



Patient-Entered Review of Systems

Michael W. Kattan, Ph.D., Robert Lorenz, M.D., Emilio Poggio, M.D., Deepak L. Bhatt, M.D., Serpil Erzurum, M.D.

Leading in Healthcare

Proposal

Scope of project

- To design a system by which patients enter their review of system(s) prior to their encounter with the health care provider
- Objectives:
 - More comprehensive patient examination, leading to more referrals to CCF providers
 - More accurate (especially higher level of) billing
 - Shorter patient visit
- Plan to pilot in a single clinic; test initially at Cleveland Clinic Main Campus; then move to the satellites and RMPs
- This new program will improve patient experience and provider satisfaction

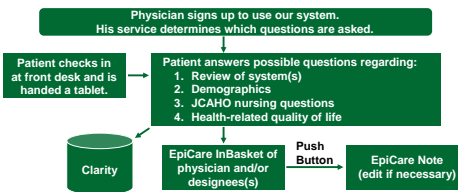
Rationale

- Several elements, such as review of systems, family history, etc., must be documented to justify higher level of service billing.
- Patients can answer their own questions regarding their health, electronically, through an ATM-level interface.
- Physicians asking patients standard questions is inefficient use of physicians' time.

Benefits

- ↑ Referrals
- ↑ Physician efficiency, leading to satisfaction and retention
- ↑ Billing accuracy
- ↑ Patient experience
- ↑ Clinical data for research
- ↑ Mechanism for conducting research

Work Flow



Implementation

- Patient will be handed a wireless device to sit down with.
 - Receptionist enters patient number to start the session.
 - Patient answers questions.
 - Upon completion, patient is instructed to return device to check in counter.
- Physician decides which systems get reviewed, and this occurs for all his/her patients.

Implementation Timeline

- 8 months to develop the system.
- 6 months to conduct a pilot.
- Install in a new clinic each week or two.

Market Analysis/Needs Assessment

- Our product will be built into Epic.
 - We will not have the opportunity to sell this as a third party application.
 - Perhaps we can partner with Epic to share in profits somehow.
 - At a minimum, we may be able to get the programming for this at no charge.
- We will pilot this in a single clinic (Head and Neck Institute) for testing and further development.
 - Expand to rest of main campus, then outside facilities.
 - Avoid clinics where population is not generally computer friendly (e.g., Geriatrics)
- We would lead the healthcare market in this initiative.
- We will use handheld tablets to save clinic space.
- Handhelds will be equipped with security to reduce theft.

Operational Considerations

- Will need IT personnel to set up the workstations and to maintain them; secretaries will need to be trained in helping patients use the system.
- Physicians, house officers, and allied health personnel will need to be trained in using this information and integrating it into EPIC.

Financial Analysis

Revenue:

- Although there will be incremental revenue gains through higher coding levels and patient encounter efficiencies (less time entering data, more patient volume), these data are very difficult to quantify, and not sufficiently reliable for business planning purposes.
- Retrospectively, our metrics will supply a revenue impact.

Pilot Project

- Costs: Head and Neck Institute (based on 2006 volume):
- 3,814 new patients, 14,429 office visits total, 70 pts/day average

Handheld "tablet" Programming	\$4,000/unit x 5 units=	\$20,000
• Tablet equipment and support (technical support):	1 FTE at \$65,000 for 8 months:	\$43,400
• Questionnaire Build and Support- 2 FTE (clinical analyst):	2 FTE at \$65,000 for 8 months:	\$86,700
Installation Cost		
• Per station:	\$1,500 for 5 stations:	\$7,500
• Networking-cable drops:	\$1,000/drop for 5 tablets:	\$5,000
Pilot survey: Vendor: Quality Data Management	200 pts, 10 office staff, 3 MD's over 6 months	\$5,000
On-going costs:		
• Each patient usage: \$ 0.15 (includes software support):	50% capture of new patients:	\$286
	20% capture of former patients:	\$318
Support Costs:		
• Annual Maintenance:	\$300 for 5 stations:	\$1,500
	Total costs:	\$170,000

Cleveland Clinic Main Campus

- Costs: CC Main Campus (based on 2006 volume):
- 77,385 new patients, 1,800,595 office visits total, 6670 pts/day average
- 42 outpatient areas, average need per area: 7 tablets

Handheld "tablet" Programming	\$4,000/unit x 300 units=	\$1,200,000
• Tablet equipment and support (technical support):	1 FTE at \$65,000 for 12 months:	\$65,000
• Questionnaire Build and Support- 2 FTE (clinical analyst):	2 FTE at \$65,000 for 12 months:	\$130,000
Installation Cost		
• Per station:	\$1,500 for 300 stations:	\$450,000
• Networking-cable drops:	\$1,000/drop for 300 tablets:	\$300,000
	Total start-up costs:	\$2,145,000
On-going costs:		
• Each patient usage: \$ 0.15 (includes software support):	50% capture of new patients:	\$5,803
	20% capture of former patients:	\$54,017
Support Costs:		
• Annual Maintenance:	\$300 for 300 stations:	\$90,000
	Total annual costs:	\$150,000

SWOT Analysis

Strengths

- Capitalize on high patient volume – efficiency and billing impact

Weaknesses

- Many different waiting areas that will need wireless devices.
- Very busy physicians who may not have time to identify patients

Opportunities

- Our high-tech approach may attract new patients.

Threats

- Professional software developer could easily develop a competing product

Plan Implementation and Metrics

- ITD is supportive of this project and thinks we could be operational by early 2008.
- What metrics will be used to measure the project's success?
 - Increase in level of complexity codes per visit
 - Increased generation of referrals per encounter
 - Increase in number of patients seen
 - Increase in numbers of visits per provider in areas using the system
 - Improved patient satisfaction with health care on Main Campus (especially in regards to time spent waiting for visits in waiting area)

Challenges

- Will require substantial commitment by ITD
- Software development and maintenance will be moderately expensive.
- Moderate hardware expense for handhelds
- Patients may need to arrive early for their visit. It is conceivable this could be ported to MyChart.