

# Evidence-Based Medication Safety Quality Improvement Programs and Strategies for Critical Access Hospitals

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## Purpose of the Project

This report examines evidence-based medication safety Quality Improvement (QI) programs and strategies that could be implemented in Critical Access Hospitals (CAHs).

## Background

Hospital QI programs to improve medication safety management focus on identifying medication safety risks and prevention of medication errors. Many patient safety and medication safety initiatives were originally motivated by the seminal Institute of Medicine report *To Err is Human* (Kohn 1999).

Over the past decade, medication safety has gained emphasis as a major health issue via numerous high-profile safety events (Killbridge 2002). It is estimated that adverse drug events (ADE) occur in 6.5% to more than 20% of hospitalized patients (Bates 1995, Classen 1991, Rozich 2003). Although many of these are avoidable, there is disagreement among researchers regarding which types of issues have the greatest impact on medication safety as well as the degree to which those issues are preventable (Classen 2003).

Medication safety is an important focus area in the Medicare Beneficiary Quality Improvement Project (MBQIP). The Federal Office of Rural Health Policy (ORHP) created MBQIP specifically to improve the quality of care for Medicare beneficiaries served by CAHs. An MBQIP Phase 3 quality measure is the percent of medication orders that are directly-entered (Computerized Prescriber Order Entry, or CPOE) or verified by a pharmacist within 24 hours for patients admitted to a CAH as an inpatient or a swing bed patient.

As part of its accreditation process, the Joint Commission has adopted comprehensive medication safety quality standards, which are described in the Comprehensive Accreditation Manual for Critical Access Hospitals (Joint Commission 2013). However, only 30% of the 1,328 CAHs are accredited by the Joint Commission (Casey 2011).

## Approach

Our approach combined an extensive literature review with a survey of State Flex Coordinators. We reviewed and synthesized articles in peer-reviewed healthcare journals and reports from a variety of public and private organizations which were focused on QI programs and strategies promoting inpatient medication safety – particularly those which were found to be effective in CAHs and small rural hospitals. We also identified programs and strategies that hold promise for

## Key Findings

- Sixteen of eighteen states surveyed have implemented projects which address medication safety in Critical Access Hospitals, and 30% of the 616 CAHs in those states have participated (or are participating) in those projects.
- All states that had implemented medication safety projects reported that the projects were successful in improving medication safety.
- The evidence indicates that Critical Access Hospitals can improve medication safety via five strategies:
  1. maintain adequate pharmacist and nurse staffing,
  2. improve nurses' workflow,
  3. adopt effective medication reconciliation strategies,
  4. implement appropriate technology (telehealth), and
  5. foster a culture of accountability that values quality improvement.

adoption in the small rural hospital environment.

To identify additional QI programs and strategies that have not been documented in the literature, we surveyed state Flex Coordinators about medication safety activities in the CAHs within their states. The survey was administered via the internet and by phone: 18 Coordinators completed the survey; their states collectively include 616 CAHs (46% of CAHs nationwide). One of the states had multiple informants. The responding states included: Florida, Illinois, Indiana, Kentucky, Michigan, Minnesota, Mississippi, Montana, Nebraska, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Tennessee, Utah, Washington, and West Virginia.

## Results

Of the 18 states that completed our survey, 12 reported having medication safety projects, including 10 that had been active for more than a year and two projects that were completed. Two more states were planning projects. Project goals provided by the responding states vary but include the following: increase event reporting for medication errors, improve medication safety culture and infrastructure generally, identify environmental issues that could lead to a medication error, reduce patient harm from specific commonly-used medications, and/or to educate providers about medication safety.

Eight responding states specified ways in which medication safety projects aim to measure their progress. The measures cited most often: numbers of medication errors, numbers of hospitals with active medication safety programs, numbers of hospitals with medication error reporting systems, and the presence or absence of safety protocols for specific medications. One responding state measured whether or not patient discharge instructions included listing medications. A project that facilitates advisory visits from project staff at participating hospitals tracks the number of hospitals visited, total visits, immediate issues identified during advisor visits, whether or not an advisor report was provided to a hospital following a visit, the number of advisor report items that result in board (quality, hospital, or other) recommendations and improvements, and whether or not hospitals complied with recommendations for improvement.

