

A Critical Pathway for Electronic Medical Record Selection

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Background – Health Care

- Canada
 - Universal access
 - Hospitals, physicians publicly funded
 - Family physician primary gatekeeper
 - Drugs mix of public and private
 - Ontario
 - \$23 billion health care budget
 - \$2.6 billion for drugs – growing at 16%/year
 - Strong health economics base
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Who We Are

- Centre for Evaluation of Medicines (CEM)
 - Independent Academic Research Institute
 - Specialize in evidence-based therapeutics
 - COMPETE (Computerization of Medical Practices for the Enhancement of Therapeutic Effectiveness)
 - a three year project to evaluate the impact of EMR on practice efficiency, quality of care, privacy concerns in community-based primary care
 - Funded by CIHR, Ontario MOH, industry
 - EMR use is rare in mainstream family practice in Canada
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Initial Premise

- EMRs/EHRs as “breakthrough” health technology
 - Impact at all levels of health care
 - “Mission critical” technology
 - Created by smart people
 - 20 years of study
 - ✚ Therefore there must be high quality evidence on EMR selection, implementation, decision support design, etc.
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EMR Selection: The Awakening

- Evidence on rigorous EMR selection process
 - Literature search to September, 2000
 - No relevant hits
 - Conferences, colleagues
 - 20 years in-house development
- Develop software selection team
 - Technical, clinical and methodology expertise
 - HW, SW, DB, networks, research methods, computer:user interface, clinical care, EMRs in primary care

Methods

- Multi-stage evaluation
 1. Target group surveys
 2. “Gold standard” development
 3. Broad scan for eligible EMR systems
 4. Detailed system reviews
 5. Detailed vendor reviews
 6. Finalist evaluations and negotiations
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Target Audience Surveys

