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**Literature search results**

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**Search details**

Clinical records. Effectiveness of teams keeping separate records as opposed to teams keeping notes together in one document.

**Resources searched**

NHS Evidence; National Library for Health; TRIP Database; Cochrane Library; CINAHL; EMBASE; HMIC; Health Business Elite; MEDLINE; Google Scholar; Google Advanced Search

**Database search terms**: “patient notes”; “patient records”; MEDICAL RECORDS; NURSING RECORDS; COMPUTERIZED PATIENT RECORD; “medical record*”; “medical notes”; “nursing notes”; “health record*”; “patient documentation”; “medical documentation”; “nursing documentation”; DOCUMENTATION; undisciplinary; multidisciplinary; interdisciplinary; MULTIDISCIPLINARY CARE TEAM; “single record”; “separate record”; “multiple record”; “multiple document”; integrated ADJ4 record; unified ADJ4 record; single ADJ4 record; separate ADJ4 record; service ADJ4 record; clinical ADJ4 record; QUALITY OF HEALTH CARE; COMPARATIVE STUDIES; ACCESS TO INFORMATION; OUTCOME ASSESSMENT; outcome; evaluation; assess*

**Google search string**: ("medical record" OR "patient record" OR "health record" OR "care record" OR "service record") (unified OR integrated) (single OR separate) ("quality of care" OR outcomes OR "access to information")

**Summary**

This search is not exhaustive, but there is a lot of literature in this subject, most of which focuses on the advantages and disadvantages of an integrated patient record, usually electronic in form. There is little research comparing the effectiveness of keeping multiple records as opposed to a single integrated or unified patient record. However you may find the following research illuminating: 7, 10, 14, 17, 24, 29, 30, 31, 37, 38, 39, 42, 47, 50, 52, 64, 79, 81, 82.
Guidelines
Royal College of Nursing

eHealth: Putting information at the heart of nursing care 2010

Documentation in colorectal and stoma care nursing. RCN guidance for nursing staff 2003

See chapters 4, 6 and 7.

Safeguarding children and young people—every nurse’s responsibility. Guidance for nursing staff 2004

All information about an individual child should be held in one file, where it is accessible to all members of the team. The file should be made secure in accordance with local policy and with reference to national guidelines.

Royal College of Pathologists

The retention and storage of pathological records and specimens 2009

Where pathologists have reason to doubt the reliability of systems of patient record keeping, they should bring this to the attention of those responsible, rather than attempt to rectify it by duplication with local and prolonged laboratory storage of diagnostic records.

NHS Quality Improvement Scotland

Maternity Services Standards 2005

Maternity care should be documented and managed using a unified, handheld maternity record in which all professionals, sharing the woman’s care, record their findings. The single document should contain a full record of the woman’s care during pregnancy and, ideally, the woman should take responsibility for it during her pregnancy.

Department of Health

Building a safer NHS for patients: improving medication safety 2004

1. Electronic prescribing systems, linked to the patient record, may reduce the risk of many prescribing errors.

2. Linked automated systems, e.g., electronic prescribing, computerised medication administration records or bar-coding, will facilitate review of prescriptions and may increase the accuracy of administration, and reduce transcription errors

University College London

The devil’s in the detail: final report of the independent evaluation of the Summary Care Record and HealthSpace programmes 2010

Whilst many stakeholders shared a broad vision of an efficient, accurate and accessible national electronic record system, making this vision a reality required collaboration across a number of very different worlds – political, clinical, technical, commercial and personal. Differences in expectations, values and ways of working between these worlds accounted for many of the misunderstandings and frictions occurring at the operational level.

Summary Care Record early adopter programme: an independent evaluation 2008

A University College London (UCL) research team has published its independent evaluation of the first year of the Summary Care Record (SCR) programme. The team found that although the SCR offers real benefits for treating patients in emergency and unscheduled care settings, the ‘complicated’ technical system needs to be refined before being rolled out.
House of Commons Health Committee

The electronic patient record: sixth report of session 2006-07

Storing and sharing health information electronically can speed up clinical communication, reduce the number of errors, and assist doctors in diagnosis and treatment. Patients can have more control of their own healthcare. Electronic data also have vast potential to improve the quality of healthcare audit and research. However, increasing access to data through EPR systems also brings new risks to the privacy and security of health records.

King’s Fund

Electronic patient records reading list 2010

HealthPress Publishing

What works: effective tools and case studies to improve clinical office practice 2004

Evidence-based reviews

Cochrane Database of Systematic Reviews

Nursing record systems: effects on nursing practice and healthcare outcomes 2009

The evidence shows that nursing record systems which aim to fix a specific problem, such as reducing lost notes, decreasing the time required for data entry, or the amount of paper files, may be successful at fixing that problem. But it is uncertain whether changing an entire system of recording nursing care may improve how nurses practice or how well a patient does.

Database of Abstracts of Reviews of Effects

Does the patient-held record improve continuity and related outcomes in cancer care: a systematic review 2007

RCTs did not find any benefit of PHRs on the intended outcomes, whereas non-randomised studies showed the more positive benefits of the PHRs. The non-randomised studies also shed light on some of the essential mechanisms and conditions for their successful use. Most of the patients welcomed the introduction of the PHR.

Evidence for handheld electronic medical records in improving care: a systematic review 2006

Hand-held electronic medical records may improve documentation but evidence is limited due to the small number of studies and data being restricted to one patient group and a small number of clinicians. Further research is required to determine the benefits of hand-held electronic medical records, particularly for patient outcomes.

Does the use of electronic medical records improve surrogate patient outcomes in outpatient settings (Structured abstract) 2000

Evidence from published trials suggests that utilisation of either complete or hybrid EMRs can improve some surrogate out-patient care outcomes. However, rigorous trials that evaluate their impact on morbidity and mortality, and employ current technologies are required before widespread adoption of EMRs can be confidently recommended.

Published research

1. What can paper-based clinical information systems tell us about the design of computerized clinical information systems (CIS) in the ICU?

Author(s): Miller A, Pilcher D, Mercaldo N, Leong T, Scheinkestel C, Schildcrout J

Citation: Australian Critical Care, 01 August 2010, vol./is. 23/3(130-140), 10367314
Publication Date: 01 August 2010

Abstract: BACKGROUND: Screen designs in computerized clinical information systems (CIS) have been modeled on their paper predecessors. However, limited understanding about how paper forms support clinical work means that we risk repeating old mistakes and creating new opportunities for error and inefficiency as illustrated by problems associated with computerized provider order entry systems. PURPOSE: This study was designed to elucidate principles underlying a successful ICU paper-based CIS. The research was guided by two exploratory hypotheses: (1) paper-based artefacts (charts, notes, equipment, order forms) are used differently by nurses, doctors and other healthcare professionals in different (formal and informal) conversation contexts and (2) different artefacts support different decision processes that are distributed across role-based conversations.

METHOD: All conversations undertaken at the bedsides of five patients were recorded with any supporting artefacts for five days per patient. Data was coded according to conversational role-holders, clinical decision process, conversational context and artefacts. 2133 data points were analyzed using Poisson logistic regression analyses.

RESULTS: Results show significant interactions between artefacts used during different professional conversations in different contexts ($\chi^2(16)=55.8$, $p<0.0001$). The interaction between artefacts used during different professional conversations for different clinical decision processes was not statistically significant although all two-way interactions were statistically significant.

CONCLUSIONS: Paper-based CIS have evolved to support complex interdisciplinary decision processes. The translation of two design principles - support interdisciplinary perspectives and integrate decision processes - from paper to computerized CIS may minimize the risks associated with computerization.

Source: CINAHL

2. Relationship between quality improvement processes and clinical performance

Author(s): Damberg C.L., Shortell S.M., Raube K., Gillies R.R., Rittenhouse D., McCurdy R.K., Casalino L.P., Adams J.

Citation: American Journal of Managed Care, August 2010, vol./is. 16/8(601-606), 1088-0224 (August 2010)

Publication Date: August 2010

Abstract: Objectives: To examine the association between performance on clinical process measures and intermediate outcomes and the use of chronic care management processes (CMPs), electronic medical record (EMR) capabilities, and participation in external quality improvement (QI) initiatives. Study Design: Cross-sectional analysis of linked 2006 clinical performance scores from the Integrated Healthcare Association's pay-for-performance program and survey data from the 2nd National Study of Physician Organizations among 108 California physician organizations (POs). Methods: Controlling for differences in PO size, organization type (medical group or independent practice association), and Medicaid revenue, we used ordinary least squares regression analysis to examine the association between the use of CMPs, EMR capabilities, and external QI initiatives and performance on the following 3 clinical composite measures: diabetes management, processes of care, and intermediate outcomes (diabetes and cardiovascular). Results: Greater use of CMPs was significantly associated with clinical performance: among POs using more than 5 CMPs, we observed a 3.2-point higher diabetes management score on a performance scale with scores ranging from 0 to 100 ($P < .001$), while for each 1.0-point increase on the CMP index, we observed a 1.0-point gain in intermediate outcomes ($P < .001$). Participation in external QI initiatives was positively associated with improved delivery of clinical processes of care: a 1.0-point increase on the QI index translated into a 1.4-point gain in processes-of-care performance ($P = .02$). No relationship was observed between EMR capabilities and performance. Conclusion: Greater investments in CMPs and QI interventions may help POs raise clinical performance and achieve success under performance-based accountability schemes.

Source: EMBASE

PURPOSE Understanding delays in cancer diagnosis requires detailed information about timely recognition and follow-up of signs and symptoms. This information has been difficult to ascertain from paper-based records. We used an integrated electronic health record (EHR) to identify characteristics and predictors of missed opportunities for earlier diagnosis of lung cancer. METHODS Using a retrospective cohort design, we evaluated 587 patients of primary lung cancer at two tertiary care facilities. Two physicians independently reviewed each case, and disagreements were resolved by consensus. Type I missed opportunities were defined as failure to recognize predefined clinical clues (ie, no documented follow-up) within 7 days. Type II missed opportunities were defined as failure to complete a requested follow-up action within 30 days. Results Reviewers identified missed opportunities in 222 (37.8%) of 587 patients. Median time to diagnosis in cases with and without missed opportunities was 132 days and 19 days, respectively (P < .001). Abnormal chest x-ray was the clue most frequently associated with type I missed opportunities (62%). Follow-up on abnormal chest x-ray (odds ratio [OR], 2.07; 95% CI, 1.04 to 4.13) and completion of first needle biopsy (OR, 3.02; 95% CI, 1.76 to 5.18) were associated with type II missed opportunities. Patient adherence contributed to 44% of patients with missed opportunities. CONCLUSION Preventable delays in lung cancer diagnosis arose mostly from failure to recognize documented abnormal imaging results and failure to complete key diagnostic procedures in a timely manner. Potential solutions include EHR-based strategies to improve recognition of abnormal imaging and track patients with suspected cancers.

Source: CINAHL

Full Text:
Available in fulltext at the ULHT Library and Knowledge Services' eJournal collection

4. QRDA--technology overview and lessons learned

Author(s): Velamuri S.

Citation: Journal of healthcare information management : JHIM, June 2010, vol./is. 24/3(41-48), 1099-811X (2010 Summer)

Publication Date: June 2010

Abstract: Quality of healthcare is a high priority for several years but there was no standard until recently. The standards body, HL7 released draft standard for Quality Reporting Document Architecture (QRDA) with an aim to develop an electronic data standard for healthcare information systems to use in communicating patient level quality measurement data across disparate systems. This standard would enable Healthcare providers those use Electronic Health Record (EHR) systems to generate Quality Reporting documents to be consumed by payer agencies such as Centers Medicare and Medicaid Services (CMS) replacing proprietary file formats that existed in this space previously, This paper discusses various features of this new standard, which promotes interoperability and easy adoption, the three categories proposed by the QRDA standard and their application in different contexts, measure sets and measures and finally the relationship of this QRDA standard to the HQMF (eMeasure) standard proposed by National Quality Forum (NQF) in collaboration with HL7 to standardize the Quality Measures across the healthcare landscape. This paper also provides high-lights on early adoption of QRDA standard by Centers Medicare and Medicaid Services (CMS) for their Physician Quality Reporting Initiative (PQRI) program.

