Review Article

Cancer-Related Pain and Symptoms Among Nursing Home Residents: A Systematic Review

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Abstract

Context. Many older nursing home (NH) residents with cancer experience pain and distressing symptoms. Although some develop cancer during their time in the institution, an increasing number are admitted during their final stages of their lives. Numerous studies have evaluated various treatment approaches, but how pain and symptoms are assessed and managed in people with cancer with and without dementia is unclear.

Objectives. The objective of this review was to summarize the evidence on cancer-related symptoms among NH residents with and without dementia.


Results. We identified 11 studies (cross-sectional, longitudinal, clinical trial, and qualitative studies). Ten studies investigated the prevalence and treatment of cancer-related symptoms such as vomiting, nausea, urinary tract infections, and depression. Studies clearly report a high prevalence of pain and reduced prescribing and treatment, regardless of the cognitive status. Only one small study included people with cancer and a diagnosis of dementia. Studies of new cancer diagnoses in NHs could not be identified.

Conclusion. This review clearly reports a high prevalence of pain and reduced drug prescribing and treatment among NH residents with cancer. This issue appears to be most critical among people with severe dementia, emphasizing the...
need for better guidance and evidence on pain assessment for these individuals. J Pain Symptom Manage 2014;48:699–710. © 2014 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words
Cancer, dementia, pain, pain treatment, symptom management, nursing home, review

Introduction
Cancer diseases are common, with 12.7 million affected people worldwide and about three million cases in Europe. These numbers are expected to increase during the coming decades, with the prevalence expected to double during the next 10 years in Norway. This pattern is largely the result of the increasing aging population, with an increased risk of cancer playing a smaller role. Prostate, lung, and colon cancer are the most common types among men, and breast, lung, and colon cancer are most typical among women. Cancer poses an enormous challenge for health-care provision and imposes a significant financial and emotional burden on the individuals affected and on society in general. Several effective cancer therapies are now available that prolong life expectancy and improve the quality of life. However, treatment and care for older people with cancer are often inadequate in long-term care institutions that provide continuous treatment and care, especially in relation to addressing certain symptoms such as pain, which is a common and distressing symptom of cancer.

In addition to people affected by cancer in the community, the condition affects many people who reside in nursing home (NH) settings. Although some develop cancer while residing in the NH, an increasing number of older people with cancer are admitted to an NH during the final stages of their lives. In Norway, 14%–26% of NH residents have a diagnosis of cancer. These reports are comparable with figures from the U.S., varying from 4% to 14%. Despite the considerable variation in reported cancer prevalence within cross-sectional studies, it is established that most people with cancer will experience pain and burdensome symptoms over the course of their disease. Between 37% and 80% of the younger people admitted to palliative care units experience pain. In addition, most experience symptoms such as depression, dyspnea, emesis, or fatigue. These symptoms cause great distress for the people with cancer and their relatives, reduce health-related quality of life, and increase stress and anxiety. Importantly, cancer-related pain and symptoms occur independent of age and are therefore a significant factor for older people living in NHs, as well. These are critical settings to consider because of the elevated prevalence of cancer among older people. In Norway, 45% of the population (about 18,000 people annually) die in NHs, 36% in hospitals, and 15% at home. Cancer causes about 30% of all deaths, and about 24% of the people with cancer die in an NH vs. about 6% in palliative care units in Norway. These individuals represent a growing NH group with complex needs for competence in cancer-related assessment and treatment of pain and symptoms.

Dementia, of which the most common cause is Alzheimer’s disease, occurs frequently among older people residing in NHs. Current estimates indicate that 82% of NH residents in Norway have dementia, and this will probably increase. Assessing pain and other symptoms is particularly challenging in these individuals because of their impaired ability to communicate and inability to self-report. Diagnosing pain relies on memory, expectation, and emotion, which are often lacking or disrupted. As a result, people with dementia who experience pain often do not receive the treatment they require. This complex clinical challenge means that people with cancer and cognitive impairment receiving end-of-life care are more at risk of untreated pain and other symptoms than their younger counterparts because they cannot communicate pain and symptoms and the effect of the treatment.

This article reviews the evidence for cancer-related challenges among NH residents aged ≥65 years with and without dementia to
identify means to improve the treatment and care received by this vulnerable group of people and to identify areas for future research.

