic ketoacidosis
Activity: Title Critique

1. Lights, Camera, Action: Increasing the use and documentation of asthma action plans in a pediatric outpatient setting

2. Ah-Choo, Ah-flu: Factors associated with acceptance of the flu vaccine in pediatrics

3. Integration of asthma action plans into the electronic medical record in a primary care setting
Poster Content

WHY did you start? ➞ Background & Objectives

HOW: What did you do? ➞ Methods

What did you find? ➞ Results

TAKEAWAY: What does it mean? ➞ Conclusions
Background/Objectives

- WHY did you start?
- Information relevant to why you did the study
- Focus on the gap that the study fills
- Specific study aims
- Include a hypothesis
Methods

• The HOW: What did you do?

• Study type

• Provide context

• Measurements (outcomes)

• Concise but detailed enough to evaluate your approach
Results

• Describe as extensions of your objectives

• Present only relevant data

• Include data used to draw conclusions

• Use Tables & Figures – keep simple, include descriptions

• Limit use of lines

• DON’T repeat in the text what is in Tables/Figures
Conclusions

• TAKEAWAYS: What does it mean?

• Emphasize the significance of the results

• Tie conclusions to the background/objectives

• Include how the findings impact clinical practice or future research

• DON’T overstate the finding and claim more than the work justifies
How is the poster best visually designed?
GOAL OF GOOD DESIGN

Create a **visual hierarchy** that moves the viewers attention through your poster with ease, so they **quickly understand** the information.
UNDERSTANDING THE VIEWER

F-Shape Reading Pattern:

- Western cultures read from left to right and top to bottom, creating an F-Shaped pattern across the page.

Heatmaps from user eyetracking studies of three websites. The areas where users looked the most are colored red; the yellow areas indicate fewer views, followed by the least-viewed blue areas. Gray areas didn’t attract any fixations.
UNDERSTANDING THE VIEWER

- Shape, Color, Content:
  - The brain understands in the following order:
    - 1 - Basic shapes
    - 2 - Color
    - 3 - Content/wording

- Clear
- Bulleted points
- Not too much text
- Figures > Tables > Text
THE PRINCIPLES OF DESIGN

rhythm

balance

unity

proportion

contrast

dominance

https://www.onlinedesignteacher.com/2015/11/design-principles_69.html
BALANCE & ALIGNMENT

• Distribute the visual to create an equilibrium (for the poster)

Balance
- Equal column widths
- Equally spaced columns
- Equally spaced sections
- ~30% white space

Alignment
- Align headings
- Align columns
- Align graphics (vertically and/or horizontally)
RHYTHM & UNITY

Repeat elements to create unity

- Use similar shapes
- Use analogous colors (next to each other on color wheel)
- Limit color palette (Max 3 primary colors)
- Use same font throughout
  - Sans serif Headings (Arial, Helvetica)
  - Serif text (Times New Roman)
- Use similar dimensions for figures and photos
EMPHASIS (Dominance, Proportion & Contrast)

• Create emphasis by creating visual focal points with contrast
  • Use contrasting sizes of shapes
  • Use contrasting colors (background/text)
  • Use contrasting fonts (Font size, type)
    • Sans serif Title / Headings (Arial, Helvetica)
    • Serif text (Times New Roman)
  • Light vs Dark (highlight key sections)
  • **BOLD ALL CAP** or **Sentence Case** for Titles / Headings vs Regular Font text
• Work in small groups at your table
• Use poster design checklist to evaluate example posters
  • What do you like? Why?
  • How you could improve the poster design?
Purpose
What is the impact of our elective for UCSF MS-4’s to be editing Wikipedia for academic credit?

Background
- In the fall of 2013, we began offering an MS-4 elective to edit Wikipedia’s health-related content.
- UCSF faculty & librarians partnered with WikiProject Medicine, Wikipedia Education Program, and experienced Wikipedians to design, deliver and evaluate the elective.
- Between 2013 – 2015, across 3 cycles of the month-long immersion rotation 28 students enrolled.

Methods
Impact on the students
mid-rotation 1:1 interviews + end-rotation focus groups → Transcribed and coded for themes

Impact on WP article quality
Pre-rotation
- 2 MD’s “gestalt” impressions

During
- Bytes added
- References added

Post-rotation
- Internal WP quality scale
- 2 MD’s “gestalt” impressions
- Errors corrected
- Bytes removed
- Sentences improved

Impact on WP readers
- Article traffic statistics during only the months students were actively editing

Results
Impact on WP readers

Impact on the students

Discussion/Dissemination
These 28 Wikipedia articles were collectively viewed 974,065 times during only the months students were actively editing
Working in over 100 languages, our students have translated over 600 articles to other language Wikipedias
Provides Wikipedia access to 400 million people for free in 46 developing countries through 54 mobile phone operators

Reflective Critique
- Wide variability in baseline student aptitude and effort.
- UCSF MD quality “scale” is entirely subjective and not validated.
- Students have not continued editing Wikipedia after the rotation ended.

Institutional Affiliations
1. UCSF Department of Psychiatry
2. Stanford University Library
3. UCSF Library
4. University of California, Berkeley College of Arts and Sciences
5. University of British Columbia Department of Emergency Medicine
6. Content Rules, Inc.
7. The DocGraph Journal
8. Wikimedia Foundation
9. UCSF Department of Internal Medicine
Keeping PACE with Healthcare Reforms & COPD Standards of Care
Vi Bui, Thien Hoang, Loc Le, Nicholas Thrash

Introduction
The Ondenia Community Hospital Quality Improvement committee was called upon by the CEO to address the higher than average COPD readmission rate in light of the upcoming Medicare penalties. The events surrounding the admission, discharge, and readmission of four COPD patients were mapped and analyzed to determine the root causes. The committee then proposes the PACE Initiative to tackle the problems of high readmission rate and low patient satisfaction. The Initiative aims to not only resolve the apparent and ongoing problems but also establish a quality improvement process in order to adapt to future challenges.