Source: EMBASE

5. A preliminary look at duplicate testing associated with lack of electronic health record interoperability for transferred patients.

Author(s): Stewart BA, Fernandes S, Rodriguez-Huertas E, Landzberg M

Citation: Journal of the American Medical Informatics Association, 01 May 2010, vol./is.
6. Computerized physician order entry of medications and clinical decision support can improve problem list documentation compliance

Author(s): Galanter W.L., Hier D.B., Jao C., Sarne D.

Citation: International Journal of Medical Informatics, May 2010, vol./is. 79/5(332-338), 1386-5056 (May 2010)

Publication Date: May 2010

Abstract: Objective: The problem list is a key and required element of the electronic medical record (EMR). Problem lists may contribute substantially to patient safety and quality of care. Physician documentation of the problem list is often lower than desired. Methods are needed to improve accuracy and completeness of the problem list. Design: An automated clinical decision support (CDS) intervention was designed utilizing a commercially available EMR with computerized physician order entry (CPOE) and CDS. The system was based on alerts delivered during inpatient medication CPOE that prompted clinicians to add a diagnosis to the problem list. Each alert was studied for a 2-month period after implementation. Measurements: Measures included alert validity, alert yield, and accuracy of problem list additions. Results: At a 450 bed teaching hospital, the number of medication orders which triggered alerts during all 2-month study periods was 1011. For all the alerts, the likelihood of a valid alert (an alert that occurred in patients with one of the predefined diagnoses) was 96 +/- 1%. The alert yield, defined as occurring when an alert led to addition of a problem to the problem list, was 76 +/- 2%. Accurate problem list additions, defined as additions of problems when the problem was determined to be present by expert review, was 95 +/- 1%. Conclusion: The CDS problem list mechanism was integrated into the process of medication order placement and promoted relatively accurate addition of problems to the EMR problem list. 2008 Elsevier Ireland Ltd. All rights reserved.

Source: EMBASE

7. Identifying medication misadventures: Poor agreement among medical record, physician, nurse, and patient reports

Author(s): Kaboli P.J., Glasgow J.M., Jaipaul C.K., Barry W.A., Strayer J.R., Mutnick B., Rosenthal G.E.

Citation: Pharmacotherapy, May 2010, vol./is. 30/5(529-538), 0277-0008 (May 2010)

Publication Date: May 2010

Abstract: Study Objective. To analyze and compare four different methods of detecting medication misadventures in order to determine the optimal system for reporting clinically observed medication misadventures. Design. Prospective cohort study. Setting. Forty-eight-bed general internal medicine inpatient ward at a large academic teaching hospital with a decentralized pharmacy system. Patients. One hundred twenty-six patients (54% male, mean age 54 yrs) with 133 consecutive admissions to the ward (mean length of stay...
7.8 days) over an 8-week period from December 2001-February 2002. Intervention. Medication misadventures were detected by four methods: house staff (resident physicians) report during their morning conference, nursing report during shift change, patient report at the discharge interview, and standardized medical record review. All methods of reporting medication misadventures were compared with the hospital's existing electronic medication misadventure reporting system. Measurements and Main Results. Overall, 63 patients (47% of 133 admissions) experienced at least one medication misadventure. Thirty-seven adverse drug events (ADEs) and 69 medication errors were observed over 1035 patient bed-days. Little overlap was noted among the four intervention methods, with nearly 80% of all 106 events detected by only a single method (medical record review 51% [54 events], patient interview 11% [12], house-staff report 9% [10], nurse report 8% [9]). Of the 37 ADEs, 6 (16%) were due to medication errors and 10 (27%) were preventable. Of five life-threatening ADEs, all were preventable, and all were reported in the medical record and the electronic reporting system; however, only two were reported by a nurse, two by a resident physician, and one by a patient. Conclusion. Little overlap was noted among the individual medication misadventure reporting methods, suggesting the need to use multiple complementary methods to identify medication misadventures in hospitalized patients. These findings have important implications for development of surveillance systems, design of prevention initiatives, and future medication safety research.

Source: EMBASE

8. Some unintended effects of teamwork in healthcare.

Author(s): Finn R, Learmonth M, Reedy P

Citation: Social Science & Medicine, 01 April 2010, vol./is. 70/8(1148-1154), 02779536

Publication Date: 01 April 2010

Abstract: Teamwork has been emphasised as a key feature of health service reform, essential for safe, efficient and patient-centred care. Bringing together literatures from the sociology of healthcare and organizational theory, we examine how the teamwork phenomenon plays out in practice. Drawing upon material from two ethnographic studies, conducted in an operating theatre and a medical-records department in separate UK NHS hospitals, we explore some of the discursive teamwork practices of healthcare staff. Our analysis presents a very different picture from the normative, evangelistic promotion of teamwork within much management and health policy writing. We reveal how the ambiguity of teamwork opens up opportunities for a complex, diverse range of responses to the managerial discourse among diverse occupational groups, mobilizing the discourse to enact identity in different ways. We highlight how teamwork discourse can be instrumentally co-opted in the reproduction of the very occupational divisions it is designed to ameliorate, or simply ignored as irrelevant when compared to more attractive forms of collective identity. These responses challenge both those who believe that teamwork is a solution to problems in healthcare, as well as those concerned about the oppressive effects of pervasive managerialism.

Source: CINAHL


Author(s): Jarden RJ, Quirke S

Citation: Intensive & Critical Care Nursing, 01 April 2010, vol./is. 26/2(101-107), 09643397

Publication Date: 01 April 2010

Abstract: Transporting the critically ill patient is described within the literature as a high-risk procedure. Both guidelines and minimum standards are available to inform practice. However, a practical, clinically useful, and evidence-based document (tool) for the ICU nurse to use when transporting a critically ill patient was not identified in the literature. Consequently, the development of an intrahospital transport tool is described. This transport tool was designed to mitigate the risks associated with patient transport by providing the Intensive Care Unit (ICU) nurse with an integrated documentation record, incorporating patient assessment with a procedural guideline. The result is a framework for
the ICU nurse to use throughout intrahospital transfers, informing and supporting them to provide and document continuity of nursing care. The potential benefit of using this tool is enhanced patient outcomes through safer ICU intrahospital transport processes.

Source: CINAHL

10. A study of the use of medicine lists in medicines reconciliation: Please remember this, a list is just a list

Author(s): Green C.F., Burgul K., Armstrong D.J.

Citation: International Journal of Pharmacy Practice, April 2010, vol./is. 18/2(116-121), 0961-7671 (April 2010)

Publication Date: April 2010

Abstract: Objectives Medication history-taking is recognised as a potential source of medication errors and is the subject of the first National Patient Safety Agency/National Institute for Health and Clinical Excellence Patient Safety Guidance. Medication lists are suggested as a way of improving medicines reconciliation, but, anecdotally, can falsely reassure prescribers that they have an accurate list of medicines if used in isolation. Methods Patients in possession of a medicines list on admission to hospital were approached as part of routine care. Data were collated regarding medication history discrepancies, their source and whether a prescription amendment was made. Key findings One hundred and twenty patients were reviewed and the median time for pharmacists to complete medicines reconciliation was 15 min. Eighty-three patients (69.2%) had only one medication list, 31 (26%) had two, five (4%) had three and one patient (0.8%) had four lists. In total, 447 discrepancies were identified of which 49 (11.0%) were initiated by the patient, including 32 (65.3%) to adjust a dosage regimen or not to comply with a dosing regime. For the 279 (62.4%) discrepancies attributable to secondary care staff, 119 (42.6%) prescribed medicines were omitted unintentionally. For the 119 (26.6%) discrepancies attributable to the primary care medicines lists, 48 (40.3%) related to inadequate or inaccurate information regarding medicine doses, frequency, strength or form. Each patient required a mean of 1.6 amendments to their prescription despite bringing a list of medicines with them. Conclusions Medication lists should be interpreted with caution and assessed in combination with other sources of information, particularly the patient or their carer. Strategies to improve medicines reconciliation on admission to hospital are still needed and a single electronic patient record encompassing primary and secondary care medication records would be a positive step forward. 2010 Royal Pharmaceutical Society of Great Britain.

Source: EMBASE

11. Keeping psychotherapy notes separate from the patient record

Author(s): DeLettre J.L., Sobell L.C.

Citation: Clinical psychology & psychotherapy, March 2010, vol./is. 17/2(160-163), 1099-0879 (2010 Mar-Apr)

Publication Date: March 2010

Abstract: Doctoral level psychologists (N = 464) who were members of the American Psychological Association and who identified themselves as clinical practitioners were surveyed about their knowledge and utilization of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule that allows practitioners to keep their psychotherapy notes separate from their patients’ records if they involve electronic submissions. Although 79% of those surveyed said they were aware of the HIPAA privacy rule allowing for a separate set of notes, slightly less than half (46%) reported currently using such notes even though half (49%) felt that patients benefit most from the use of a separate set of psychotherapy notes. Surprisingly, 21% said they had never heard of the HIPAA provision allowing for a separate set of notes. Considering that when this provision was introduced it was heralded as a major benefit for mental health practitioners, its low utilization is surprising. Perhaps clinical practitioners would benefit from continuing education about the benefits of such notes.

Source: EMBASE
12. Notification of abnormal lab test results in an electronic medical record: do any safety concerns remain?


Citation: The American journal of medicine, March 2010, vol./is. 123/3(238-244), 1555-7162 (Mar 2010)

Publication Date: March 2010

Abstract: BACKGROUND: Follow-up of abnormal outpatient laboratory test results is a major patient safety concern. Electronic medical records can potentially address this concern through automated notification. We examined whether automated notifications of abnormal laboratory results (alerts) in an integrated electronic medical record resulted in timely follow-up actions. METHODS: We studied 4 alerts: hemoglobin A1c ≥15%, positive hepatitis C antibody, prostate-specific antigen > or =15 ng/mL, and thyroid-stimulating hormone > or =15 mIU/L. An alert tracking system determined whether the alert was acknowledged (ie, provider clicked on and opened the message) within 2 weeks of transmission; acknowledged alerts were considered read. Within 30 days of result transmission, record review and provider contact determined follow-up actions (eg, patient contact, treatment). Multivariable logistic regression models analyzed predictors for lack of timely follow-up. RESULTS: Between May and December 2008, 78,158 tests (hemoglobin A1c, hepatitis C antibody, thyroid-stimulating hormone, and prostate-specific antigen) were performed, of which 1163 (1.48%) were transmitted as alerts; 10.2% of these (119/1163) were unacknowledged. Timely follow-up was lacking in 79 (6.8%), and was statistically not different for acknowledged and unacknowledged alerts (6.4% vs 10.1%; P =.13). Of 1163 alerts, 202 (17.4%) arose from unnecessarily ordered (redundant) tests. Alerts for a new versus known diagnosis were more likely to lack timely follow-up (odds ratio 7.35; 95% confidence interval, 4.16-12.97), whereas alerts related to redundant tests were less likely to lack timely follow-up (odds ratio 0.24; 95% confidence interval, 0.07-0.84). CONCLUSIONS: Safety concerns related to timely patient follow-up remain despite automated notification of non-life-threatening abnormal laboratory results in the outpatient setting. Published by Elsevier Inc.

Source: EMBASE

13. The use of an electronic patient record to facilitate a specialist palliative care multidisciplinary team meeting.

Author(s): Dorman S, Smith V, Kirkham S

Citation: Palliative Medicine, 01 March 2010, vol./is. 24/2(198-199), 02692163

Publication Date: 01 March 2010

Source: CINAHL

14. The care and outcomes management plan and Kardex. A design for improving documentation of nursing plan of care and patient outcomes

Author(s): Crabtree C., Howard P.B., El-Mallakh P.