**Methods**

**Search**

A systematic search of literature was conducted in October 2012. The databases included were PubMed (MEDLINE; 1946–2012), Excerpta Medica Database (EMBASE; 1974–2012), Cumulative Index to Nursing and Allied Health Literature (CINAHL; 1981–2012), AgeLine, and Cochrane Library (1998–2012).

The following search terms combined with relevant database-specific subject terms were used: Neoplasm* OR cancer OR tumor AND Nursing home* and limited to age ≥65 years. The search strategy is outlined in the Appendix (available from jpsmjournal.com or may be obtained from the authors). Additional studies were identified by manually searching reference lists and contacting authors of the studies included and experts. In addition, we searched the references of eligible studies for potentially relevant studies. Duplicates were removed, and the following three-step inclusion process was conducted independently by two of the authors (J. D. and B. S. H.): 1) reviewing the title and abstract of the articles; 2) reviewing the full-text article when an abstract seemed to meet the inclusion criteria; and 3) comparing the results of the reviewers’ article selection process. Disagreements were resolved by discussion between the reviewers and the other authors before consensus. Finally, the studies included were categorized in relation to cancer-related pain and symptoms with quantitative and qualitative research approaches (Tables 1 and 2).

**Inclusion and Exclusion Criteria**

Studies were included if they met the following criteria:

1) cross-sectional, longitudinal, randomized controlled trials, qualitative studies, and clinical trials including NH residents with cancer (such as breast or colon);

2) patients were eligible with or without diagnoses of dementia (such as Alzheimer’s disease, vascular dementia, Lewy body disease, or frontotemporal dementia);

3) outcome measures including cancer-related pain (acute or chronic) and symptoms (such as fatigue, nausea, vomiting, lack of appetite, and ulcers), with instruments based on self-rating scales or proxy-rater observation tools;

4) studies that report the mortality of an NH population;

5) interventions in the form of medication (such as analgesics or antiemetics) or surgery; and

6) only articles in English were included.

Studies were excluded if they

1) reported only NH residents with and without dementia without cancer;

2) only included patients <65 years old;

3) were case reports, dissertations, commentaries, study protocols, letters to the editor, or conference articles; and

4) were not based on empirical data.

**Data Extraction**

We developed a data extraction form and tested it by including five relevant articles. The form assessed the following domains of the studies included: 1) author, year of publication, and country; 2) characteristics of the study population (such as sample size, age, type of cancer, and type and stage of dementia) and number of NHs included; 3) aim of the study (such as surgery or assessment of pain and symptoms); 4) measurement instruments (such as pain, symptoms, or survival); and 5) the primary results of the study.