Background
- Ondenia (Pop. 45,000) is the largest city in Gandon county, Ohio.
- Major industries: agriculture, diesel engine manufacturing plant, paper mill, coal power plant.
- Air Quality Index (AQI) > 151 for 30 days/year, reaching upwards > 200 at times.
- Health problems: 15% hospital admissions are for pulmonary diagnoses, 10% of ED visits are for COPD/COPD-related comorbidities.

Methodology
- Summary of events.
- Root cause analysis and identification of red flags using the Lean/Six Sigma approach.

Results

Root Cause Analysis

- Patient Characteristics
  - Low income
  - Lifestyle choices
  - Therapeutic noncompliance
- Medical Staff
  - Lack of pulmonologists
  - Poor discharge process
  - Improper follow-up
- Institutional Factors
  - Lack of translation services
  - Lack of coordination of care
  - Lack of integrated electronic medical record
- Environmental Factors
  - Air pollution (Diesel engines, paper mills, coal burning power plants)
  - Casino (smoky environment)

DMAIC Cycle
- Goal: 15% reduction in 30 days COPD readmissions
- Recommendations: Develop processes & tools for improvement
- Metrics: Quarterly readmission rates for COPD patients

Cost-Benefit Analysis
Monetized benefits:
- $6.6 million – 1st year (Net benefit)
- $2.3 million – 2nd year
- $3.2 million – 3rd year
Non-monetized benefits:
- Increased patient satisfaction
- Increased public trust
- Cleaner air for the greater Ondenia community

Timeline

Acknowledgement
- Dr. Cindy Acton (SON), Dr. Charles Seifert (SOP), Dr. Sharon Decker (SON), and the TTUHSC CLARION 2013 course team.
- TTUHSC Quality Enhancement Plan for poster funding.

Contact Information
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- Nicholas Thrash – School of Nursing (Lubbock)
- Loc Le – Graduate School of Medical Sciences (Lubbock)
Provider Education Program, www.olapep.ca

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¹Ontario Lung Association, ²University of Western Ontario, ³University of Toronto

**Abstract**

**Background**

The program builds on the success of The Provider Education in Asthma Care Project. Primary care providers attending the pilot workshops demonstrated needs for improved asthma knowledge and skills, particularly medication plans for chronic management and creation of written action plans. Participants rated this provincial asthma CME program highly, would recommend it to a colleague, and remained satisfied with the workshop 3 months later. Participants reported improvements in asthma care, including prescribing practices, use of spirometry and written action plans.

**Background**

The need for spirometry education as it relates to technique, interpretation and implementation continues to exist among primary care providers across Ontario. Barriers to utilization of spirometry in primary care have included challenges related to interpretation of spirometric data. (77.58% of providers (52 of 424) noted the barriers for not utilizing spirometry.

**Our Programs**

Through multiple methods to effectively transfer asthma knowledge and skills into practice, the following methods for knowledge translation are included: Workshops that include didactic presentations by opinion leaders, peer facilitators, case-based learning, CME through the Ontario Telemedicine Network, interactive touch pad technology and web-based learning.

Workshops:
- ManifestPAC accredited workshops
  - Asthma (Adult, Pediatric, Preschool)
  - Spirometry Interpretation (Eng. & Fr.)
  - COPD vs. Asthma (Eng. & Fr.)
- Work-Related Asthma
- Asthma Action Plan

**Conclusion**

We acknowledge the continued support of our PEP committee.

Members:
- Dr. Sharon Dell (co-chair)
- Dr. Donna Loughhead
- Dr. I. O’Dwyer
- Jennifer Olajos-Cole
- Dr. Caryn Mandryk
- Dr. Richard C. L. S. Graf
- Andrea White

We wish to thank Gloria AtaWh for her administrative support.

**References**


**Contact**

For more information about the Provider Education Program please contact

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Flipping the Classroom: A Data-Driven Model for Nursing Education

Brian S. McGowan, PhD; Jann T. Balmer, PhD, RN; and Kathy Chappell, PhD, RN
ArcheMedX, Charlottesville, VA; University of Virginia School of Medicine, Charlottesville, VA; American Nurses Credentialing Center, Silver Spring, MD

Introduction
To enable learners to describe the applicability of the flipped-dosser and the learning Actions Model to support learning education, a specialty designed, data-driven flipped document was developed for the 2014 annual symposium on continuing learning education. The goal of the project was to:

1. Use the flipped approach to support learner planning and agile design.
2. Use the flipped approach to support educator planning and agile design.
3. Use the flipped approach to support lifelong learning.
4. Use the flipped approach to support real-time learning data.

The Learning Actions Model Supports Educator Planning and Agile Design

Online Prework Engaged Learners

More than 150 learners who participated in the online learning experience.

- 876 hours
- 19.8 watch time
- 815 learners
- 96% completion

Engagement in Online Learning was High

Most learners took nearly 300 core Learning Actions which were divided as follows:

- 1% searches
- 3% real-time
- 9% resources closed

Self-reports: 30%

Average engagement: 7.5

21% Resources downloaded

Learner Comfort With the Science of CE Was Improved

Learners were asked how comfortable they were in applying what they learned in their educational activity, success in their comfort before and after the activity comforted them better than the comfort of the population. Overall, variance in comfort across the topic was reduced following participation in the online activities.