Citation: Journal of healthcare information management : JHIM, December 2009, vol./is. 23/1(50-55), 1099-811X (2009 Winter)

Publication Date: December 2009

Abstract: The gradual transition from paper records to electronic records presents challenges for nurses. In particular, split paper/electronic records can interfere with staff communication during shift change reports. A project was implemented to facilitate documentation of individualized care plans and improve staff communication during shift change report. The hospital's critical pathway was incorporated into Kardex to create a single electronic medical record for use during shift change report. This combined electronic outcomes plan and Kardex improved access to patient information during shift report and facilitated nurses' ability to update the care plan with the most current patient information. Future strategies will include collaboration with the hospital's information systems staff to make the COMPdex compatible with the hospital's electronic
documentation system, so that pertinent patient data will populate from the current electronic chart into the COMPdex forms for printing and to include patient outcome data in the electronic medical record.

Source: EMBASE

15. Medication reconciliation at an academic medical center: implementation of a comprehensive program from admission to discharge.

Author(s): Murphy EM, Oxencis CJ, Klauck JA, Meyer DA, Zimmerman JM

Citation: American Journal of Health-System Pharmacy, 01 December 2009, vol./is. 66/23(2126-2131), 10792082

Publication Date: 01 December 2009

Abstract: PURPOSE: The implementation of a comprehensive medication reconciliation program to reduce errors in admission and discharge medication orders at an academic medical center is described. SUMMARY: A multidisciplinary team was formed to assess the current process of obtaining medication histories and to develop a new workflow for the pharmacist to obtain and reconcile medication histories. Pharmacists received intensive training on the new workflow, policies, and procedures. Hospitalwide multidisciplinary education was provided, and the new process was introduced in November 2005. Every inpatient admitted to the hospital has a complete and comprehensive home medication history interview conducted by a pharmacist or designee (pharmacy student or intern with subsequent verification by a pharmacist) within 24 hours of arrival. All components of the medication history are documented utilizing an integrated electronic medical record (EMR) medication documentation tool. Development of the discharge medication reconciliation program began in fall 2006. A discharge medication reconciliation report form was created through the EMR to improve the accuracy of the discharge medication orders. The form provides physicians with complete, accurate medication information and decreases the risk for transcription errors. Finally, a discharge medication report was developed for patients to take home. Analysis of the discharge reconciliation process revealed that medication errors were reduced from 90% to 47% on the surgical unit (95% confidence interval [CI], 42-53%; p = 0.000) and from 57% to 33% on the medicine unit (95% CI, 28-38%; p = 0.000). CONCLUSION: A pharmacy-driven multidisciplinary admission history and medication reconciliation process has reduced medication errors in an academic medical center.

Source: CINAHL

Full Text:
Available in fulltext at EBSCO Host

16. A national integrated electronic health record system would benefit everyone.

Author(s): Lockwood CJ

Citation: Contemporary OB/GYN, 01 December 2009, vol./is. 54/12(8-9), 00903159

Publication Date: 01 December 2009

Source: CINAHL

Full Text:
Available in fulltext at EBSCO Host

17. Introduction of computerized anesthesia-recording systems and construction of comprehensive medical information network for patients undergoing surgery in the University of Tokyo Hospital

Author(s): Kitamura T., Hoshimoto H., Yamada Y.

Citation: Japanese Journal of Anesthesiology, October 2009, vol./is. 58/10(1316-1322), 0021-4892 (October 2009)

Publication Date: October 2009

Abstract: The computerized anesthesia-recording systems are expensive and the
introduction of the systems takes time and requires huge effort. Generally speaking, the efficacy of the computerized anesthesia-recording systems on the anesthetic managements is focused on the ability to automatically input data from the monitors to the anesthetic records, and tends to be underestimated. However, once the computerized anesthesia-recording systems are integrated into the medical information network, several features, which definitely contribute to improve the quality of the anesthetic management, can be developed; for example, to prevent misidentification of patients, to prevent mistakes related to blood transfusion, and to protect patients’ personal information. Here we describe our experiences of the introduction of the computerized anesthesia-recording systems and the construction of the comprehensive medical information network for patients undergoing surgery in The University of Tokyo Hospital. We also discuss possible efficacy of the comprehensive medical information network for patients during surgery under anesthetic managements.

Source: EMBASE

18. The role of health information technology in quality improvement in pediatrics.

Author(s): Zuckerman AE

Citation: Pediatric Clinics of North America, 01 August 2009, vol./is. 56/4(965-973), 00313955

Publication Date: 01 August 2009

Abstract: Health information technology (HIT) will play an important role in most efforts to improve the quality of pediatric medicine, as evident from the range of investigations and projects discussed in this volume. Clement McDonald identified the importance of using information technology as an integral component of quality initiatives early in the development of electronic medical records (EMR). The role of HIT in quality improvement is not limited to tools integrated into EMR, but that remains an important strategy. Today, much attention is focused on interoperability of clinical systems that integrate and share data from multiple sources. There are also additional freestanding quality-improvement tools that can be used without an EMR. This article explores the many roles of HIT in quality improvement from several perspectives. Copyright © 2009 by Elsevier Inc.

Source: CINAHL

19. Genomic electronic health records: Opportunities and challenges

Author(s): Al-Ubaydli M., Navarro R.

Citation: Genome Medicine, July 2009, vol./is. 1/7, 1756-994X (22 Jul 2009)

Publication Date: July 2009

Abstract: There is value to patients, clinicians and researchers from having a single electronic health record data standard that allows an integrated view, including genotype and phenotype data. However, it is important that this integrated view of the data is not created through a single database because privacy breaches increase with the number of users, and such breaches are more likely with a single data warehouse. Furthermore, a single user interface should be avoided because each end user requires a different user interface. Finally, data sharing must be controlled by the patient, not the other end users of the data. A preferable alternative is a federated architecture, which allows data to be stored in multiple institutions and shared on a need-to-know basis. The data sharing raises questions of ownership and stewardship that require social and political answers, as well as consideration of the clinical and scientific benefits. 2009 BioMed Central Ltd.

Source: EMBASE

Full Text:
Available in selected fulltext at BioMedCentral
Available in fulltext at National Library of Medicine

20. Implementation of an electronic documentation system using microsystem and quality improvement concepts
Abstract: Electronic documentation systems have become integral to improving the quality of healthcare, reducing medical errors, and advancing the delivery of evidence-based medical care. A smooth transition from paper charting to an electronic documentation system is challenging. Using quality improvement tools and building on the clinical Microsystems concept can assist with a smooth transition. Specific strategies include involving all stakeholders in the development and implementation of the plan, assessing the culture of the department, and identifying processes and patterns that require attention. Specific steps include developing a statement of aim, formulating a specific path to reach the aim, evaluating the progress of implementation, and creating a template for future process improvement. This article describes the process used in one midwestern NICU to implement an integrated electronic documentation system using a clinical Microsystems approach and quality improvement methods. Challenges encountered and lessons learned are discussed.

Source: EMBASE


Citation: Klinische Monatsblatter fur Augenheilkunde, March 2009, vol./is. 226/3(161-167), 1439-3999 (Mar 2009)

Publication Date: March 2009

Abstract: OBJECTIVE: A prerequisite for integrated care programmes is the implementation of a communication network meeting quality assurance standards. Against this background the main objective of the integrated care project between the University Eye Hospital Erlangen and the health insurance company AOK Bayern was to evaluate the potential and the acceptance of a web-based electronic patient record in the context of cataract and retinal surgery. METHODS: Standardised modules for capturing pre-, intra- and post-operative data on the basis of clinical pathway guidelines for cataract- and retinal surgery have been developed. There are 6 data sets recorded per patient (1 pre-operative, 1 operative, 4-6 post-operative). For data collection, a web-based communication system (Soarian Integrated Care) has been chosen which meets the high requirements in data security, as well as being easy to handle. This teleconsultation system and the embedded electronic patient record are independent of the software used by respective offices and hospitals. Data transmission and storage were carried out in real-time. RESULTS: At present, 101 private ophthalmologists are taking part in the IGV contract with the University Eye Hospital Erlangen. This corresponds to 52% of all private ophthalmologists in the region. During the period from January 1st 2006 to December 31st 2006, 1844 patients were entered. Complete documentation was achieved in 1390 (75%) of all surgical procedures. For evaluation of this data, a multidimensional report and analysis tool (Cognos) was used. The deviation from target refraction as one quality indicator was in the mean 0.09 diopter. CONCLUSIONS: The web-based patient record used in this project was highly accepted by the private ophthalmologists. However there are still general concerns against the exchange of medical data via the internet. Nevertheless, the web-based patient record is an essential tool for a functional integration between the ambulatory and stationary health-care units. In addition to the telemedicine functions of the system, we achieved the export of the data to a data warehouse system in order to provide a flexible and powerful tool for quality assurance analysis and reporting.

Source: EMBASE

23. The Kaiser Permanente electronic health record: Transforming and streamlining modalities of care

Author(s): Chen C., Garrido T., Chock D., Okawa G., Liang L.
Citation: Health Affairs, March 2009, vol./is. 28/2(323-333), 0278-2715;1544-5208 (March-April 2009)
Publication Date: March 2009
Abstract: We examined the impact of implementing a comprehensive electronic health record (EHR) system on ambulatory care use in an integrated health care delivery system with more than 225,000 members. Between 2004 and 2007, the annual age/sex-adjusted total office visit rate decreased 26.2 percent, the adjusted primary care office visit rate decreased 25.3 percent, and the adjusted specialty care office visit rate decreased 21.5 percent. Scheduled telephone visits increased more than eightfold, and secure e-mail messaging, which began in late 2005, increased nearly sixfold by 2007. Introducing an EHR creates operational efficiencies by offering nontraditional, patient-centered ways of providing care.

Source: EMBASE

24. Assessment of a single-stranded electronic patient record [Danish]
Evaluering af en enstrengt elektronisk patientjournal

Author(s): Norgaard B., Ammentorp J., Kirketerp E., Kofoed P.E.
Citation: Ugeskrift for laeger, February 2009, vol./is. 171/8(591-594), 1603-6824 (16 Feb 2009)
Publication Date: February 2009
Abstract: INTRODUCTION: Patient care and treatment is usually documented in a double-stranded patient record, i.e. a record with separate sections for different health professionals, which reduces the possibility of getting a comprehensive view of the patient's case. Therefore, the Pediatric Department chose to implement a single-stranded medical record. MATERIAL AND METHODS: Development and evaluation of the new record was based on standards formulated during interdisciplinary audits. Eighteen months after its implementation, the record was evaluated by interdisciplinary audits and questionnaires. All health professionals employed at the department were included. Data from the questionnaires were analyzed descriptively and summaries of the audits were analyzed using an anthropological method. RESULTS: A total of 149 staff members (96%) responded to the questionnaire and eight records were evaluated by audits at which a total of 63 interdisciplinary clinicians participated. The evaluation concluded that overlapping documentation was reduced considerably, 97% of the staff members reported that their documentation was being read by their colleagues and 84% reported that the patient record gave them a good general view of the patients' case apart from complicated patient cases and long lasting admissions. CONCLUSION: The single-stranded interdisciplinary patient record reduces documentation overlap. The record facilitates overview and continuity in short-term patient cases. The participating staff became acquainted with and now uses the information documented by other health professionals.

Source: EMBASE

25. Do clinicians read our reports? Integrating the radiology information system with the electronic patient record: Experiences from the first 2 years

Author(s): Hurlen P., Otbye T., Borthne A., Dahl F.A., Gulbrandsen P.
Abstract: This study aimed to determine how clinicians adapted to and utilized new routines for accessing radiology reports after the integration of an electronic patient record (EPR) with a radiology information system (RIS). Activity-related data describing the availability and receipt of radiology reports were collected from the EPR and the RIS over a period of 2 years. Twelve percent of the final radiology reports had not been opened 4 weeks after they had been entered into the EPR. For opened reports, the median time after a report was available in the EPR until it was first opened by a clinician was less than 1 h for preliminary reports and less than 4 h for final radiology reports. The use of radiology reports was stable during the second observation year. Some reports were not opened for professional as well as technical reasons. The integrated information systems offered a potential for improving routines related to the transmission of radiology reports. Clinicians did not fully take advantage of this potential in the 2 years after its introduction. European Society of Radiology 2008.

Source: EMBASE

26. An integrated platform for ADR reporting

Author(s): Chakraborty P., Kite R.