**Study Quality**

We used the criteria in the Mixed Methods Appraisal Tool to make our review more objective and systematic.
<table>
<thead>
<tr>
<th>Author</th>
<th>Number of People</th>
<th>Cognitive Status</th>
<th>Design and Setting</th>
<th>Aim of the Study</th>
<th>Outcome Measures</th>
<th>Results</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finlayson et al.</td>
<td>6822 with colon cancer</td>
<td>50% cognitive intact before surgery</td>
<td>Retrospective cohort study, 1995–2005, 32 NHs, U.S.</td>
<td>Explore functional status and mortality rates after colon cancer surgery compared with those without surgery</td>
<td>MDS assessment including ADL, CPS, and comorbidity</td>
<td>After one year, 53% rates of mortality; 24% sustained functional decline. Older age (≥80 years), surgical complications, and functional decline before surgery associated with functional decline at one year</td>
<td>High mortality rates after colon cancer surgery are common among NH residents.</td>
</tr>
<tr>
<td>Bradley et al.</td>
<td>1907 People with cancer (≥66 years old in NHs, U.S.)</td>
<td></td>
<td>Cross-sectional, 1997–2000</td>
<td>Investigate the quality of care and palliative care in NH patients with cancer</td>
<td>Late or unstaged disease, dead within three months, receiving hospice care, and Charlson comorbidity index</td>
<td>62% late or unstaged disease, 48% mortality within three months, 28% received hospice care, 22% cancer-directed surgery, and 6% chemotherapy and/or radiation. People 71–75 years old were treated with more cancer-directed surgery than people ≥86 years old</td>
<td>Necessary to consider treatment practices and the apparent absence of diagnosis and treatment</td>
</tr>
<tr>
<td>Duncan et al.</td>
<td>1022 with cancer and 9910 without cancer</td>
<td></td>
<td>Cross-sectional, 264 NHs, U.S.</td>
<td>Compare frequency and severity of pain and symptoms in people with and without cancer</td>
<td>MDS, including assessment of pain, delirium, edema, weight loss, vomiting, diarrhea, dyspnea, ADL, comorbidity, CPS, and MSD depression</td>
<td>Significant difference ($P = 0.05$) between symptoms among people with and without cancer for pain (51% vs. 46%), dyspnea (13% vs. 10%), vomiting (3% vs. 1%), diarrhea (5% vs. 3%), and weight loss (17% vs. 10%). Lower comorbidity score was significantly related to cancer. ADL and depression were not associated with cancer diagnosis</td>
<td>Control of symptoms needs to be improved</td>
</tr>
</tbody>
</table>
Buchanan et al.\textsuperscript{1} 61,890 People with cancer and 486,440 people without cancer 34% cognitively intact at admission Cross-sectional, NHs, U.S. Compare people in NHs with and without cancer regarding demographics, health status, treatment, and physical and cognitive status MDS including assessment of diagnoses, physical and cognitive functioning, pain, depression, psychosocial well-being, communication patterns, and CPS 64% of the people with cancer were dependent in carrying out ADL, 55% used a wheelchair, 37% moderate daily pain, 26% depression, 50% unstable health condition, 21% in the final six months of life, 19% hospice care, and 60% advance directives. Compared with NH residents without cancer: those with cancer had greater ADL dependence, more daily pain, and were older (mean age 75.9 vs. 74.8 years). Pain management, mental health services, advanced directives, and palliative care for dying NH residents need to be improved.

Drageset et al.\textsuperscript{5} 227 Cognitively intact NH residents ≥65 years: 60 with cancer and 167 without cancer Cross-sectional observational study in 30 NHs, Norway HRQOL (SF-36) More residents with cancer reported more bodily pain and scored lower on all other SF-36 subscales, except for role-emotional. General health was worse than that of the residents without cancer ($P = 0.04$). Residents with cancer reported more pain and worse health.

Johnson et al.\textsuperscript{23} 190,769 NH residents with cancer Cross-sectional, 1999, NHs, U.S. Explore the scope and quality of cancer care MDS including assessment of symptoms, pain, depression, shortness of breath, weight, and medication Improving the quality of cancer care for older adults is important.
<table>
<thead>
<tr>
<th>Author</th>
<th>Number of People</th>
<th>Cognitive Status</th>
<th>Design and Setting</th>
<th>Aim of the Study</th>
<th>Outcome Measures</th>
<th>Results</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brandt et al.</td>
<td>544 Long-term care patients with life expectancy six weeks or less in 2001—2005, 12% of 544 with cancer diagnosis</td>
<td>33% cognitively intact at admission</td>
<td>Prospective observational cohort study, 16 NHs, the Netherlands</td>
<td>Compare three groups of NH residents: cancer (n = 60) vs. dementia (n = 156) vs. cardiovascular diseases (n = 106) assessed in the end of life, regarding demographics, diagnoses, and pain and symptoms</td>
<td>GDS, Codes of Diseases—Dutch Classification for NH Medicine assessed by NH physicians</td>
<td>Cancer vs. dementia vs. cardiovascular diseases, respectively: generalized weakness (47%, 29%, and 29%); extreme tiredness (27%, 3%, and 10%); loss of appetite (10%, 1%, and 4%); vomiting (12%, 1%, and 1%); nausea (13%, 1%, and 1%); cachexia (10%, 1%, and 2%)</td>
<td>The article emphasized the challenge involved in decision making in the palliative care of terminally ill.</td>
</tr>
<tr>
<td>Jordhøy et al.</td>
<td>395 People with cancer: NHs (n = 55), hospital (n = 260), and home (n = 80)</td>
<td>Cognitive status not reported</td>
<td>Prospective—trajectory in Norway, 1995—1997: NHs, hospital, and home</td>
<td>Explore demographics, medical status, and quality of life</td>
<td>EORTC QLQ-C30, survival rate, and place of death</td>
<td>14% died in the NH, 20% at home, and 66% in hospitals; those dying in NHs were older, widowed, and had poor performance status. One month before death, NH residents had more severe functioning impairments, fatigue, nausea or vomiting, and appetite loss compared with those dying elsewhere.</td>
<td>Improved practice in treatment and care are needed for older people with cancer.</td>
</tr>
<tr>
<td>Bernabei et al.</td>
<td>13,625 People with cancer ≥65 years discharged from hospital to NHs</td>
<td>Cognitive impairment: 65—74 years: 32% moderate, 8% severe; 75—84 years: 39% moderate, 10% severe; ≥85 years: 43% moderate, 11% severe</td>
<td>Retrospective, cross-sectional study, 1992—1995, U.S.</td>
<td>Evaluate quality of pain management</td>
<td>MDS including assessment of physical and mental status, pain, and CPS</td>
<td>4003 People; 24%, 29%, and 38% of those aged ≥85, 75—84, and 65—74 years, respectively, reported daily pain. Age, sex, race, marital status, physical functioning, depression, and cognitive status were independently associated with pain.</td>
<td>Daily pain is prevalent and is often untreated, particularly among older and minority patients.</td>
</tr>
</tbody>
</table>
Results