Prework Engaged and Prepared Live Learners

Do you believe that prework engagement was an opportunity to engage with learning materials? Did you believe that prework was an effective educational strategy?

- 76% yes
- 24% no

Prework was created and prepared live learners.

- 92.4% yes
- 7.6% no

If you received the videos, how many videos did you watch?

- 8.5% 5
- 14.3% 3
- 19.8% 1
- 7.6% 0

Access a Tour of This Poster

View QR code to access a tour of this poster.

ArcheMedX Learning Actions Model

ArcheMedX Learning Actions Model enables learners to capture data about learning and engagement in the real world. It is an innovative learning technology that allows learners to control the learning experience, complementing the prework. Anticipated questions and areas of concern are identified, and the learners are able to focus on critical learning opportunities for efficient learning.

ArcheViewer Creates a Novel Learning Environment

ArcheViewer creates a novel learning environment by allowing educators to define distinct learning moments, scalable content libraries with video resources, and highlight these resources and engage learners at predetermined moments. In addition, within the learning environment, learners have the ability to:

- Record content
- Search through related resources
- Create notes
- Ask questions of faculty

Flipped Classroom was a new Experience for Majority

When asked if they had prior experience participating in a flipped classroom learning environment, learners responded:

- 73% Yes
- 27% No

Conclusions

- Flipped learning experience prepares learners to participate and engage in live or classroom-style learning.
- Frequent notifications and clear communications drive participation.
- On-the-spot prework must be designed to gather data about learners and learning that the live intervention may be optimized.
- The Archeviewer e-learning technology permits planners and faculty to create a data-driven and therefore more rewarding overall learning experience.
An Interdisciplinary Model of Collaboration Between Medical Staff, Hospital Quality Improvement, and Continuing Medical Education Departments to Promote Education and Practice Changes in the Prevention of Venous Thromboembolism in Cancer Patients

Lucille Leong, M.D., Mary Mendelsohn, R.N., B.S.N., Crystal J. Saavedra, B.A., and Robert Morgan, M.D.
City of Hope Comprehensive Cancer Center, Duarte, CA
Supported by a Unihealth Educational Grant

**BACKGROUND**

- **Why?**
  - VTE is a leading cause of morbidity/mortality in cancer patients.
  - VTE is the second cause of death in cancer patients behind cancer itself.
  - Despite established national guidelines for pharmacologic prophylaxis for hospitalized cancer patients, there is a knowledge and practice gap of cancer physicians.
  - Hospital VTE rates are nationally reported metrics.

- **Definition of PI-CME**
  - "A CME activity is a process that has established a process by which a physician identifies an educational need through a formal assessment, plans educational experiences to meet the need, integrates learning into patient care, and then re-evaluates the physician's performance."
  - Result should be better patient care outcomes

**METHODS**

- VTE Task Force established in 2010
  - Department of Quality Improvement
    - Quality Risk and Resource Management
  - Medical Staff
    - Department of Continuing Medical Education
  - Pharmacy
  - Nursing

  - Unihealth grant support
  - Multiplatform educational interventions through CME

**RESULTS**

- **Educational Participation**
  - 326 unique COH MS members participated
  - 140 faculty physicians
  - Physicians trainees
  - 31 pharmacists
  - 57 RN/PAs
  - 24 ancillary health staff
  - Over 27,000 VTE emails were sent by CME during the grant period

- **System Changes**
  - Visual cues re VTE prophylaxis above workstations where admission orders are written.
  - Use of standardized admission order sets tailored for each service.
  - New Computerized Order Entry will enhance this.
  - Compliance with inclusion of VTE order sets was used as a departmental quality indicator.
  - VTE Order Set Usage by Department

- **Enoxaparin Usage Data**
  - Enoxaparin Administration By Service
  - Enoxaparin Administration Doses per Patient Days
  - Enoxaparin Rates by Patient Service
  - Bleeding Complications in Enoxaparin Patients

**CONCLUSIONS**

- Appropriate use of VTE prophylaxis is a clinical gap generating a CME learning need.
- Collaboration between MS and hospital QI and CME can create multiphase educational interventions.
- Systematic institutional changes are necessary for practice changes (order sets, CPOE hard stops and risk assessment tools).
- Despite effective education, there is national trend of rising VTE rates. Reassessment of risks and interventions is necessary.

Why have we not seen decline in VTE?

1. Stringent standards for admissions have led to sicker inpatients - increased risk for VTE
2. Increased use of PICC lines in Hematology patients
3. Earlier discharge of post-operative patients:
   - who remain on bed rest at home
   - do not continue enoxaparin
4. Despite changes in physician attitudes, some physicians continue to view anticoagulation therapy for VTE as burdensome, affecting their compliance with the VTE guidelines.
5. Increased use of TKIs and Anti-angiogenics which increase risk for VTEs.
COMPARING PERCEIVED KNOWLEDGE OF CHRONIC DISEASE MANAGEMENT TO QUANTITATIVE KNOWLEDGE MEASUREMENT IN A SAMPLE BACCALAUREATE NURSING STUDENTS: IMPLICATIONS FOR PALLIATIVE CARE NURSING EDUCATION

Kim K. Kuebler DNP, RN, ANP-BC
Vanderbilt School of Nursing

Abstract

Purpose: To compare baccalaureate nursing students' self-perceived knowledge with objective test knowledge in the management of chronic diseases and their associated symptoms.