Citation: Innovations in Pharmaceutical Technology, January 2009, vol./is. /27(18-21), 1471-7204 (January 2009)

Abstract: The incorporation of patient health information into an integrated safety infrastructure would provide a better system of ADR reporting, resulting in improved levels of patient safety.

Source: EMBASE

27. Timely follow-up of abnormal diagnostic imaging test results in an outpatient setting: Are electronic medical records achieving their potential?

Author(s): Singh H., Thomas E.J., Mani S., Sittig D., Arora H., Espadas D., Khan M.M., Petersen L.A.

Citation: Archives of Internal Medicine, 2009, vol./is. 169/17(1578-1586), 0003-9926;1538-3679 (2009)

Abstract: Background: Given the fragmentation of outpatient care, timely follow-up of abnormal diagnostic imaging results remains a challenge. We hypothesized that an electronic medical record (EMR) that facilitates the transmission and availability of critical imaging results through either automated notification (alerting) or direct access to the primary report would eliminate this problem. Methods: We studied critical imaging alert notifications in the outpatient setting of a tertiary care Department of Veterans Affairs facility from November 2007 to June 2008. Tracking software determined whether the alert was acknowledged (ie, health care practitioner/provider [HCP] opened the message for viewing) within 2 weeks of transmission; acknowledged alerts were considered read. We reviewed medical records and contacted HCPs to determine timely follow-up actions (eg, ordering a follow-up test or consultation) within 4 weeks of transmission. Multivariable logistic regression models accounting for clustering effect by HCPs analyzed predictors for 2 outcomes: lack of acknowledgment and lack of timely followup. Results: Of 123 638 studies (including radiographs, computed tomographic scans, ultrasonograms, magnetic resonance images, and mammograms), 1196 images (0.97%) generated alerts; 217 (18.1%) of these were unacknowledged. Alerts had a higher risk of being unacknowledged when the ordering HCPs were trainees (odds ratio [OR], 5.58; 95% confidence interval [CI], 2.86-10.89) and when dual-alert (>1 HCP alerted) as opposed to single-alert communication was used (OR, 2.02; 95% CI, 1.22-3.36). Timely follow-up was lacking in 92 (7.7% of all alerts) and was similar for acknowledged and unacknowledged alerts (7.3% vs 9.7%; P=.22). Risk for lack of timely follow-up was higher with dual-alert communication (OR,1.99; 95% CI, 1.06-3.48) but lower when additional verbal communication was used by
the radiologist (OR, 0.12; 95% CI, 0.04-0.38). Nearly all abnormal results lacking timely follow-up at 4 weeks were eventually found to have measurable clinical impact in terms of further diagnostic testing or treatment. Conclusions: Critical imaging results may not receive timely follow-up actions even when HCPs receive and read results in an advanced, integrated electronic medical record system. A multidisciplinary approach is needed to improve patient safety in this area. 2009 American Medical Association. All rights reserved.

Source: EMBASE

Full Text:
Available in fulltext at Highwire Press
Available in selected fulltext at Highwire Press

28. Implementing electronic health record-based quality measures for developmental screening

Author(s): Jensen R.E., Chan K.S., Weiner J.P., Fowles J.B., Neale S.M.

Citation: Pediatrics, 2009, vol./is. 124/4(e648-e654), 0031-4005;1098-4275 (2009)

Publication Date: 2009

Abstract: OBJECTIVE: The goal was to examine the current abilities and future potential of electronic health record (EHR) systems to measure childhood developmental screening and follow-up rates in primary care settings. METHODS: A group of pediatric clinicians and health informatics experts was convened to develop quality indicators reflecting different aspects of the developmental screening process. These indicators included the administration of a standardized, validated instrument to screen children for developmental delays, the documentation of abnormal screening results, and the provision of follow-up care. Six integrated provider systems across the United States, with fully implemented EHR systems, were evaluated to determine the feasibility of implementing these measures within each system. Barriers related to measure implementation were identified. RESULTS: The EHR systems of all 6 health care organizations could implement measures examining developmental screening rates and could identify and track children with abnormal screening results. However, most of the systems did not have the ability to capture data for more-complex EHR-based measures. In particular, data elements based on workflow actions could not be captured with current EHR system designs. CONCLUSIONS: This study identified 2 main barriers to the implementation of developmental quality measures: concerns about data reliability and the tracking of care coordination within patient records. Potential solutions to these problems, including terminology standardization, patient portal use, and use of a single developmental screening instrument, are discussed. Copyright 2009 by the American Academy of Pediatrics.

Source: EMBASE

Full Text:
Available in fulltext at American Academy of Pediatrics
Available in fulltext at Highwire Press

29. Health care information systems - the outcomes of the integrated use of health information

Author(s): Maenpaa T., Asikainen P., Rostila I., Suominen T.

Citation: Studies in health technology and informatics, 2009, vol./is. 146/(749-750), 0926-9630 (2009)

Publication Date: 2009

Abstract: The objective of this study is to formulate a clearer picture of how a regional healthcare information system affects the completeness of patient health care and health care delivery. The purpose is to study how the implementation of regional health information systems has influenced outcomes in health care delivery in one hospital area in Finland. The essential concepts in this study are health care information systems and outcomes. The research consists of four different phases. Research material will be processed through qualitative and quantitative research methods and statistical tests.
30. Beyond the EPR: complementary roles of the hospital-wide electronic health record and clinical departmental systems

Author(s): Vedvik E., Tjora A.H., Faxvaag A.
Citation: BMC medical informatics and decision making, 2009, vol./is. 9/(29), 1472-6947 (2009)
Publication Date: 2009

Abstract: BACKGROUND: Many hospital departments have implemented small clinical departmental systems (CDSs) to collect and use patient data for documentation as well as for other department-specific purposes. As hospitals are implementing institution-wide electronic patient records (EPRs), the EPR is thought to be integrated with, and gradually substitute the smaller systems. Many EPR systems however fail to support important clinical workflows. Also, successful integration of systems has proven hard to achieve. As a result, CDSs are still in widespread use. This study was conducted to see which tasks are supported by CDSs and to compare this to the support offered by the EPR. METHODS: Semi-structured interviews with users of 16 clinicians using 15 different clinical departmental systems (CDS) at a Medium-sized University hospital in Norway. Inductive analysis of transcriptions from the audio taped interviews. RESULTS: The roles of CDSs were complementary to those of the hospital-wide EPR system. The use of structured patient data was a characteristic feature. This facilitated quality development and supervision, tasks that were poorly supported by the EPR system. The structuring of the data also improved filtering of information to better support clinical decision-making. Because of the high value of the structured patient data, the users put much effort in maintaining their integrity and representativeness. Employees from the departments were also engaged in the funding, development, implementation and maintenance of the systems. CONCLUSION: Clinical departmental systems are vital to the activities of a clinical hospital department. The development, implementation and clinical use of such systems can be seen as bottom-up, user-driven innovations.

Source: EMBASE


Author(s): Keyhani S, Hebert PL, Ross JS, Federman A, Zhu CW, Siu AL
Citation: Medical Care, 01 December 2008, vol./is. 46/12(1267-1272), 00257079
Publication Date: 01 December 2008

Abstract: Background: Electronic health records (EHRs) have been promoted as an important tool to improve quality of care. We examined the association between EHR components, a complete EHR, and the quality of care. Methods: Using data from the 2005 National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey, we conducted a cross-sectional analysis of all visits with an established primary care provider and examined the association between presence of EHR components and: (1) blood pressure control; and (2) receipt of appropriate therapy for chronic conditions. We examined similar associations for complete EHRs which we defined as one that includes physician and nursing notes, electronic reminder system, computerized prescription order entry, test results, and computerized test order entry. We constructed multivariate models to examine the association between EHR components and each outcome controlling for patient sociodemographic, health, physician practice, and geographic factors. Results: We found no association between electronic physician notes and blood pressure control or receipt of appropriate therapies, with the exception of inhaled steroids among asthmatics (adjusted odds ratio 2.86; 95% confidence interval, 1.12-7.32). We found no association between electronic reminder systems and blood pressure control or receipt of appropriate therapies, with the exception of angiotensin converting enzyme inhibitors or angiotensin receptor blockers in patients with diabetes with hypertension (odds
We found no association between electronic physician notes and any measure of quality. We found no relationship between having a complete EHR and any of the quality measures investigated. Conclusions: We found no consistent association between blood pressure control, management of chronic conditions, and specific EHR components. Future research focusing on how an EHR is implemented and used and how care is integrated through an EHR will improve our understanding of the impact of EHRs on the quality of care.

**Source:** CINAHL

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32. Employing the electronic health record to improve diabetes care: A multifaceted intervention in an integrated delivery system

**Author(s):** Weber V., Bloom F., Pierdon S., Wood C.

**Citation:** Journal of General Internal Medicine, April 2008, vol./is. 23/4(379-382), 0884-8734;1525-1497 (Apr 2008)

**Publication Date:** April 2008

**Abstract:** INTRODUCTION: Type 2 diabetes is one of the nation's most prevalent chronic diseases. Although well-known practice guidelines exist, real-life clinical performance often falls short of benchmarks. AIM: Employ an electronic registry derived from a fully integrated electronic health record (EHR) as the cornerstone of an intervention to improve compliance with recommended diabetes performance measures in an integrated practice network. SETTING: Geisinger Health System's network of 38 practice sites providing care to over 20,000 persons with diabetes located in a 40-county region of central and northeastern Pennsylvania. PROGRAM DESCRIPTION: A multidisciplinary group of physicians worked to create a "bundle" of best practice measures for diabetes. This measurement tool was then used as part of a multifaceted intervention to improve physician performance in diabetes care, including audit and feedback, computerized reminders, and financial incentives. Changes in performance of individual measures and the total "bundle" were tracked monthly over 1 year. PROGRAM EVALUATION: Significant increases were seen in all measures of diabetes care over the 12-month period of the study. Vaccination for pneumococcal disease and influenza improved from 56.5% to 80.8% (p<.0001) and 55.1% to 71.0% (p<.0001), respectively. The percentage of patients with ideal glucose control (HBA1c<7.0) increased from 32.2% to 34.9% (p<.0001), and blood pressure control (<130/80) improved from 39.7% to 43.9% (p<.0001). The overall number of patients receiving all 9 "bundled" measurements improved from 2.4% to 6.5% (p<.0001). DISCUSSION: Diabetes care improved significantly in response to a multifaceted intervention featuring the use of an EHR-derived registry in an integrated delivery system. More work is needed to demonstrate that such improvements will translate into improved patient health outcomes. 2007 Society of General Internal Medicine.

**Source:** EMBASE

**Full Text:** Available in fulltext at [National Library of Medicine](https://www.nlm.nih.gov/)

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33. Quality outcomes management: Veterans Affairs case study.

**Author(s):** Bhatia SC, Fernandes PP

**Citation:** Psychiatric Clinics of North America, 01 March 2008, vol./is. 31/1(57-72), 0193953X

**Publication Date:** 01 March 2008

**Abstract:** During the last decade, the Department of Veterans Affairs (VA) has made major strides in enhancing quality of medical, surgical, and mental health care for veterans. These improvements have been achieved through the will and commitment of VA leadership and by changes in the administrative structure, such as through the creation of Veteran Integrated Service Networks and patient care service lines, the use of state-of-the-art technology for electronic health records, implementation of high-value preventative and chronic disease management performance measures, and the ability to track their effectiveness. Parallel with these changes, the quality of mental health care in the VA has also improved, as have mental health education and research. Copyright © 2008 by
34. Implementing an integrated electronic outcomes and electronic health record process to create a foundation for clinical practice improvement.

