Evidence-based practice can be hard to implement in the “real world” of clinical care. A set of reference cards with outcome-specific intervention options can make that practice possible. The Oncology Nursing Society Putting Evidence Into Practice® (ONS PEP) resources cover 16 topics to improve care for patients with cancer and their families. A survey evaluated awareness of the tools and the need for further research on their adoption. The survey also elicited target topics for future ONS PEP resources. Awareness of the resources varies among different nursing roles. Increased awareness among clinicians can guide and support improved patient care.

Oncology Nursing Society
Putting Evidence Into Practice® Resources:
Where Are We Now and What Is Next?

Evidence-based practice is patient care based on the best possible scientific evidence and clinical expertise within the context of patient and family values (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). The goal of implementing evidence-based practice is to improve patient outcomes. Evidence-based practice supports administrative policy and organizational decisions and guides research to build oncology nursing knowledge. It has become a mandate from third-party payers and regulators of health care in government and private sectors (Smedley, Stith, & Nelson, 2002). In today’s healthcare environment, nurses are accountable for delivering the highest-quality care that is safe and cost effective.

Oncology nurses can best improve patient outcomes by implementing evidence-based nursing interventions. Identifying and selecting appropriate interventions while serving patient and organizational demands can be challenging. To support nurses in this goal, the Oncology Nursing Society (ONS) has developed the Putting Evidence Into Practice (PEP®) resources, which provide evidence-based interventions and recommendations for practice. The resources have been used in the care of patients with cancer since the spring of 2006. The next step is the evaluation of their effectiveness and impact on patient outcomes. The purpose of this article is to describe ONS PEP resources and recommendations for evaluating their impact on patient outcomes as identified by the 2008 ONS Research Priorities Survey results.

ONS PEP Resources

ONS is committed to integrating evidence-based practice into oncology care and improving nursing-sensitive patient outcomes. Nursing-sensitive patient outcomes focus on how patients and their healthcare problems are affected by nursing interventions and result in changes in patients’ symptom experience, functional status, safety, psychological distress, and quality of life. The PEP® resources are designed to help oncology nurses implement evidence-based interventions in their practice and improve patient outcomes. The resources are available in the form of reference cards that provide evidence-based interventions and recommendations for practice. By using these resources, nurses can improve the quality of care for patients with cancer and their families.

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and costs (Given et al., 2004). ONS recognized that nurses need evidence-based tools for increasing positive patient outcomes in clinical practice and began developing the ONS PEP resources in 2005 (Given & Sherwood, 2005; Gobel, Beck, & O’Leary, 2006). The resources were timely and on the cutting-edge for oncology nursing practice. The purpose of the ONS PEP resources was to improve clinical outcomes for patients with cancer and their families by promoting excellence in oncology nursing and quality cancer care.

Teams consisting of staff nurses, advanced practice nurses, and nurse scientists identified and summarized the scientific evidence for oncology nursing interventions addressing each patient outcome topic. Topics were identified through surveys of groups of the membership (ONS Evidence-Based Practice and Outcomes Advisory Panel, ONS PEP authors, ONS PEP champions) and a literature search to confirm that research is published on the recommended topics. The recommended topics then were presented to the ONS Steering Council for approval. The process was followed prior to development of each ONS PEP volume. The teams determined the strength of evidence using a standardized rating system (Melynky & Fineout-Overholt, 2005; Ropka & Spencer-Cisek, 2001) (see www.ons.org/outcomes). Interventions were categorized by practice recommendation level using a classification system developed for the ONS PEP resources project. The resources were color coded to quickly identify the level of evidence supporting each intervention: green is strong evidence, yellow means evidence is insufficient, and red indicates no evidence or evidence showing the intervention may cause harm (Gobel et al., 2006).

To date, 16 ONS PEP resources have been introduced (see Table 1) and released to the ONS membership in four separate volumes. They are available as quick-reference cards and online resources (www.ons.org/outcomes). Each resource provides a summary of scientific evidence, intervention definitions, and references for a variety of interventions that target a desired outcome. The resources can be used in all areas of oncology practice.