The search produced 886 publications; 353 focused on pain and symptoms. We excluded 25 because the full text showed that they did not comply with the inclusion criteria. We included 11 studies (Fig. 1).

Characteristics of the Reviewed Studies

This review identified 11 studies\(^5,10^{-28}\) (Tables 1 and 2).

Four studies compared pain and symptoms cross-sectionally among NH residents with and without cancer\(^5,10^{-21}\). One focused explicitly on residents without cognitive impairment,\(^5\) and two studies included residents both with and without cognitive impairment (reported as the proportion cognitively intact: 23% and 34% of the cohorts, respectively).\(^19,21\)

Only two studies identified pain and other symptoms specifically among older NH residents with cancer.\(^23,28\) Only one study focused on changes in the functional status (before and after surgery).\(^24\) One study compared people with cancer diagnoses in various settings, including palliative care units and NHs.\(^25\) A further study provided cross-sectional data on pain and other symptoms among people with cancer and dementia,\(^26\) and one study explored attitudes toward and knowledge about pain and pain management among family members of NH residents with terminal cancer.\(^27\)

Studies Fulfilling the Inclusion Criteria

Tables 1 and 2 show the key features of the studies included.

Finlayson et al.\(^24\) examined the functional status and mortality rates after colon cancer surgery among 6822 NH residents aged ≥65 years from 32 NHs in the U.S. Residents >80 years old demonstrated 50% more functional decline than clients 65–69 years old. Functional decline six months before surgery significantly predicted mortality.

Duncan et al.\(^20\) compared the prevalence of cancer-related symptoms among 1022 NH residents with cancer and 9910 without cancer. Of those with cancer, 94% were ≥85 years old. Severe pain (4%, odds ratio [OR] = 1.78) vomiting (3%, OR = 2.28), dyspnea (13%, OR = 1.27), weight loss (17%, OR = 1.68), and diarrhea (17%, OR = 1.68) were significantly
related to cancer. Those without cancer had more comorbid conditions. Another study evaluated the quality of care, cancer-related surgery, and mortality among NH residents with cancer. Mortality was high, with about 48% dying within three months. People with African American background received fewer surgeries than Caucasians, indicating the need for better guidance on assessment and treatment.

Buchanan et al. analyzed the 548,330 admissions to NHs in the U.S. in 2002. At admission, 11% (n = 61,890) had a cancer diagnosis, 37% had at least moderate daily pain, and 26% had a diagnosis of depression. About 20% had reduced life expectancy (six months or less). Compared with people without cancer, people with cancer needed more assistance in performing the activities of daily living and were more unstable in health patterns during acute or chronic periods, with weight loss, obstipation (60%), and bladder incontinence (56%).

Drageset et al. explored the health-related quality of life in a cross-sectional study of 227 cognitively intact NH residents ≥65 years in 30 NHs in Norway through face-to-face interviews. People with cancer reported more pain and worse general health. Interestingly, people with cancer with fewer comorbid conditions also had more impaired physical functioning.