The nature of the projects varied: nine responding states located at least one project in inpatient facilities, three in outpatient facilities, two in emergency departments, one in clinics, and four in other locations. Nine respondents reported that their states' projects focused on medication

administration safety, prescribing safety, and dispensing safety; and projects in seven states focused on medication reconciliation. Projects in four states provided medication education – all four of those provided education for nursing staff, three also provided education for prescribing staff, two for dispensing staff, and one for patients.

Participants included nurses (identified by 9 respondents), pharmacists (8 respondents), physicians (5 respondents), administrative staff (5 respondents), nurse practitioners and physician assistants (4 respondents), and quality improvement (QI) staff (2 respondents).

Results were positive and encouraging: 10 responding states reported that the projects in their state were successful in improving medication safety. Three cited a significant increase in the implementation of medication safety protocols at hospitals within their states, two cited an increase in the reporting of adverse drug events, and two others pointed out that medication safety programs had raised awareness of relevant issues and/or led to systematic reviews and improvements of existing protocols. One respondent reported that state-level projects led to the establishment of a “non-punitive environment” with respect to reporting medication safety issues/events and also increased the investment in and utilization of pharmacy HIT among participating facilities. Two cited very specific outcomes: in one case, medication safety projects resulted in an increase of facility-approved protocols and a decrease in potential adverse drug events for Coumadin, heparin, insulin, narcotics, and sedatives. Another respondent stated that numerous serious safety events have been avoided as a result of a medication safety project.

These survey findings were generally supported by the peer-reviewed literature. Contextualizing the key findings of published research with reports from state and national organizations working on medication safety issues and our survey of State Flex Coordinators, we have identified five strategies that CAHs can pursue to improve medication safety:

1. maintain adequate pharmacist and nurse staffing,
2. improve nurses' workflow,
3. adopt effective medication reconciliation strategies,
4. implement appropriate technology (telehealth), and
5. foster a culture of accountability that values quality improvement.

The evidence supporting these strategies, as well as a list of several resources and tools that could be useful for CAHs

wishing to improve medication safety, follows.

### Strategies for CAHs to improve medication safety:

*Ensure adequate pharmacist staffing, either in person or via telepharmacy.*

Rural hospitals have generally not been able to ensure pharmacist staffing due to financial reasons or lack of adequate trained personnel (DHHS 2000).

- The recent AHRQ Making Health Safer II report encourages the use of clinical pharmacists to reduce adverse drug events (Shekelle 2013).
- Pharmacist staffing has been shown to be important in the areas of medication preparation, cross checking of laboratory values, monitoring of look-alike and high-risk medications and preventing ADE's (Classen 2003, Pedersen 2012, Bond 2002).
- Research in best practices in medication safety in rural hospitals has demonstrated the importance of pharmacist staffing (Jones 2004, Stevenson 2004, Casey 2006).
- Active pharmacist participation in hospital committees that address medication safety is significantly related to implementation of four key medication safety practices: a high alert drug list, a do not use abbreviation list, using two identifiers for administering drugs and having two independent checks for high alert medication dosages (Casey 2006).
- Telepharmacy has been used by rural hospitals as a way to alleviate inadequate pharmacist staffing (Stratton 2008, Cole 2012, Garrelts 2010, Lordan 2002, Keays 2002, Woodall 2004, Boon 2007, Peterson 2007, Casey 2010, Wakefield 2010). Telepharmacy guidelines have been developed to achieve this (Thompson 2010).

*Maintain adequate nurse staffing and improve nursing workflow.*

- Nurse staffing ratios have been shown to influence the number of errors in hospitals (Needleman 2002).
- Nurses' workflow is also an important factor in ensuring medication safety during administration and monitoring of patients (Westbrook 2010, Pape 2005).

