T558. OT Management in Today's Health and Community Systems

Why Using Health Information Technology Might Save Lives but Steal your Sunshine

Daniel J. Vreeman, PT, DPT, MSc

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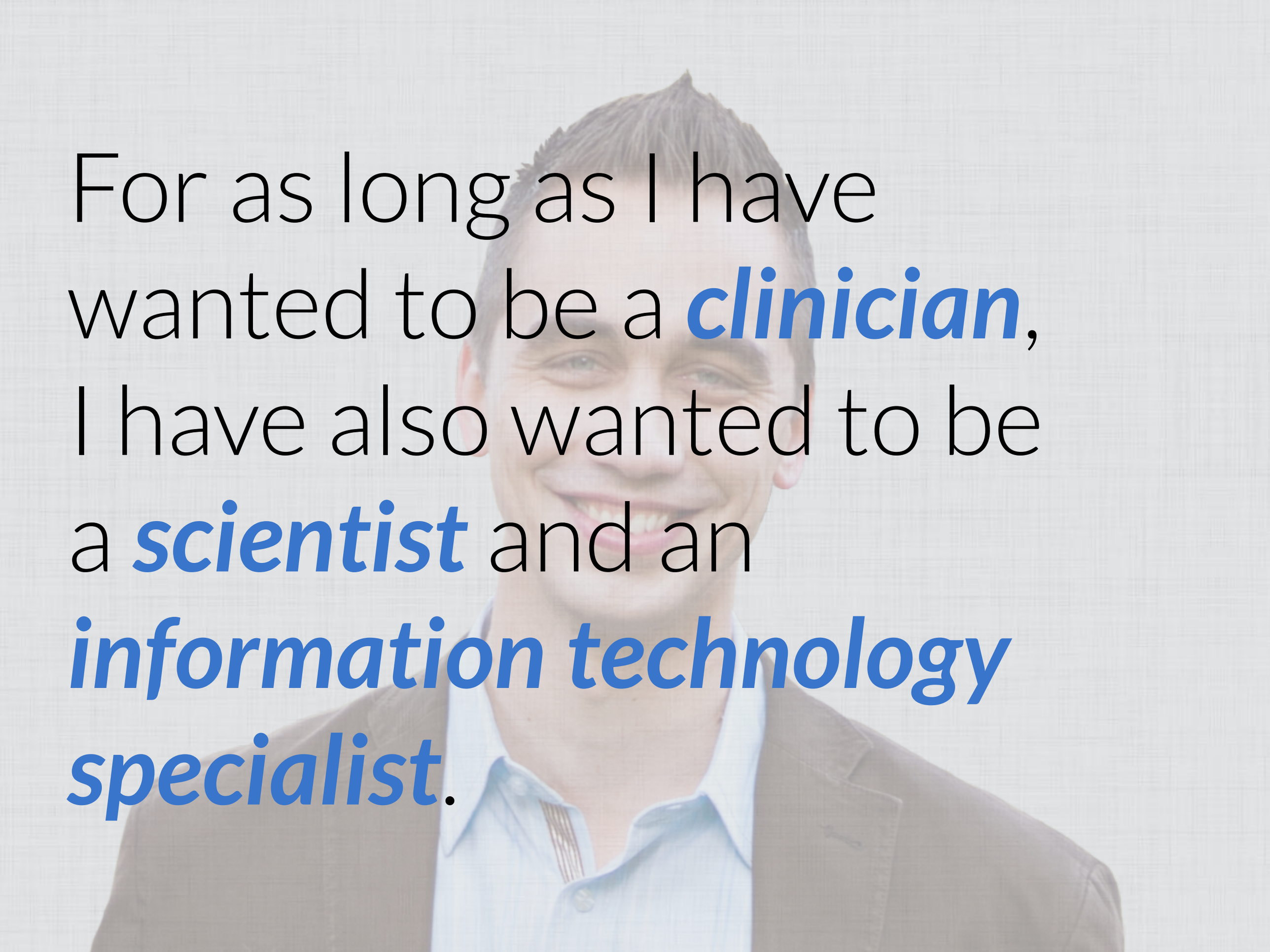
Associate Director for Terminology Services, Regenstrief Institute, Inc

@djvreeman

INDIANA UNIVERSITY
DEPARTMENT OF MEDICINE
School of Medicine

Regenstrief Institute
Better Care. Better Health.

photo via Sadie Hernandez



For as long as I have wanted to be a ***clinician***, I have also wanted to be a ***scientist*** and an ***information technology specialist***.

No magical thinking!

Biomedical informatics (BMI)

The interdisciplinary field that studies and pursues the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem solving and decision making, motivated by efforts to improve human health.

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https://www.amia.org/biomedical-informatics-core-competencies

Human

+

Computer

Human

Friedman CP. A "fundamental theorem" of biomedical informatics. J Am Med Inform Assoc. 2009 Mar-Apr;16(2):169-70.PubMed PMID: 19074294;

