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To EHR is Human: Impact of Health Information Technology on Patient-Doctor Communication in Clinics Serving Low-Income Populations in a Large and Diverse Medicaid Health Plan

Session: **2241.0 Patient Centered Care Part II: A Role for Information Technology**

Section: **Health Informatics Information Technology**

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Presenter Disclosures

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The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

I am employed as a statistician at L.A. Care Health Plan –
the Local Initiative Health Authority of Los Angeles County, California.

L.A. Care is a public entity competing with commercial insurers in the Medicaid and S-CHIP markets in L.A. County.

Notes:
CAHPS® is a registered trade name of the Agency for Healthcare Research and Quality (AHRQ).
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Outline

I. Learning Objectives.

II. Role of Electronic Health Records in Delivery of Quality Health Care.

III. HITEC Act of 2009: Deployment of HITEC-LA Incentive Program in Los Angeles County, California.

IV. Methodology: EHR Adoption Data and Quality Data.

V. Descriptive Findings.

VI. Analysis.

VII. Discussion.

VIII. Options For Actionability: Expanding on Meaningful Use.

IX. Recap of Learning Objectives.

II. Background – L.A. Care Health Plan

Large, diverse membership in Los Angeles, California:

- Mostly Medicaid, urban, 1/2 pediatric, often Spanish-speaking.
- Roughly 18% of Medicaid managed care population in California.
- Roughly 3% of Medicaid managed care population in the U.S.
- Almost 1-in-5 L.A. County residents is an L.A. Care member.
- Mostly Medicaid, Dual-eligible, and special programs.
- Serves 11 distinct language concentrations ("threshold languages"): Spanish, English, Arabic, Armenian, Korean, Cambodian, Chinese, Russian, Vietnamese, Farsi, Tagalog.
- Mostly urban and suburban; 1 semi-rural region in the high desert.

I. Learning Objectives

1. Compare two opposing predictions or hypotheses from the literature about the expected impacts of HIT on patient-provider communication in the clinic.
2. Describe measured differences in the speed of adoption of EHRs in clinics which serve low-income (Medicaid) members versus clinics in the general market.
3. Compare differences of adult patients versus parents of pediatric patients in rating provider communication in clinics with EHRs.
4. Describe the impact of maturation on ratings of provider communication and related quality-of-service measures.
5. Explain one prominent reason why provider communication is an earlier indicator of EHR adoption, than other common measures of service quality from the patient perspective.
6. Identify two common surveys routinely used by health plans that can be used to evaluate the human outcomes of HIT for patients and providers.

II. Role of Electronic Health Records in Delivering Quality

Much of the promise of has been provider-directed: HIT seeks to improve the information available to clinicians at the time and place of service, to make more robust, data driven judgments about the care, tests, and treatments that a patient has received, and will receive.

The objectives are to improve health outcomes, patient safety, and the efficient use of scarce resources (clinicians, staff, time, facilities, and money).

> "Information is the lifeblood of modern medicine. Health information technology (HIT) is destined to be its circulatory system. Without that system, neither individual physicians nor health care institutions can perform at their best or deliver the highest-quality care, any more than an Olympian could excel with a failing heart."

> "By focusing on the effective use of EHRs with certain capabilities, the HITECH Act makes clear that the adoption of records is not a sufficient purpose: it is the use of EHRs to achieve health and efficiency goals that matters."
> David. Blumenthal, New England Journal of Medicine 02/04/2010, 362-385, DHHS ONC-HIT http://www.nejm.org/doi/full/10.1056/NEJMp0912825

Critics note that HIT places substantial new demands on those scarce resources that it is intended to use more appropriately. The process thus requires careful monitoring to determine if the benefit/cost balance remains positive.

Role of Electronic Health Records in Patient-Centered Care

The focus of HIT promotion tends to be on providers and their work – likely because providers are the primary actors and agents in the clinical processes that might improve through information technology.

Far less effort and resource has been spent studying the impact of HIT and EHRs on patients. From the point of view of patient-centered care:

Potential harms:

- Early critics of HIT and EHR use speculated that having the doctor use a computer in the presence of a patient, would distract and interfere.
- Critics also noted the costs of HIT and EHRs, as monies that can't be spent on care.

Potential benefits directly observable by the patient:

- *Information access:* Ability to show the patient his/her records: Confirming current medications; trending weight, test results, etc.
- *Tangible communication:* Ability to print out after-visit summaries and instructions.
- *Coordination of care:* Ability to combine information from more than one doctor, so that all parties are on the same page with the patient.
- *Communication options:* EHR capability seems to buttress adoption of other technologies, such as email as a doctor-patient communication option; and a clinic's ability to issue automated reminders for a patient's appointments.

Role of Electronic Health Records in Delivering Quality

Stages of development:

- Stage 1 emphasized collecting basic data elements and information sharing among providers serving a given patient, and reporting quality measures to agencies. Obstacles noted in this stage were
  - (a) infrastructure for secure data exchange;
  - (b) the resources to purchase, deploy, and maintain EHRs; and
  - (c) technical know-how to choose and use EHR systems.
- Stage 2 will focus on use of EHRs to improve the process of care.
- Stage 3 will focus on improving outcomes.
- Stages 2 and 3 will in pursue rewarding providers for using EHRs to improve processes of care and outcomes, respectively.

III. HITECH Act of 2009: Deployment in Los Angeles County

The American Recovery and Reinvestment Act (ARRA) provided means for ONC to fund 62 HITECH Regional Extension Centers (RECs) to help providers enroll in HITECH incentive programs, implement EHR systems, and attain meaningful use.

This paper reports statistics from one such REC, HITEC-LA in Los Angeles County, California.

Los Angeles County is a diverse county: largely urban, with large suburban areas, and one semi-rural area in the high desert.

- The practitioner market is very large, with 28,672 physicians and surgeons licensed in 2012-2013.
- Although some work in solo practices, many have more than one clinic site.

Provider enrollment statistics for HITEC-LA:

n=6,558 entries (includes doctors, nurses, and other licensed clinical services).

n= 973 doctors with patients surveyed in PAS 2011 survey for ratings:

n=603 seeing Adult patients in the survey.

n=370 seeing pediatric patients in the survey.