Johnson et al. analyzed data from about 9% (n = 190,769) of the NH residents with cancer in the U.S.: 12% were terminally ill, 29% received hospice care, and 45% had a do-not-resuscitate order. Anemia (24%), weight loss (23%), and depression (22%) were frequent. More than 50% had persistent severe pain. Active treatment such as chemotherapy or radiotherapy was rare (<5%), but 16% received tube feeding, intravenous medication (28%), or oxygen (25%).

Brandt et al. reported the diagnoses and symptoms of residents with life expectancy of less than six weeks living in 16 NHs in the Netherlands. People with cancer (n = 60) were compared with those with dementia and behavioral disturbances (n = 156) and with people with cardiovascular diseases (n = 106). Compared with the other groups, people with cancer were weaker, with extreme tiredness (27%), loss of appetite (10%) and cachexia, nausea (13%), and vomiting.

Jordhøy et al. compared 55 people with cancer in Norway who died in NHs (median age 77 years) with 260 people who died in a hospital (median age 69 years) and 80 people who died at home (median 65 years). Those who died in NHs had significantly more fatigue, nausea, vomiting, and appetite loss than the others. Jordhøy et al. concluded

### Table 2

<table>
<thead>
<tr>
<th>Author</th>
<th>Participants</th>
<th>Design, Setting</th>
<th>Aim of the Study</th>
<th>Results</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berry</td>
<td>Family members of NH residents with terminal cancer in the U.S.</td>
<td>Qualitative interview</td>
<td>To investigate family members’ experiences and understanding of pain and pain management among people with cancer</td>
<td>Participants who believed their relatives’ pain could be better managed viewed their family member’s pain and illness differently than those who did not believe this and took on the role of advocate. Those who believed that their relative did not have adequate pain relief expressed no concerns about this aspect of their relatives’ care; they could not separate their relatives’ pain from their illness</td>
<td>Pain and pain management is only one part of the whole disease trajectory.</td>
</tr>
</tbody>
</table>

NH = nursing home.
that research and improved practice in treatment and care are urgently needed for frail older people with cancer.

Furthermore, Bernabei et al.\textsuperscript{28} investigated pain treatment among 13,625 people \( \geq 65 \) years old with cancer discharged from hospitals to nursing facilities between 1992 and 1995. Of those with daily pain, 26% received no analgesics, 16% non-narcotic drugs, 32% weak opiates, and 26% strong opiates. Those \( \geq 85 \) years received less analgesia and significantly less opiates than younger residents. In addition, African American residents, those with dementia, and those using polypharmacy (\( > 10 \) drugs) received less analgesia.

Finally, Monroe et al.\textsuperscript{26} retrospectively investigated the prevalence of pain among 48 people with cancer with dementia in the last three months of life. Pain behavior was negatively associated with Alzheimer’s disease (\( P = 0.05 \); increase in moderate dementia and decrease in advanced dementia). Cognitive ability (Cognitive Performance Scale score) and total opioid medication were significantly negatively correlated, indicating that individuals with severe Alzheimer’s disease received less opioids.

**Qualitative Studies**

One qualitative study used in-depth interviews on pain and pain management with nine relatives of NH residents with end-stage cancer. Berry\textsuperscript{27} found that family members (husband, wife, daughter, and mother) experienced pain as a metaphor for illness and death, independent of the quality of pain.

![Fig. 1. Results of search strategy.](image-url)
treatment. However, when pain management was optimal, their attitudes appeared to be more hopeful and action oriented.

Discussion

The findings demonstrate several important trends in symptoms and treatment in people who experience cancer-related pain in NH settings. The studies19,20,25,26 clearly report a high prevalence of pain (37%–60%) in this patient group, regardless of the cognitive status. The studies of Monroe et al.,26 Bernabei et al.,28 Duncan et al.,20 and Buchanan et al.19 reported reduced drug prescribing and treatment of people with cognitive impairment. This issue appears to be most critical for people with severe dementia, emphasizing the need for better guidance and evidence on pain assessment for these individuals.