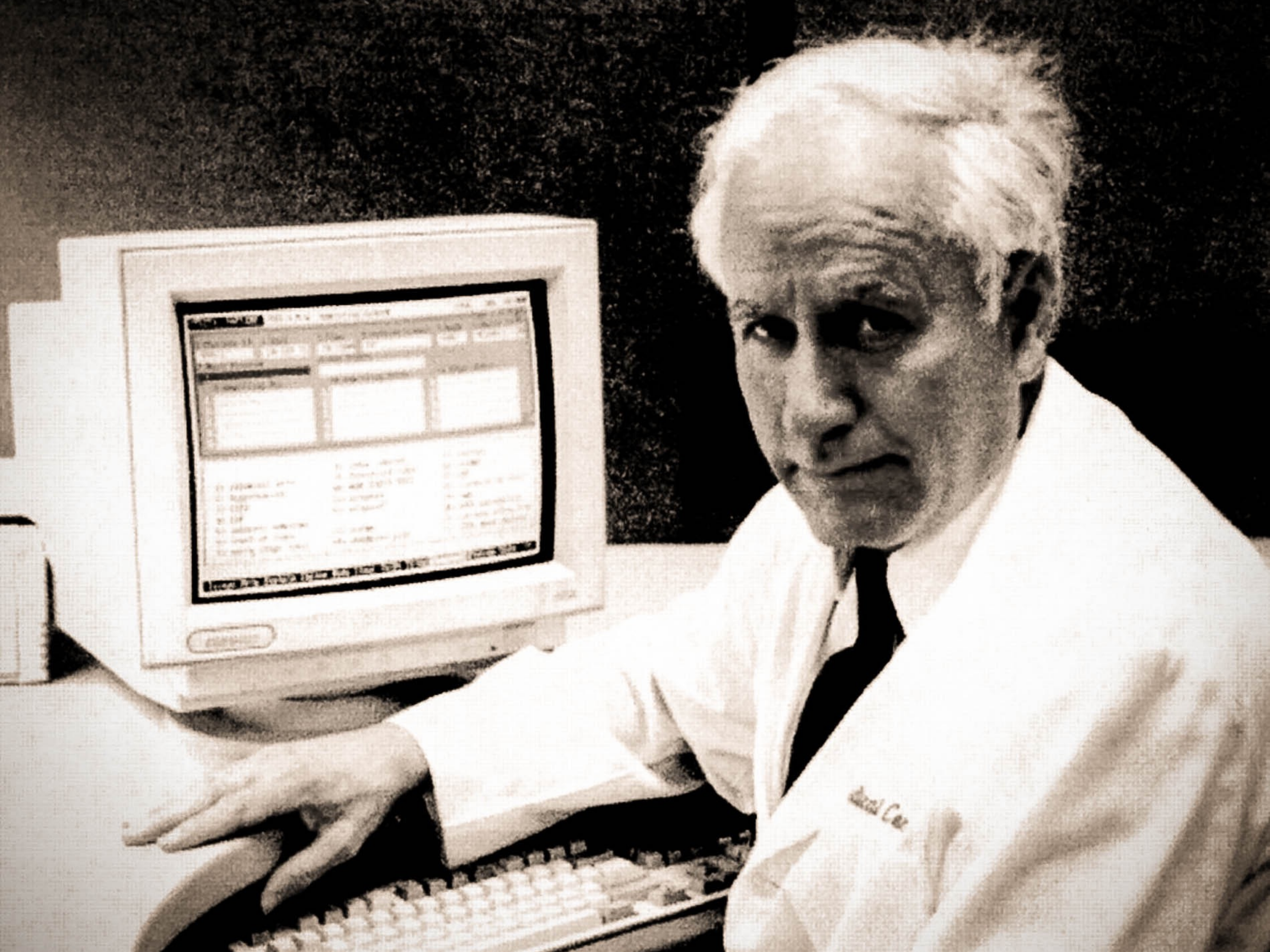
Objectives

When it's all said and done, you'll be able to…

1. Explain the current forces driving adoption of information technology in healthcare
2. Appreciate the kinds of problems that can be improved with more judicious use of health information technology
3. Discuss the key factors for success, as well as important barriers to implementing electronic health record systems in rehabilitation
4. Articulate at least one way that you could use health information technology to improve care

photo via Vernio77

First, some introductions...



The EHR steals 60 minutes a day from me!

The EHR steals 60 minutes a day from me!

48 mins/day

mean time loss per clinic day for attending physicians

McDonald CJ, Callaghan FM, Weissman A, Goodwin RM, Mundkur M, Kuhn T. Use of internist's free time by ambulatory care Electronic Medical Record systems. JAMA Intern Med. 2014 Nov;174(11):1860-3. PubMed PMID: 25200944.

AMPATH Pediatric Clinical Summary

John Doe

6

999-3

Male 4 Years,10 Months (23-Jun-2007)
HIV STATUS: POSITIVE

99999-5

First Encounter	Highest WHO Stage	6 Months HIV Rx Adherence
02-Sep-2011	WHO STAGE 2 PEDS	Perfect

Problem List:

Remove resolved problems through encounter form

1. HIV INFECTED *(02-Sep-2011)*
2. HERPES ZOSTER *(02-Sep-2011)*

Immunizations

1. HEMOPHILUS INFLUENZA B VACCINATION
2. BACILLE CAMILE-GUERIN VACCINATION
3. HEPATITIS B VACCINATION
4. MEASLES VACCINATION
5. DIPTHERIA TETANUS AND PERTUSSIS VACCINATION
6. POLIO VACCINATION

Recent ARVs and OI Meds:

1. TRIMETHOPRIM AND SULFAMETHOXAZOLE

ARV Side Effects

NONE

Maternal pMTCT: Med / Period / Doses Given / Rx Length

NONE

Flowsheet (Initial + Last Four Value)

WT (KG)	HT (CM)	HGB	CD4	VIRAL-LD	SGPT	DNA PCR	ELISA	RPDELSA	CREAT
16.0 *(z=-0.32 / p=37%)* 02-Sep-2011	93.0 02-Sep-2011	12 02-Sep-2011	1214 *(32%%)* 02-Sep-2011		12 02-Sep-2011		POSITIVE 02-Sep-2011		0.4 02-Sep-2011
17.0 *(z=-0.57 / p=28%)* 01-Mar-2012	93.0 01-Mar-2012		984 *(28%%)* 01-Mar-2011						
17.0 *(z=-0.86 / p=19%)* 16-May-2012	93.0 16-May-2012								

Last 2 Chest X-Rays *(check chart as needed for results prior to 14-Feb-2006)*

No chest x-ray results available.

Reminders (Write number next to each reminder)

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Last seen 16-May-2012 at MTRH Module 4 by Good Doctor
Encounter entered by Super User on 17-May-2012
Next scheduled visit: 15-Jun-2012

999-3

Generated on 30-Sep-2011 08:41:38.0611
Version 4.0-SNAPSHOT
Paediatric Template revision 20

Were MC, Nyandiko WM, Huang KT, et al. Computer-generated reminders and quality of pediatric HIV care in a resource-limited setting. Pediatrics. 2013 Mar; 131(3):e789-96. Epub 2013 Feb 25. PubMed PMID: 23439898.

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4x

increase in completion of overdue clinical tasks!
(68% vs 18%)

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Saving lives or stealing sunshine?

The Future

Great Scott!

photo via JD Hancock

Complete, longitudinal information that ***follows the consumer***

Care that is ***coordinated*** across settings

photos via meddygarnet and brykmantra

Health decisions for individuals made with information tools that ***assist and guide,*** accounting for everything from molecules to the environment

This system has *way more than just electronic documentation.*

Someday, care will be

Comprehensive
Patient-centered
Coordinated
Accessible
Safe
High quality

photo via proimos

Meanwhile, back on planet Earth...

Patients move ***faster*** and ***further*** than their health information

SUPPORT OF ELECTRONIC HEALTH RECORD IN PHYSICAL THERAPY HOD P06-08-13-11
[Position]

Whereas, It is in the best interest of patients/clients to ensure health care practitioners have the full picture of a patient's/client's health by integrating the health history, lab results, current medications, and effects of clinical interventions into one electronic interface;

Whereas, In addition to improving efficiency and reducing medical errors, a well-designed electronic health record that meets recognized standards for privacy, security, and interoperability can assist health care practitioners to monitor and manage health risks to entire groups of patients/clients;

Whereas, The President of the United States issued an executive order in 2004 with the goal of widespread adoption of interoperable electronic records by 2014[1]; and

Whereas, Using electronic health record systems may improve reporting, operational efficiency, communication, data accuracy, the capability for research, and some aspects of clinical decision making;

Resolved, That the American Physical Therapy Association supports the use of electronic health record systems (EHRs) and promotes the widespread adoption of interoperable EHRs in all physical therapy practice settings.

1. President Unveils Tech Initiatives for Energy, Health Care, Internet. Remarks by the President at American Association of Community Colleges Annual Convention [press release]. Minneapolis, Minn: The White House; April 26, 2004. Available at: http://www.whitehouse.gov/news/releases/2004/04/20040426-6.html. Accessed March 24, 2008.

Relationship to Vision 2020: Professionalism; (Practice Department, ext 3176)

[Document updated: 12/14/2009]

Explanation of Reference Numbers:
BOD P00-00-00-00 stands for Board of Directors/month/year/page/vote in the Board of Directors Minutes; the "P" indicates that it is a position (see below). For example, BOD P11-97-06-18 means that this position can be found in the November 1997 Board of Directors minutes on Page 6 and that it was Vote 18.