Methodology: Two regionally distinct nursing programs have participated in this project and represent institutions in the Southeastern and the Northeastern US. Senior baccalaureate nursing students in their last semester have been targeted and represent the entry level of the professional nurse. Participants completed a self-rated knowledge survey and then completed a 45 item multiple choice objective knowledge examination on disease pathophysiology and symptom management.

Results: A weak correlation was found in the southeast cohort \(r=0.244\) \((p=0.08)\) between self perceived knowledge and objective tested knowledge. The northeast cohort had a negative correlation \(r=-0.183\) \((p=0.29)\) between self perceived knowledge and the objective test measurement. There was no statistically significant difference in the objective testing between cohorts. In comparing the two overall objective examination scores the mean score for the southeast was 21.17 and the mean score for the northeast was 21.48. The differences between these two scores is statistically non significant \((p > 0.05)\). Both cohorts scored a mean of less than 50% on the objective examination.

Background

Americans are living with one or more chronic debilitating diseases, and seven out of ten can expect to live with their diseases several years before dying. When coupled with the advancing age of the 8 million baby boomers that are now qualifying for Medicare,\(^1\) this will soon create a huge demand on healthcare resources. These demands will force changes in patterns of care for patients living for several years before dying with a chronic disease.\(^2\) Healthcare reform will demand changes in nursing education requiring new innovations, skills, and knowledge to address the demands of this burgeoning population.

PROBLEM: The demands of an increasing population of Americans suffering from symptomatic chronic diseases and its impact on the healthcare system requires further investigation as it relates to baccalaureate nursing education.

Methods

- Two regionally distinct nursing programs have participated in this project and represent institutions in the Southeastern and the Northeastern US.
- Senior baccalaureate nursing students in their last semester were targeted and represent entry level into the professional role of nursing.

DATA COLLECTION TOOLS

- Proctor Instructions
- Self Rated Knowledge Survey
- Chronic Disease Objective Knowledge Examination

A Pearson’s correlation coefficient was used to determine if there were correlations between self perceived knowledge and objective knowledge. In addition, a paired t-test was used to compare the two nursing cohorts.

Results

- A weak correlation was found in the Southeast cohort \(r=0.244\) \((p=0.08)\) between self perceived knowledge and objective knowledge. The Northeast cohort had a negative correlation \(r=-0.183\) \((p=0.08)\) between self perceived knowledge and the objective test measurement.
- There was no statistically significant difference in the objective testing between the cohorts \((p > 0.05)\).
- Both cohorts scored less than 50% on the objective examination.

Conclusions

- This project has identified gaps in nursing knowledge as it relates to use of palliative care in the management of chronic disease and its associated symptoms based upon examination scores.
- The findings from this project can be used address the lack of existing information on the inclusion of palliative care within baccalaureate nursing education.
- This pilot project has provided the author with baseline data that will be used to generate additional studies to further evaluate the need to integrate palliative education in the form of symptom management for patients living for several years with chronic disease.

References

Lessons Learned: Implementation, Curriculum Development and the Evaluation of ECHO Ontario Mental Health at CAMH and the University of Toronto

Allison Crawford, MD, MA, FRCP, Co-Chair; Sanjeev Sookalingam, MD, FRCP, MHPE, Co-Chair; Linda Mok, MD, Co-Chair; Greg Lodeweski, MD, FRCP(C); Lisa Lechlevert, MD, MPH, CHF; DABAM, FASAM; Javed Ali, MD, CCFT, FRCP(C); Eva Serhal, MBA, Manager; Amanda Arana, PhD, Research Coordinator; Brittany Watson, MPH, PMS Project Coordinator; Maury Nadasoj, BSc, Administrative Supervisor

**Program Summary**

ECHO Ontario Mental Health is the first mental health and addictions ECHO in Canada and is the second ECHO in Ontario. We use zoom to connect primary care providers in Ontario with an interdisciplinary Hub with expertise in mental health and addictions. 24 spoke sites with 170 registered primary care providers take part in weekly ECHO sessions.

**Innovations:** We've rooted our evaluation framework and program planning in Moos's 7 Levels of CME Outcomes Measurements: utilized a triangulated needs assessment to build our curriculum; and integrated in-session polling software to measure real-time knowledge change during each weekly ECHO session.

**Introduction**

ECHO Ontario Mental Health is the second ECHO in Ontario, and the first ECHO in Canada in the area of mental health and addictions.

**Scope**

To create a community of practice and to enable multiplication, with the ECHO Ontario Mental Health community learning from each other and achieving the highest level within their scope of practice.

**Vision**

ECHO Ontario Mental Health will equip primary care providers in Ontario with applicable knowledge and collaborative support to effectively manage complex mental illness and addictions needs within their own practices.

**Program Description**

ECHO Model and Telemedicine Networks

The ECHO Ontario Mental Health Hub consists of specialized mental health care providers, including physicians with expertise in child and youth, family, adult and geriatric psychiatry, social work, and psychology, as well as mental health nurses.

Spokes are primary care provider sites across the province of Ontario that include physicans, nurse practitioners, nurse practitioners, social work, and psychology.

**Spoke Participants**

24 Participating Spoke Organizations

There are currently 170 registered multi-disciplinary spoke participants eligible for participation in weekly ECHO Ontario Mental Health classes.

**Spoke Map**

The spoke farthest from the hub is located in Red Lake, ON at 12190.0 km.

The closest spoke to the hub is located in Brampton, ON at 49 km.

**The ECHO Model At Work**

**Discussion**

Preliminary Findings

Diagnosis Approaching in Cases

- **ADHD**
- Bipolar Disorder
- Major Depression
- Psychosis
- Personality Disorder

Mental health diagnoses in case presentations, reviewed to date (23%): most case presentations had Consumer diagnoses identified in the statistics.