*Adopt effective medication reconciliation strategies.*

- The process of effective medication reconciliation involves comparison of a patient's current medication regimen against a physician's admission, transfer, or discharge orders to identify discrepancies.
- Medication reconciliation combines the need for patient information and expert review of medications, interactions, and side-effects. There are frequent errors in this area during transitions of care, with 35% to 67% of patients having at least one discrepancy in this area (Gleason 2004, Gleason 2010, Tam 2005).
- The recent AHRQ Making Health Safer II report encourages medication reconciliation, particularly during transitions, to reduce adverse drug events (Shekelle 2013).
- Study data show that specific attention to effective medication processes, such as pharmacist-led medication review, reconciliation and counseling, taking accurate medication histories (particularly in older patients with a large number of medications), clearly defining roles and building care partnerships, and use of a discharge survey can detect and avert many medication discrepancies, potentially avoiding a large number of adverse drug events and related costs for care of affected patients (Kripalani 2007, Schippner 2006, Gleason 2004, Gleason 2010, Greenwald 2010, Whittington 2004, Pronovost 2003, Boockvar 2003, Bates 1997).

*Implement appropriate technology.*

- The adoption of appropriate technology in storing, administering, and monitoring medications has enhanced medication safety. Pertinent technology includes better patient identification (improved wristbands), medication storage (radiofrequency identifiers), computerized decision support (CDS) systems that caution for high-risk medications, and surveillance systems that allow prompt detection of adverse events (Peris-Lopez 2011, Sakowski 2008, Teich 2005, Classen 1991, Kilbridge 2006).
- A network collaboration of CAHs with a rural referral hospital to implement HIT-based medication safety practices may be an effective strategy for CAHs

(Wakefield 2010).

- Various aspects of HIT, including CPOE, pharmacist access to laboratory data, and enhanced ability to perform medication reconciliation have been shown to improve medication safety (Ohsfeldt 2005, Hagland 2011, Karowski 2002, Kaushal 2002, Kaushal 2003, Moore 2011).
- Technology alone does not guarantee medication safety. Staff buy-in is imperative: studies in large hospitals showed that nurses developed informal workarounds after technology implementation (Wulff 2011, Hurley 2007).

*Create an environment of quality.*

- As in other areas of quality improvement, creating an improvement-oriented environment is vital to achieving medication safety (Branowicki 2003, Classen 2003).
- Voluntary reporting of medication errors is shown to be dependent on pharmacist staffing and support

(Jones 2004).

- An effective quality environment includes both appropriate organizational support (Vogus 2007, Fogerty 2006, Winterstein 2006) and the organization's ability to learn from teams (Moore 2011, Wulff 2011).
- Perhaps most important, a hospital of any size must create an environment that supports and encourages non-punitive reporting (Voelker 2001, Santamour 2009).

### **Conclusion**

Despite the fact that numerous studies examine and evaluate ways to improve medication safety, few do so specifically with respect to CAHs. More research is clearly needed, as is more reporting of tools, outcomes, and concerns related to medication safety enhancement projects with CAHs; however, reports from State Flex programs indicate that CAHs are finding useful tools. There is also evidence that working collaboratively can help CAHs improve medication safety and reduce the frequency of adverse drug events.

### **How can State Flex Programs help CAHs improve medication safety outcomes?**

- Encourage CAHs to use the evidence-based programs, tools, and resources highlighted in this policy brief.
- Provide technical assistance and support to help CAHs implement evidence-based QI activities.
- Facilitate the comparison of QI practices among CAHs.
- Foster collaborative relationships between CAHs and QIOs.
- Support CAHs as they participate in local or national medication safety initiatives.

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## MEDICATION SAFETY TOOLS AND RESOURCES FOR CRITICAL ACCESS HOSPITALS

### **Institute for Safe Medication Practices (ISMP)**

*ISMP Medication Safety Self-Assessment*: the 2011 ISMP Medication Safety Self-Assessment® for Hospitals is designed to heighten awareness of distinguishing characteristics of a safe hospital medication system. The self-assessment is divided into ten key elements that significantly influence safe medication use. Each element is defined by one or more core characteristics that further define a safe medication use system. Each core characteristic contains individual self-assessment items to help you evaluate your success with achieving that characteristic. Explicit instructions on how to complete the assessment are included. Available at <http://www.ismp.org/selfassessments/default.asp>. Many additional ISMP resources (webinars, paper tools, guidelines, and links to other websites) are free and available at <http://www.ismp.org/Tools/default.asp>.