IV. Methodology: Combining Diverse Data Sources

Hypothesis: EHR should be positively associated with patients ratings of the quality of health care, and the rating of the PCP or Specialist; and if EHR saves time, assessments of timely access might show modest effects.

Counter-hypothesis argued by critics of EHR: Patients should rate Provider Communication lower due to the distraction of the provider working with the computer during the office visit.

One feature of the design is that the independent variable (EHR participation) and the dependent variables (ratings of the quality of health care services by providers) come from data gathered from entirely independent sources for purposes unrelated to the hypothesis being tested in this paper:

- EHR participation data comes from regional extension center (REC) rolls.
- Ratings of the quality of services come from a survey of patients.

If the results show a relationship between EHR adoption and member ratings, the only plausible mechanism by which the two variables would be related, is that EHR is having an impact on the quality of care observed by members.

The patient survey provides a way to test HITEC-LA program goals in terms of Stage 3 effects.

Methodology: Combining Diverse Data Sources

Independent variable: Degree of Engagement in EHR Activities

Basic data on EHR adoption come from enrollment records in the HITEC-LA program. Enrollment is by provider license number. Although a provider may have more than one license in practice, duplication is not an issue in the data due to the nature of the incentive program.

The administrative data contain four elements of analytic interest:

- Whether or not the provider already had an EHR before enrolling.
- Date on which a new system's go-live status was documented to the program.
- Date on which a new systems' attainment of meaningful use was documented to the program.
- The act of being enrolled or not is testable to see if it differentiates among providers.

Design and Methodology (Cont.)

Dependent variables: Member assessments about the quality of services by providers.

In Fall 2011, L.A. Care surveyed Medicaid members as part of a pay-for-performance (P4P) incentive program for medical groups.

- That survey supplies the primary dependent measures for this study – data not available for some of the physicians in the EHR data source.
- L.A. Care Health Plan is one of two health plans licensed in Los Angeles County, California, to offer Medicaid coverage to low-income residents.

The survey:

  - Patient Assessment Survey 2011 (related to the Clinician & Group CAHPS survey v2.0).
  - Fielded 08/03/2011 through 11/01/2011 in English and Spanish, by mail and phone.
  - Initial mail-out of 49,549, n=16,288 completed surveys.
- Response rates:
  - 32.9%: lowest for Adult Specialist survey in Spanish, 23.1%), and highest for Child PCP survey in Spanish, 41.6%).
- Adult and Child samples for 42 entities, sampled for PCPs and Specialists, separately:
  - Samples for 38 large provider groups; and samples for directly-contracted doctors for 2 Plan Partners; and a sample for members in county clinics.
  - A sample for otherwise survey-eligible members who were not continuously enrolled with any of the above groups.
  - *Caveat: The samples are representative of provider groups. For this analysis, results are raw (unweighted), to examine whether EHR adoption is associated with ratings of health care quality.*

Limitations

- Limitations in the independent variable (EHR adoption):
  - *Self-selection limits generalizability:* HITEC-LA was promoted broadly to the provider network, but providers were ultimately self-selected into the intervention.
  - *A single provider cohort for the baseline study and the replication:* Of necessity, the same provider cohort was used for both studies. However, some variability in the independent variable enters the analysis due to the fact that HITEC-LA was ongoing, and the latter two levels of the treatment measures (Go-Live, and Meaningful Use) could occur after the first field dates on both surveys.
  - *For the PAS 2011 study, many providers attained meaningful use in 2012 and 2013, long after the member experience survey:* Doctors who would go on to attain meaningful use tended to get more positive provider communications scores than those who did not. This challenges the assumption that because the EHR adoption largely began before the patient survey, EHRs must be the cause of any boost in provider communication.

    One rival hypothesis is that doctors who adopt EHRs are just better communicators to begin with. But the CG CAHPS 2014 scores reported here, show scores noticeably improving for doctors who attained meaningful use of EHRs. Both hypotheses (Good Communicators and EHR effects) are thus viable. The question then becomes: Does adoption of EHRs and proficiency with those, help a poor communicator improve? As "Meaningful Use" evolves to include patient access to test results, and email with doctors regarding questions, the patient may have the means to guide doctor-patient communications to meet the patient's needs.

    If the EHR permits direct patient access to lab results, and email access to doctors, provider communication may improve, even if the provider's communication skills are weak.

Limitations (Cont.)

- Limitations in the dependent variable (ratings of provider communication):
  - *Population:* The respondent population is solely from Medicaid, not commercial. Although the health plan was serving small numbers of Medicare-Medicaid members during the time of both surveys, Medicare members were excluded from the survey.
  - *Population shift:* Between PAS 2011 and CG CAHPS 2014, a sizable cohort of seniors and people with disabilities (SPD) were transitioned from Fee-For-Service Medicaid to Medicaid Managed Care within the CG CAHPS 2014 cohort. This impact lowered scores for HP CAHPS 2013, but had largely rebounded by HP CAHPS 2014 (hence presumably rebounded for CG CAHPS 2014 as well). Later changes (Medicaid Expansion under ACA) had not yet entered the population when CG CAHPS 2014 was conducted.

V. Speed of Adoption for County At-Large vs Medicaid Providers

- Medicaid providers received the incentive, but only about 1-in-9 did so.
  - 20 day median for Go-Live at large, reflects providers with EHRs prior to HITEC-LA.
- Low n's in Medicaid provider columns reveal the limited network having EHRs.
  - PAS 2011 could not sample medical groups with small panels, so understates the Medicaid provider network – but the finding of limited EHR availability is correct.
- Medicaid providers exhibit much slower rates of implementation.
  - Among Medicaid providers, those serving the pediatric population were slowest in implementation.
  - Findings reflect Medicaid provider network in a state with comparatively low reimbursement rates.

