Estimating the Workforce Needs for Building the NHIN

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Outline

I. Background

- **NHIN = Nationwide Health Information Network**
- **"Anywhere, anytime health care information and decision support"**
- **Current issue: How can we build it?**
- **Next issue: Who will build it?**
  - **Not enough trained professionals to build NHIN**
  - **Need better understanding of workforce problem**

II. Goal of Study

- **Quantitative estimation of needed workforce to install NHIN**
  - **Additional workers -- not extra burden on current workers**
  - **Workforce -- NOT cost**
- **Flexible estimation tool**
- **Variety of assumptions & scenarios**
- **Expert input and guidance**

III.A. Assumptions

- **Three independent NHIN activities**
    1. **EHRs in provider offices**
    2. **EHRs in institutions (e.g. hospitals)**
    3. **Infrastructure to create complete records**
- **Multiple architectures for each activity**
- **Specific architecture will impact workforce needs**
- **Estimate of workforce for each architecture for each activity --> useful model**

III.B. Research Plan

- **Development of detailed approach and framework (2 expert panels)**

- **Independent expert review and validation of approach and framework (2 expert panels)**

- **Site visits (5) to further validate model and gather additional workforce estimates**

- **Synthesis, review, and validation of final model**

III.C. Methodology

- **Create spreadsheet model including**
  - **Timeframe for building NHIN**
  - **Number of installations of each type needed**
- **Determine number of personnel needed for each activity**
  - **Average of multiple estimates**

III.D. Limitations

- **Workforce to install (not maintain)**
- **Focus on workforce, NOT cost**
- **Not including:**
  - **Burden on existing workforce**
  - **Differences between specialties**
  - **Economies of scale**
  - **Potential impact of more/improved standards**
  - **Potential new approaches to NHIN**
- **Data on community HIIs very limited**
- **First study of this type**
  - **Results heavily dependent on assumptions and expert input**

IV. Activities & Architectures

- **EHRs for providers (small, medium, large, very large)**
  - Architecture 1: independent systems
  - Architecture 2: asp model
- **EHRs for institutions (small/rural hospitals, community hospitals, large hospitals, academic/chain hospitals, long-term care)**
  - Architecture 1: independent systems
  - Architecture 2: asp model
- **Health Information Infrastructure (HII) in Communities**
  - Architecture 1: scattered model
  - Architecture 2: repository model

V. Types of Personnel [1 of 2] (expert panel 2)

1. **Project Manager**
2. **Implementation Coordinator**
3. **IT Interface Builder**
4. **Change Management Specialist**
5. **Desktop Specialist**
6. **Database Administrator**
7. **Network Engineer**
8. **Records Management Specialist**

V. Types of Personnel [2 of 2] (expert panel 2)

9. **Q.A. Specialist**
10. **Privacy Officer**
11. **Security Officer**
12. **Technical Analyst**
13. **Trainer**
14. **Help Desk Specialist**
15. **CMIO**

VI. Results [1 of 3]

- **Available Data**
  - **8 estimates for physician office EHRs (normalized per physician)**
  - **4 estimates for hospital EHRs**
  - **2 estimates for community health information infrastructures**
- **Insufficient data for subcategories of activities, architectures, or personnel types**

VI. Results [2 of 3]

- **Five year implementation timeframe**
- **Physician office EHRs (400,000)**
  - **Need 7,600 +/- 3,700 personnel**
- **Hospital EHRs (4,000)**
  - **Need 28,600 personnel**
- **Community HIIs (300)**
  - **Need 416 personnel**
- **Tool to estimate workforce under different assumptions of number of systems and timeframe**