### **Agency for Healthcare Research and Quality (AHRQ)**

*Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation*: this toolkit incorporates the experiences and lessons learned by health care facilities that have implemented MATCH strategies to improve their medication reconciliation processes for patients as they move through health care settings. Funded by AHRQ, the toolkit is AHRQ Publication No. 11(12)-0059. Available at: <http://www.innovations.ahrq.gov/content.aspx?id=3360>

### **Institute for Healthcare Improvement (IHI)**

*IHI Medication Safety Resources*: practical resources for administration, dispensing, reconciliation, storage, high-alert medication, plus look-alike and sound-alike medications in hospital and outpatient settings. Available at: <http://www.ihl.org/search/pages/results.aspx?k=medication%20safety>

*IHI's "Protecting 5 Million Lives From Harm" campaign*: includes strategies to 1) prevent harm from high-alert medications, starting with a focus on anticoagulants, sedatives, narcotics, and insulin; and 2) prevent Adverse Drug Events (ADEs) by implementing effective medication reconciliation processes. Available at: <http://www.ihl.org/offerings/Initiatives/PastStrategicInitiatives/5MillionLivesCampaign/Pages/default.aspx>

### **American Society of Health System Pharmacists (ASHP)**

The ASHP Small and Rural Hospital Resource Center has links to guidelines, policies, best practices, and tools that are relevant to small rural hospitals. <http://www.ashp.org/smallhospitals>

### **Rural Assistance Center (RAC)**

RAC, an online library devoted entirely to rural health and human services topics, is funded by the Office of Rural Health Policy and provides free access to resources, tools, news, success stories, funding opportunities, contacts, and more. MLS-credentialed librarians with subject expertise in rural health topics curate more than 80 topic guides relevant to CAHs and the five strategies outlined in this brief:

- Critical Access Hospitals Topic Guide: <http://www.raconline.org/topics/hospitals/cah.php>
- Pharmacy and Prescription Drugs Topic Guide: <http://www.raconline.org/topics/pharmacy/>
- Telehealth Topic Guide: <http://www.raconline.org/topics/telehealth/>
- Networking and Collaboration Topic Guide: <http://www.raconline.org/topics/networking/>
- Health Care Quality Topic Guide: <http://www.raconline.org/topics/quality/>

RAC also maintains a collection of rural success stories and lessons learned, designed to facilitate collaboration and promote best practices. Organizations are encouraged to submit stories for addition to the database; medication safety initiatives in particular: <http://www.raconline.org/success/suggestion.php>