P: Position | S: Standard | G: Guideline | Y: Policy | R: Procedure

American Physical Therapy Association

The Science of Healing. The Art of Caring.

SUPPORT OF ELECTRONIC HEALTH RECORD IN PHYSICAL THERAPY HOD P06-08-13-11

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Whereas, The President of the United States issued an executive order in 2004 with the goal of widespread adoption of interoperable electronic records by 2014[1]; and

Whereas, Electronic health record systems that integrate operational efficiency, communication, data accuracy, and capability to collect clinical data for clinical decision-making;

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Jump to FAQ

EHR Integration with Interfaces that Work

AOTA PERFORM® provides interfaces to all leading Electronic Health Record Systems. Cedaron offers interfaces for billing solutions to integrate Scheduler, ADT and Billing, including the 30-day rollover to avoid manually changing account numbers, Permanent Clinical Record and Physician Order Entry.

AOTA PERFORM® interfaces with Abraxas, AthenaHealth, Cerner, Epic, GE Healthcare, McKesson, Meditech, NextGen, Siemens and many more to greatly reduce data entry. You can also build a custom interface if needed.

Detailed Features of AOTA PERFORM®

Developed in a partnership between Cedaron and the American Occupational Therapy Association, AOTA PERFORM® is the leading software solution for occupational therapy practice framework and practice management.

With AOTA PERFORM® you can:

- Spend more time with your patients and less time documenting patient care.
- Decrease denials and increase profitability.
- Open all your patients for the day and work in any patient file by just clicking on that patient.
- Document all components of patient care quickly, accurately, and defensibly.
- Confidently meet all reporting requirements, following the AOTA's Guide to Occupational Therapy Practice.

In USA, major driver of eHealth standards adoption is

EHR Incentive Program

a.k.a. *"Meaningful Use"*

Blumenthal D, Tavenner M. The "meaningful use" regulation for electronic health records. N Engl J Med. 2010 Aug 5;363(6):501-4. Epub 2010 Jul 13. PubMed PMID: 20647183.

FEDERAL HEALTH IT STRATEGIC PLAN

2015 – 2020

Prepared by:

The Office of the National Coordinator for Health Information Technology (ONC)
Office of the Secretary, United States Department of Health and Human Services
http://healthit.gov

FEDERAL HEALTH IT STRATEGIC PLAN

1. Advance person-centered and self-managed health
2. Transform healthcare delivery and community health
3. Foster research, scientific knowledge, and innovation
4. Enhance nation's health IT infrastructure

Prepared by:

The Office of the National Coordinator for Health Information Technology (ONC)
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http://healthit.gov

Via online submission to http://www.regulations.gov

November 17, 2015

Andy Slavitt
Acting Administrator
Centers for Medicare & Medicaid Services
Department of Health and Human Services
Attention: CMS–1631–P
P.O. Box 8013
Baltimore, MD 21244-8013

Re: **Request for Information Regarding Implementation of the Merit-Based Incentive Payment System, Promotion of Alternative Payment Models, and Incentive Payments for Participation in Eligible Alternative Payment Models [CMS–3321–NC]**

Dear Acting Administrator Slavitt:

The American Occupational Therapy Association (AOTA) is the national professional association representing the interests of more than 230,000 occupational therapists, occupational therapy assistants, and students of occupational therapy. The science-driven, evidence-based practice of occupational therapy enables people of all ages to live life to its fullest by promoting health and minimizing the functional effects of illness, injury, and disability. Many occupational therapy services are reimbursed under the Medicare Physician Fee Schedule (MPFS) and are affected by Medicare Part B payment policies. We appreciate the opportunity to comment on the Request for Information Regarding Implementation of the Merit-Based Incentive Payment System and Promotion of Alternative Payment Models under the Medicare Access and CHIP Reauthorization Act (MACRA),[1] published at 80 *Federal Register* 59102 on October 1, 2015.

I. MIPS EP Identifier and Exclusions

Section 1848(q)(1)(C) of MACRA defines a MIPS eligible professional (EP) for the first 2 year for which the MIPS applies to payment as only a physician, a physician assistant (PA), nurse practitioner (NP), and clinical nurse specialist (CNS), a certified registered nurse anesthetist (CRNA) and a group that includes such professionals. Beginning with the third year of the program (2019) and for succeeding years, the statute also gives the Secretary discretion to specify additional EPs, as that term is defined in section 1848(k)(3)(B) of the Act, which could include an occupational therapist, a physical therapist, a qualified speech-language pathologist or a qualified audiologist, among other professionals. For the MIPS program, AOTA makes the following general

[1] P.L. 114-10 (April 16, 2015).

The American Occupational Therapy Association, Inc.

Occupational Therapy:
Living Life To Its Fullest®

Via online submission to http://www.regulations.gov

November 17, 2015

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[illegible]

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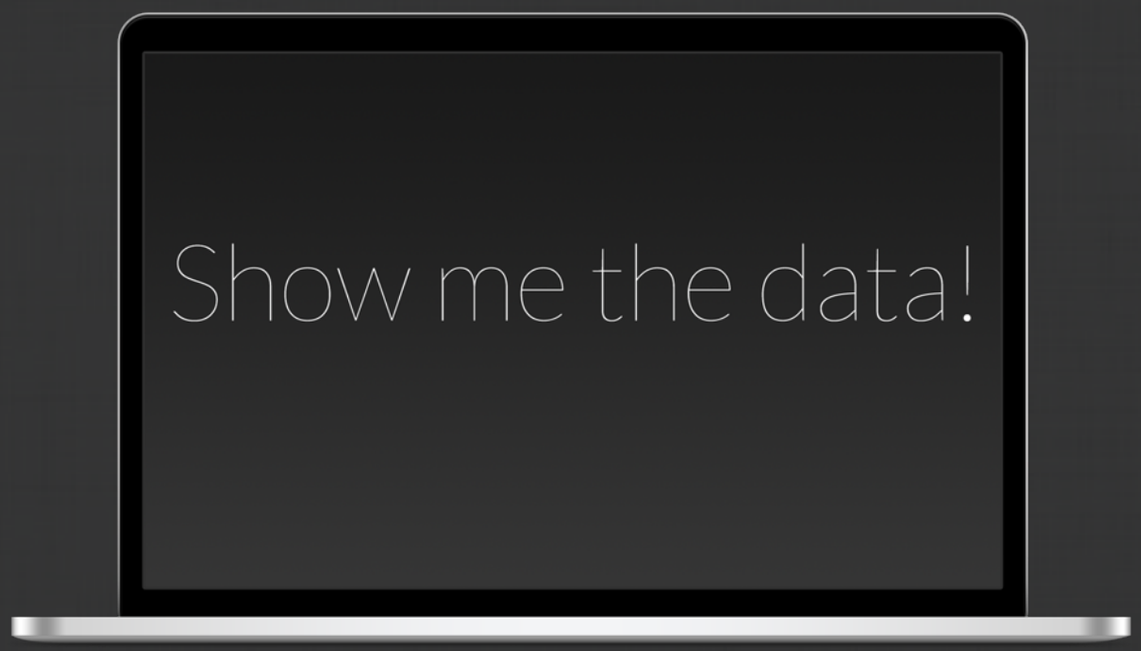
AOTA's Centennial Vision 2017
4720 Montgomery Lane
Bethesda, MD 20814-1220
301-652-2682
301-652-7711 fax
800-377-8555 TDD
www.aota.org

AOTA recommends…

1. Inclusion of OTs in MIPS for quality measures and clinical practice improvement activities
2. Inclusion of OTs in Resource Use measures and Meaningful Use of EHR performance categories in RY 2019.