NHIN WORKFORCE vs. TIME SPAN

Office EHRs
Hospital EHRs
Community HII

YEARS
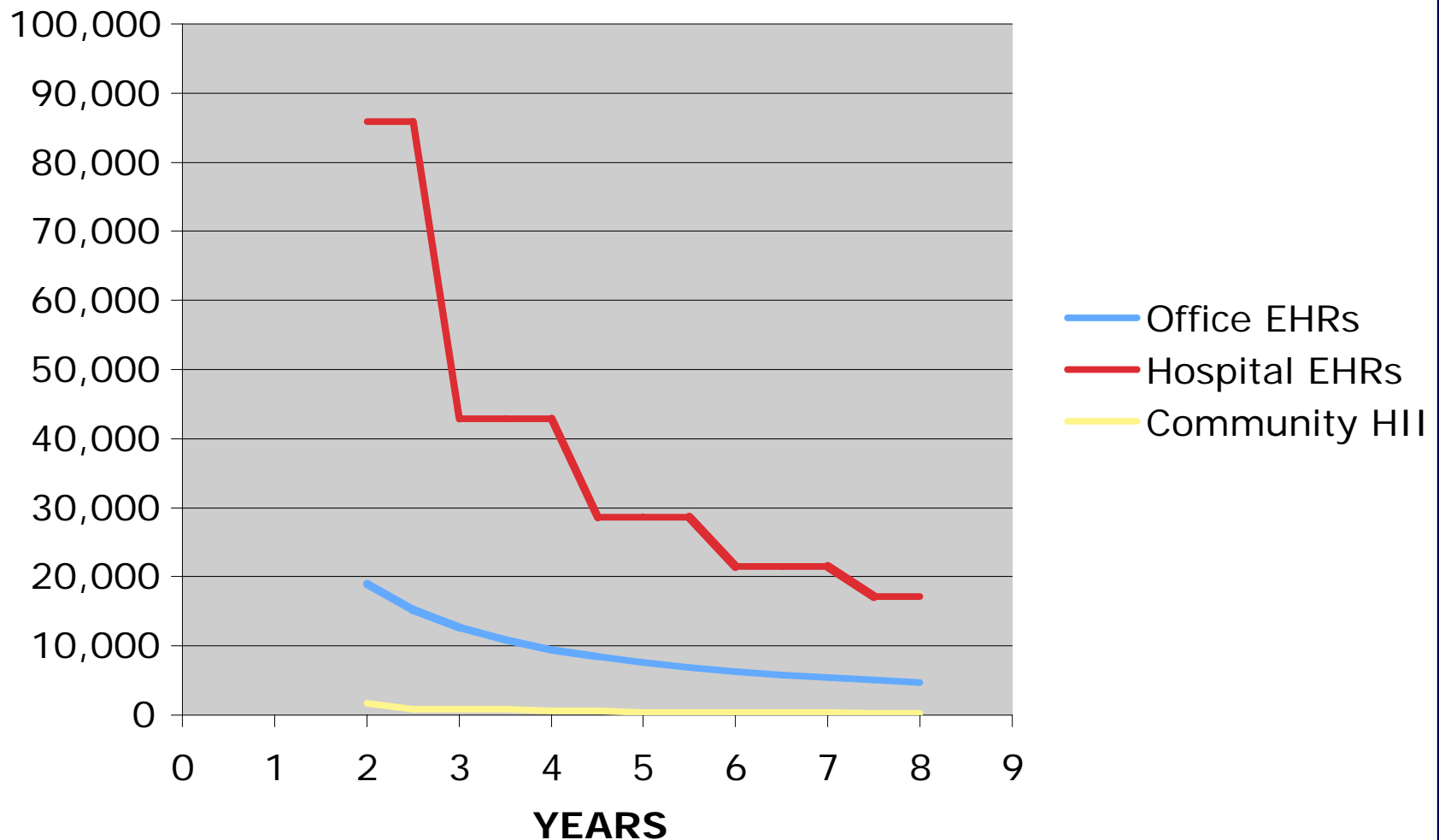
VII. Conclusions

- **First ever quantitative estimates of NHIN workforce**

- **Tool to estimate workforce under different assumptions**

- **Since no data available on number of existing personnel, cannot determine if shortage exists**

- **More research is needed to**

  - **refine estimates with additional data**

  - **provide details re: subcategories of activities, architectures, personnel types**

Questions?

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