## References

- ASHP. ASHP Guidelines on the safe use of automated dispensing devices. *Am J Health Syst Pharm*. 2010;67(6):483-90.
- Auerbach AD, Landefeld CS, Shojania KG. The tension between needing to improve care and knowing how to do it. *N Engl J Med*. 2007; 357(6):608-613.
- Bates DW, Cullen DJ, Laird N, et al. Incidence of adverse drug events and potential adverse drug events: implications for prevention. *JAMA*. 1995;274:29-34.
- Bates DW, Spell N, Cullen DJ, et al. The costs of adverse drug events in hospitalized patients. *JAMA*. 1997;277(4):307-311.
- Bond, CA, Raehl C, Franke, T. Clinical pharmacy services, hospital pharmacy staffing, and medication errors in United States hospitals. *Pharmacotherapy* 2002;22(2):134-147.
- Boockvar KS, Carlson LaCorte H, Giambanco V, et al. Medication reconciliation for reducing drug-discrepancy adverse events. *Am J Geriatr Pharm* 2006;4(3): 236-243.
- Branowicki P, O'Neill JB, Dwyer JL, et al. Improving complex medication systems: an interdisciplinary approach. *J Nurs Adm* 2003;33(4):199-200.
- Casey MM, Moscovice I. Quality improvement strategies and best practices in critical access hospitals. *J Rural Health* 2004;20(4):327-34.
- Casey MM, Moscovice I, Davidson G. Pharmacist staffing, technology use, and implementation of medication safety practices in rural hospitals. *J Rural Health* 2006;22(4):321-30.
- Casey MM, Moscovice I, Hung P, Barton B. Critical access hospital year 7 hospital compare participation and quality measure report. Flex Monitoring Team Briefing Paper No. 31. August 2012.
- Casey MM, Sorensen TD, Elias W, et al. Current practices and state regulations regarding telepharmacy in rural hospitals. *Am J Health-Sys Pharm* 2010;67(13):1085-92.
- Classen DC. Medication safety: moving from illusion to reality. *JAMA* 2003;289(9):1154-6.
- Classen DC, Pestotnik SL, Evans RS, Burke JR. Computerized surveillance of adverse drug events in hospital patients. *JAMA*. 1991;266:2847-2851.
- DHHS-Department of Health & Human Services, Health Resources and Services Administration, Bureau of Health Professions. The pharmacist workforce: a study of the supply and demand for pharmacists. Report to Congress, December 2000.
- Fogarty GJ, McKeon CM. Patient safety during medication administration: the influence of organizational and individual variables on unsafe work practices and medication errors. *Ergonomics* 2006;49(5-6):444-56.
- Gleason KM, Groszek JM, Sullivan C, et al. Reconciliation of discrepancies in medication histories and admission orders of newly hospitalized patients. *Am J Health Syst Pharm*. 2004;61:1689-1695.
- Gleason, KM., McDaniel MR., Feinglass J, et al. Results of the medications at transitions and clinical handoffs (MATCH) study: an analysis of medication reconciliation errors and risk factors at hospital admission. *J Gen Int Med*. 2010;25(5): 441-447.
- Greenwald, JL, Halasyamani L, Greene J, et al. Making inpatient medication reconciliation patient centered, clinically relevant and implementable: a consensus statement on key principles and necessary first steps. *J Hosp Med*. 2010;5, 477-485.
- Hagland M. CPOE and patient safety. *Healthcare Inf*. 2011;28(6):76-8.
- Hurley AC, Bane A, Fotakis S, et al. Nurses' satisfaction with medication administration point-of-care technology. *J Nurs Adm* 2007;37(7-8):343-9.
- Joint Commission Comprehensive Accreditation Manual for Critical Access Hospitals. 2013. Available at <http://store.jcinc.com/2013-comprehensive-accreditation-manual-for-critical-access-hospitals-camcah/>
- Jones K, Cochran G, Hicks R, et al. Translating research into practice: voluntary reporting of medication errors in critical access hospitals. *J Rural Health*. 2004;20(4): 335-343
- Karow HS. Creating a culture of medication administration safety: laying the foundation for computerized provider order entry. *Jt Comm J Qual Improv* 2002;28(7):396-402.
- Kaushal R, Bates DW. Information technology and medication safety: what is the benefit? *Quality & Safety in Health Care* 2002;11(3):261-5.
- Kaushal R, Shojania KG, Bates DW. Effects of computerized physician order entry and clinical decision support systems on medication safety: a systematic review. *Arch Intern Med* 2003;163(12):1409-16.
- Kilbridge P, Classen D. Surveillance for adverse drug events: history, methods and current issues. VHA. Irving, TX: VHA Inc; 2002. Research Series.
- Kilbridge PM, Campbell UC, Cozart HB, et al. Automated surveillance for adverse drug events at a community hospital and an academic medical center. *J Am Med Inform Assoc*. 2006;13:372-7
- Kohn LT, Corrigan JM, Donaldson MS, Eds. To err is human: building a safer health system. Washington, DC: National Academy Press, Institute of Medicine; 1999.
- Kripalani, S., Jackson AT, Schnipper, JL, et al. Promoting effective transitions of care at hospital discharge: a review of key issues for hospitalists. *Society of Hosp Med*. 2007. Published online. DOI 10.1002/jhm.228