### 2008 ONS Research Priorities Survey

The 2008 ONS Research Priorities Survey was conducted to set research priorities, including those related to evidence-based resources. Questions were designed to assess ONS PEP awareness, the importance of measuring the resources’ impact on patient outcomes, and needs for additional evidence-based resources. The survey information helps direct research on how adopting each of the existing ONS PEP resources influences patient outcomes and identifies directions for development of future resources. This article reports survey findings related to ONS PEP resources. More information about the 2008 ONS Research Priorities Survey is available in the November 2008 issue of the Oncology Nursing Forum (Doorenbos et al., 2008).

### Methods

ONS has more than 36,000 members who represent a great variety of oncology nursing perspectives. The membership was divided into three groups, and a representative sample of each group was invited to complete the Internet-based survey. The three groups were: general membership (n = 4,460), advanced practice nurses (n = 980), and members with a doctoral degree (n = 598). Human subjects approval was obtained from the University of Washington Human Subjects Division.

### Survey

One goal of the survey was to explore the impact of ONS efforts to promote evidence-based practice. The survey team developed two new sets of questions specific to ONS PEP resources. The first set of questions explored opinions about the importance of conducting research regarding how adoption of each of the 16 ONS PEP resources impacts patient care outcomes. Respondents were asked to rank the importance of research on the ONS PEP resources (1 = low, 2 = medium, 3 = high, and not familiar with the resource). The second set of questions asked about the oncology nurses’ interest in the development of new ONS PEP resources based on a group of nine symptom topics.

| Table 1. Oncology Nursing Society Putting Evidence Into Practice® Resources and Release Dates |
|-----------------|-----------------|-----------------|-----------------|
| **VOLUME** | **RESOURCE TOPIC** | **REFERENCE** | **RELEASE DATE** |
| I | Fatigue | Mitchell et al., 2007 | May 2006 |
| | Nausea and vomiting | Tipton et al., 2007 | May 2006 |
| | Prevention of infection | Zitella et al., 2006 | May 2006 |
| | Sleep/wake disturbances | Page et al., 2006 | May 2006 |
| II | Caregiver strain and burden | Honea et al., 2008 | April 2007 |
| | Constipation | Woolery et al., 2008 | April 2007 |
| | Depression | Fulcher et al., 2008 | April 2007 |
| | Dyspnea | DiSalvo et al., 2008 | April 2007 |
| | Mucositis | Harris et al., 2008 | April 2007 |
| | Peripheral neuropathy | Vosovsky et al., 2007 | April 2007 |
| III | Pain | – | November 2007 |
| | Prevention of bleeding | – | November 2007 |
| IV | Anorexia | Sheldon et al., 2008 | May 2008 |
| | Anxiety or psychological distress | – | May 2008 |
| | Diarrhea | Poage et al., 2008 | May 2008 |
| | Lymphedema | – | May 2008 |
generated by the survey team. Respondents were asked to rate each of the proposed ONS PEP resources (0 = not at all to 3 = high). An unrestricted comment box asked respondents to identify three additional topics that they believed needed to be developed as new ONS PEP resources. The survey included questions about the nurses’ demographic and professional characteristics. New to the 2008 survey was a question asking respondents to select the role perspective from which they were responding to the questions. The role options were clinician, advanced practice nurse, administrator, educator, and researcher.

Procedures

The survey was offered via the Internet during a two-week period in June 2008, immediately after the 2008 ONS Annual Congress. A link to the survey site was provided in an introductory e-mail to selected ONS members. The invitation e-mail also included an inducement for timely response, promising that if 400 or more responses were received within two weeks, a $500 donation would be made to the ONS Foundation; the donation was made. The survey responders and any potentially personally identifiable data were not linked, assuring anonymity. The entire participant pool was sent one follow-up e-mail a week after the first contact to encourage participation.

Results

Respondents

Of the 6,038 ONS members invited, a total of 713 members completed the survey. The respondents identified their role perspective as follows: staff nurse (n = 364, 51.1%), advanced practice nurse (n = 112, 15.7%), researcher (n = 117, 16.4%), educator (n = 68, 9.5%), administrator (n = 36, 5.0%), and other or no response (n = 16, 2.2%).

Importance of Conducting Research on Adoption of ONS PEP Resources

To analyze the data from the first set of ONS PEP resource questions on the survey, a rank order of mean importance ratings were calculated for each of the 16 resources (see Table 2). The pain resource was ranked most in need of adoption research, followed by prevention of infection, peripheral neuropathy, fatigue, mucositis, and nausea and vomiting. Table 3 shows the rank order of importance ratings for all 16 available ONS PEP resources by respondent role perspective.