Author(s): Deutscher D, Hart DL, Dickstein R, Horn SD, Gutvirtz M

Citation: Physical Therapy, 01 February 2008, vol./is. 88/2(270-285), 00319023

Publication Date: 01 February 2008

Abstract: BACKGROUND AND PURPOSE: Improving clinical outcomes requires continuous measurement and interpretation in conjunction with treatment process and patient characteristics. The purposes of this study were: (1) to describe implementation and integration of electronic functional status outcomes into an electronic health record (EHR) for the promotion of clinical practice improvement processes and (2) to examine the effect of ongoing outcomes data collection in a large physical therapy service in relation to patient and clinic burden. SUBJECTS: Data were examined from 21,523 adult patients (mean age=50.6 years, SD=16.3, range=18-99; 58.9% women, 41.1% men) referred for physical therapist management of neuromusculoskeletal disorders. METHODS: Process and patient characteristic data were entered into the EHR. OUTCOMES: data collected using computerized adaptive testing technology in 11 outpatient clinics were integrated into the EHR. The effect of data collection was assessed by measuring the participation rate, completion rate, and data entry time. Qualitative assessment of the implementation process was conducted. RESULTS: After 1 year, the average participation rate per clinic was 79.8% (range=52.7%-100%), the average completion rate per clinic was 45.1% (range=19.3%-64.7%), and the average data entry time per patient (minutes:seconds) was 03:37 (SD=02:19). Maximum estimate of average administrative time per patient was 9.6% of overall episode time. Barriers to and facilitators of the implementation process were identified. DISCUSSION AND CONCLUSION: The results indicate that routine collection of outcome data is realistic in a large public physical therapy service and can be successfully integrated with EHR data to produce a valuable clinical practice improvement platform for service evaluation and outcomes research. Participation and completion rate goals of 90% and 65%, respectively, appear to be feasible.

Source: CINAHL

Full Text:
Available in fulltext at Highwire Press
Available in fulltext at EBSCO Host

35. Integrating information from disparate sources: the Walter Reed National Surgical Quality Improvement Program Data Transfer Project

Author(s): Nelson V., Li F., Green S., Tamura T., Liu J.M., Class M.

Citation: AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium, 2008(1066), 1942-597X (2008)

Publication Date: 2008

Abstract: The Walter Reed National Surgical Quality Improvement Program Data Transfer web module integrates with medical and surgical information systems, and leverages outside standards, such as the National Library of Medicine's RxNorm, to process surgical and risk assessment data. Key components of the project included a needs assessment with nurse reviewers and a data analysis for federated (standards were locally controlled) data sources. The resulting interface streamlines nurse reviewer workflow by integrating related tasks and data.

Source: EMBASE

Full Text:
Available in fulltext at National Library of Medicine

36. The Single Shared Electronic Patient Record (SSEPR): Problems with
functionality and governance

Author(s): Hawking M.

Citation: Informatics in Primary Care, 2008, vol./is. 16/2(157-158), 1476-0320 (2008)

Publication Date: 2008

Source: EMBASE

37. From a paper-based to an electronic registry in physiotherapy

Author(s): Buyl R., Nyssen M.

Citation: Studies in health technology and informatics, 2008, vol./is. 141/(75-81), 0926-9630 (2008)

Publication Date: 2008

Abstract: During the past decade the healthcare industry has evolved from paper-based storage of clinical data into the digital era. Electronic healthcare records play a crucial role to meet the growing need for integrated data-storage and data communication. In this context a new law was issued in Belgium on December 7th, 2005, which requires physiotherapists (but also nurses and speech therapists) to keep an electronic version of the registry. This (electronic) registry contains all physiotherapeutic acts, starting from January 1, 2007. Up until that day, a paper version of the registry had to be created every month. This article describes the development of an electronic version of the registry that not only meets all legal constraints, but also enables to verify the traceability and inalterability of the generated documents, by means of SHA-256 codes. One of the major concerns of the process was that the rationale behind the electronic registry would conform well to the common practice of the physiotherapist. Therefore we opted for a periodic recording of a standardized “image” of the controllable data, in the patient database of the software-system, into the XML registry messages. The proposed XSLT schema can also form a basis for the development of tools that can be used by the controlling authorities. Hopefully the electronic registry for physiotherapists will be a first step towards the future development of a fully integrated electronic physiotherapy record. By means of a certification procedure for the software systems, we succeeded in developing a user-friendly system that enables end-users that use a quality labeled software package, to automatically produce all the legally necessary documents concerning the registry. Moreover, we hope that this development will be an incentive for non-users to start working in an electronic way.

Source: EMBASE

38. The effects of electronic documentation in the ambulatory surgery setting

Author(s): O’Meara E

Citation: AORN Journal, 01 December 2007, vol./is. 86/6(970-978), 00012092

Publication Date: 01 December 2007

Abstract: Electronic Documentation can improve organizational processes in health care settings and may be of particular benefit to ambulatory surgery centers. A Decision Support System (DSS) can be integrated with an electronic documentation system. A DSS can identify potential errors and deviations from best practices and provide electronic alerts for health care clinicians to support patient screening and care. Barriers To Implementation of a DSS include practitioner noncompliance with alerts and limitations in system design. Nurses Can Be Instrumental in overcoming the barriers that prevent some clinicians from adopting these useful information systems.

Source: CINAHL

Full Text:
Available in fulltext at EBSCO Host

39. The impact of converting to an electronic health record on organizational culture and quality improvement

Author(s): Nowinski C.J., Becker S.M., Reynolds K.S., Beaumont J.L., Caprini C.A., Hahn
Implementing an information technology system can impact more than just quality of care and patient outcomes. The purpose of this 4-year, observational research project is to examine changes in organizational culture, quality improvement (QI) maturity, and quality of care following adoption of a single, electronic health record (EHR) system within an integrated healthcare network. The primary outcome measure, the Culture and Quality Questionnaire (CQQ), assesses the perceived culture of an organization and the degree of QI maturity in seven quality management areas. Baseline surveys were distributed prior to conversion to the EHR. Subsequent data collection occurred at 12 months post "go live" and will occur at 24 and 36 months after the first hospital "go live". Secondary data were abstracted from routinely collected patient satisfaction measures and standard quality indicators. Contrary to expectation, our findings from the Baseline and 12-month follow-up data suggest that employees perceived the organizational culture as becoming more, rather than less, hierarchical. We also hypothesized that quality indicators would show improvement due to enhanced information flow and ease of information retrieval. This hypothesis was not supported by 1-year results. However, follow-up data from years two and three may provide different results. 2006 Elsevier Ireland Ltd. All rights reserved.

Source: EMBASE

40. Clinical decision support to improve antibiotic prescribing for acute respiratory infections: results of a pilot study


Citation: AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium, 2007(468-472), 1559-4076 (2007)

Publication Date: 2007

Abstract: Acute Respiratory Infections (ARIs) are the number one reason for antibiotic prescribing in the United States, and much antibiotic prescribing for ARIs is inappropriate. We designed an electronic health record-integrated, documentation-based clinical decision support system for the care of patients with ARIs, the ARI Smart Form. To evaluate the ARI Smart Form and assess the feasibility of performing a larger trial, we conducted a pilot study with 10 clinicians who used the ARI Smart Form with 26 patients. Clinicians prescribed antibiotics to 6 of 6 patients with antibiotic-appropriate diagnoses and to 3 of 20 (15%) patients with antibiotic-inappropriate diagnoses. The average duration of use of the ARI Smart Form was 7.5 (SD+/−4.5) minutes. Eight of 10 respondents reported that the ARI Smart Form was either time-neutral or timesaving. The ARI Smart Form requires further evaluation but has the potential to improve workflow and reduce inappropriate antibiotic prescribing.

Source: EMBASE

41. Bridging the gap: a virtual health record for integrated home care.

Author(s): Hagglund, Maria

Citation: International Journal of Integrated Care, 2007, vol./is. 7/ (27 June 2007)

Publication Date: 2007

Abstract: INTRODUCTION: The coexistence of different information systems that are unable to communicate is a persistent problem in healthcare and in integrated home care in particular. THEORY AND METHODS: Physically federated integration is used for design of the underlying technical architecture to implement a mobile virtual health record for integrated home care. A user centered system development approach is followed during design and development of the system. RESULTS: A technical platform based on a service-oriented approach where database functionality and services are separated has been developed. This guarantees flexibility with regard to changed functional demands and
allows third party systems to interact with the platform in a standardized way. A physically federated integration enables point-of-care documentation, integrated presentation of information from different feeder systems, and offline access to data on handheld devices. Feeder systems deliver information in XML-files that are mapped against an ideal XML schema, published as an interface for integration with the information broker, and inserted into the mediator database. CONCLUSIONS: A seamless flow of information between both different care professionals involved in integrated home care and patients and relatives is provided through mobile information access and interaction with different feeder systems using the virtual health record. 3 figs. 34 refs. [Abstract]

Source: HMIC

Available in fulltext at National Library of Medicine

42. Developing the electronic health record: what about patient safety?

Author(s): Boaden R, Joyce P

Citation: Health Services Management Research, 01 May 2006, vol./is. 19/2(94-104), 09514848

Publication Date: 01 May 2006

Abstract: This paper examines the development of electronic health records within the National Health Service (NHS) by an analysis of a series of pilot projects funded by the Electronic Record Development and Implementation Project (ERDIP), one aspect of the work of the NHS Information Authority (NHSIA) (As of 1 April 2005, the NHSIA ceased to operate. Much of its work is continued by Connecting for Health and the Health and Social Care Information Centre.) The focus of the analysis is on the extent to which identifying and correcting error within health records was explored through these projects. The inherent potential for error and resultant impact on patient safety is highlighted, by considering the context of the record, the content of the record and the process of change from paper-based or piecemeal electronic health records to integrated electronic health records. While the process of change highlights issues of data security and access, it is the variability in starting points for different organizations that possibly poses most risk to patient safety. Issues relating to the content of the record can to some extent be minimized by the effective use of technology, but the tension between coding and qualitative data requires further consideration in terms of its impact on patient safety. This paper concludes that the development of electronic health records has to be viewed within the context of governance and patient safety, and the implications articulated.

Source: CINAHL

43. An RN's dream.

Citation: Alberta RN, 01 May 2006, vol./is. 62/5(10-11), 14819988

Publication Date: 01 May 2006

Abstract: Registered nurse Irene Manning calls it a "nurse's dream," but its real name is the Regional Shared Health Information Program, or RSHIP. RSHIP is a collaboration between seven of Alberta's nine regional health authorities (RHAs) Aspen, Chinook, East Central, David Thompson, Northern Lights, Palliser and Peace Country. Together they are working to create a single, integrated, enterprise medical record encompassing all aspects of health service for patients within their regions. RSHIP replaces multitudes of separate, non-integrated clinical information systems such as pharmacy tracking, laboratory test results, diagnostic imaging and transcribed results. And, it also replaces a number of financial and administrative systems.

Source: CINAHL

Available in fulltext at EBSCO Host

44. MedEconomics: The reality of shared care records.
Author(s): Barton, Simon

Citation: GP: General Practitioner, 03 March 2006, vol./is. /(67-67), 02688417

Publication Date: 03 March 2006

Abstract: The article focuses on the concept of shared care records. The big idea for electronic medical records was to have a single repository into which all medical records were placed or created. The planners of the concept were concerned about the risk that a single record could mean a single monopoly software supplier who could name his price and bankrupt the NHS. So competition was introduced by dividing England into five clusters, each with its own main contractor or a local service provider.

Source: HEALTH BUSINESS ELITE

Full Text:
Available in fulltext at EBSCO Host

45. Linkage of patient records to support continuity of care: Issues and future directions

Author(s): Mills M.E.

Citation: Studies in health technology and informatics, 2006, vol./is. 122/(320-324), 0926-9630 (2006)

Publication Date: 2006

Abstract: Continuity of care depends on the availability of complete health care information on which current and future care can be planned and implemented. Consumers however, may have multiple records—even within single institutions—often unknown by the institution or the individual care provider. One of the first challenges to health care informatics professionals is to establish a means of identifying individual patients across care delivery systems. The ability to create an integrated record system depends on the development of a "universal person index" as well as considerations for standardizing and integrating other aspects of the electronic record. Many individual health facilities are working to create a "master person index" (MPI) and some integrated delivery systems are attempting to combine these MPIs into a single "enterprise person index" (EPI). Even more difficult is the task of establishing a means of identifying and linking patient records across all health care settings. Primary efforts to establish these linkages will depend on standardization across multiple MPI files, linkage protocols, data protection and patient consent. The nurse informatics specialist will be important to the planning, implementation, application and evaluation process necessary to the integration of health information records to support patient care.