Electronic Health Records

Opportunities and Challenges



Four ways EHRs can accelerate the vision

Seamless web of data

Data reuse

Data analytics

Clinical decision support

photo via OiMax

Seamless web of data

photo via nosha

McDonald et al. Canopy Computing: using the Web in Clinical Practice. *JAMA*. 1998;280(15):1325-1329

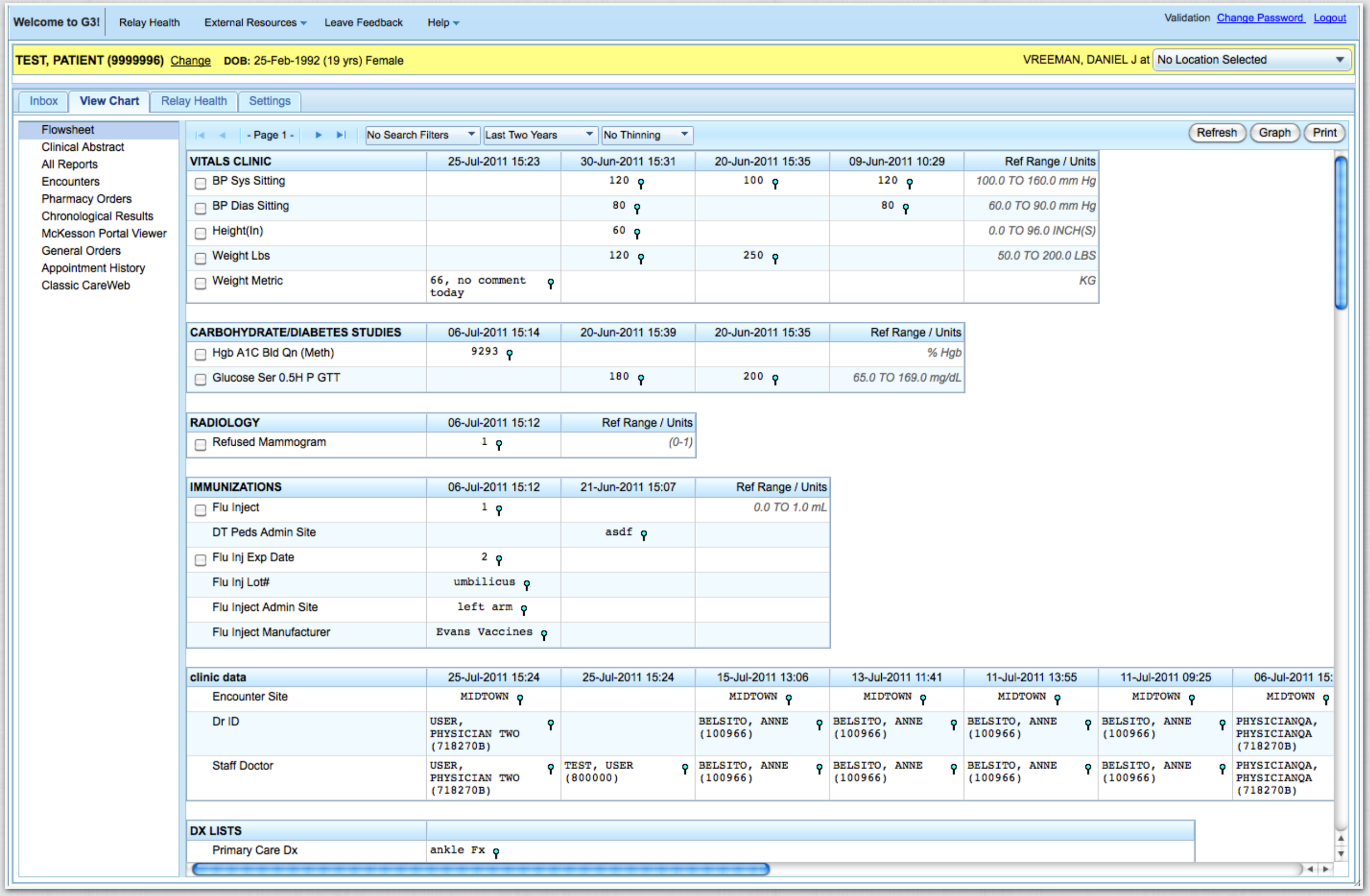
photo via nosha

The rain forest canopy is a seamless web through which arboreal creatures efficiently move to reach the edible fruits without any attention to the individual trees.

McDonald et al. Canopy Computing: using the Web in Clinical Practice. *JAMA*. 1998;280(15):1325-1329

