

# Using Electronic Case Summaries to Elicit Multi-Disciplinary Expert Knowledge about Referrals to Post-Acute Care



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**E**LICITING knowledge from a large number of geographically dispersed clinical experts given their time and scheduling constraints, while maintaining anonymity among them, presents multiple challenges. Objectives: 1) To describe a four step, innovative Internet based knowledge elicitation method to acquire interprofessional experts' knowledge about which patients need post-acute referral. 2) To compare the percentage of patients referred by experts after case study review to the percentage of patients referred by hospital clinicians and to compare the experts' referral decisions by discipline and geographic region.

**Methods:** De-identified case studies, developed from the electronic health records (EHR) from six hospitals, contained a comprehensive description of 1,496 acute care inpatients. Clinical experts, with at least 5 years of clinical experience with older adults in discharge planning, post-acute, or transitional care were recruited from among professional colleagues of the team members, professional organizations, and snowball sampling. In teams of three, physicians, nurses, social workers, and physical therapists judged the case studies for the need for post-acute care referrals such as home care in a four step Internet based process followed by Delphi rounds when the team did not agree. Delphi rounds were also online and allowed sharing of information and asynchronous communication. We compared the referral decisions of the experts to each other, their regions, and the actual documented discharge dispositions made on the same cases by practicing clinicians at the hospital sites.

**Results:** Thirty-two physicians, 47 nurses, 44 social workers and 48 physical therapists completed the study. Twenty-nine percent were from the East, 26% from the Midwest, 19% from the West and 26% from the Southern regions of the United States. It took the experts 5-10 minutes per case to make their decisions. Experts recommended referral for 1,204 cases (80%) and not to refer for 292 (20%). Two hundred- eighty cases (18.7%) required one Delphi Round and 105 (7%) required two Delphi rounds to reach consensus on the site of care. In the end, 37% were recommended for skilled nursing facility care, 36.5% were recommended for home care services, 11% for inpatient rehabilitation, 8.5% for nursing home care, 5.5% for hospice, and 1.4% were unable to reach agreement at the end of two Delphi rounds and were not used in the modeling of the decision support algorithm. The experts demonstrated no significant differences in their decisions to refer patients for post-acute care based on their profession or regional location and there were no significant differences in the site of referral by discipline or region. The experts recommended referral for 80% of the cases while the actual discharge disposition of the patients collected from the hospital sites showed post-acute referrals for 65.9%.

**Discussion:** Experts given the time and comprehensive information to evaluate patients' need for post-acute care referred more patients for service than practicing clinicians. The methodology worked well for capturing the experts' decisions and provided enough information and a means to achieve agreement among multiple disciplines. The method elicited the independent (patient characteristics that are important) and the dependent variables (yes/no refer and to what setting) for subsequent modeling to build decision support tools.

**Conclusion:** The Internet based method for eliciting expert knowledge enabled expert clinicians to review case summaries and make decisions about post-acute care referrals. Having a case summary of comprehensive patient assessment information may have assisted experts to identify more patients in need of post-acute care compared to the number the hospital clinicians actually referred. The methodology produced the data needed to develop an expert decision support system for discharge planning. It is recommended as an effective method to elicit knowledge for building expert decision support.

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