		HITEC-LA Region	L.A. Care Medicaid Network Combined:	Adult*	Child*
Duration from signup to Go-Live:**					
	Mean	172.83 days	334.25 days	323.62 days	351.55 days
	Median	20.00 days	322.00 days	323.00 days	321.00 days
		n=2,644	n=431	n=267	n=164
Duration from Go-Live to Meaningful Use:					
	Mean	217.30 days	241.69 days	232.88 days	254.95 days
	Median	152.00 days	203.00 days	194.50 days	216.00 days
		n=1,736	n=333	n=200	n=133
Total duration from signup to Meaningful Use:					
	Mean	371.89 days	566.05 days	546.40 days	595.59 days
	Median	332.50 days	556.00 days	545.50 days	560.00 days
		n=1,736	n=333	n=200	n=133

* Adult and Child columns include providers seeing patients from those cohorts. A provider who sees both age groups will be tallied in both statistics. Medicaid providers may see both adult and pediatric patients (often as mothers and children).
** All durations are based on dates when documentation was received by HITEC-LA of Go-Live and Meaningful Use.

Other Descriptive Findings

- Early adopters had less attrition at all stages, and more total success.

Providers in HITEC-LA (includes nurses):

Had an EHR at time of signup (early adopters):	100.00%	n=1,873
Never got a go-live date or meaningful use:	12.39%	n= 232
Proceeded to a go-live date:	87.61%	n=1,641
Never had meaningful use:	33.42%	n= 626
Attained meaningful use:	54.19%	n=1,015
No EHR at time of signup:	100.00%	n=3,728
Never got a go-live date or meaningful use:	32.65%	n=1,217
Proceeded to a go-live date:	67.36%	n=2,511
Never had meaningful use:	25.03%	n= 933
Attained meaningful use:	42.33%	n=1,578

Early adopters (had EHR before HITEC-LA incentive program):

Total who never attained go-live or meaningful use:	45.81%	n= 858
Total who went live and attained meaningful use:	54.19%	n=1,015

Later adopters:

Total who never attained go-live or meaningful use:	57.67%	n=2,150
Total who went live and attained meaningful use:	42.33%	n=1,578

EHR Adoption By Providers With Patients Surveyed in 2014

- Signup is virtually tautological for this study due to the respective launch and finish dates of the HITEC program and the surveys.
- Thus, signup is not analyzed as a level of the independent variable.
- Attrition from EHR adoption is relatively high.

	CG CAHPS 2014
HITEC-LA providers (Drs. / Nurses) with match in CAHPS cohort:	
	n=647
Had existing EHR before signup or survey:	33.5%
Had signup for HITEC program before start of survey:	99.4%*
Had live EHR by the start of the survey:	74.0%
Had attained meaningful use by the start of the survey:	56.0%

Anchor dates for matching EHR information to patient survey were set at the start of the respective survey field periods.
PAS 2011 data (2014 analysis) used 08/01/2011.
CG CAHPS 2014 (2015 analysis in this briefing) used 05/21/2014.

* This and subsequent slides focus solely on the cohort of providers in HITEC-LA and samples of their patients who had visits and gave ratings in PAS 2011 and CG CAHPS 2014.

Other Descriptive Findings

Results reflect a highly-differentiated EHR software market locally as of 08/08/2014:

- The set of HITEC-LA registrants reported used 71 different primary EHR vendors.
  - 18.6% did not name a primary EHR vendor.
  - Local market share: The top 7 vendors had 22.8%, 13.9%, 9.3%, 4.7%, 5.1%, 3.9%, 2.0%, respectively.
  - Although qualifying EHR systems meet particular standards for functionality and connectivity, the standardized nature of the clinical data, and technical nature of the data communications, suggest a relatively immature software market.
  - Consensus may emerge as to optimal features, transportable skills, and ease-of-use, as new clinicians and office staff migrate within the market.
- Few registrants reported having homegrown systems (n=2), although some who named no vendor may have in-house solutions.
- Collectively, HITEC-LA registrants named 29 primary EHR software products.
  - 62.3% did not name a specific software system.
  - (Respondents may be considering the EHR software system as synonymous with the EHR vendor name.)

VI. ANALYSIS -- Testing the Association Between EHR Use and Quality of Services

EHR is the independent variable, measured in three levels:

1. Provider had EHR system (0,1) before enrolled in HITEC incentive program.
2. Provider attained "go-live" status (0,1).
3. Provider attained go-live *and* attained meaningful use (0,1).

In 2015, a third CG CAHPS survey will complete, and these treatments will be separated into distinct cohorts at each respective level.

Quality of service ratings from CAHPS – focusing on Provider Communication:

- Tier A: EHR impact on processes most directly connected to patients.
  - Coordination of Care: Awareness of patient history, tests, visits, results, and care from specialists.
  - *Provider Communication: Critics hypothesize EHR harms patient-doctor communications.*
- Tier B: EHR impact on less tangible measures of quality of service.
  - Access to Care; Timely access in clinic: Critics hypothesize that EHR takes time and slows workflow.
- Tier C: EHR impact on general measures of health plans' service quality.
  - Health Plan Rating, Rating of All Health Care, Rating of Personal Doctor, Would Recommend Doctor, Rating of Specialist
  - Clinic Staff: EHR means informed staff help patients? EHR means slower workflow.

The study compares results from 2014 study with replication from 2015:

- 2014 study used HITEC EHR data as *cause* and 2011 patient experience data as *effect.*
  - R. Starr, "On Target with HIT", APHA 2014, paper #308951, 11/18/2014.
- 2015 study uses HITEC EHR data as *cause* and 2014 patient experience data as *effect.*

Estimating Effect Size and Practical Effect

Association in a contingency table indicates that two variables move in unison. With a time-lagged dependent variable and 2x2 tables, guarded inferences can be drawn about *direction of causality* and *magnitude of effect* -- things vital in actionability analysis.

Effect size: For a 2x2 contingency table, the Phi coefficient φ measures effect size. Phi is equivalent to the correlation coefficient *r* . A Phi value of .1 is considered to be a small effect; .3 is a medium effect; and .5 is a large effect. The effects discussed in this paper are very small.

Small effects are noteworthy in this paper for three reasons:

1. EHR is not yet a mature technology in the setting of the study. Small effects may grow if resourced to maturity – a premise tested in this study.
2. CAHPS has many measures. Many are correlated, but enough independence remains, to expect that some small effects are additive or synergistic.