Familiarity With ONS PEP Resources

ONS PEP resources volumes I–IV were released at four different times, the first being at the 2006 ONS Annual Congress and the most recent being the 2008 Congress. Respondent ratings of familiarity with the resources are shown in Table 2. The most familiar resource was fatigue, which was released in volume I. Familiarity with the resources for differing respondent role perspectives is shown in Table 4. Administrators reported being most familiar, followed in order by educators, advanced practice nurses, staff nurses, and researchers.

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>RANK ORDER</th>
<th>NOT FAMILIAR WITH RESOURCE (%)</th>
<th>RELEASE DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>1</td>
<td>9.0</td>
<td>November 2007</td>
</tr>
<tr>
<td>Prevention of infection</td>
<td>2</td>
<td>9.2</td>
<td>May 2006</td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
<td>3</td>
<td>9.9</td>
<td>April 2007</td>
</tr>
<tr>
<td>Fatigue</td>
<td>4</td>
<td>8.8</td>
<td>May 2006</td>
</tr>
<tr>
<td>Mucositis</td>
<td>5</td>
<td>9.3</td>
<td>April 2007</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td>6</td>
<td>9.2</td>
<td>May 2006</td>
</tr>
<tr>
<td>Depression</td>
<td>7</td>
<td>10.3</td>
<td>April 2007</td>
</tr>
<tr>
<td>Caregiver strain and burden</td>
<td>8</td>
<td>10.6</td>
<td>April 2007</td>
</tr>
<tr>
<td>Anxiety</td>
<td>9</td>
<td>10.6</td>
<td>May 2008</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>10</td>
<td>9.6</td>
<td>April 2007</td>
</tr>
<tr>
<td>Anorexia</td>
<td>11</td>
<td>10.9</td>
<td>May 2008</td>
</tr>
<tr>
<td>Prevention of bleeding</td>
<td>12</td>
<td>10.7</td>
<td>November 2007</td>
</tr>
<tr>
<td>Lymphedema</td>
<td>13</td>
<td>10.5</td>
<td>May 2008</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>14</td>
<td>9.7</td>
<td>May 2008</td>
</tr>
<tr>
<td>Sleep/wake disturbances</td>
<td>15</td>
<td>10.4</td>
<td>May 2006</td>
</tr>
<tr>
<td>Constipation</td>
<td>16</td>
<td>9.7</td>
<td>April 2007</td>
</tr>
</tbody>
</table>

N = 713

Note. Adjusted for oversampling of nurses with doctoral and master’s degrees

Importance of the Development of New ONS PEP Resources

The ONS survey team generated a list of nine potential topics to be developed into future ONS PEP resources. Survey respondents were asked to review the topics and rank them in order of importance (see Table 5). The five highest-ranking topics were skin changes and cutaneous reactions, symptom clusters, cognitive dysfunction, family adjustment to cancer, and functional impairment. Hormone disturbances and incontinence were ranked as least important.

The importance of developing new ONS PEP resources also was examined from the respondents’ role perspectives. Ranking of importance differed by respondent role perspectives, but no clear trends emerged. Responses to the open-ended question about additional resource topics generated a list of 331 topics. No topic clearly was top ranking. Hot flashes were suggested by three respondents, and the topic was listed most frequently.

Discussion

The 2008 ONS Research Priorities Survey results drive the 2009–2013 ONS Research Agenda. ONS is one of the leading nursing societies that focus on identifying knowledge gaps, setting research priorities, and promoting evidence-based practice. The survey included questions on ONS PEP resources. The responses to those questions will shape the Society’s ongoing development and dissemination of tools for evidence-based practice in oncology nursing care. Great interest exists in translating research
findings into practice; however, how to best disseminate and adopt research findings into everyday nursing practice is not yet known.

Survey results did not allow for identifying any ONS PEP resources as significantly more important than others, which may be because of the relevance of all the ONS PEP resources to oncology nurses. The ONS PEP pain resource was the highest-ranking topic in the importance of conducting research on its adoption into clinical practice. The finding was similar to the research priority rankings, which ranked pain as a priority research topic. ONS members are indicating that more research is needed in pain control and in methods of adopting evidence-based clinical practices in pain management. The finding is consistent with the knowledge that pain and fatigue are identified in cancer literature as the two most prevalent symptoms (Patrick et al., 2003). Mock (2003) demonstrated that clinical excellence can be enhanced with the adoption of evidence-based fatigue guidelines. Further improvement in the adoption of evidence-based guidelines for the management of pain and fatigue is an important research topic.