**Use of In-Session Polling**

**Use of a Multi-Level Evaluation Framework**

ECHO Ontario Mental Health has recently submitted a grant application to conduct further research examining the project impacts on provider, population, and community level, as well as on patient health outcomes.

**Use of In-Session Polling**

- **Trust**
- **Goodwill**
- **Compliance**
- Clients
- Satisfaction
- Knowledge
- Understanding
- Attitude

**Discussions**

Knowledge Change and Self-Rated Satisfaction

Spoke Satisfaction Statements (Aggregated across sessions - 10)

- Interactive polling software embedded in each didactic session to improve the ECHO Ontario Mental Health curriculum.
- The average knowledge change per question in the 11 aggregated sessions was 26.7% between the pre- and post-session polling questions.

**Testimonials**

"Mental health is one of the most prevalent issues that are in the way to quality care..." - [Testimonial 1]

"I had the pleasure of working with [a colleague] on [a project], and I think it was an incredibly valuable experience..." - [Testimonial 2]

"[Participant] was a great resource and the group was very supportive. [They] provided a lot of encouragement and motivation..." - [Testimonial 3]

"I was able to see the benefit of the collaboration..." - [Testimonial 4]
Teaching Shock with High-fidelity Simulation versus Case-based Discussion

Keith Littlewood, MD1,2,4, Ashley Shilling, MD2,4, Christopher Sterland, MD2,4, Elisabeth Wright, MSE1,2 and Mark Kirk MD1,2,3
1 Medical Simulation Center, 2 School of Medicine, 3 Department of Emergency Medicine, 4 Department of Anesthesiology
University of Virginia Health System, Charlottesville, Virginia

INTRODUCTION
High-fidelity simulation is being widely adopted in healthcare education. There is limited data regarding its efficacy compared to other educational methods. The resource cost of simulation education is high and includes faculty and learner time, simulation center infrastructure, simulation specialist time, and the devices themselves. Responsible use of this expensive educational modality requires critical analysis of its relative effectiveness.

During a required anesthesiology clerkship, third year medical students had structured experiences dealing with cardiogenic and septic shock over a half day. Scheduling circumstances created two groups of approximately equal sizes: one group managed a patient with cardiogenic shock in the Simulation Center and had a case-based discussion (CBD) centered on sepsis (SIMond), the second group had the contrapositive schedule with a simulation scenario of sepsis and CBD of cardiogenic shock (SIMaps).

All students also attended an introductory discussion of shock and an airway workshop. Upon completion of these activities, all students underwent a structured oral examination (SOE). Results of the SOE were divided into patient evaluation (EVAL), invasive monitoring (MON), diagnosis and management of septic (SEP) and cardiogenic (CRD) shock. Following IRB approval, de-identified data were analyzed using SPSS (IBM, ver 17).

DATA ANALYSIS
Each student’s total and module scores were divided by the corresponding averaged scores of all students to create indexed scores. Analysis of raw and indexed scores was performed. Some of the pertinent results from the paired t-test of indices are shown in the adjacent table.

There are several issues that require justification or clarification. The study was retrospective and without randomization. Not all examiners were blinded (i.e., some examiners had participated in the CBD or SIM sessions). Three-fourths of the students were scheduled for CBD before SIM. Finally, the SOE had not been previously validated.

For these reasons, the indexed scores for the SIM and CBD were compared for students who had CBD first and those who had SIM first. The same approach was used to compare the results from blinded and non-blinded examiners. Some of the key results can be found in the table below. Additionally, the performance of the SOE was considered. The SOE was used by authors KL and CS with more senior students and house officers. Raw total and module scores showed strong correlation with learner level (p < 0.01), supporting construct validity. This relationship is presented graphically. It should be emphasized that the purpose of the SOE was to introduce students to this type of examination and to evaluate cumulative performances not to assess individual student’s comparative individual performance.

CONCLUSIONS
Students demonstrated superior performance on the SOE for the type of shock experienced through SIM vs CBD, but showed no difference between EVAL or MON modules. The differences were perceived statistically regardless of type of shock, order of experiences, level of MS3 experience (i.e., time of academic year), or examiner blinding. The effect size of SIM vs CBD was larger than that usually recorded in comparing PBLD to traditional lectures. Even if this CBD is conservatively considered a lecture, SIM compared favorably to PBLD efficacy.

Additionally, a SOE proved useful in curricular evaluation despite minimal faculty training.

FUNDING
This project was funded by the UVA Academy of Distinguished Educators and the UVA Department of Anesthesiology.

ACKNOWLEDGEMENTS
This project evolved from author KL’s Harvard-Macy Medical Educators’ project with the generous contributions of Harvard-Macy faculty and scholars. Patty Jenkins provided invaluable assistance.

DISCUSSION
Prior work has indicated that SIM experiences may produce a better understanding of shock than CBD. This study adds to that pool with a greater number of subjects, statistical power of crossover comparisons, and evaluation by a method other than one of the studied modules.
Discovery Within

CLIENT & FAMILY EDUCATION: An Emerging Research Stream

David Wiljer¹,² • Andrew Johnson¹ • Sandra Cunning¹,² • Michael-Jane Levitan¹ • Karen MacCon¹ • Ivan Silver¹,²

Rationale

The development of an effective research stream focused on client and family education is critically important to supporting the CAMH Education Strategic goal of transforming the client and family experience within CAMH and beyond through partnership, engagement and education.