Practical effect: Effect sizes in this context don't translate well into practical terms for assessing the impact of an EHR. Change in percent of patients scoring quality high or low is the relevant currency in CAHPS quality improvement. Cell deviations are explored as a route for estimating practical effect, and for calculating practical effect in percentage terms,

Using Cell Deviations as a Proxy for Effect Size

Association in a contingency table indicates that two variables move in unison. With a time-lagged dependent variable and 2x2 tables, guarded inferences can be drawn about *direction of causality* and *magnitude of effect* -- things vital in actionability analysis.

Direction of causality: These CAHPS scores were given *after* clinics adopted EHRs. The CAHPS scores were thus not known to providers when installing EHRs. Thus, causality must likely flow from EHR use to CAHPS ratings.

Maintained hypothesis: EHR use will be positively associated with favorable CAHPS ratings. Although X**2 is a suitable test: In a 2x2 comparison, Fisher's Exact Test (FET) can explore direction of association. The above causality assumption implies a stronger association on the right-sided Fisher's Exact Test: upper left to lower right diagonal (UL->LR) -- displacement of cases from the UL<-UR quadrants and from the LL->LR quadrants. In the example which follows, the association is significant at p=0.0001915. The X**2 test offers no way to test direction, and shows the table's relationship to be less significant (p=0.0003).

In the weakest levels of the independent variable tested in this briefing, *some of the associations are negative, and the directionality of FET tests provides clarity*.

Using Cell Deviations as a Proxy for Effect Size (Cont.)

The table below indicates that ***having*** an EHR in "Meaningful Use" displaces a net 43 parents into giving positive ratings, who would otherwise have given negative ratings. Conversely, ***not having*** an EHR in "Meaningful Use" appears to displace a net 43 parents into giving negative ratings, who would otherwise given positive ratings.

In a cohort of n=5,743 pediatric patients, this represents a total effect of about 1.51% -- half from doctors who attained meaningful use, and half from those who failed. The safest estimate is 0.75% effect if rolled out to the patient population. *The key issues are (a) whether the leverage of negative scores translates to a disproportionate impact on CAHPS scores; and (b) whether the effect is additive across CAHPS measures.*

Table of **Had_EHR_Meaningful_Use_by_CG_CAHPS_2014 (Y,N)** [05/21/2014]
by QC15: Prv_Communic: **How Oft PCP Listened Carefully (Parents of Pediatric Patients)(0=no 1=yes)**

Frequency / Expected / **Deviation** / Cell Chi-Square / Percent / Row Pct / Col Pct	How Often the Doctor Listened Carefully to the Patient's Parent: "Never / Sometimes" (0)	"Usually / Always" (1)	Total
N	317	2001	2318
	273.66	2044.3	
	43.344	-43.34	
	6.8653	0.919	
	5.52	34.84	40.36
	13.68	86.32	
	46.76	39.51	
Y	361	3064	3425
	404.34	3020.7	
	-43.34	43.344	
	4.6464	0.622	
	6.29	53.35	59.64
	10.54	89.46	
	53.24	60.49	
Total	678	5065	5743
	11.81	88.19	100.00

Statistics for Table of had_EHR_MflUse_by_pas2014 by PCP Listened Carefully

Statistic	DF	Value	Prob
Chi-Square	1	13.0527	0.0003
Likelihood Ratio Chi-Square	1	12.8956	0.0003
Continuity Adj. Chi-Square	1	12.7533	0.0004
Continuity Adj. Chi-Square	1	12.7533	0.0004
Mantel-Haenszel Chi-Square	1	13.0504	0.0003
Phi Coefficient		**0.0477**	**<- Effect size**
Contingency Coefficient		0.0476	
Cramer's V		0.0477	

Fisher's Exact Test

Cell (1,1) Frequency (F)	317
Left-sided Pr <= F	0.9999
Right-sided Pr >= F	**1.915E-04** [0.0001915]
Table Probability (P)	5.196E-05
Two-sided Pr <= P	3.352E-04

Sample Size = 5743

Using Cell Deviations as a Proxy for Effect Size (Cont.)

Effect size: This analysis uses cell deviation as a proxy for effect size, since it estimates the number of patients displaced from the cells they would be (based on row/column percents alone) in if the two variables are unrelated.

"Having an EHR attain Meaningful Use" implies displacement of 43.344 patients in the LR quadrant who would otherwise have been negative respondents. "Not having an EHR in Meaningful Use" implies displacement of 43.344 patients into the UL quadrant, who would otherwise have been positive.

Although the 2x2 table calculation forces cell effects to be symmetrical, the positive count of displaced patients represents the total EHR effect if all HITEC doctors attain Meaningful Use. Thus, the effect of network-wide EHR adoption is 86.688 persons. 86.688/5743 = **1.51%** of the 5,743 pediatric patient cohort seeing HITEC doctors. Though a small percent, gains on CAHPS can be additive and synergistic across measures. L.A. Care covers over 900,000 children: **1.51% would be 13,590 Medicaid parents reporting better doctor-patient communication. What is that worth?**

The cell X**2 value indicates the bulk of the effect is in the upper-left cell. This is consistent with subject matter knowledge: CAHPS measures tend to stack heavily on the positive end. Positive scores don't move the mean or median much. Patients giving very negative scores (e.g. the left-most cells above) have much more leverage on the scoring math than patients giving top scores.

Do EHRs Improve Doctor-Patient Communication? – Level 1

- EHR should improve quality of info provider gives to patient.
- (Downside risk: May serve as a distraction, distancing the patient.)

Doctor had EHR bef. HITEC: *Minimal Adoption = Minimal Effect*

	2011 Survey		2014 Survey	
	Adult	Child	Adult n=2,899 †	Child n=5,748 †
	p-value	p-value	p-value	p-value
• Doctor explained understandably:	0.4442	0.4755	0.2954	0.2289
• Doctor listened carefully:	**0.0394**	0.2388	0.5064	0.3470
• Doctor responded to concerns:*	0.5021	0.4848	0.1598	0.4725
• Doctor showed respect:	0.1116	0.1258	0.2776	0.4355
• Doctor spent enough time:	0.0858	0.2295	0.3783	0.4014
• Doctor encouraged questions:	0.1012	0.4955	[Not on survey.]	