photo via nosha

A Unified Patient Record

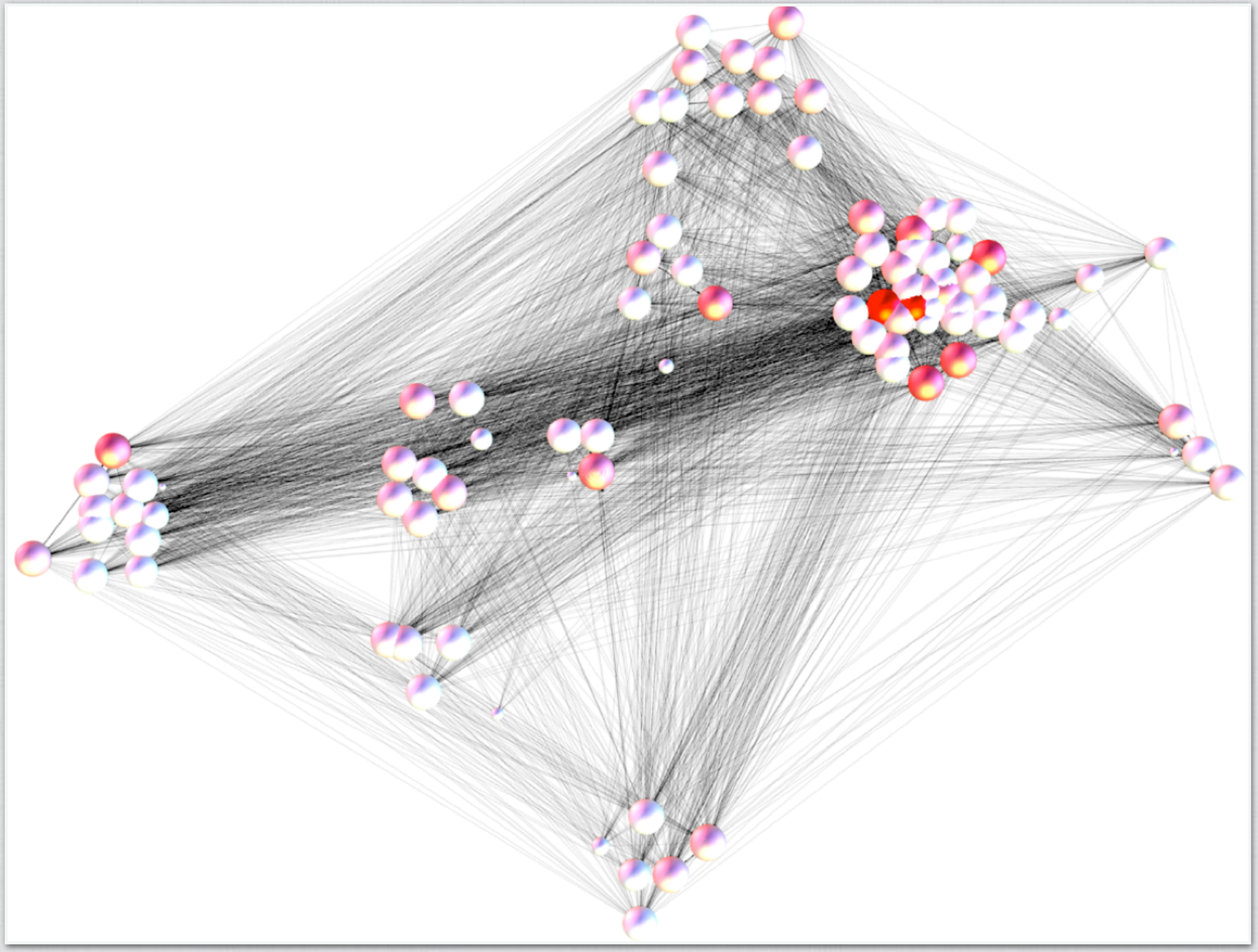


41%

of ED visits are for patients with **data at another institution**

Finnell JT, Overhage JM, Grannis SJ. All Health Care is Not Local: An Evaluation of the Distribution of Emergency Department Care Delivered in Indiana. AMIA Annu Symp Proc. 2011;:409-416.

Connectedness among Indiana EDs



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Nearly *every ED* in Indiana shares patients with *every other ED* in the state

Collect once. Use many.

Clinical care, public health reporting, quality management, clinical and epidemiological research, etc…

photo via pagedooley

Data Analytics

Harvard Business Review

ARTWORK: TAMAR COHEN, ANDREW J BUBOLTZ, 2011, SILK SCREEN ON A PAGE FROM A HIGH SCHOOL YEARBOOK, 8.5" X 12"

DATA

Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

FROM THE OCTOBER 2012 ISSUE

When Jonathan Goldman arrived for work in June 2006 at LinkedIn, the business networking site, the place still felt like a start-up. The company had just under 8 million accounts, and the number was growing quickly as existing members invited their friends and colleagues to join. But users weren't seeking out connections with the people who were already on the site at the rate executives had expected. Something was apparently missing in the social experience. As one LinkedIn manager put it, "It was like arriving at a conference reception and realizing you don't know anyone. So you just stand in the corner sipping your drink—and you probably leave early."

Goldman, a PhD in physics from Stanford, was intrigued by the linking he did see going on and by the richness of the user profiles. It all made for messy data and unwieldy analysis, but as he began exploring people's connections, he started to

WHAT TO READ NEXT

Big Data: The Management Revolution

5 Essential Principles for Understanding Analytics

Data Scientists Don't Scale

VIEW MORE FROM THE
October 2012 Issue

EXPLORE THE ARCHIVE

“What Does $67B Dell Deal Mean for Healthcare Big Data Analytics?”

“Blue Cross CIO: Big Data Can Fix Healthcare Quality, Costs”

“Experts Say ‘Big Data’ Represents Future of Health Care Research”

“Healthcare Big Data Analytics Keeps Small Hospitals Independent”

“North America to Lead the Global Healthcare Analytics Market”

“Global Big Data Spending in Healthcare Industry to Grow at a CAGR of 42% Over the Period 2014-2019”

Clinical Decision Making

Right info. Right time. Right format.

Evidence-based Practice

patients + evidence + clinical expertise

Everyone wants it.

Nobody has time.

(So they say)

Jette DU, Bacon K, et al. Evidence-based practice: beliefs, attitudes, knowledge, and behaviors of physical therapists. Phys Ther. 2003;83(9):786-805.

How can EHRs help?

Tools to implement EBP at the point of care.

EHR Decision Support

A computer-generated suggestion about care for an individual patient

The secret sauce of the EHR chicken soup

photo via liber

photo via paskukaru76

Changing Clinical Practice Through Patient Specific Reminders Available at the Time of the Clinical Encounter: Systematic Review and Meta-Analysis

Tim A. Holt, PhD[1,2], Margaret Thorogood, PhD[2], and Frances Griffiths, PhD[2]

[1]Department of Primary Care Health Sciences, University of Oxford, Oxford, UK; [2]Health Sciences Research Institute, University of Warwick, Coventry, UK.

OBJECTIVE: To synthesise current evidence for the influence on clinical behaviour of patient-specific electronically generated reminders available at the time of the clinical encounter.

DATA SOURCES: PubMed, Cochrane library of systematic reviews; Science Citation Index Expanded; Social Sciences Citation Index; ASSIA; EMBASE; CINAHL; DARE; HMIC were searched for relevant articles.

STUDY ELIGIBILITY CRITERIA, PARTICIPANTS AND INTERVENTIONS: We included controlled trials of reminder interventions if the intervention was: directed at clinician behaviour; available during the clinical encounter; computer generated (including computer generated paper-based reminders); and generated by patient-specific (rather than condition specific or drug specific) data.

STUDY APPRAISAL AND SYNTHESIS METHODS: Systematic review and meta-analysis of controlled trials published since 1970. A random effects model was used to derive a pooled odds ratio for adherence to recommended care or achievement of target outcome. Subgroups were examined based on area of care and study design. Odds ratios were derived for each sub-group. We examined the designs, settings and other features of reminders looking for factors associated with a consistent effect.

RESULTS: Altogether, 42 papers met the inclusion criteria. The studies were of variable quality and some were affected by unit of analysis errors due to a failure to account for clustering. An overall odds ratio of 1.79 [95% confidence interval 1.56, 2.05] in favour of reminders was derived. Heterogeneity was high and factors predicting effect size were difficult to identify.

KEY WORDS: reminder systems; electronic health records; computer systems; decision support systems, clinical.