Pain assessment and treatment also appear to be lacking among people from ethnic minority backgrounds, a key consideration for guidance and practice.22,28 Common additional cancer-related symptoms included vomiting, nausea, and urinary tract infections, with some evidence of increased depression. These findings indicate the need to consider alleviating these symptoms among people diagnosed with cancer. One study27 highlights that family members are clearly affected by the condition and treatment of their loved ones. Overall, these studies clearly demonstrate the greater treatment and care needs inherent in caring for people with cancer in NHs. In this context, good expertise in oncology nursing, palliative medicine, and dementia is required25 as well as improving the methods for assessing pain among residents with Alzheimer’s disease.26

We did not find any studies reporting the trajectory of symptoms over the period of time that residents remain in NHs, despite its potential relevance.

This review has highlighted some gaps in the current evidence. No studies have focused on the symptoms and treatment of NH residents newly diagnosed with cancer. Bradley et al.22 and Clement et al.4 found that cancer is likely to be diagnosed late among NH residents, probably indicating significant distress among these individuals before being diagnosed.

Distinct symptoms are probably present that could expedite diagnosis. An important focus for future research will therefore be identifying diagnostic markers of early- and midstage cancer among NH residents. Evidence to support the benefits of treating this group would aid health professionals and provide incentives and impetus to improve diagnosis.

Our review identified only one study of 48 people with cancer with confirmed mental impairment.26 Key findings included a significant difference in pain behavior (increase in moderate dementia and decrease in advanced dementia) between people with varying severity of Alzheimer’s disease and a discrepancy in analgesic prescribing in these distinct groups. Beyond the direct implications of these findings to treatment practice, the evidence to inform treatment of cancer-related pain among people with severe cognitive impairment is extremely limited. This represents a critical gap in knowledge because these are the most vulnerable people who also are more likely to experience pain. These individuals are also at higher risk of developing behavioral and mental symptoms of dementia such as agitation, aggression, and depression, which greatly affect the medication they receive and their quality of life.29 Improving the assessment of pain would enable unnecessary or inappropriate prescribing to be reduced and greatly improve the treatment of these residents.

We identified no intervention study focusing on cancer in NHs.24 No intervention studies have reported the effect of interventions related to cancer among NH residents. However, there are numerous intervention studies among people with cancer not living in NHs.30–33 This key discrepancy needs to be addressed in the future to improve the treatment and care provided to people with cancer in these settings.

The evidence revealed by this review confirms several key points that are directly relevant to practice but also emphasizes the urgent need for more research into cancer-related pain, particularly among people with cognitive impairment.

Limitations

This systematic review has limitations. The studies included were heterogeneous in terms
of design (retrospective vs. prospective and some qualitative), method (measurements used and conceptualization of symptoms), research population (patients with cognitively impaired or not and family members), differences in health-care systems, national or cultural differences among countries, and specific characteristics of the NHs. The results, therefore, are difficult to compare.

Furthermore, limiting the inclusion to residents ≥65 years could have narrowed our results. However, our search protocol was limited to age ≥65 years because the NH populations generally have high age and high mortality. This is comparable with other European countries and the U.S.22

Six of the 10 studies included used the minimum data sets. Assessment of cancer-related symptoms has been noted to be incomplete because the type and stage of cancer and symptoms such as fatigue, weakness, and urinary or bowel incontinence are not included in assessing minimum data sets.20 However, despite this limitation, minimum data sets are suggested to be useful in long-term care research because of the standardization and coverage of a broad population.

Five of the 11 studies included assessed cognitive impairment. Some studies have suggested that using the Discomfort Behavior Scale for pain detection could lead to underreported pain among patients diagnosed with dementia.8,13

We used the Mixed Methods Appraisal Tool18 to make our review more objective and systematic, but the different methods and diversity in themes of the studies presented challenges in ranking the studies’ quality.

Disclosures and Acknowledgments

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References


# Appendix

## Search History

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<td>#7 (#4) AND #2 Filters: review, aged: 65+ years 27</td>
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<tr>
<td></td>
<td>#6 (#4) AND #2 Filters: aged: 65+ years 391</td>
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<tr>
<td></td>
<td>#5 (#4) AND #2579</td>
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|                      | "Neoplasms"[Mesh] 2373160 |
|                      | #2 "Nursing Homes"[Mesh] or "nursing home*" 34944 |
|                      | #1 "Nursing Homes"[Mesh] 30061 |
| Number of hits       | 27 reviews and 364 individual studies |
| Librarian who performed or guided the search | Regina Küfner Lein |