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. CG CAHPS 2014 term is *information.*

Do EHRs Improve Doctor-Patient Communication? – Treatment Level 1

Doctor had EHR before HITEC: *Minimal adoption = Minimal Effect*

	2011 Survey		2014 Survey	
	Adult	Child	Adult n=2,899 †	Child n=5,748 †
	p-value	p-value	p-value	p-value
• Doctor explained understandably:	0.4442	0.4755	0.2954	0.2289
Effect Size (phi):			φ=0.0109	φ=-0.0103
Practical effect (net) of having EHR present:			n=5.8 0.20%	n=-9.8 -0.17%
Potential effect -- total Patients displaced:			n=11.6 0.40%	n=-19.7 -0.34%
• Doctor listened carefully:	**0.0394**	0.2388	0.5064	0.3470
Effect Size (phi):			φ=0.0007	φ=0.0058
Practical effect (net) of having EHR present:			n=0.4 0.01%	n=4.9 0.09%
Potential effect -- total Patients displaced:			n=0.8 0.03%	n=4.9 0.17%
• Doctor responded to concerns:*	0.5021	0.4848	0.1598	0.4725
Effect Size (phi):			φ=0.0221	φ=0.0019
Practical effect (net) of having EHR present:			n=9.0 0.40%	n=1.2 0.03%
Potential effect -- total Patients displaced:			n=18.1 0.79%	n=2.4 0.06%
• Doctor showed respect:	0.1116	0.1258	0.2776	0.4355
Effect Size (phi):			φ=0.0121	φ=0.0029
Practical effect (net) of having EHR present:			n=5.7 0.20%	n=2.2 0.04%
Potential effect -- total Patients displaced:			n=11.3 0.39%	n=4.3 0.08%
• Doctor spent enough time:	0.0858	0.2295	0.3783	0.4014
Effect Size (phi):			φ=-0.0066	φ=-0.0038
Practical effect (net) of having EHR present:			n=-3.8 -0.13%	n=-4.0 -0.07%
Potential effect -- total Patients displaced:			n=-7.7 -0.26%	n=-8.0 -0.14%
• Doctor encouraged questions:	0.1012	0.4955	[Not on CG CAHPS 2014 survey.]	

In these next slides, each 0.01% = roughly 1,800 members.

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. The term in CG CAHPS 2014 is "information".

Do EHRs Improve Doctor-Patient Communication? – Level 2

- Adult patients may see computer as distraction or barrier in exam.
- Low income parents might see computer as indicator of quality care.

EHR went live bef. CAHPS survey: *Active Use Sharpens Effect*

	2011 Survey		2014 Survey	
	Adult	Child	Adult n=2,899 †	Child n=5,748 †
	p-value	p-value	p-value	p-value
• Doctor explained understandably:	**0.0346**	0.0835	**0.0241**	**0.0052**
• Doctor listened carefully:	**0.0140**	0.0889	**0.0021**	**0.0003**
• Doctor responded to concerns:*	**0.0226**	**0.0453**	**0.0258**	**0.0008**
• Doctor showed respect:	**0.0372**	**0.0037**	**0.0105**	**0.0398**
• Doctor spent enough time:	**0.0155**	**0.0033**	0.3248	**0.0033**
• Doctor encouraged questions:	**0.0358**	**0.0014**	[Not on CG CAHPS 2014 survey.]	

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. The term in CG CAHPS 2014 is "information".

Do EHRs Improve Doctor-Patient Communication? – Treatment Level 2

EHR went live bef. CAHPS survey: *Active Use Sharpens Effect*

	2011 Survey Adult p-value	2011 Survey Child p-value	2014 Survey Adult n=2,899 † p-value	2014 Survey Child n=5,748 † p-value
• Doctor explained understandably:	**0.0346**	0.0835	**0.0241**	**0.0052**
Effect Size (phi):			φ=0.0383	φ=0.0349
Practical effect (net) of having EHR present:			n=15.8 0.54%	n=27.7 0.48%
Potential effect -- total Patients displaced:			n=31.5 1.10%	n=55.7 0.97%
• Doctor listened carefully:	**0.0140**	0.0889	**0.0021**	**0.0003**
Effect Size (phi):			φ=0.0555	φ=0.0472
Practical effect (net) of having EHR present:			n=22.1 0.76%	n=33.5 0.58%
Potential effect -- total Patients displaced:			n=44.2 1.52%	n=66.9 1.17%
• Doctor responded to concerns:*	**0.0226**	**0.0453**	**0.0258**	**0.0008**
Effect Size (phi):			φ=0.0428	φ=0.0509
Practical effect (net) of having EHR present:			n=14.0 0.61%	n=26.4 0.63%
Potential effect -- total Patients displaced:			n=27.9 1.22%	n=52.8 1.26%
• Doctor showed respect:	**0.0372**	**0.0037**	**0.0105**	**0.0398**
Effect Size (phi):			φ=0.0451	φ=0.0243
Practical effect (net) of having EHR present:			n=16.4 0.56%	n=15.2 0.27%
Potential effect -- total Patients displaced:			n=32.8 1.13%	n=30.4 0.53%
• Doctor spent enough time:	**0.0155**	**0.0033**	0.3248	**0.0033**
Effect Size (phi):			φ=0.0095	φ=0.0371
Practical effect (net) of having EHR present:			n=4.2 0.15%	n=33.0 0.58%
Potential effect -- total Patients displaced:			n=8.5 0.29%	n=66.0 1.17%
• Doctor encouraged questions:	**0.0358**	**0.0014**	[Not on CG CAHPS 2014 survey.]	

Each 0.01% = 1,800 members.

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. The term in CG CAHPS 2014 is "information".

Do EHRs Improve Doctor-Patient Communication? – Level 3

- 2011 study: Doctors who later attained meaningful use, were already somewhat better communicators. Became better after meaningful use.
- Moderate positive effect, particularly with parents.

Doctor attained Meaningful Use: *Both Cohorts Become Favorable*

	2011 Survey Adult p-value	2011 Survey Child p-value	2014 Survey Adult n=2,899 † p-value	2014 Survey Child n=5,748 † p-value
• Doctor explained understandably:	0.3086	0.0683	**0.0423**	**0.0021**
• Doctor listened carefully:	0.0867	**0.0354**	**0.0002**	**0.0002**
• Doctor responded to concerns:*	**0.0056**	**0.0342**	**0.0242**	**0.0031**
• Doctor showed respect:	0.4508	**0.0331**	**0.0356**	**0.0574**
• Doctor spent enough time:	0.0700	0.1464	0.0775	**0.0040**

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. The term in CG CAHPS 2014 is "information".