J Gen Intern Med

DOI: 10.1007/s11606-012-2025-5

BACKGROUND

Computer generated reminder systems are commonly used to support routine health care. They utilise electronic data to identify clinical errors and opportunities for screening, preventive interventions, improved prescribing, and both diagnostic and monitoring tests. Previous studies have found that the response of clinicians to such reminders is variable, and a number of reviews have described existing tools, where possible measured their impact, and in some cases attempted to identify factors influencing effect size.[1–11] Reminder systems are diverse in their design. Some are used to support specific clinical areas of care (e.g. diabetes), presenting current recommendations or evidence, and do not require patient specific data. Others are triggered simply by an attempt to prescribe a specific drug therapy, for instance reminding the prescriber of lithium that blood monitoring is required. Shojania et al. studied the impact of 'on-screen' reminders as a Cochrane systematic review,[10] and excluded computer generated paper-based reminders and email alerts occurring outside clinical encounters. They hypothesised that this

Changing Clinical Practice Through Patient Specific Reminders Available at the Time of the Clinical Encounter: Systematic Review and Meta-Analysis

Tim A. Holt, PhD[1,2], Margaret Thorogood, PhD[2], and Frances Griffiths, PhD[2]

[1]Department of Primary Care Health Sciences, University of Oxford, Oxford, UK; [2]Health Sciences Research Institute, University of Warwick, Coventry, UK.

STUDY ELIGIBILITY CRITERIA, PARTICIPANTS AND INTERVENTIONS: We included controlled trials of reminder interventions if the intervention was: directed at clinician behaviour; available during the clinical encounter; computer generated (including computer generated paper-based reminders); and generated by patient-specific (rather than condition specific or drug specific) data.

published since 1970. A random effects model was used to derive a pooled odds ratio for adherence to recommended care or achievement of target outcome. Subgroups were examined based on area of care and study design. Odds ratios were derived for each sub-group. We examined the designs, settings and other features of reminders looking for factors associated with a consistent effect.

RESULTS: Altogether, 42 papers met the inclusion criteria. The studies were of variable quality and some were affected by unit of analysis errors due to a failure to account for clustering. An overall odds ratio of 1.79 [95% confidence interval 1.56, 2.05] in favour of reminders was derived. Heterogeneity was high and factors predicting effect size were difficult to identify.

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OBJECTIVE: To synthesise current evidence for the influence on clinical behaviour of patient-specific electronically generated reminders available at the time of the clinical encounter.

DATA SOURCES: PubMed, Cochrane library of systematic reviews; Science Citation Index Expanded; Social Sciences Citation Index; ASSIA; EMBASE; CINAHL; DARE; HMIC were searched for relevant articles.

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KEY WORDS: reminder systems; electronic health records; computer systems; decision support systems, clinical.

J Gen Intern Med

DOI: 10.1007/s11606-012-2025-5

BACKGROUND

Computer generated reminder systems are commonly used to support routine health care. They utilise electronic data to identify clinical errors and opportunities for screening, preventive interventions, improved prescribing, and both diagnostic and monitoring tests. Previous studies have found that the response of clinicians to such reminders is variable, and a number of reviews have described existing tools, where possible measured their impact, and in some cases attempted to identify factors influencing effect size.[1–11] Reminder systems are diverse in their design. Some are used to support specific clinical areas of care (e.g. diabetes), presenting current recommendations or evidence, and do not require patient specific data. Others are triggered simply by an attempt to prescribe a specific drug therapy, for instance reminding the prescriber of lithium that blood monitoring is required. Shojania et al. studied the impact of 'on-screen' reminders as a Cochrane systematic review,[10] and excluded computer generated paper-based reminders and email alerts occurring outside clinical encounters. They hypothesised that this

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Evidence in Rehabilitation

Redesign of an Electronic Clinical Reminder to Prevent Falls in Older Adults

Gwendolyn V. Spears, PhD, RN, Carol P. Roth, RN, MPH,† Isomi M. Miake-Lye, BA,* Debra Saliba, MD, MPH,*‡§‖ Paul G. Shekelle, MD, PhD,*§ and David A. Ganz, MD, PhD*‡§*

Background: Falls are the leading cause of unintentional injury among US older adults. Guidelines recommend screening patients for fall risk, and providing exercise for patients with gait and balance problems. We redesigned an electronic clinical reminder to improve identification and management of Veterans at high risk for falls, and piloted the reminder in 3 Veterans Health Administration community-based outpatient clinics.

Methods: This project had 5 key elements: (1) case finding, (2) efficient collection of condition-specific clinical data, (3) clinical reminders to prompt appropriate care, (4) patient and family education materials, and (5) primary care provider (PCP) decision support/PCP and staff education. We reviewed clinical reminder reports, interviewed nurses and PCPs, directly observed clinic operations, and watched nurses and PCPs use the clinical reminder with a dummy patient record to determine areas in need of improvement.

Results: Over a 1-year period, 2943 Veterans aged 75 years and older visited the 3 clinics, with 2264 screened for fall risk by the intake nurse, yielding 472 positive screens. PCPs completed gait, balance, and strength evaluations on 231 screen-positive Veterans. Among the 162 Veterans who had a gait, balance, or strength problem on evaluation and were free of advanced dementia or poor prognosis, 39 were offered physical therapy or exercise. PCPs and nurses held divergent opinions about the clinical reminder and the project, with PCPs more negative and nurses more positive.

Conclusions: A fall prevention clinical reminder can be incorporated into routine care, but low referral rates to exercise programs suggest that further quality improvement cycles are needed.

Key Words: quality improvement, fall prevention, primary care, clinical reminder

(*Med Care* 2013;51: S37–S43)

From the *VA Greater Los Angeles HSR&D Center of Excellence, Sepulveda; †The RAND Corporation, Santa Monica; ‡Geriatric Research, Education and Clinical Center, Veterans Affairs Greater Los Angeles

Redesign of an Electronic Clinical Reminder to Prevent Falls in Older Adults

Gwendolyn V. Spears, PhD, RN, Carol P. Roth, RN, MPH† Isomi M. Miake-Lye, BA,**
Richard Rubenstein, MD, MPH,‡§ and Paul G. Shekelle, MD, PhD†‖§*

Implementing a fall prevention program that adheres to clinical guidelines, however, requires addressing the significant logistical barriers that impede the integration of fall prevention activities into primary care.

Background: Falls are the leading cause of unintentional injury among US older adults. Guidelines recommend screening patients for fall risk, providing exercise programs, and addressing balance problems. We redesigned an electronic clinical reminder to improve identification and management of Veterans at high risk for falls, and piloted it in 5 Veterans Health Administration community-based outpatient clinics.

Methods: This consisted of 5 key elements: (1) patient fall risk identification, (2) clinical reminders to prompt appropriate care, (3) patient and family education materials, and (4) primary care provider (PCP) decision support/PCP and staff education. We reviewed clinical reminder reports, interviewed nurses and PCPs, directly observed clinic operations, and watched nurses and PCPs use the clinical reminder with a dummy patient record to determine areas in need of improvement.

Results: Over a 6-month period, 2933 patients aged 65 years and older visited the 5 clinics, with 2264 screened for fall risk by the intake nurse, yielding 472 positive screens. PCPs completed gait, balance, function, and strength evaluations on 232 fall-risk-positive Veterans. Among the 162 Veterans who had a gait, balance, or strength problem on evaluation and were free of advanced dementia or poor prognosis, 30 were referred to exercise programs. Clinical reminder use increased over the project, with PCPs more negative and nurses more positive.

Conclusions: A fall prevention clinical reminder can be incorporated into routine care, but low referral rates to exercise programs suggest that further quality improvement cycles are needed.

