Costs and Benefits of Speech Recognition

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Our Experience

- We chose the Epic EHR
- Epic has great “SmartTools” for documentation
- Some areas need robust narrative!

We integrated Dragon Medical Voice with Epic
Electronic Health Records

Frustrations with the EHR

- “Point and Click” Templates
- Limited set of templates – difficult to say what really happened
- Clicking Fatigue – “Clicking Kills!”
- Difficult to document narrative sections like HPI and MDM
- Still need to type – “Type?”
- Decreased productivity – (30-90 minutes/day)

Excluded details can become a problem downstream
Benefits of Speech Recognition

• Simplifies the workflow – Integrated
• Notes available immediately – no transcription delay
• Better documentation with more robust narrative sections
• Less pointing, clicking, and scrolling
• Improves productivity and physician satisfaction
Costs of Speech Recognition

• Software - $1600/provider
• Microphone - $250/device (don’t need one per provider)
• Training (1:1) - $300/provider (group training can ↓ cost)
• Go-live Support - $150/provider
• Maintenance/Support - $320/year
• Total Cost/provider - ~$2700 (first year)
Costs of Speech Recognition

Revenue Implications @ Premier Health

- $1.4 million saved in Miami Valley Hospital ED in the first year
- Yearly transcription savings are many times more than the cost of the software and training
- ROI – Breakeven point was only a couple of months
Drawbacks of Speech Recognition

- Cost
- Accuracy
  - Ambient noise
  - Microphone selection
- Errors (Dragonisms)
- Correction Time
Literature Review of Speech Recognition

- Most studies focused on error rates
- Many of them showed significant error rates in notes dictated with speech recognition technology.
- Not many recent studies in this area.
- Pre & post speech recognition deployment time/efficiency studies would be helpful
Annunciation Errors were common

17.5% were deemed “critical”

Conclusion: Speech Recognition may not meet the rigorous standards of healthcare.

Questions – microphone type, system config, version of software
Dragon Medical Voice Commands

- Pretty amazing functionality
- Brings efficiency by using speech to automate repetitive functions
- Saving one or two clicks per patient adds up
- Voice activate entire multi-step processes
Dragon Medical Voice Commands

- Text & Graphics
- Step by Step
- Advanced Scripting
- Macro Recorder
Dragon Medical Voice Commands

- **Text & Graphics**
  - Brings text into any field or note window
  - Easy to build
Text & Graphics Command Demonstration
Dragon Medical Voice Commands

- **Step by Step**
  - Very powerful
  - Automates multistep processes
  - Providers love these!
Step by Step Command Demonstration
Advanced Scripting

- Uses Visual Basic language
- Much faster than Step by Step commands
- Good for longer multistep processes
Dragon Medical Voice Commands

- **Advanced Scripting**
  - Can use these to create some amazing commands!
  - Not all providers can build the more complex ones

```vbscript
sub Main
    dim rythem$(20)
    rythem$(0) = "Normal Sinus Rhythm"
    rythem$(1) = "Atrial Ectopic"
    rythem$(2) = "Atrial Fibrillation - controlled"
    rythem$(3) = "Atrial Fibrillation - Rapid"
    rythem$(4) = "Atrial Flutter"
    rythem$(5) = "Atrial Tachycardia"
    rythem$(6) = "Bigeminy"
    rythem$(7) = "Junctional"
end sub
```
Advanced Scripting Command Demonstration
**Macro Recorder**

- For all the other stuff
- Tied to specific locations on the screen
- Can get broken with a change in screen resolution
Macro Recorder Command Demonstration
Questions?
Top 10 Question List

1. Citrix (Fat vs Thin)
2. Foreign/regional accents
3. Accuracy in noisy environments
4. Microphone selection?
5. Support
6. Residents and ancillary staff Use
7. Timing of Dragon Medical Voice implementation
   (Before, During, or After EHR Go-Live)
8. Whole house vs department roll-out?
9. Computer system requirements
10. Training? (Core group, then Train-the-Trainer)