Does EHR Use Improve Dr. Communication? – Treatment Level 3

Doctor attained Meaningful Use: *Both Cohorts Become Favorable*

	2011 Survey Adult p-value	2011 Survey Child p-value	2014 Survey Adult n=2,899 † p-value	2014 Survey Child n=5,748 † p-value
• Doctor explained understandably:	0.3086	0.0683	**0.0423**	**0.0021**
Effect Size (phi):			φ=0.0330	φ=0.0384
Practical effect (net) of having EHR present:			n=17.4 0.59%	n=39.4 0.69%
Potential effect -- total Patients displaced:			n=34.7 1.19%	n=78.8 1.37%
• Doctor listened carefully:	0.0867	**0.0354**	**0.0002**	**0.0002**
Effect Size (phi):			φ=0.0680	φ=0.0477
Practical effect (net) of having EHR present:			n=34.6 1.18%	n=43.3 0.75%
Potential effect -- total Patients displaced:			n=69.1 2.37%	n=86.7 1.51%
• Doctor responded to concerns:*	**0.0056**	**0.0342**	**0.0242**	**0.0031**
Effect Size (phi):			φ=0.0427	φ=0.0434
Practical effect (net) of having EHR present:			n=17.4 0.76%	n=29.2 0.70%
Potential effect -- total Patients displaced:			n=34.9 1.53%	n=58.3 1.40%
• Doctor showed respect:	0.4508	**0.0331**	**0.0356**	**0.0574**
Effect Size (phi):			φ=0.0347	φ=0.0216
Practical effect (net) of having EHR present:			n=16.1 0.56%	n=17.3 0.30%
Potential effect -- total Patients displaced:			n=32.2 1.11%	n=34.6 0.61%
• Doctor spent enough time:	0.0700	0.1464	0.0775	**0.0040**
Effect Size (phi):			φ=0.0274	φ=0.0359
Practical effect (net) of having EHR present:			n=15.7 0.54%	n=41.0 0.73%
Potential effect -- tot. Patients displaced:			n=31.3 1.08%	n=82.0 1.45%
• Doctor encouraged questions:	0.2919	0.1999	[Not on survey.]	

L.A. Care HEALTH PLAN

In this Medicaid plan, each 0.01% = 1,800 members getting better doctor – patient commun-ication.

What is that benefit worth?

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.
* PAS 2011 question asked if Dr. gave understandable *instructions* re. concerns. The term in CG CAHPS 2014 is "information".

Advanced Uses of EHR Do Not Yet Show Effect on Patients' Ratings

Although the focus of this study is on Provider Communication, it is worthwhile to note that EHR adoption is process with a long maturation cycle. The hypothesis below did not fare as well:

In concept, EHRs should provide doctors with earlier and easier access to results from patients' visits with other doctors (specialists, etc.).

CAHPS includes some rudimentary measures of coordination-of-care activities, from things that a patient might hear or observe in visits to a PCP. The questions are simple, asking how often PCPs seemed aware of care the patient received from other doctors; and how often someone at the clinic helped get that care from other doctors.

Unlike Provider Communication, which showed early and noticeable effects from EHRs as the technology was adopted – Coordination of Care shows no early benefits during the period of this study, as reported on the following three slides.

Exception: Doctors' awareness of patients' medical history does show the expected effect in the 2011 study.

This reinforces the point that adoption and use of EHRs, and the realization of potential benefits and synergies, is a long-term process. There is a learning curve for doctors and clinic staffs – and there may be a learning curve for patients as well, on how to benefit from health information technology.

Does EHR Use Improve Coordination of Care? – Treatment Level 1

Hypothesis: Having an EHR should improve Coordination of Care ratings.
Finding: Effect is negative or tepid until patient sees use of EHR?

Level 1 -- Minimal adoption: Dr. already had EHR before HITEC.

	2011 Survey		2014	
	Adult	Child	Adult n=2,899 †	Child n=5,748 †
	p-value	p-value	p-value	p-value
• Doctor knows patient's med. hx:	0.2226	0.4289	0.1591	0.1879
• Doctor aware Pt's specialist care:	0.4072	0.2789	[Not on CG CAHPS 2014]	
• Staff followed up with test results:	**0.0152**	0.2217		
• Patient got timely test results:	0.0558	**0.0149**		
• Doctor sought F/U w/Pt. aft ER:	0.2556	0.2031		

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Practical effect: Cell deviation * 2: # of patients moved from negative to positive score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.

Does EHR Use Improve Coordination of Care? – Level 2

- Slight indication of EHR effect on patients' reports.
- EHR might not help access test results if lab is external.

Level 2 – EHR system had live EHR by date of CAHPS survey.

	2011 Survey		2014 Survey	
	Adult	Child	Adult n=2,899 †	Child n=5,748 †
	p-value	p-value	p-value	p-value
• Doctor knows patient's medical history:	**0.0321**	0.0658	**0.0165** **n=36.2** **1.25%**	**0.0294** **n=42.5** **0.75%**
• Doctor is aware of care from specialists:	0.1024	0.0777	[Not on CG CAHPS.]	
• Staff followed up with test results:	**0.0001**	0.2327		
• Patient got test results as soon as needed:	**0.0048**	**0.0344**		
• Doctor sought follow-up visit with patient after ER:	0.1329	0.4891		

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.

Does EHR Use Improve Coordination of Care? – Level 3

- Adult effect is still undiscernible, but moving in the expected direction.
- "Meaningful Use" is a waypoint, but might not yet reflect proficiency.
- Neg. assoc. for parents: Children have less use of complex care, so EHR may be a distraction.

Level 3 -- Doctor attained Meaningful Use w/EHR before survey.