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Background: Falls are the leading cause of unintentional injury among US older adults. Guidelines recommend screening patients for fall risk, and providing exercise for patients with gait and balance problems. We redesigned an electronic clinical reminder to improve identification and management of Veterans at high risk for falls, and piloted the reminder in 3 Veterans Health Administration community-based outpatient clinics.

Methods: This project had 5 key elements: (1) case finding, (2) efficient collection of condition-specific clinical data, (3) clinical reminders to prompt appropriate care, (4) patient and family education materials, and (5) primary care provider (PCP) decision support/PCP and staff education. We reviewed clinical reminder reports, interviewed nurses and PCPs, directly observed clinic operations, and watched nurses and PCPs use the clinical reminder with a dummy patient record to determine areas in need of improvement.

Results: Over a 1-year period, 2943 Veterans aged 75 years and older visited the 3 clinics, with 2264 screened for fall risk by the intake nurse, yielding 472 positive screens. PCPs completed gait, balance, and strength evaluations on 231 screen-positive Veterans. Among the 162 Veterans who had a gait, balance, or strength problem on evaluation and were free of advanced dementia or poor prognosis, 39 were offered physical therapy or exercise. PCPs and nurses held divergent opinions about the clinical reminder and the project, with PCPs more negative and nurses more positive.

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...tailor the reminder to existing clinic setups and workflows.

Background: Falls are the leading cause of unintentional injury among US older adults. Guidelines recommend screening patients for fall risk, and providing clinical interventions to address balance problems. We redesigned an electronic clinical reminder to improve identification and management of Veterans at high risk for falls, and piloted the reminder in 3 Veterans Health Administration community-based outpatient clinics.

Methods: This project had 5 key elements: (1) case finding, (2) efficient collection of condition-specific clinical data, (3) clinical reminders to prompt appropriate care, (4) patient and family education materials, and (5) primary care provider (PCP) decision support/PCP and staff education. We reviewed clinical reminder reports, interviewed nurses and PCPs, directly observed clinic operations, and watched nurses and PCPs use the clinical reminder with a dummy patient record to determine areas in need of improvement.

Results: Over 5 months, 1633 Veterans aged 75 years and older visited the 3 clinics, with 2264 screened for fall risk by the intake nurse, yielding 472 positive screens. PCPs completed gait, balance, and strength evaluations on 231 screen-positive Veterans. Among the 162 Veterans who had a gait, balance, or strength problem on evaluation and were free of advanced dementia or poor prognosis, 39 were offered physical therapy or exercise. PCPs and nurses held divergent opinions about the clinical reminder and the project, with PCPs more negative and nurses more positive.

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My Summary:

Reminders can help, but healthcare is complex (because it involves people)!

Background: Falls among older adults are common and costly. Guidelines recommend screening patients for fall risk, and providing exercise for patients with gait and balance problems. We redesigned an existing clinical reminder to improve identification of older patients who need fall prevention, and piloted the reminder in 3 Veterans Health Administration community-based outpatient clinics.

Methods: This project had 5 key elements: (1) case finding, (2) efficient collection of condition-specific clinical data, (3) clinical reminders to prompt appropriate care, (4) patient and family education materials, and (5) primary care provider (PCP) decision support/PCP and staff education. We reviewed clinical reminder reports, interviewed nurses and PCPs, directly observed clinic operations, and watched nurses and PCPs use the clinical reminder with a dummy patient. Finally, we determined the number of patients identified by the reminder.

Results: Over a 1-year period, 2943 Veterans aged 75 years and older visited the 3 clinics, with 2264 screened for fall risk by the taking the Timed Up and Go test. Of these patients, 231 had gait, balance, and strength evaluations or 231 screen-positive Veterans. Among the 162 Veterans who had a gait, balance, or strength problem on evaluation and were free of advanced dementia or poor prognosis, 39 were offered physical therapy or exercise. PCPs and nurses held divergent opinions about the clinical reminder and the project, with PCPs more negative and nurses more positive.

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Your Turn

If this, then that...

If current temperature drops below 38°F, then turn on Sunroom heater

Archive favorited tweets in Evernote

If

Hgb < 8 gm/dL

Then

Prompt: “No exercise.
Essential daily activities only.”

An On-line Computer System for a Rehabilitation Hospital *)

From the Departments of Rehabilitation, Physiology and Pediatrics, Baylor University College of Medicine, and the Texas Institute for Rehabilitation and Research, Houston, Texas, USA

C. VALLBONA, W. A. SPENCER, A. H. LEVY, R. L. BAKER, D. M. LISS, S. B. POPE

An on-line computer system has been implemented for processing medical information at the Texas Institute for Rehabilitation and Research. The major objectives of the system are: 1. to improve the process of patient care by expediting the flow of information among members of the rehabilitation team, 2. to facilitate the utilization of medical data for research purposes, 3. to enhance efficient hospital management, and 4. to obtain accurate data for an effective study of the cost of hospitalization.

The system consists of the following interrelated programs: a) recording of physiological monitoring, b) on-line processing of data collected at the bedside, c) processing of laboratory data, d) on-line processing of results of physiological studies, e) processing of data pertaining to treatments administered to patients, f) on-line calculation of fluid and electrolyte requirements, and g) statistical analysis of the hospital census.

The on-line computer facility is based on a time-shared teleprocessing system located at Baylor University College of Medicine and time-shared with various departments of the College. Remote terminal units installed at the Texas Institute for Rehabilitation and Research are connected by cable with the computer at the College of Medicine.

1968!

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Evidence for Electronic Health Record Systems in Physical Therapy

With increasing pressures to better manage clinical information, we investigated the role of electronic health record (EHR) systems in physical therapist practice through a critical review of the literature. We reviewed studies that met our predefined criteria after independent review by 3 authors. The investigators in all of the reviewed studies reported benefits, including improved reporting, operational efficiency, interdepartmental communication, data accuracy, and capability for future research. In 7 studies, the investigators reported barriers, including challenges with behavior modification, equipment inadequacy, and training. The investigators in all studies reported key success factors, including end-user participation, adequate training, workflow analysis, and data standardization. This review suggests that EHRs have potential benefits for physical therapists. The authors formed the following recommendations based on the studies' themes: (1) incorporate workflow analysis into system design and implementation; (2) include end users, especially clinicians, in system development; (3) devote significant resources for training; (4) plan and test carefully to ensure adequate software and hardware performance; and (5) commit to data standards. [Vreeman DJ, Taggard SL, Rhine MD, Worrell TW. Evidence for electronic health record systems in physical therapy. *Phys Ther.* 2006;86:434–449.]

Key Words: *Computerized medical records systems, Medical informatics, Medical informatics applications, Physical therapy, Physical therapy department: hospital.*

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Benefits of EHRs

Improved reporting

Improved operational efficiency

Improved communication

Improved data accuracy

Vreeman DJ, Taggard SL, Rhine MD, Worrell TW. Evidence for electronic health record systems in physical therapy. Phys Ther. 2006 Mar;86(3):434-46; discussion 446-9. Review. PubMed PMID: 16506879.

Barriers to Implementing EHRs

Behavior or workflow modification

Software/hardware inadequacy

Staff training

Vreeman DJ, Taggard SL, Rhine MD, Worrell TW. Evidence for electronic health record systems in physical therapy. Phys Ther. 2006 Mar;86(3):434-46; discussion 446-9. Review. PubMed PMID: 16506879.