Background

Incorporating the voices of clients and family members in health-related education activities is gaining momentum.¹ A growing body of research suggests that the meaningful incorporation of the lived experience in mental health education is well received, with positive experiences reported from both client and student perspectives.² However, there is a paucity of research and evaluations on the impact of this teaching method on attitude, behaviour and practice of learners.³

Objectives

- Develop expertise in client and family education through a critical understanding of how to:
  - Respectfully operationalize client and family roles in mental health (MH) education
  - Deliver meaningful MH education that promotes learning and decreases stigma
  - Evaluate effectiveness of programs and advance knowledge of best practice for MH education

A Snapshot of CAMH Education Research

- Systematic Review: Research Question: What evidence is there that educational programs effectively improve treatment outcomes for clients?
- Research Question: How do educational programs influence client outcomes in mental health settings?
- Next Steps: Develop a framework for evaluating the effectiveness of educational programs in mental health settings.

- APP Review: Research Question: What are the key components of effective educational programs in mental health settings?
- Research Question: How effective are different types of educational programs in mental health settings?
- Next Steps: Develop a framework for evaluating the effectiveness of educational programs in mental health settings.

- Course Evaluation: Research Question: What impact do educational programs have on client knowledge and attitudes?
- Research Question: How effective are different types of educational programs in mental health settings?
- Next Steps: Develop a framework for evaluating the effectiveness of educational programs in mental health settings.

- Client as Teacher: Research Question: What role do clients play in educational programs in mental health settings?
- Research Question: How can educational programs be designed to actively involve clients?
- Next Steps: Develop a framework for evaluating the effectiveness of educational programs in mental health settings.

- Outcome Evaluation: Research Question: What is the impact of educational programs on client outcomes?
- Research Question: How effective are different types of educational programs in mental health settings?
- Next Steps: Develop a framework for evaluating the effectiveness of educational programs in mental health settings.

References

Goals of Care and Code Status Discussions Among General Medical Inpatients

Zachary D Erekson, BS1, Tyler H Haberle, BS1, Ann E Curtis, MD1,2, Laura A Shinkunas, BA3, Katrina T Cannon, MD1,2, Valerie L Forman-Hoffman, PhD, MPH1,2 and Lauris Kaldjian, MD, PhD1,2,3

1University of Iowa Carver College of Medicine, Iowa City, IA; 2Center for Research in the Implementation of Innovative Strategies in Practice (CRIISP), Iowa City VA Medical Center, Iowa City, IA; 3Program in Biomedical Ethics and Medical Humanities, University of Iowa Carver College of Medicine, Iowa City, IA

Background

- Code status (resuscitation) orders are a routine part of clinical care in hospitalized patients.
- Possible types of code status orders include:
  - Full code
  - Do Not Resuscitate (DNR)
  - Without chest compressions
  - With chest compressions, defibrillation, intubation
  - Other
- Studies suggest that physicians often misunderstand or are unaware of patients’ actual preferences regarding code status.
- Communication between patients and physicians regarding code status orders needs to improve to respect patients’ preferences.
- Establishing patients’ goals of care may improve communication between patients and physicians and provide a meaningful context for discussing resuscitation preferences (and other treatments).

Objectives

- To assess patients’ understanding of what resuscitation entails.
- To describe patients’ code status preferences.
- To describe patients’ goals of care.
- To assess how frequently patients discuss their goals with their physicians.
- To determine whether discussing goals of care influences patients’ resuscitation preferences.

Methods

- Structured interviews (carefully scripted) of 130 inpatients on the general medicine service at a large academic medical center within 48 hours of admission.
- Interviews conducted by 2 medical students.
- Charts reviewed for demographic information.
- Treating physicians were contacted to estimate patients’ survival prognosis.

Flowchart of Patients Included

Interview Guide (domains queried):
- Resuscitation preferences
- Communication with physicians about goals of care
- Demographic variables
  - Goals of care
  - Other
  - Interview
  - Other

Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (years)</td>
<td>46 (Range 15-98)</td>
</tr>
<tr>
<td>Male</td>
<td>48 %</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>92 %</td>
</tr>
<tr>
<td>Black</td>
<td>3 %</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3 %</td>
</tr>
<tr>
<td>Asian</td>
<td>1 %</td>
</tr>
<tr>
<td>Estimated Survival Prognosis</td>
<td></td>
</tr>
<tr>
<td>&gt;24 Months</td>
<td>82 %</td>
</tr>
<tr>
<td>&lt;24 Months</td>
<td>8 %</td>
</tr>
<tr>
<td>Not Yet Clear</td>
<td>10 %</td>
</tr>
<tr>
<td>Self-rated health status</td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>6 (6)</td>
</tr>
<tr>
<td>Very Good</td>
<td>25 (19)</td>
</tr>
<tr>
<td>Good</td>
<td>45 (39)</td>
</tr>
<tr>
<td>Fair</td>
<td>30 (22)</td>
</tr>
<tr>
<td>Poor</td>
<td>26 (19)</td>
</tr>
</tbody>
</table>

Admitting Diagnoses

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Disease category (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroenterology</td>
<td>11 (%)</td>
</tr>
<tr>
<td>Infectious diseases</td>
<td>14 (%)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>14 (%)</td>
</tr>
<tr>
<td>Nephrology</td>
<td>10 (%)</td>
</tr>
<tr>
<td>Neurology</td>
<td>7 (%)</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>7 (%)</td>
</tr>
<tr>
<td>Endocarditis</td>
<td>6 (%)</td>
</tr>
<tr>
<td>Hematology-Oncology</td>
<td>4 (%)</td>
</tr>
<tr>
<td>Connective tissue disease</td>
<td>3 (%)</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>11 (%)</td>
</tr>
</tbody>
</table>