Although ONS members at all levels of practice had familiarity with the 16 current ONS PEP resources, differences in familiarity existed among groups. The degree of familiarity with the resources may be explained by two factors: timing of release of each resource and the respondent’s role perspective. Earlier ONS PEP resources were ranked higher in familiarity among ONS members compared to those released later. Administrators, educators, and advanced practice nurses were most familiar with the available resources. The higher familiarity of administrators and educators may be attributable to their positional responsibility to maintain currency in best practices. Whatever the cause, those in positions of influence should be well versed in evidence-based practice. Advanced practice nurses are more likely to use the resources in practice, which may influence their higher familiarity. The results suggest that staff nurses are not as familiar with ONS PEP resources. The finding highlights the need for further research on adoption of the resources into practice.

The rankings of the importance of research on the impact of ONS PEP resources on the patient outcomes of prevention of infection, peripheral neuropathy, mucositis, and nausea and vomiting may be, in part, because of the higher prevalence of the side effects from new chemotherapeutic agents and dose-intensive chemotherapy regimens. The side effects of chemotherapy and radiation lead to increased distress in patients with
cancer and their families and to decreased quality of life (Armstrong, Almadrones, & Gilbert, 2005; Eilers, 2004; Neymark & Crott, 2005). Therefore, oncology nurses are asking for more evidence-based interventions that they can adopt in clinical practice. ONS members reported being interested in having new ONS PEP resources developed on several topics. The information will help guide future development.

**Conclusion**

Topics such as pain and fatigue have been researched a great deal; however, healthcare providers still face challenges when caring for patients who experience those symptoms and when teaching caregivers home intervention strategies. ONS PEP resources provide an avenue for nurses to address nursing-sensitive patient outcomes for pain and fatigue and 14 other areas. The next challenge presented by ONS PEP resources is how to increase awareness and use of the tools. When almost all staff nurses either know the best evidence-based practices or where to find them using the resources, the outcome goals will be met more consistently.

ONS is committed to developing knowledge through the research process and sharing that knowledge with nurses providing care to patients with cancer. Nurses can make a difference in nursing-sensitive patient outcomes through adoption of ONS PEP resources. Meanwhile, results from the survey will guide a new ONS research agenda that incorporates evidence-based practice and evaluates its effects on nursing-sensitive patient outcomes. Oncology nurses are in key positions to facilitate further ONS PEP resource studies that lead to improvement in patient outcomes by sharing and using tools that promote the best of evidence-based practices across the continuum of care.

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**Table 5. Importance of Developing New Oncology Nursing Society Putting Evidence Into Practice® Resources in 2008**

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>RANK ORDER</th>
<th>IMPORTANCE RATING (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin changes/cutaneous reactions</td>
<td>1</td>
<td>2.53 (0.61)</td>
</tr>
<tr>
<td>Symptom clusters</td>
<td>2</td>
<td>2.50 (0.64)</td>
</tr>
<tr>
<td>Cognitive dysfunction</td>
<td>3</td>
<td>2.48 (0.63)</td>
</tr>
<tr>
<td>Family adjustment to cancer</td>
<td>4</td>
<td>2.46 (0.66)</td>
</tr>
<tr>
<td>Functional impairment</td>
<td>5</td>
<td>2.44 (0.65)</td>
</tr>
<tr>
<td>Sexuality</td>
<td>6</td>
<td>2.39 (0.66)</td>
</tr>
<tr>
<td>Adherence</td>
<td>7</td>
<td>2.36 (0.72)</td>
</tr>
<tr>
<td>Hormone disturbances</td>
<td>8</td>
<td>2.28 (0.65)</td>
</tr>
<tr>
<td>Incontinence</td>
<td>9</td>
<td>2.14 (0.69)</td>
</tr>
</tbody>
</table>

N = 713
*Note. Adjusted for oversampling of nurses with doctoral and master’s degrees*

*Note. Importance rating scale: 0 = not at all, 1 = low, 2 = medium, 3 = high*

**References**