Source: EMBASE

46. Building an innovation electronic nursing record pilot structure with nursing clinical pathway.

Author(s): Hao AT, Huang LF, Wu LB, Kao CC, Lu MS, Jian WS, Chang HK, Hsu CY

Citation: Studies in Health Technology & Informatics, 2006, vol./is. 122/(279-83), 0926-9630;0926-9630 (2006)

Publication Date: 2006

Abstract: The nursing process consists of five interrelated steps: assessment, diagnosis, planning, implementation, and evaluation. In the nursing process, the nurse confronts a great deal of data and information. The amount of data and information may exceed the amount the nurse can process efficiently and correctly. Thus, the nurse needs assistance to become proficient in the planning of nursing care, due to the difficulty of simultaneously processing a large set of information. Thus, some form of assistance will be needed to help nurses to become more proficient in planning nursing care. Using computer technology to support clinicians’ decision making may provide high-quality, patient-centered, and efficient healthcare. Although some existing nursing information systems aid in the nursing process, they only provide the most rudimentary decision support—i.e., standard care plans associated with common nursing diagnoses. Such a computerized decision support system helps the nurse develop a care plan step-by-step. But it does not assist the nurse in the
decision-making process. The decision process about how to derive nursing diagnoses from data and how to individualize the care plans still remains in the mind of the nurse. The purpose of this study is to develop a pilot structure in an electronic nursing record system integrated with international nursing standards for improving the proficiency and accuracy of the plan of care in the clinical pathway process. The pilot system has shown promise in assisting both student nurses and beginner nurses. It also shows promise in helping experts who need to work in a practice area that is outside of their immediate domain.

Source: MEDLINE

47. The future of the perfusion record: automated data collection vs. manual recording.

Author(s): Ottens J, Baker RA, Newland RF, Mazzone A

Citation: Journal of Extra-Corporeal Technology, 01 December 2005, vol./is. 37/4(355-359), 00221058

Publication Date: 01 December 2005

Abstract: The perfusion record, whether manually recorded or computer generated, is a legal representation of the procedure. The handwritten perfusion record has been the most common method of recording events that occur during cardiopulmonary bypass. This record is of significant contrast to the integrated data management systems available that provide continuous collection of data automatically or by means of a few keystrokes. Additionally, an increasing number of monitoring devices are available to assist in the management of patients on bypass. These devices are becoming more complex and provide more data for the perfusionist to monitor and record. Most of the data from these can be downloaded automatically into online data management systems, allowing more time for the perfusionist to concentrate on the patient while simultaneously producing a more accurate record. In this prospective report, we compared 17 cases that were recorded using both manual and electronic data collection techniques. The perfusionist in charge of the case recorded the perfusion using the manual technique while a second perfusionist entered relevant events on the electronic record generated by the Stockert S3 Data Management System/Data Bahn (Munich, Germany). Analysis of the two types of perfusion records showed significant variations in the recorded information. Areas that showed the most inconsistency included measurement of the perfusion pressures, flow, blood temperatures, cardioplegia delivery details, and the recording of events, with the electronic record superior in the integrity of the data. In addition, the limitations of the electronic system were also shown by the lack of electronic gas flow data in our hardware. Our results confirm the importance of accurate methods of recording of perfusion events. The use of an automated system provides the opportunity to minimize transcription error and bias. This study highlights the limitation of spot recording of perfusion events in the overall record keeping for perfusion management.

Source: CINAHL

48. What is the patient really taking? Discrepancies between surgery and anesthesiology preoperative medication histories.

Author(s): Burda SA, Hobson D, Pronovost PJ

Citation: Quality & Safety in Health Care, 01 December 2005, vol./is. 14/6(414-416), 14753898

Publication Date: 01 December 2005

Abstract: BACKGROUND: Surgical patients may be at risk for medication discrepancies that may lead to medication errors because both the anesthesiologist and the surgeon write separate preoperative medication histories. METHODS: A prospective observational study was conducted to examine the extent of medication and allergy discrepancies between surgical and anesthesia preoperative medication histories for patients admitted to two surgical intensive care units in an academic medical center. RESULTS: Of the 79 patient records reviewed, 58 (73%) contained at least one discrepancy, 23% had different allergy information, 56% had different preoperative medications, and 43% had different doses or dosing frequencies listed in the medication histories. Of the 988 allergies, medications, and doses or dosing frequencies documented in the two histories, 456 (46%) contained
discrepancies. Of these discrepancies, 20 (5%) were due to different allergies, 293 (64%) to different medications, and 143 (31%) to different doses or dosing frequencies.

CONCLUSIONS: Discrepancies in preoperative medication histories between surgical and anesthesia records occur in most patients and further work is required to help improve agreement of patient medication histories between services.

Source: CINAHL

Full Text:
Available in fulltext at Highwire Press
Available in fulltext at National Library of Medicine
Available in print at Grantham Hospital Staff Library

49. VA gets high marks for preventive, chronic care: integrated medical record needed but not sufficient.

Citation: Hospital Case Management, 01 March 2005, vol./is. 13/3(40-41), 10870652
Publication Date: 01 March 2005
Source: CINAHL

50. Effect of electronic health records in ambulatory care: Retrospective, serial, cross sectional study

Author(s): Garrido T., Jamieson L., Zhou Y., Wiesenthal A., Liang L.

Citation: British Medical Journal, March 2005, vol./is. 330/7491(581-584), 0959-8146 (12 Mar 2005)
Publication Date: March 2005

Abstract: Objective: To evaluate the effect of implementing comprehensive, integrated electronic health record systems on use and quality of ambulatory care Design: Retrospective, serial, cross sectional study. Setting: Colorado and Northwest regions of Kaiser Permanente, a US integrated healthcare delivery system. Population: 367 795 members in the Colorado region and 449 728 members in the Northwest region. Intervention: Implementation of electronic health record systems. Main outcome measures: Total number of office visits and use of primary care, specialty care, clinical laboratory, radiology services, and telephone contact. Health Plan Employer Data and Information Set to assess quality. Results: Two years after electronic health records were fully implemented, age adjusted rates of office visits fell by 9% in both regions. Age adjusted primary care visits decreased by 11% in both regions and specialty care visits decreased by 5% in Colorado and 6% in the Northwest. All these decreases were significant (P < 0.0001). The percentage of members making >= 3 visits a year decreased by 10% in Colorado and 11% in the Northwest, and the percentage of members with <= 2 visits a year increased. In the Northwest, scheduled telephone contact increased from a baseline of 1.26 per member per year to 2.09 after two years. Use of clinical laboratory and radiology services did not change conclusively. Intermediate measures of quality of health care remained unchanged or improved slightly. Conclusions: Readily available, comprehensive, integrated clinical information reduced use of ambulatory care while maintaining quality and allowed doctors to replace some office visits with telephone contacts. Shifting patterns of use suggest reduced numbers of ambulatory care visits that are inappropriate or marginally productive.

Source: EMBASE

Full Text:
Available in fulltext at Highwire Press
Available in print at Grantham Hospital Staff Library
Available in print at Lincoln County Hospital Professional Library
Available in print at Louth County Hospital Medical Library
51. Improving patient care. Comparison of quality of care for patients in the Veterans Health Administration and patients in a national sample.


Citation: Annals of Internal Medicine, 21 December 2004, vol./is. 141/12(938-946), 00034819

Publication Date: 21 December 2004

Abstract: BACKGROUND: The Veterans Health Administration (VHA) has introduced an integrated electronic medical record, performance measurement, and other system changes directed at improving care. Recent comparisons with other delivery systems have been limited to a small set of indicators. OBJECTIVE: To compare the quality of VHA care with that of care in a national sample by using a comprehensive quality-of-care measure. DESIGN: Cross-sectional comparison. SETTING: 12 VHA health care systems and 12 communities. PATIENTS: 596 VHA patients and 992 patients identified through random-digit dialing. All were men older than 35 years of age. MEASUREMENTS: Between 1997 and 2000, quality was measured by using a chart-based quality instrument consisting of 348 indicators targeting 26 conditions. Results were adjusted for clustering, age, number of visits, and medical conditions. RESULTS: Patients from the VHA scored significantly higher for adjusted overall quality (67% vs. 51%; difference, 16 percentage points [95% CI, 14 to 18 percentage points]), chronic disease care (72% vs. 59%; difference, 13 percentage points [CI, 10 to 17 percentage points]), and preventive care (64% vs. 44%; difference, 20 percentage points [CI, 12 to 28 percentage points]), but not for acute care. The VHA advantage was most prominent in processes targeted by VHA performance measurement (66% vs. 43%; difference, 23 percentage points [CI, 21 to 26 percentage points]) and least prominent in areas unrelated to VHA performance measurement (55% vs. 50%; difference, 5 percentage points [CI, 0 to 10 percentage points]). LIMITATIONS: Unmeasured residual differences in patient characteristics, a lower response rate in the national sample, and differences in documentation practices could have contributed to some of the observed differences. CONCLUSIONS: Patients from the VHA received higher-quality care according to a broad measure. Differences were greatest in areas where the VHA has established performance measures and actively monitors performance.

Source: CINAHL

Full Text:
Available in fulltext at Highwire Press
Available in fulltext at Lincoln County Hospital Professional Library; Note: Username: ulhtkis/Password: library
Available in print at Lincoln County Hospital Professional Library

52. Integrated care and the working record.

Author(s): Fitzpatrick G

Citation: Health Informatics Journal, 01 December 2004, vol./is. 10/4(291-302), 14604582

Publication Date: 01 December 2004

Abstract: By default, many discussions and specifications of electronic health records or integrated care records often conceptualize the record as a passive information repository. This article presents data from a case study of work in a medical unit in a major metropolitan hospital. It shows how the clinicians tailored, re-presented and augmented clinical information to support their own roles in the delivery of care for individual patients. This is referred to as the working record: a set of complexly interrelated clinician-centred documents that are locally evolved, maintained and used to support delivery of care in conjunction with the more patient-centred chart that will be stored in the medical records department on the patient's discharge. Implications are drawn for how an integrated care record could support the local tailorability and flexibility that underpin this working record and hence underpin practice. © 2004 SAGE Publications Ltd.
53. Accuracy of nursing home medical record information about care-process delivery: implications for staff management and improvement.

Author(s): Schnelle JF, Bates-Jensen BM, Chu L, Simmons SF

Citation: Journal of the American Geriatrics Society, 01 August 2004, vol./is. 52/8(1378-1383), 00028614

Publication Date: 01 August 2004

Abstract: Arguments have been made that the culture of nursing homes (NHs) must change to improve the quality of care, and two initiatives have been designed to accomplish this goal. One initiative is to provide resident outcome information (quality indicators) to NH management and consumers via public reporting systems. This initiative is based on the assumptions that resident outcomes are related to care processes implemented by NH staff, the NH industry will respond to market forces, and there are management systems in place within NHs to change the behavior of direct care staff if outcomes are poor. A separate staffing initiative argues that NH care will not improve until there are resources available to increase the number of direct care staff and improve staff training. This initiative also assumes that systems are in place to manage staff resources. Unfortunately, these initiatives may have limited efficacy because information useful for managing the behavior of direct care providers is unavailable within NHs. Medical record documentation about daily care-process implementation may be so erroneous that even the best-intentioned efforts to improve the care received by residents will not be successful. A culture of inaccurate documentation is largely created by a discrepancy between care expectations placed on NHs by regulatory guidelines and inadequate reimbursement to fulfill these expectations. Nursing home staff have little incentive to implement the technologies necessary to audit and assure data quality if accurate documentation reveals that care consistent with regulatory guidelines is not or cannot be provided. A survey process that largely focuses on chart documentation to assess quality provides further incentive for care-process documentation as opposed to care-process delivery. This article reviews methods to improve the accuracy of NH medical record documentation and to create data systems useful for staff training and management.