Audit Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report having a living will</td>
<td>35 (24)</td>
</tr>
<tr>
<td>Report appointing a power of attorney for healthcare</td>
<td>34 (25)</td>
</tr>
<tr>
<td>Copy of living will in the medical record</td>
<td>6 (4)</td>
</tr>
<tr>
<td>Copy of power of attorney for healthcare document in the medical record</td>
<td>7 (5)</td>
</tr>
</tbody>
</table>

Knowledge of CPR

<table>
<thead>
<tr>
<th>Question</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report knowing what CPR stands for</td>
<td>96 (73)</td>
</tr>
<tr>
<td>Report knowing the components of cardiopulmonary resuscitation</td>
<td>101 (75)</td>
</tr>
<tr>
<td>Actual knowledge of the components of cardiopulmonary resuscitation</td>
<td></td>
</tr>
<tr>
<td>Cardiac defibrillation</td>
<td>37 (27)</td>
</tr>
<tr>
<td>Chest compressions</td>
<td>79 (58)</td>
</tr>
<tr>
<td>Intubation (endotracheal)</td>
<td>10 (7)</td>
</tr>
</tbody>
</table>

Code Status Discussions

<table>
<thead>
<tr>
<th>Question</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>During this hospitalization, my doctor discussed with me whether I want CPR in case my heart stopped beating or my lungs stopped breathing, which would mean that I was dying</td>
<td>41</td>
</tr>
<tr>
<td>Decision after discussion</td>
<td></td>
</tr>
<tr>
<td>CPR to be provided</td>
<td>33</td>
</tr>
<tr>
<td>CPR not to be provided</td>
<td>5</td>
</tr>
<tr>
<td>Undecided, not answered, or partial CPR</td>
<td>3</td>
</tr>
<tr>
<td>I had enough time to discuss this decision with my doctor</td>
<td>33</td>
</tr>
<tr>
<td>I think my doctor understood my preferences</td>
<td>39</td>
</tr>
</tbody>
</table>

Code Status Preferences

<table>
<thead>
<tr>
<th>Preference</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In case my heart stopped beating or my lungs stopped breathing, which would mean that I was dying</td>
<td>125 (93)</td>
</tr>
<tr>
<td>...to receive defibrillation (electricity) on my chest to shock my heart to make it start beating again</td>
<td>125 (93)</td>
</tr>
<tr>
<td>...to receive chest compressions (pushing up and down on my chest) to try to keep the blood moving through my body</td>
<td>124 (92)</td>
</tr>
<tr>
<td>...to be intubated (have a tube placed through my mouth and into my windpipe) so that a breathing machine can then move air in and out of my lungs</td>
<td>117 (87)</td>
</tr>
</tbody>
</table>

Discussion Goals

- 53 patients (39%) had spoken with their doctors about their goals of care prior to the study interview.
- At the conclusion of the interview, 70% of patients stated that discussing goals of care during the study was helpful.
- 2 patients changed their resuscitation preferences after discussing goals of care (they were more interested in receiving CPR).
- Patients who had discussed goals of care with their physicians were more likely to have full code status (p=0.002).
- Individual goals of care did not correlate with code status preferences.

Limitations

- Model sample size.
- Results may not be representative of other patient populations.
- Potential influence of interviewer.
- No follow-up on long-term influence of the discussion.

Conclusions

- Many patients do not understand what resuscitation entails.
- Asking patients about their goals of care is feasible.
- Discussing goals of care was perceived as helpful by a majority of patients.
- Goals of care differed widely among patients on a general medical service and warrant explicit discussion to avoid misunderstanding.
- Discussing goals of care may lead to changes in code status preference in some patients.

Acknowledgments

- This study was funded in part by the Medical Student Research Fellowship Program, The University of Iowa Carver College of Medicine.

Case Example:

A man with pneumonia and HIV
- Patient had multiple emotional discussions with his physicians
- During the study interview he passed after discussing his goals of care and said, "Thank you. That helped. I've been fighting (against having) a test, but this reminded me that it's important, and I can do this."
How to Command Attention with Your Presentation

The Oral Presentation
The Good and The Bad

• Watch the following videos.

  • What was most successful about the poster presentation?

  • What was least successful?
Step-by-Step Guide to Effective Presentations

• Start with a “hook” tailored to your viewer

• Pitch the argument for your scholarly work
  • What is the problem you were trying to address?
  • How did your work fill gaps in the literature?

• Your objective and methods (less emphasis for casual viewer, in depth for expert viewer)

• Highlights of what you found

• Implications of your work
The 4 Types of Poster Viewers

- The General-Knowledge Viewer
- The Expert in the Field
- The Super-Nice Friendly Viewer
- The Aloof Visitor
Pro Tip: Customizing Poster Presentations

• Tailor the presentation to your viewer
  • Have 1, 2 and 5 minute versions
Presenting Tips

• Be on time for the poster session
• Don’t read your poster word-for-word
  • Use the graphics as an anchor
• Stand to side of poster
• Wear your name tag
• Bring business cards
• Bring a notepad to record questions asked by viewers
Poster Pros and Cons

• At your table, identify “pro position” takers and “con position” takers. Debate the following:

• Should you allow viewers to take pictures?