	2011 Survey Adult p-value	2011 Survey Child p-value	2014 Survey Adult n=2,899 † p-value	2014 Survey Child n=5,748 † p-value
• Doctor knew patient's medical history:	0.2964	0.1319	**0.0019** **n=61.5** **2.13%**	0.0769 n=41.1 0.73%
• Doctor is aware of care from specialists:	0.0891	0.4716	[Not on CG CAHPS.]	
• Staff followed up with test results:	0.4495	0.4304		
• Patient got test results as soon as needed:	0.4631	**0.0058**		
• Doctor sought follow-up visit w/patient after ER:	0.1528	**0.0245**		

Notes: All tests are Fisher's Exact Test. Green – association is positive. Red – association is negative.
Effect size: Cell deviation * 2: # of patients moved from negative to positive CAHPS score by EHR (0,1).
† Survey respondents: Calculations used actual denominator for each question, typically 98-100% of the total shown.

VII. Discussion

- The mixed findings for adult patients versus parents, on Provider Communications, illustrate the challenge of adopting and using technology in very personal services such as health care.
  - As the broker of information at the point of service, the success of EHR in bringing value to the exam room, likely relies on the doctor assessing how the patient is responding to the use of the computer.
- CAHPS is a unique tool for examining EHR adoption from the patient's perspective.
  - The impact of EHR on doctor-patient communication to the patient can be directly assessed in the Provider Communication questions.
  - Use of EHR for coordination of care or for calendaring and reminders, uses the patient as an instrument to measure whether the EHR is being used for those functions.
- *Patient-centered care:* The findings in this study are guardedly favorable regarding EHR use. If deployed incompletely and used poorly, it can be a barrier to communication. If deployed well, and incorporated into the exam by a reasonably-proficient doctor, EHRs can, on net, significantly enhance communication with a subset of patients, without noticeably harming the remainder.

  Although the net benefit is small (very low single digits for any given provider communication measure), the benefits are likely additive, and don't yet count synergies and other potential benefits.

Findings: EHRs Can Improve Doctor-Patient Communication

The 2014 study (PAS 2011 data) found evidence to support critics' prediction that EHRs could hamper doctor-patient communication.

- The effect sizes were small.
- The negative effect was mainly present for doctors who had obtained EHRs prior to enrolling in the HITEC incentive program; and for doctors who had EHRs but no "go-live" on the system prior to the 2011 member satisfaction survey.
- The effect was mainly present for adult patients; and mixed for parents of pediatric patients.
- However, the negative effects disappeared for both age cohorts for doctors who attained meaningful use with their EHR systems, with statistically significant effects on some Provider Communication measures.

The 2015 study (CG CAHPS 2014 data) corroborates the 2014 study findings:

- For most measures, the findings were more significant, and effect sizes were larger – suggesting that EHRs have maturation effects, as doctors become more proficient in using the tools in clinical practice, and as patients become more accustomed to the information; the technology through which it is discussed and delivered; and/or to differences in the care that they receive.

Recap on Effect Size Norms and the Importance of Context

Statistical significance testing and the a=0.05 standard hedge against the risk of accepting a finding that may be due to random chance alone. But statistical significance can be found for any non-zero relationship If the sample size is large enough. Effect size norms provided valuable discipline.

Cohen (1977, 2002) offered the following convention for the social sciences:

- For Cohen's d: 0.2="small effect", 0.5="medium effect", 0.8="large effect".

Lipsey *et al* (2012) note that Cohen himself cautioned against blanket use of these as standards. Citing McCartney and Rosenthal (2000), Lipsey *et al* note:

> "[I]n intervention areas that involve hard to change low baserate outcomes, such as the incidence of heart attacks, the most impressively large effect sizes found to date fall well below the .20 that Cohen characterized as small. Those 'small' effects correspond to reducing the incidence of heart attacks by about half—an effect of enormous practical significance."
> http://ies.ed.gov/ncser/pubs/20133000/pdf/20133000.pdf

Rosenthal (1994), noted that the effect of aspirin in reducing heart attacks is only 0.03. (Cited in McCarthy and Dearing (2002), http://www.hfrp.org/evaluation/the-evaluation-exchange/issue-archive/family-support/evaluating-effect-sizes-in-the-policy-arena).

Effect Size Is Context-Dependent

The practical importance of any effect size, is determined In context. As noted in an earlier example: **1.51% improvement on a single CAHPS measure would affect 13,590 Medicaid parents reporting better doctor-patient communication. What is that worth?**

When the cost of an intervention is low, or the benefit is high, even very small effect sizes can be worth pursuing. The effect sizes in this present paper are very small. The value proposition is in this: Medicaid CAHPS scores have proven difficult to move in areas with low-reimbursement rates. A systematic positive result – even a small one – is valuable as a first start.

NCQA has provided a terminology, guiding health plans to look change that is both statistically significant (i.e. not due to chance) and clinically meaningful. Others have used "practical significance" to complement pair to "statistical significance" – but the NCQA usage ensures that the two criteria are thought about and met separately.

Applied to phi, Cohen's rule of thumb becomes: 0.1 is "small", 0.3 is "medium", and 0.5 is "large". Effect sizes in this present study are less than ½ that size. *"Why bother with these?"*

"Meaningful" is context-dependent: An effect is worth pursuing if Benefits > Costs.

"Small" Can Have Synergy, and Synergies Can Be Large

Factors to consider in deciding if small effects are worth pursuing:

- *Is the effect additive or synergistic?:* Is the effect additive (not double-counted across measures)? Do EHRs lift more than one scored measure (CAHPS, HEDIS)?
- *Are there maturation effects?:* Small effects in a technology's infancy, can grow into meaningful effects. Do EHR benefits increase as doctors and patients get more proficient?
- *What is the cost of pursuing this benefit?:* Effect size is less important if cost is low.
- *Does the benefit use non-competing resources?:* Some promotion and training can be piggybacked on activities already being pursued for other purposes (minimal cost).
- *Is your organization agnostic about Medicaid CAHPS actionability / improvability?:* Starting from an empirically-proven driver, is better than no start at all.