- 700 area family physicians
 - 1200 – 4000 patients/doc @ 25-60 patients per day
 - Mostly solo/small group, fee for service
 - 10-15% interested
 - Drivers - efficiency, better charting, access to reminders & guidelines
 - Barriers – cost, privacy, change management
 - Willingness to pay ~ 1/3 actual cost
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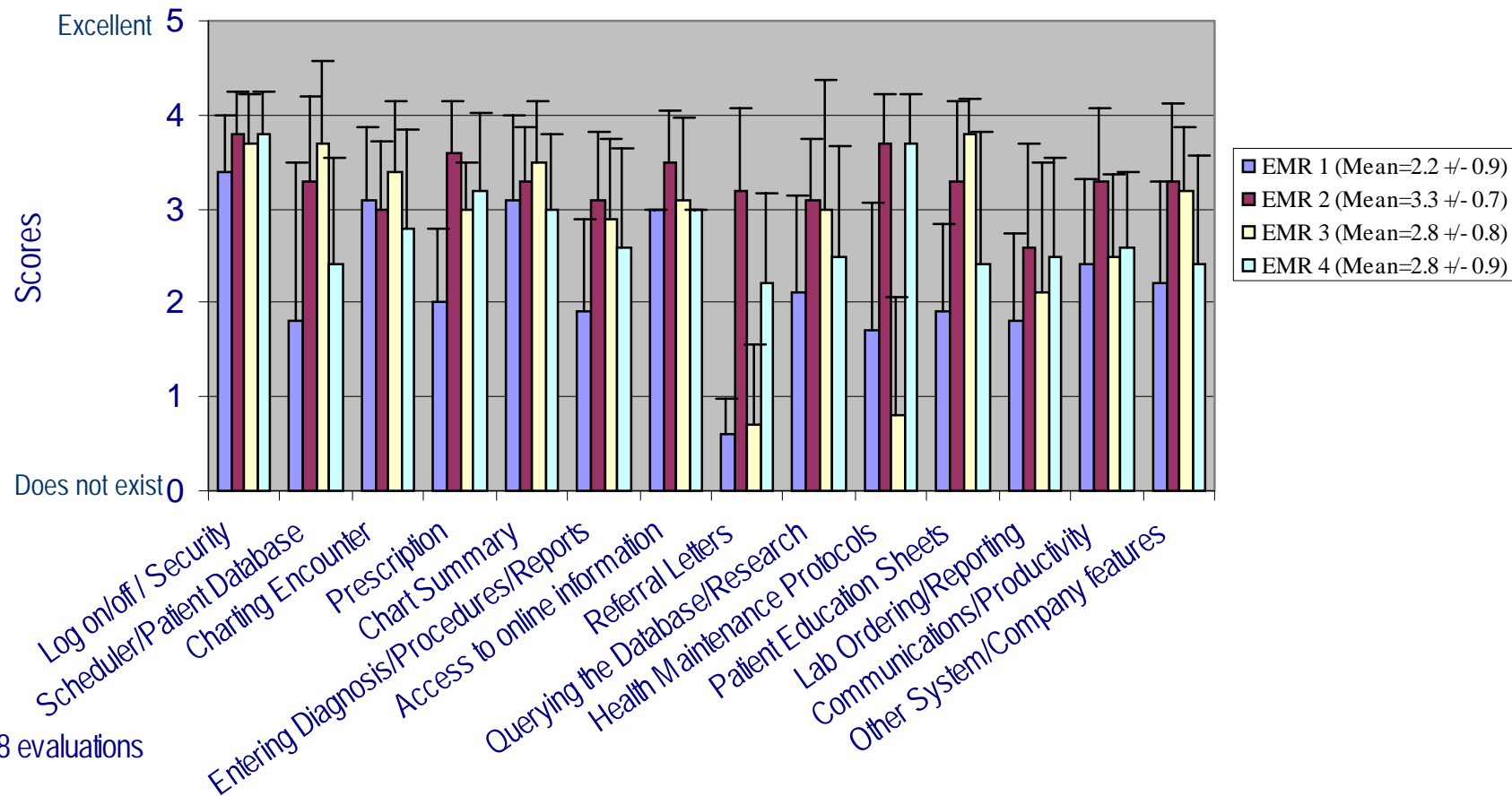
The “Gold Standard” EMR

- Ability to extract data for research
 - Good platform for decision support
 - Interface fast, flexible, familiar
 - Security, data privacy protection
 - Provincial and national standards dev't
 - Full charting, billing, scheduling, prescribing, e-labs, basic decision support
 - Vendor stable, responsive, developing
 - Affordable
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EMR System Review