Source: CINAHL

Full Text:
Available in fulltext at Ovid
Available in fulltext at EBSCO Host
Available in print at Lincoln County Hospital Professional Library
Available in print at Pilgrim Hospital Staff Library

54. Can we use automated data to assess quality of hypertension care?

Author(s): Borzecki AM, Wong AT, Hickey EC, Ash AS, Berlowitz DR

Citation: American Journal of Managed Care, 02 July 2004, vol./is. 10/7 Part 2(473-479), 10961860

Publication Date: 02 July 2004

Abstract: Objective: To determine whether extractable blood pressure (BP) information available in a computerized patient record system (CPRS) could be used to assess quality of hypertension care independently of clinicians' notes.

Source: CINAHL

55. A single integrated record – is it the answer to delivering good community care?

Author(s): Roberts T

Citation: British Journal of Healthcare Computing & Information Management, 01 May 2004, vol./is. 21/4(22-23), 17494044
Abstract: The development of a single integrated patient/client record could in theory enhance communication between agencies leading to better decision making and improved assessment of risks. But improved outcomes for clients will not happen unless there is clarity about the purposes behind the single record and clear definition of the data to be included in the document. A single integrated record will not in itself result in a seamless and integrated whole system of care, and issues of governance and integrated management of the care system need to be considered as well. Access to information does not in itself guarantee improved decision making, and assessment of risks and managers must not lose sight of the importance of personal contact and full engagement of the client if better outcomes are to be secured.

Source: CINAHL

56. DOSSI, the electronic nursing documentation system [German].

Author(s): Hilpert B, Geiger E

Citation: PR-Internet fur die Pflege, 01 February 2003, vol./is. 5/2(1-6), 14228629

Abstract: The DPI-MI is the electronic care planning and documentation module of the integrated patient record used in the Geneva University Hospitals (HUG). This module - originally called DOSSI - was developed on the initiative of HUG in close cooperation of HUG and ELCA. It contains a patient localization and record management, a full care process documentation, including care anamnesis, diagnoses and objectives, care planing based on standard terminologies, which automatically generates PRN-based workload measures and a reporting functionality. The system has to meet the requirements of patients (data security), nurses (ergonomic use) and institutions (statistical evaluations). This document describes how DOSSI implements these requirements.

Source: CINAHL

58. Developing a unified patient record: a practical guide

Author(s): Thompson, Deb, Wright, Kim

Citation: Abingdon - 18 Marcham Road, Abingdon, Oxon OX14 1AA: Radcliffe Medical Press, 2003(xi, 140p)

Abstract: Two senior and specialist nursing staff wrote this nine chapter 140-page book. The importance of high quality record keeping to good patient care is stressed within the foreword and throughout the book. The overall emphasis is on the practical realisation of good records and illustrations of forms, information cards and posters are found in several chapters. The concept of a unified patient record (UPR) is introduced in chapter two which also contains a definition. Other concepts discussed include evidence-based medicine and its application in evidence-based practice. The use of modern technology in the field of record keeping is the subject of a chapter which also contains a definition. The final chapter is a clear example of a unified patient record covering over thirty pages. Citates numerous references.

Source: HMIC

59. Integrated Clinical Record for the planning, management, evaluation and quality control of the healthcare services [Italian] La cartella multidisciplinare come strumento per l’integrazione professionale


Citation: Monaldi Archives for Chest Disease, December 2002, vol./is. 58/3(256-264),
**Publication Date:** December 2002

**Abstract:** This paper presents a project for the development and implementation of an Integrated Clinical Record combining data on medical, nursing, and physiotherapeutic treatment for the planning, management, evaluation and quality control of the healthcare services provided to inpatient patients in the public healthcare zone of ASL 3 Genovese, P.O. Ponente. The project arose from the awareness that the clinical documentation in use presented shortcomings in terms of both the low visibility of the nursing services provided and the fact that it limited significantly the possibility of planning, programming and evaluation of interventions. Moreover healthcare professionals were obliged to report the same data on different documents (clinical record, nurse's diary, physiotherapist's record), resulting in a lack of continuity to the patient history and fragmenting the evaluative and planning particulars of the individual healthcare professionals. The development and implementation of a single unified instrument for data collection and elaboration, treatment planning and outcome evaluation gives visibility to the work of the professionals and improves the quality of the services provided to healthcare users. Furthermore it avoids the dispersion and repetition of data on different documents. This paper analyzes the present norms, the context and the process of identifying a conceptual reference model. The methodology followed for the organization of the pre-training meetings with the personnel involved, the training intervention on the personnel, and the result of the elaboration of data collection forms and forms for care planning are described. Experimentation of the data collection and care planning forms is at present underway, with a critical review of the instruments utilized at three months following the start of experimentation. This control will test, in the clinical records viewed, the evidence of the care plan, in particular as regards the nursing and physiotherapeutic care, the visibility of the services rendered in the clinical care diary and the reliability of the system of weighing the care needs and the results of the intervention.

**Source:** EMBASE

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60. **Creating an integrated care record from primary, community and therapy systems.**

**Author(s):** Monk I

**Citation:** British Journal of Healthcare Computing & Information Management, 01 October 2002, vol./is. 19/8(38-39), 17494044

**Publication Date:** 01 October 2002

**Source:** CINAHL

**Full Text:** Available in print at Pilgrim Hospital Staff Library

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61. **Integrated clinical record: Innovative aspect in patient management [Italian]**

**Caratella clinica integrata: Documento unico per competenze diverse**

**Author(s):** Gullace G., Damaschi V., Carbone C., Mancuso A., Fouladvand F., Buzzella E., Ferrari F.

**Citation:** Monaldi Archives for Chest Disease, September 2002, vol./is. 58/2(107-115), 1122-0643 (Sep 2002)

**Publication Date:** September 2002

**Abstract:** Technological and scientific development and changes in the health system have led to modifications and greater complexity in health documents and clinical records, without there being at the same time definition of guidelines on their correct compilation and formulation. The present study was designed to develop a single Integrated Clinical Record that combines, on the one hand, data of all medical, nursing and technical interventions and, on the other, involves the patient in all decisional processes of diagnosis and treatment during the hospitalization period. All phases of the project related to development of the Integrated Clinical Record are discussed. The data of 240 new clinical records regarding patients admitted consecutively over a period of 6 months are reported. The results show a progressive reduction of compilation errors and an improved
management of the patient's clinical course. The innovative aspects of the new clinical record are discussed, with particular reference to the system of quality management, within which context the clinical record has to function, and to the modalities of check, audit and improvement.

Source: EMBASE

62. The Central Hampshire Electronic Health Record Pilot Project.
Author(s): Sanderson, Hugh
Citation: Health Summary, 2002, vol./is. xix/10(13-14) (October 2002)
Publication Date: 2002
Abstract: This article discusses the legal and organisational issues involved in a project to link existing electronic records in health and social services into a single electronic health record. [BRD]
Source: HMIC

63. Care pathways: integrated clinical record or management information tool?
Author(s): Bond, S., Balogh, R., McKeever, M.
Citation: Journal of Integrated Care Pathways, 2001, vol./is. 5/2(54-63), 1473-2297 (August 2001)
Publication Date: 2001
Abstract: OBJECTIVES: To compare the development and implementation of care pathways (CPs) in orthopaedic wards in six acute hospitals in England. METHOD: Comparative case studies of six English orthopaedic departments with at least twelve months' experience of CP development. Data were collected between 1992 and 1996 by interviews with clinical and managerial staff, supported by local progress reports and clinical data analyses. Two independent data collectors verified findings. RESULTS: Three principal functions for CPs were discernible: an integrated clinical record, a management information tool, and (less frequently) a clinical audit tool. However, different clinical and management staff groups perceived their functions in different ways, leading to conflicts over use of CPs. This was most pronounced regarding the clinical record and management information tool functions. Only one site had managed to use CPs effectively for all three functions. Here, CPs were integrated into strategic planning at the highest level, and considerable resources had been used to develop, introduce and maintain them. When introduced as a nursing initiative, progress towards their adoption was limited. Their development from project status to routine practice was problematic. CONCLUSIONS: The clinical evidence base for CPs remains poorly developed. When CPs were not an element of strategic planning linked to quality enhancement, supported by all types of clinicians and properly resourced, progress in implementing them was so limited that it was impossible to determine their clinical or cost-effectiveness. Without adequate conceptualisation and strategic support, CPs risk becoming a time-wasting administrative system. 2 tables 36 refs. [Abstract]
Source: HMIC

64. Delivery of high-quality care depends on an integrated electronic medical record
Author(s): Binder C.
Citation: Diabetes, Nutrition and Metabolism - Clinical and Experimental, 2001, vol./is. 14/2(87-89), 0394-3402 (2001)
Publication Date: 2001
Source: EMBASE

65. Toward an integrated computerized patient record.
Author(s): Dole TR, Luberti AA
**Citation:** Journal of Ambulatory Care Management, 01 April 2000, vol./is. 23/2(27-27), 01489917

**Publication Date:** 01 April 2000

**Abstract:** Developing a comprehensive electronic medical record system to serve ambulatory care providers in a large health care enterprise requires significant time and resources. One approach to achieving this system is to devise a series of short-term, workable solutions until a complete system is designed and implemented. The initial solution introduced a basic (mini) medical record system that provided an automated problem/summary sheet and decentralization of ambulatory-based medical records. The next step was to partner with an information system vendor committed to continued development of the long-term system capable of supporting the health care organization well into the future.

**Source:** CINAHL

**Full Text:**
Available in fulltext at EBSCO Host

66. Anaesthetists' records of pre-operative assessment

**Author(s):** Simmonds M., Petterson J.

**Citation:** Clinical performance and quality health care, 2000, vol./is. 8/1(22-27), 1063-0279 (2000)

**Publication Date:** 2000

**Abstract:** The pre-operative anaesthetic records of 195 patients were analysed for the presence of 12 agreed core items of pre-operative assessment. This study showed that anaesthetists recorded 26.8 per cent of this information. In up to one-third of patients the following were recorded: smoking history, family history, gastro-oesophageal reflux, airway assessment, dental assessment, chest examination, heart-sounds and blood pressure. Previous anaesthesia, drug history and allergies were recorded in one to two-thirds of patients. Past medical history was recorded in over two-thirds of patients. With a view to improving the level of record-keeping, a formatted, pre-printed pre-operative assessment record was introduced into practice and two months later the audit was repeated. A small but non-significant improvement in record keeping was observed. An argument is made for the introduction of an interdisciplinary, unified anaesthetic pre-operative record.

**Source:** EMBASE

67. Integration of all information sources in a clinical environment.

**Author(s):** Goncalves S, Steele B, Franks C, Wilson A

**Citation:** Health Informatics Journal, 01 December 1999, vol./is. 5/4(193-199), 14604582

**Publication Date:** 01 December 1999

**Abstract:** If evidence-based medicine (EBM) is to become fully integrated with patient care then we believe it essential that reference sources must be readily available at the point of healthcare delivery and be seamlessly integrated with access to the medical record. We have employed a user-centred design approach to develop a prototype ward-based clinical workstation, which uses Web technology to provide consistency of both user and data interfaces. Two sources of information are required for our work: the first is an Electronic Patient Record (EPR); the second is the reference material. As a first stage towards a clinical workstation to support EBM, the most commonly required sources of reference material were identified using semi-structured interviews. A first prototype system to evaluate the potential for a workstation to support EBM was constructed by developing a Web-based interface to the hospital's laboratory Results Reporting System (RRS). Links between this and the most commonly used reference sources identified in the semi-structured interviews were established. An evaluation of this prototype suggested a high acceptability of both the user interface and of the concept of a clinical workstation which allows access to both patient specific and reference data.

**Source:** CINAHL
68. **Primary health care records: an integrated approach.**

**Author(s):** Clark DJ, Mooney G

**Citation:** Nursing Times, 21 April 1999, vol./is. 95/16(48-50), 09547762

**Publication Date:** 21 April 1999

**Abstract:** The extended primary health care team is expected to achieve the government’s vision of an integrated service for patients. Key to this vision is an integrated record-keeping system, integrating GP and community nursing functions.