Success Factors in Implementing EHRs

End-user participation i n development

Data standardization

Adequate staff training

Incorporating workflow analysis

Vreeman DJ, Taggard SL, Rhine MD, Worrell TW. Evidence for electronic health record systems in physical therapy. Phys Ther. 2006 Mar;86(3):434-46; discussion 446-9. Review. PubMed PMID: 16506879.

Most common complaint?

anecdotal

Where's the Rehab stuff?

Getting from here...

to there.

photo via janeandd

photo via Justin Ornellas

Embrace interoperable EHRs.

Be mindful of the complexity.

Establishing the Centrality of Health Informatics in Physical Therapist Education: If Not Now, When?

Steven G. Wilkinson, PT, PhD, Julia Chevan, PT, PhD, MPH, OCS, and Daniel Vreeman, PT, DPT, MSc

Background and Purpose. Physical therapists increasingly struggle to manage the vast amount of information required to make sound clinical decisions. This struggle occurs, in part, because of a lack of knowledge and skills needed to effectively use the potent tool of information technology for systematically processing data and supporting information and knowledge. The field of health informatics has emerged as an interdisciplinary science that evaluates how health information and knowledge can be effectively used for clinical decision making. Health care leaders have recognized informatics competencies as essential in other health care education programs, especially as a foundation for evidence-based practice. The purpose of this article is to describe the current state of health informatics in physical therapist education, to summarize the rationale for incorporating informatics in physical therapist education, and to propose a framework for incorporating this content into physical therapist education.

Position and Rationale. Physical therapist education should identify and incorporate health informatics as a foundational domain. Failing to prepare clinicians with technology competencies will hamper progress towards our profession's goals of fully availing ourselves of technologies that can facilitate more effective and efficient care. Because adopting health information technology is a top national priority, we must move quickly to ensure that physical therapists can continue to thrive in the emerging electronic infrastructure.

Discussion and Conclusion. Although some concepts of health informatics are incorporated in physical therapist education program's core documents, this inclusion was not based on the perspective of health informatics as an applied scientific discipline. In conjunction with the APTA's concerted effort to adopt interoperable electronic health record systems, the profession should develop a strategic plan for ensuring that physical therapists have the knowledge and skills to use the tools of informatics effectively. We present specific recommendations to help strengthen the centrality of informatics within physical therapist education, such as including health informatics as a foundational domain and fully developing the set of core informatics competencies for physical therapy. We encourage the academic community to engage in activities and dialog that clarify the role of informatics in physical therapist education.

Key Words. Health informatics, Physical therapist education, Informatics competencies.

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Received April 29, 2009, and accepted November 30, 2009.

BACKGROUND AND PURPOSE

Health professionals, including physical therapists, increasingly struggle to manage the vast amount of information required to make sound clinical decisions, in part because they often lack the knowledge and skills to effectively use the potent tool of information technology for systematically processing data and supporting information and knowledge management.[1] The field of health informatics has emerged as an interdisciplinary science that evaluates how health information and knowledge can be effectively used for clinical decision-making. With timely access to a patient's complete health record and computerized systems that make patient-specific recommendations based on best evidence, physical therapists are likely to make better clinical decisions. Few of these systems have been evaluated within physical therapy,[2] but systemic reviews from the broader health informatics field have convincingly demonstrated that computers can improve quality by increasing providers' adherence to guideline-based care, improving surveillance and monitoring in disease management, and decreasing medication errors.[3,4] As just one example from many, a computerized reminder for contact isolation for patients known to be colonized or infected with resistant organisms improved the isolation rate from 33% to 89% while simultaneously decreasing the median time for contact isolation orders to be written from 16.6 to 0.0 hours.[5] The power of intelligent, introspective information systems like this one that generated the isolation reminder can even be enhanced further when patient data is shared electronically across institutions in a regional health information exchange.[6,7] Furthermore, health information technology has been shown to improve the efficiency of the health care system by decreasing utilization.[4] The mounting evidence for information technology like electronic health records (EHRs) has caught the attention of health care leaders and policymakers, and informatics initiatives are now a top national priority.

In April 2004, then President George W. Bush issued an Executive Order calling for widespread adoption of health information technology (HIT) to aid in improving the safety and efficiency of health care and to give all American citizens the benefits of EHRs by 2014.[8,9] Since that time, Congress has written legislation to promote technology and EHRs within American health care.[10-13] More recently, President Barack Obama signed into law the Health Information Technology and Clinical Health Act (HITECH).[14] The act provides $19 billion over a 4-year period, in

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Physical therapist education programs should incorporate core informatics competencies into their curricula.

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Background and Purpose. Physical therapists increasingly struggle to manage the vast amount of information required to make sound clinical decisions. This struggle occurs, in part, because of a lack of knowledge and skills needed to effectively use the potent tool of information technology for systematically processing data and supporting information and knowledge. The field of health informatics has emerged as an interdisciplinary science that evaluates how health information and knowledge can be effectively used for clinical decision making. Health care leaders have recognized informatics competencies as essential in other health care education programs, especially as a foundation for evidence-based practice. The purpose of this article is to describe the current state of health informatics in physical therapist education, to summarize the rationale for incorporating informatics in physical therapist education, and to propose a framework for incorporating this content into physical therapist education.

Position and Rationale. Physical therapist education should identify and incorporate health informatics as a foundational domain. Failing to prepare clinicians with technology competencies will hamper progress towards our profession's goals of fully availing ourselves of technologies that can facilitate more effective and efficient care. Because adopting health information technology is a top national priority, we must move quickly to ensure that physical therapists can continue to thrive in the emerging electronic infrastructure.

Discussion and Conclusion. Although some concepts of health informatics are incorporated in physical therapist education program's core documents, this inclusion was not based on the perspective of health informatics as an applied scientific discipline. In conjunction with the APTA's concerted effort to adopt interoperable electronic health record systems, the profession should develop a strategic plan for ensuring that physical therapists have the knowledge and skills to use the tools of informatics effectively. We present specific recommendations to help strengthen the centrality of informatics within physical therapist education, such as including health informatics as a foundational domain and fully developing the set of core informatics competencies for physical therapy. We encourage the academic community to engage in activities and dialog that clarify the role of informatics in physical therapist education.

Key Words. Health informatics, Physical therapist education, Informatics competencies.

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Stead WW, Searle JR, Fessler HE, Smith JW, Shortliffe EH. Biomedical informatics: changing what physicians need to know and how they learn. Acad Med. 2011 Apr;86(4):429-34. PMID: 20711055

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This is similar to assuming that a student proficient in the use of a word processing program knows how to write an award-winning novel.

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Key Lessons for Today

photo via IMLS DCC

Human

+

Computer

Human

Interoperable EHRs can *improve clinical decisions* and *support data re-use* (for lots of purposes)

Closing Thought

Tone is in Your fingers

photo via scragz

via scragz

Though Wooten's basses receive much attention, his most frequent and consistent response when asked by his fans about his equipment is that "the instrument doesn't make the music ... ***you do***".

via scragz

via scragz

photo via milos milosevic