BRENDAN LEEN, AREA LIBRARY MANAGER, HSE SOUTH; LEAD, HEALTH LIBRARY IRELAND EVIDENCE
EBHC CONFERENCE 2023, TAORMINA, SICILY, 28 OCTOBER 2023

Impact of health library information resources on patient care
Background: What is Health Library Ireland?

80,000 healthcare personnel.


National elibrary www.hselibrary.ie supplying ejournals, ebooks, point-of-care resources (BMJ Best Practice, UpToDate), drugs reference resources (MedicinesComplete).

27 (mainly hospital-based) physical library sites with teams delivering national procurement and nationally standardized services ... incl. Health Library Ireland Evidence: protocol-guided literature searches and evidence summaries.

Current membership 15,000 healthcare personnel.
Objectives and Methods: A cross-sectional survey of Irish HCP

Objectives: How do Irish HCP use information found in or provided by Health Library Ireland? What is the impact on patient care? incl. impact on quality of care provided ... and associated economic impact?

Design: Multi-centre cross-sectional survey. 27 library sites. Local (mainly acute hospital) email distribution lists.

Setting: Primary, secondary, and tertiary healthcare settings in Irish public health service.

Methods: 9-item email questionnaire to registered library users, and via broadcast email to local email distribution lists. Separately, consulted economic data sources to find credible estimates of the costs associated with adverse events and clinicians' time in Irish health service.

Response: 1,278.
Q1. Demographics

95% of participants (n=1,212) answered this question.

- Medical, Surgical or Dental: 32% (n=432)
- Nursing or Midwifery: 27% (n=358)
- Health and Social Care: 25% (n=333)
- Other (16%)

Q2. Engagement

99% of participants (n=1,270) answered this question.

- At least 5 times per week: 31%
- At least 4 times per week: 42%
- At least 2 times per week: 65%
- At least once per week: 90%
Q3. Information Categories

98% of participants (n=1,249) answered this question.

How often do you search for each of the following types of information?

- **Drugs Information**: 80% (39.77% often; 40.21% sometimes)
- **Treatment or Prognosis**: 94% (55.46% often; 38.32% sometimes)
- **Diagnosis or Clinical Symptoms**: 80% (48.68% often; 43.65% sometimes)
- **Patient Information**: 76% (45.54% often; 30.39% sometimes)
- **Epidemiology or Pathogenesis**: 80% (28.96% often; 51.26% sometimes)
Q4. Impact on Patient Care

All participants (n=1,278) answered parts or all of this question. How strongly do you agree/disagree with each of these statements?

- **Quality**: 92%
  "Use of library information resources helps me to provide better quality of care for my patients."
  68.52% STRONGLY AGREE; 23.78% AGREE

- **Confidence**: 93%
  "Use of library information resources makes me more confident in my decisions."
  67.3% STRONGLY AGREE; 26.02% AGREE

- **Current Best Practice**: 94%
  "Use of library information resources assures that my decisions reflect current best practice."
  70.38% STRONGLY AGREE; 23.96% AGREE

- **Time**: 78%
  "Use of library information resources saves me time."
  51.02% STRONGLY AGREE; 26.49% AGREE

- **Adverse Events**: 63%
  "Use of library information resources has helped prevent an adverse event."
  38.88% STRONGLY AGREE; 23.97% AGREE
Q5. Decision-Making

1,274 participants answered parts or all of this question.

Within the past 12 months, how did the information found or provided influence your decision-making?

- **Decision-Making**
  - 94%: "... was integral to my decision-making."
    - 43.52% OFTEN; 50% SOMETIMES

- **Patient Management**
  - 88%: "... led to a change in patient management or treatment."
    - 35.05% OFTEN; 52.97% SOMETIMES

- **Diagnostic Testing**
  - 62%: "... led to a change in diagnostic testing."
    - 23.23% OFTEN; 39.15% SOMETIMES

- **Referrals**
  - 53%: "... made it unnecessary to refer a patient for further consultation."
    - 17.07% OFTEN; 36.07% SOMETIMES

- **Confirmed What I Already Knew**
  - 96%

- **Raised Additional Considerations**
  - 95%

  "... confirmed what I already knew."
  - 44.88% OFTEN; 50.83% SOMETIMES

  "... raised additional issues to consider."
  - 44.06% OFTEN; 50.79% SOMETIMES
Results

Q6. Impact on Patient Care: Positive Outcomes Achieved

96% of participants (n=1,229) answered parts or all of this question.

Within the past 12 months, did any of the following change in a positive way as a result of information found or provided?

- **38%** Diagnosis
  - n=470. More accurate and/or timely diagnosis.

- **30%** Diagnostic Tests
  - n=374. Fewer or more appropriate diagnostic tests.

- **48%** Drug Therapy
  - n=587. More appropriate drugs prescribed.

- **13%** Length of Stay
  - n=162. Length of stay reduced.

- **74%** Quality
  - n=911. Quality or safety of patient care improved.

- **64%** Shared Decision-Making
  - n=792. Better quality information discussed with patient.
Q7. Impact on Patient Care: Negative Outcomes Avoided

86% of participants (n=1,094) answered parts or all of this question.

Within the past 12 months, were any of the following avoided as a result of information found or provided?

- Hospital Admission or Re-Admission: 20% (n=216)
- Misdiagnosis: 27% (n=296)
- Patient Misunderstanding: 54% (n=590)
- Additional Tests or Procedures: 32% (n=350)
- Adverse Event: 25% (n=268)
- Adverse Drug Reaction or Interaction: 39% (n=424)
- Hospital-Acquired Infection: 13% (n=137)
- Surgery: 4% (n=48)
51% (n=650) strongly agreed and that use of library information resources saved time (Q4); 77% (n=986) agreed or strongly agreed. Engaged with Healthcare Pricing Office (Ireland): estimated cost benefit of \(\sim\text{€0.89 per minute per respondent}\) (based on demographics of survey population (Q1) and mean salary scales in Irish health service).

Marshall et al (2013): Mean time saved 2.5 hours per adverse event avoided. Based on library usage of \(\sim 3\) times per week (Q2), and assuming one adverse event avoided per month, annual cost benefit among respondents who strongly agreed (n=650, 51%) = \(((150 \text{ minutes} \times \text{€0.89} \times 650) \times 12) = \text{€1.04 million}; \) among respondents who agreed or strongly agreed (77%, n=986) = \(\text{€1.58 million}\).
Irish National Adverse Event Study 2 (INAES-2) established cost per adverse event of €4,700

\[
4,700 \times 268 = \text{€1.25 million}
\]
within our survey population within the past 12 months

**Limitations**

- Includes a greater proportion of active library users in the study than in the general population of healthcare personnel in the Irish health service
- Further studies are needed to better quantify and monetize more precise time (and cost) savings
Conclusion: Implications?
Better integration, more usage

Better **integration** of health library information resources into routine clinical practice: electronic records; clinical systems; + **culture**.

More **usage** of health library information resources and services: simplifying **access sign-ins, interfaces**; more aggressive **promotion and outreach** targeting non- or infrequent users; greater **technological innovation**: mobile **apps, data mining** to interrogate databases, seamless **authentication and personalization, integration** with search engines and social media.

THANK YOU.  
DO YOU HAVE ANY QUESTIONS?

Or in the case of later questions email Brendan.Leen@hse.ie.