**Source:** CINAHL

**Full Text:** Available in print at Grantham Hospital Staff Library

69. **Attitudes towards, and utility of, an integrated medical-dental patient-held record in primary care**

**Author(s):** Jones R., McConvill e J., Mason D., Macpherson L., Naven L., McEwen J.

**Citation:** British Journal of General Practice, 1999, vol./is. 49/442(368-373), 0960-1643 (1999)

**Publication Date:** 1999

**Abstract:** Background. The need for closer coordination between primary care medical and dental services has been recognized. Aim. To assess the attitudes of general medical practitioners (GMPs), general dental practitioners (GDPs), and patients to an integrated medical-dental patient-held record (integrated medical-dental PHR); to examine patients’ use of these records, and the utility of the records for doctors and dentists. Method. A three-phase study was carried out: (1) postal survey of GMPs and GDPs; (2) randomized trial of patients, using postal questionnaires before and one year after the issue of integrated medical-dental PHRs to cases; (3) assessment by doctors and dentists of anonymized integrated medical-dental PHRs from this trial. The study was carried out in medical and dental practices in affluent and deprived areas in Greater Glasgow Health Board. Two hundred and thirteen GMPs, 183 GDPs, and 369 patients registered with GMPs and GDPs were surveyed. Eighteen GDPs and GMPs assessed the integrated medical-dental PHRs. Results. Eighty per cent of dentists had contacted a doctor and 16% of doctors had contacted a dentist in the previous three months; 87% of dentists and 68% of doctors thought an integrated medical-dental PHR would be of some use. Twenty-one per cent of dentists and 85% of doctors had practice computers. Most patients wanted to be able to see and read their own records. Twenty-four per cent of patients said there were mistakes and 30% noticed omissions in the integrated medical-dental PHR issued. Experience of having an integrated medical-dental PHR made patients more positive towards the idea of having a patient-held record and being able to check the accuracy of records. Integrated medical-dental PHRs contained important information for half the GDPs and one-third of the GMPs. Conclusion. Both professionals and patients have reasonably positive attitudes towards the use of patient-held records. Among patients, the experience of having the integrated medical-dental PHR led to greater enthusiasm towards the idea. Dentists in particular would benefit from the transfer of information from doctors, but better methods are needed to ensure that patients take the integrated medical-dental PHR with them. Given the current lack of ability to easily produce an integrated medical-dental PHR, further examination of the routine issue of a copy of their medical summary, by GMPs, to all patients would be worthwhile.

**Source:** EMBASE

**Full Text:** Available in fulltext at National Library of Medicine

71. **The implementation of a new parallel child health record**

**Author(s):** Knowles, R, Blackburn, M, Zahir, M, Russell, M, Carrier, A

**Citation:** Child Care Health and Development, 1999, vol./is. 25/4(253-265), 0305-1862 (Jul
Publication Date: 1999

Abstract: After a decade of research, the parent-held Personal Child Health Record was introduced in some parts of the United Kingdom in 1991, coinciding with the enforcement of the Children Act 1989. It was designed as the main record of a child's health and development, to be used until adulthood and to be held by parents. Several Health Care Trusts have since discovered a need to maintain parallel records in the best interests of children. Barnet introduced the `Joint Professional Record' in 1995 for selected children, such as children on the Child Protection Register. The Joint Professional Record (JPR) is a single, clinic-held, parallel record for multidisciplinary use. The authors undertook a programme of audit and staff seminars to develop and evaluate use of the JPR. The authors discuss, below, the impact of this record on professional working relationships and consider the implications of its use as a confidential record and within our policy of working in partnership with parents. In the authors experience, the JPR has proved a useful adjunct to clinical supervision in the arena of Child Protection and is appropriately used for children in need of protection and those with `special needs'. Cites 11 references. [Journal abstract]

Source: HMIC

72. Primary health care records: an integrated approach

Author(s): Clarke, June, Mooney, Gail

Citation: Nursing Times, 1999, vol./is. 95/16(48-49), 0954-7762 (Apr 21 1999)

Publication Date: 1999

Abstract: The extended primary health care team is expected to achieve the government's vision of an integrated service for patients. Key to this vision is an integrated record keeping system, integrating GP and community nursing functions. Cites 10 references. [Journal abstract]

Source: HMIC

Full Text:
Available in print at Grantham Hospital Staff Library

73. Integrated record keeping as an essential aspect of a primary care led health service.

Author(s): Rigby M, Roberts R, Williams J, Clark J, Savill A, Lervy B, Mooney G

Citation: BMJ: British Medical Journal, 29 August 1998, vol./is. 317/7158(579-582), 09598146

Publication Date: 29 August 1998

Source: CINAHL

Full Text:
Available in fulltext at National Library of Medicine
Available in fulltext at Highwire Press

74. Forming an integrated documentation system.

Author(s): Krause CR, Westdorp JM, Coonen DA, Jenks DL

Citation: Nursing Management, 01 August 1996, vol./is. 27/8(25-26), 07446314

Publication Date: 01 August 1996

Abstract: A new documentation system changed not only the pieces of paper people write on, but also the way they deliver patient care. The patient record integrated all disciplines' care plans, assessments, flow sheets and Kardex into one document.

Source: CINAHL

Full Text:
75. Care planning as a strategy to manage variation in practice: from care plan to integrated person-based record.

Author(s): Hoy JD, Hyslop AQ

Citation: Journal of the American Medical Informatics Association, 01 July 1995, vol./is. 2/4(260-266), 10675027

Publication Date: 01 July 1995

Abstract: This article begins with a summary of the trend toward a person-based health record, and the need to integrate data from a variety of sources to achieve this. A project is described that demonstrated problems with the structure of nursing care plans. These problems affected the ability to integrate care plan data into a clinical database capable of analysis to link control of process with clinical outcome. A second project is described that focused on the development of data sets holding higher-level descriptions suitable for the maintenance of a person-based record, but at a summarized level and with no clinical detail. Finally, a prototype care planning system is described that, while maintaining the data required by the Nursing Process, was more flexibly structured to support analysis and hierarchical levels of description.

Source: CINAHL

Full Text:
Available in fulltext at National Library of Medicine

76. Evaluating the impact of structured text and templates in ambulatory nursing.

Author(s): Crist-Grundman D, Douglas K, Kern V, Gregory J, Switzer V

Citation: Proceedings - the Annual Symposium on Computer Applications in Medical Care, 1995(712-6), 0195-4210;0195-4210 (1995)

Publication Date: 1995

Abstract: This evaluation looks at the use of templates for entering structured text nursing notes that generate both a legal text note that is the chart record and an underlying coded form of the note to support analysis and research. This study reflects the first phase of a prototype project of an integrated, computerized health record. Templates are notes that have been prewritten using a standard clinical vocabulary. Templates can be used as the basis of a new clinical note and can be either signed unchanged or modified to represent variations in clinical presentation. The prototype setting is a Primary Care clinic where both physicians and nurses are using the computer to enter clinical notes. In the prototype clinic team, nursing utilized the CPR for 100% of all documentation from day one. Use of templates was found to be the most frequent method of initiating a note.

Source: MEDLINE

77. Editorial: integrated patient records: another move towards quality for patients?

Author(s): Williams, J. G., Rigby, M. J., Roberts, R.

Citation: Quality in Health Care, 1993, vol./is. 2/2(73-74), 0963-8172 (June 1993)

Publication Date: 1993

Abstract: The authors discuss how medical and health records could be improved for patients as health care becomes more multidisciplinary. One way of achieving this is by integrated records. There are ethical and managerial issues to be addressed if integrated patient records are to comprise a complete health and illness history. These include who will own and who will manage the integrated record, who will be allowed to enter which facts and opinions, and what rules will govern levels of access and confidentiality of data. 21 refs. [JG-L]
78. Multidisciplinary approach to improving documentation of medications used during surgical procedures.

Author(s): Donnelly AJ

Citation: American Journal of Hospital Pharmacy, April 1989, vol./is. 46/4(724-8), 0002-9289;0002-9289 (1989 Apr)

Publication Date: April 1989

Abstract: A multidisciplinary approach to improving medication documentation in the operating room (OR) of a 350-bed teaching hospital is described. A committee composed of the OR pharmacy supervisor, the assistant director of nursing in charge of the ORs, and a review coordinator from the auditing department developed a medication accountability system for the OR. The system consisted of a medication use record created by the pharmacy member of the committee for each of the hospital's two ORs (main OR and eye and ear infirmary OR). The nonsterile nurse in each OR suite would complete these forms by placing check marks next to the names of the medications used. A separate medication use record was created by the chief perfusionist for use in cardiopulmonary bypass cases; this form would be completed by the perfusionist at the end of each major heart case. Once the forms were approved by the form committee, inservice education programs were conducted for nursing and perfusion staff members; the system was implemented in both OR areas in November 1986. Errors made in completing these forms were addressed by further inservice education and individual instruction. The new accountability system was effective in improving medication documentation in the OR. Immediately after implementation of the system, 83% of medications were accounted for on the forms; after six months that figure was 90%. Before the system was implemented, only 23% of patient charts reviewed contained no errors in documentation; after six months that figure had improved to 71%. The improved medication documentation allowed for more consistent collection of the assessed pharmacy charges on bills audited by third-party payers. (ABSTRACT TRUNCATED AT 250 WORDS)

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79. Integrated computerized records provide improved quality of care with little loss of privacy


... almost anyone with a white laboratory coat (at least in our hospital) can walk to a floor, pull a patient record, and review the ... nurses, intensive care, laboratory, radiology, phar- of sources in a computerized medical record have ... have found that integrated data from a wide variety ..

80. Meeting clinician information needs by integrating access to the medical record and knowledge resources via the Web


... would permit access to either a provider panel or a single patient's record, and more ... The focus of the second phase was creating the single integrated MINDscape interface based ... by permitting them to easily access their next appointment's medical record (particularly important ...
81. Using electronic medical record data for clinical workflow and analysis: A single center experience

M Wagner, B Collins - Journal of Critical Care, 2004 - Elsevier
... common data presentation issues, and the need to integrate data even when systems are not integrated. ... alternate data presentations were available on workstations that did not have the electronic medical record product or ... The clinic ambulatory patient record used another. ...

82. The barriers to electronic medical record systems and how to overcome them

CJ McDonald - Journal of the American Medical Informatics ..., 1997 - jamia.bmj.com
... are legion (Table 2). These many different and cubbyholed systems present an enormous entropy barrier to the joining of patient data from many source systems in a single EMR. ... Abstract/FREE Full text[: Fries J. . Alternatives in medical record formats ... Unified Medical Language ...

83. Building a computer-based patient record system in an evolving integrated health system

L D Grandia, TA Pryor, DF Willson, RM Gardner ... - ... -based Patient Record ..., 1995 -
... We have found that integrating data from a wide variety of sources into a computerized medical record has been worth "more than the sum of the parts." Figure 3 is a a ... 32 CHAPTER 1 Building a Computer-based Patient Record System in an Evolving Integrated Health System ...

84. Electronic medical record systems at academic health centers: advantages and implementation issues

SM Retchin, RP Wenzel - Academic Medicine, 1999 - journals.lww.com
... Most cither have the components for an integrated delivery system or have already created one. ... 3. McDonald CJ. The barriers to electronic medical record systems and how to overcome them. ... The Computer-Based Patient Record: an Essential Technology for Health Care. ...

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85. Beliefs of Ambulatory Care Physicians about Accuracy of Patient Medication Records and Technology-Enhanced Solutions to Improve Accuracy


The continuing problem of inaccurate medication records and resultant harm from medication errors has prompted the Institute of Medicine and others to encourage information technology (IT) solutions to improve medication list accuracy. There are few studies on how ambulatory care documentation contributes to medication list inaccuracies and medication reconciliation failures.

86. Improving safety with information technology


This article analyses what is known about the role and effect of information technology with respect to safety and considers the implications for medical care, research and policy, under the headings: ways that information technology can reduce errors; improving communication; providing access to information; requiring information and assisting with calculations; monitoring; decision support; rapid response to and tracking of adverse events; medication safety and the prevention of errors; summary of approaches to prevention; barriers and directions for improvement; conclusions