Finally: There are no "silver bullets" in CAHPS: It is rare for a single measure to control enough points to move up a level in Star Ratings or Accreditation. *Successful improvements come from pursuing multiple effects.* ***For any line department owning a touch-point, there is no advantage to leaving that department idle "due to small effect," as long as the cost or burden is equally small.***

VII. Discussion

- The mixed findings for adult patients versus parents, on Provider Communications, illustrate the challenge of adopting and using technology in very personal services such as health care.
  - As the broker of information at the point of service, the success of EHR in bringing value to the exam room, likely relies on the doctor assessing how the patient is responding to the use of the computer.
- CAHPS is a unique tool for examining EHR adoption from the patient's perspective.
  - The impact of EHR on doctor-patient communication to the patient can be directly assessed in the Provider Communication questions.
  - Use of EHR for coordination of care or for calendaring and reminders, uses the patient as an instrument to measure whether the EHR is being used for those functions.
- *Patient-centered care:* The findings in this study are guardedly favorable regarding EHR use. If deployed incompletely and used poorly, it can be a barrier to communication. If deployed well, and incorporated into the exam by a reasonably-proficient doctor, EHRs can, on net, significantly enhance communication with a subset of patients, without noticeably harming the remainder.

  Although the net benefit is small (very low single digits for any given provider communication measure), the benefits are likely additive, and don't yet count synergies and other potential benefits.

Discussion – Caveats: Showing Causal Mechanism

Limitation: The analysis here is based on tests of statistical association. Association does not prove causation.

Among the possible criticisms:

- The requirements for a doctor to receive HITECH funding, are fairly *pro forma* checkbox items. While the steps of contracting, going live, and attaining meaningful use, are not trivial, a skeptic would argue that these are preparatory and aren't sufficient "treatment" to produce any clinical effect that a member would notice.
- A skeptic would argue that the intervention and treatment are only in Stage 1, and that effects on outcomes are not expected to occur until much later in the adoption cycle.
- Need to validate the findings by interviewing doctors and patients, specifically asking about how they interact with the EHR. (Experimenter and halo effects would be risks.)
- These criticisms suggest that the results are artifacts of other causes, such as self-selection: Doctors who adopt technology may (un-relatedly) be doctors who also happen to give good service.

Against that backdrop:

- Although answered somewhat by the existing design and findings – (the effects of the treatment (EHR) crystallized in the predicted direction, at each higher level of the treatment), the criticisms suggest the shape of next steps in the research.
- One near-term extension: The CAHPS survey has been replicated for 2014, and the data may permit within-doctor comparisons against 2011, to see if the effect remains and strengthens with more experience with the EHR (maturation).

VIII. Options For Actionability

The next steps for HITECH relate to interoperability and pursuit of impact on outcomes through use of an integrated HER to guide a patient's treatments in the long term.

The next steps for this research relate to practical uses of the findings.

- Inclusion of EHR adoption in P4P programs.
  - An EHR incentive was included in the health plan's P4P program during its startup years.
  - Patient experience ratings are part of how CMS and NCQA rate the health plan. CMS ratings impact revenues.
  - If the finding connecting EHR meaningful use to patient satisfaction is replicable and reliable, an EHR incentive can be revisited, with a particular emphasis on pediatric providers, where the effect is most favorable..
  - If EHR has a "two-fer" effect (improving CAHPS scores, and gaining more HEDIS data, past resource decisions regarding EHRs may have been missing that factor for properly calculating the value of such interventions to the health plan.
  - If patient experience is linked to retention, clinics may have the same gap.

IX. Recap of Learning Objectives

1. Compare two opposing predictions or hypotheses from the literature about the expected impacts of HIT on patient-provider communication in the clinic.

   Proponents of health information technology (HIT) hold that HIT and electronic health records (EHRs) will give doctors better information to make better decisions during visits with members, and will give a means to give each patient a printed after-visit summary.

   Critics of HIT and EHRs, have tended to predict that EHR use visits, will be perceived by patients as a distraction, and will be a barrier to communication.

2. Describe measured differences in the speed of adoption of EHRs in clinics which serve low-income (Medicaid) members versus clinics in the general market.

   Early adopters had less attrition better overall success with EHRs.
   On average, Medicaid providers who joined HITEC-LA took 81 weeks to attain Meaningful Use, while the county average among participants was 53 weeks.
   For Medicaid providers, much of the time elapsed between signup and go-live, suggesting that a different or additional preparatory process might be helpful.]]

Recap of Learning Objectives (Cont.)

3. Compare differences of adult patients versus parents of pediatric patients in rating provider communication in clinics with EHRs.

   Adult patients generally gave lower ratings on provider communication than did parents of pediatric members.

4. Describe the impact of maturation on ratings of provider communication and related quality-of-service measures.

   The effects observed in the 2014 study for the cohort of HITEC providers, tend to be sharpened in the 2015 study. Although the patient cohort included more adults and children with disabilities with disabilities, the effects are consistent with expectations, that benefits of information access will grow as doctors and patients become accustomed to the potential of information tools.

5. Explain one prominent reason why provider communication is an earlier indicator of EHR adoption, than other common measures of service quality from the patient perspective.

   The introduction of computers to the exam room, and interactive data access for the provider, is visible to the patient. If used to enhance the visit -- (looking up pertinent information (trending test results, checking prescriptions, checking communication from other providers) – the benefits to the visit may be apparent. If used in lieu of direct eye contact and discussion with the patient, then critics' expectations may be realized. In either direction, the computer becomes a tangible "attention magnet" in the exam.

Recap of Learning Objectives (Cont.)

6. Identify two common surveys routinely used by health plans that can be used to evaluate the human outcomes of HIT for patients and providers.

The CAHPS family of surveys are the most common surveys of patient experience, hence are a natural tool for assessing HIT in patient-centered care.

The CAHPS Health Plan survey (HP CAHPS) is the most common survey of patient experience. When used for regulatory or accreditation purposes by CMS, state agencies, and local agencies, the survey generally permits adding a limited set of questions and/or attaching administrative data (such as Provider ID, and EHR deployment). This usually involves data operations and analysis by a third-party survey firm, to protect respondent anonymity. Main advantages: representativeness to a population.

The CAHPS Clinician and Group survey (CG CAHPS) is a common survey of patient experience at the provider group or individual physician level. It is frequently used by payers (government agencies or health insurers) as part of pay-for-performance (P4P) programs. In that context, respondent anonymity is generally offered with respect to a patient's provider or provider organization, but the sponsoring agency or health insurer may retain the right to obtain member-identified response data for analytic purposes, if the cover letter is worded appropriately. That permits flexible analysis of the sort done in this study. Main drawback: CG CAHPS results may require weighting, depending on end-use.

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