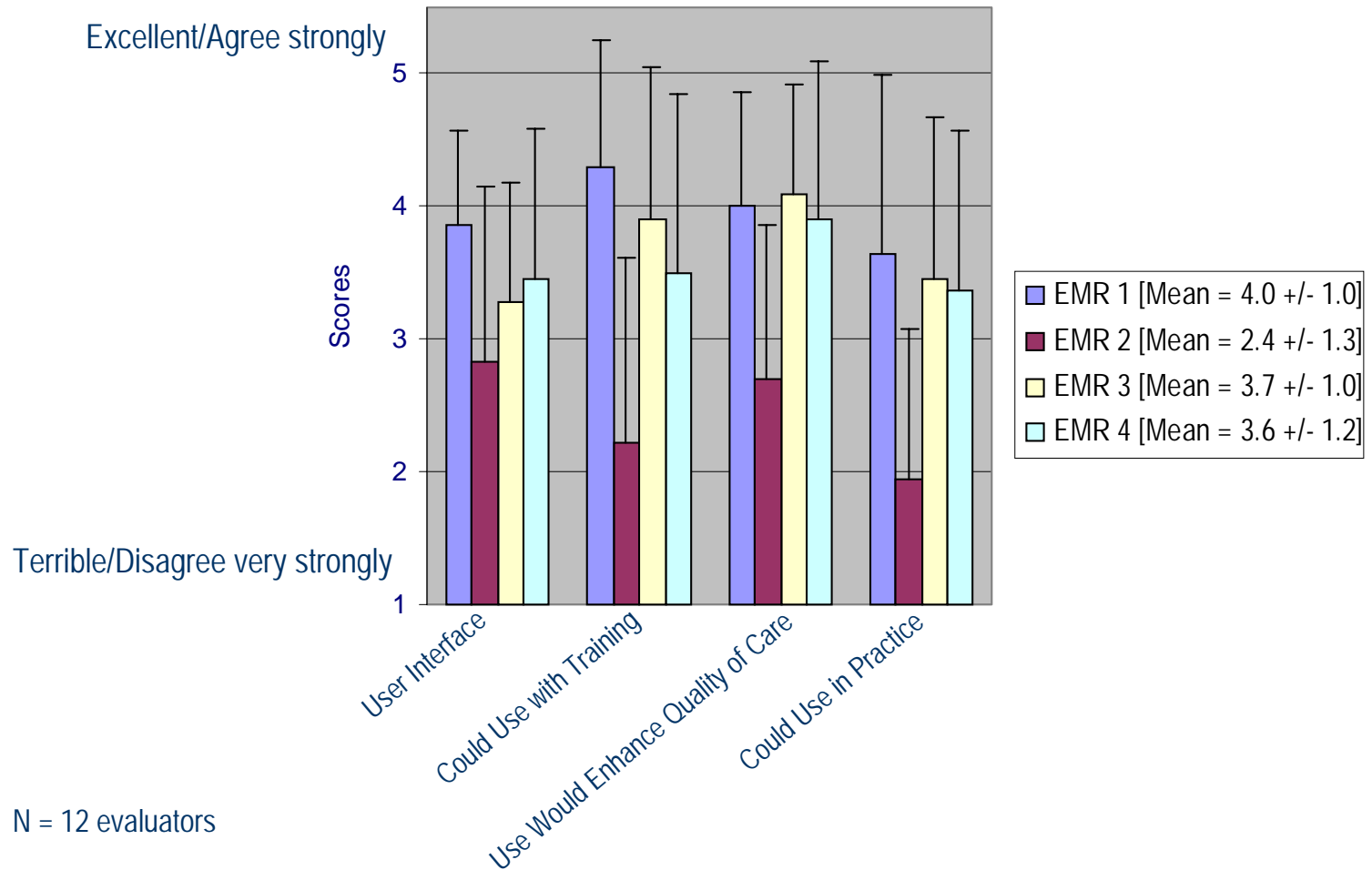
- 40 systems
 - 15 full EMRs
 - 7 in Windows OS and interested in review
 - Checklist review suggested 4 competitors
 - Live demonstrations by vendors
 - EMR users/researchers, potential users
 - Simulated case scenarios with working copies
 - Vendor headquarter visits
 - Expert physician user demo
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COMPETE EMR Evaluation – Live Demonstration



N = 8 evaluations

COMPETE EMR Evaluation – Family Physician Review



COMPETE EMR Evaluation

- Vendor headquarters
 - Small, high risk companies
 - Vapour ware vs user base
 - Contacts vs contracts
 - Expert physician user
 - Solo physician
 - Keen leaders of teaching practices
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EMR Selection – Final Stage

- Two systems capable of usability, data extraction, potential live CDSS
 - Tradeoff between clinical and research goals
 - One uses structured database, about to sign with Ontario billing partner and labs
 - Supported by research tax credits
 - Second has just merged with health utilization consulting firm
 - looking for venture capital
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Conclusions and Key Learnings

- Evaluation needs to be multifaceted, multidisciplinary, iterative
 - Time consuming and expensive
 - 5 physicians will choose 5 different EMRs
 - Clinical and research needs conflict
 - Vendor market is high risk, volatile
 - No perfect EMR, but engage & move on
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