• Do you restart your presentation for “late arrivals”?
Wrap-Up
Poster Design Checklist

Use the “Rule of 10s”: The average person scans your poster for 10 seconds from 10 ft away. Introduce your poster in 10 seconds. Poster content should be easily assimilated within 10 minutes. (Boullata 2007 Nutrition in Clinical Practice, Dec;22(6):641-6)

Balance

☐ Use structured layout with F-shaped reading pattern
☐ Poster columns are equal width
☐ Include sufficient “white-space” between columns and between sections
☐ Aim for about 30-40% “white-space”, 30-40% figures, 20% text

Alignment

☐ Headings are aligned with each other (left justified; avoid full-justified)
☐ Columns and graphics aligned with each other (vertical & horizontal)

Consistency

☐ Use the same font throughout (sans serif: e.g., Arial, Helvetica)
☐ Use similar dimensions for figures and photos
☐ Use limited color palette throughout (Max 3 colors)

Font Size & Selection

☐ Use appropriately sized font
  - Title: 80-120 pt
  - Names: 70-90 pt
  - Affiliations: 60-70 pt
  - Major headings: 54-80 pt
  - Subheadings: 48-72 pt
  - Text 36-52 pt
☐ Font size (test print poster on 8.5 x 11 sheet of paper – should be able to read everything)
☐ Use sans-serif fonts for titles, headings, & labels; use serif fonts for text (no drop shadows!)
☐ Use Sentence Case for Titles and Headings (easier to read) – don’t use all caps
☐ Use a visually pleasing font (Arial & Verdana) and no more than 2 different fonts

<table>
<thead>
<tr>
<th>10 Pleasing Serif &amp; Sans-Serif Font Combinations</th>
<th>Rules of Thumb on Font Size Legibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helvetica / Garamond</td>
<td>To be legible 6 feet use 30 pt</td>
</tr>
<tr>
<td>Caslon / Universa</td>
<td>To be legible 10 feet use 48 pt</td>
</tr>
<tr>
<td>Futura / Bodoni</td>
<td>To be legible 12 feet use 60 pt</td>
</tr>
<tr>
<td>Garamond / Futura</td>
<td>To be legible 14 feet use 72 pt</td>
</tr>
<tr>
<td>Gill Sans / Caslon</td>
<td></td>
</tr>
<tr>
<td>Minion / Gill Sans</td>
<td></td>
</tr>
<tr>
<td>Myriad / Minion</td>
<td></td>
</tr>
<tr>
<td>Caslon / Franklin Gothic</td>
<td></td>
</tr>
<tr>
<td>Trade Gothic / Clarendon</td>
<td></td>
</tr>
<tr>
<td>Franklin Gothic / Baskerville</td>
<td></td>
</tr>
</tbody>
</table>

Page 1 of 2, Gorman, Asnes, Li, Abramson, Adams, Vogt, APPD ELS 2018
Poster Design Checklist

Colors

☐ Use analogous colors for the entire poster scheme [colors next to each other on wheel]
☐ Avoid red & green, individually (for color-blind people) or together (evokes holidays)
☐ Use no more than 3 colors (may use variations of a color for contrast)
☐ Use light natural tones and avoid very bright colors or color schemes of sports teams
☐ Use black color for text

Contrast

☐ Use a slightly different color background for key sections
☐ Avoid complementary colors for text/background [opposite on color wheel]
☐ Avoid textured or picture backgrounds

Images, Figures, and Tables

☐ Maximize use of Figures and Tables. Figures > Tables > Text
☐ Use high-quality graphics so they scale to poster size in decent resolution
☐ Simplify charts/graphs - minimize “ink” while still conveying message (e.g. don’t use 3-D graphs)
☐ Use the same color scheme as the overall poster
☐ Use clear titles for your figures / tables that describe your data
☐ Create a focal point in your graph with color or symbols to highlights your results.

Text

☐ Ensure poster tells a clear, simple story
☐ Title is accurate promise of content, is clear, concise, and easy to understand (aim for < 10-12 words)
☐ Use concise, bulleted text
☐ Background – focus on why you did the study and what gap the study fills
☐ Objectives – Be direct/clear and include hypothesis
☐ Methods – aim to be concise, but with enough detail to evaluate your approach
☐ Results – Present relevant data that address your objectives
☐ Conclusion – Limit your poster to 2-3 take-home messages. Emphasize the significance. Ensure that your conclusions are supported by the results. Do not overstate the implications of your results.
4 Types of Poster Viewers

The Viewer with General Knowledge

These are the most common type.

- Use 1 minute pitch: 45 seconds of background, 15 seconds for take-home message)
- Focus on main graphic or table

The Expert in the Field

This type of viewer knows as much or more about your poster subject than you do. They will ask pointed questions, may be curt and not tolerate longer pitches.

- Use your 2 minute pitch (go skimpy on the background, focus on Methods/Results; use 15 seconds for take-home message
- Expect questions & don’t be afraid to say you don’t know something.
- Do not allow interruptions or start over if someone approaches; let them eavesdrop

The Super-Nice Friendly Person

This type of viewer provides a non-threatening opportunity to give your pitch in a low-stress environment. The group includes your friends, co-authors, mentors, the presenters at the posters next to and across from yours, and the benevolent program director.

- These are opportunities to practice; treat them like the real thing.
- Use your 2 minute pitch.

The Aloof Visitor

This viewer lingers in the space in front of the poster, moving very slowly looking at the poster but not making direct eye contact with you. There will be an awkward silence.

- Say hello, introduce yourself, and offer to discuss the poster.
- Even better: look at their badge, and offer them an easy entry into the encounter: “I see you are from Nationwide Children’s Hospital. What do you do there?”
- If they don’t want to engage, don’t push.
Poster Design & Presentation Resources


Websites


Designing Communications for a Poster Fair: Tips for Success. URL = [http://www.personal.psu.edu/drs18/postershow/postershow.pdf](http://www.personal.psu.edu/drs18/postershow/postershow.pdf)