**Evidence-Based Practice Summary**

**Optimal Delivery of Bedside Patient Education**

Author: Amanda Davis, MPH, RD; Emily Brennan, MLIS

**ASK THE QUESTION**

**Question:** Which format for delivery of bedside patient education in the hospital setting (i.e., tablet or television), is most effective for achieving quality outcomes?

**SEARCH FOR EVIDENCE**

Databases: PubMed, Scopus, Google Scholar

**PubMed search strategy:** (patient OR inpatient OR hospitalized) AND (engagement OR education OR records) AND (GetWell OR tablet* OR iPad OR MyChart)

**Keywords:** inpatient, hospitalized, education, engagement, GetWell, tablet*, iPad, MyChart

**CRITICALLY ANALYZE THE EVIDENCE**

There were three primary research articles found that address the delivery of tablet-based patient education on quality outcomes. Only one of these studies (Greyson et al., 2014) referenced the use of Epic MyChart.

Greyson et al. (2014) found that 90% of patients (n=30) were “satisfied” or “very satisfied” with their experience using the tablet, and that age and ownership of mobile devices did not significantly affect the ability to complete education modules or personal health record tasks. Dykes et al. (2013) used semi-structured interviews to assess the acceptability of a tablet-based clinical information system for hospitalized acute care patients and family members (n=11). The study found that ≥90% of participants were able to access discharge education modules and information about their clinical condition and care (i.e., blood draw and pain medication timing, lab results, physician notes), and that participants like the program and would use it if were available. Vawdrey et al. (2011) performed a qualitative
assessment of tablet use to provide clinical information to a small sample of patients (n=5) and found that patients found the tablets useful, that using the tablet would improve their satisfaction with their care and help them feel more engaged, and that for some patients using the tablets confirmed that their needs and concerns were being addressed by clinical staff.

No primary research articles were found that address the delivery of television-based bedside patient education (i.e., GetWell Network) on quality outcomes. There are a series of case studies available through the GetWell Network website that addresses improvements in patient satisfaction, patient education, pain management, readmission rates and medication teaching. While there is a high risk of bias due to the source of this material, it does provide some level of information for comparative purposes.

**Improvements in patient satisfaction:**
*Community Regional Medical Center* – The implementation of an interactive patient care technology and “teach back” to engage patients and family increased HCAHPS scores for 1) combined HCAHPS medication communication dimension (10%), 2) “staff described potential medication side effects” (9%), and 3) “staff described what medication was for” (6.75%).

**Improvements in pain management:**
*Winchester Medical Center* – The implementation of an interactive patient care technology which sent prompts to the bedside television 50 min after administration of pain to assess pain level increased documentation of medication effectiveness by 22.7%.
*St. John’s Children’s Hospital* – The implementation of an interactive patient care technology which sent prompts to the bedside television 45 min after administration of pain to assess pain level increased patient satisfaction with pain management by 68%.

**Improvements in readmission rates:**
*Cardon Children’s Medical Center* – The implementation of an interactive patient care technology to help patients learn about and manage their asthma, ensure all phases of education are completed, and engage patients in a home management plan of care to reduce readmission increased education completion by 30%, decrease direct costs per patient by 25% and resulted in zero readmissions during the busiest asthma months (Oct-Dec).

**Improvements in medication teaching:**
*Cristiana Care Health System* – The implementation of an interactive patient care technology which sent medication lists organized as “taken regularly” or “taken as needed” to the bedside television for patient viewing, increasing average monthly HCAHPS scores about medication education by 5%.

**PICO Question:** Which format for delivery of bedside patient education in the hospital setting (i.e., tablet or television), is most effective for achieving quality outcomes?
<table>
<thead>
<tr>
<th>Author/Date/Journal</th>
<th>Purpose of Study</th>
<th>Study Design</th>
<th>Sample &amp; Setting</th>
<th>Outcomes</th>
<th>Design Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dykes et al., 2013, Journal of Gerontological Nursing</td>
<td>To build and test an tablet bedside communication center (eBBC) for use by patients and family caregivers during acute care hospitalization</td>
<td>8 English-speaking adult patients (mean age=64) and 3 family members in medical units in 2 academic medical centers in the northeastern US</td>
<td>100% of patients and family members were able to access discharge education, information on their disease condition, and nurse's name on the eBBC. 91% of patients and family members were able to locate the day's laboratory test results and their physician's name on the eBBC. 82% of patients and family members were able to access physician notes, time of next blood draw and time of next pain medication administration on the eBBC. The majority of participants indicated that they would use the eBBC if it were available at their bedside, and that they liked the tailored education content. However, all patients preferred using a keyboard to the tablet keyboard.</td>
<td>Study Limitations = None</td>
<td></td>
</tr>
<tr>
<td>Greyson et al., 2014, Journal of Hospital Medicine</td>
<td>To explore inpatient satisfaction with bedside tablets (Epic MyChart) for patient education and access to their personal health record (PHR) during discharge planning</td>
<td>Prospective observational study</td>
<td>30 English-speaking adult patients in medical (hospitalist) service at a university hospital in California</td>
<td>38% of patients in the study were &lt;40 years old and 87% owned a mobile device. 90% of patients were “satisfied” or “very satisfied” with their experience using the tablet, and 70% required &lt;15 min of training to use the device. Older patients (&gt;50 years) were more likely to need more training (p=0.025), but age and mobile device ownership were not significant factors in the</td>
<td>Study Limitations = None</td>
</tr>
</tbody>
</table>

(When there are differences in the direction of the effect, populations, interventions or outcomes between studies)
- Studies are indirect (Your PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)
- Studies are imprecise (When studies include few patients and few events and thus have wide confidence intervals and the results are uncertain)
- Publication Bias (e.g. pharmaceutical company sponsors study on effectiveness of drug)

Increase Quality Rating if:
- Large Effect

Level of evidence for studies as a whole:
- High
- Moderate
- Low
- Very Low
<table>
<thead>
<tr>
<th>Study</th>
<th>Design/Methodology</th>
<th>Findings</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vawdrey et al., 2011, AMIA Annual Symposium Proceedings</td>
<td>To qualitatively assess patients’ satisfaction with and use of a tablet computer application and Web portal (myNYP.org) to provide interactive information during their hospital stay</td>
<td>All 5 patients believed the tablet was useful and felt that using the tablet would improve their satisfaction with their care and help them feel more engaged in the care process. Two patients mentioned using the tablet as confirmation that their needs and concerns were being addressed by clinical staff.</td>
<td>Study Limitations = None Non-Experimental/Observational Studies (case-control, cohort, cross sectional, longitudinal, descriptive, epidemiologic, case study/series, QI, survey)</td>
</tr>
</tbody>
</table>

**REFERENCES**