- Moore P, Armitage G, Wright J, et al. Medicines reconciliation using a shared electronic health care record. *J Pat Safety* 2011;7(3):148-54.
- Needleman J, Buerhaus P, Mattke S, et al. Nurse-staffing levels and the quality of care in hospitals. *N Engl J Med*. 2002;346:1715-1722
- Ohsfeldt RL, Ward MM, Schneider JE, et al. Implementation of hospital computerized physician order entry systems in a rural state: feasibility and financial impact. *J Am Med Informatics Assoc*. 2005;12(1): 20-27.
- Pape TM, Guerra DM, Muzquiz M, et al. Innovative approaches to reducing nurses' distractions during medication administration. *J Contin Educ Nurs*. 2005;36(3):108-16.
- Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP national survey of pharmacy practice in hospital settings: monitoring and patient education--2009. *Am J Health-Syst Pharm*. 2010;67(7):542-58.
- Peris-Lopez P, Orfila A, Mitrokotsa A, et al. A comprehensive RFID solution to enhance inpatient medication safety. *Int J Med Inf*. 2011;80(1):13-24.
- Pronovost P, Weast B, Schwarz M, et al. Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care*. 2003;18(4):201-205.
- Rozich JD, Haraden CR, Resar RK. Adverse drug event trigger tool: a practical methodology for measuring medication related harm. *Qual Safety Health Care* 2003;12(3):194-200.
- Sakowski J, Newman JM, Dozier K. Severity of medication administration errors detected by a bar-code medication administration system. *Am J Health-Syst Pharm*. 2008;65(17):1661-6.
- Santamour B, Bush H. Pursuing excellence: AHA initiative demonstrates value of teamwork in improving safety. *Mater Manag Health Care* 2009;18(8):14-7.
- Schillig J, Kaatz S, Hudson M, et al. Clinical and safety impact of an inpatient pharmacist-directed anticoagulation service. *J Hosp Med (Online)* 2011;6(6):322-8.
- Schnipper JL, Kirwin JL, Cotugno MC, et al. Role of pharmacist counseling in preventing adverse drug events after hospitalization. *Arch Intern Med*. 2006;166:565-571.
- Shojania KG, Grimshaw JM. Evidence-based quality improvement: the state of the science. *Health Aff*. 2005;24(1):138-150.
- Shekelle PG, Wachter RM, Pronovost PJ, et al. Making health care safer II. Comparative Effectiveness Review No. 211. AHRQ Publication No. 13-E001-EF. Rockville, MD: Agency for Healthcare Research and Quality. March 2013. [www.ahrq.gov/research/findings/evidence-based-reports/ptsafetyuptp.html](http://www.ahrq.gov/research/findings/evidence-based-reports/ptsafetyuptp.html).
- Stevenson KB, Samore M, Barbera J, et al. Pharmacist involvement in antimicrobial use at rural community hospitals in four Western states. *Am J Health-Syst Pharm*. 2004;61(8): 787-792.
- Tam VC, Knowles SR, Cornish PL, et al. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *Can Med Assoc J*. 2005;173(5): 510-515.
- Teich JM, Osheroff JA, Pifer EA, et al. Clinical decision support in electronic prescribing: recommendations and an action plan: report of the joint clinical decision support workgroup. *J Am Med Inform Assoc*. 2005;12: 365-76.
- Thompson B, Conrad G, Gum MO, et al. ASHP guidelines on remote medication order processing. *Am J Health-Syst Pharm*. 2010;67(8):672-7.
- Voelker R. Hospital collaborative creates tools to help reduce medication errors. *JAMA* 2001;286(24):3067-9.
- Vogus TJ, Sutcliffe KM. The impact of safety organizing, trusted leadership, and care pathways on reported medication errors in hospital nursing units. *Med Care*. 2007;45(10):997-1002.
- Wakefield DS, Ward MM, Loes JL, et al. A network collaboration implementing technology to improve medication dispensing and administration in critical access hospitals. *J Am Med Inform Assoc*. 2010; 17: 584-587.
- Walsh KE, Landrigan CP, Adams WG, et al. Effect of computer order entry on prevention of serious medication errors in hospitalized children. *Pediatrics* 2008;121(3): e421-7.
- Westbrook JL, Woods A, Rob MI, et al. Association of interruptions with an increased risk and severity of medication administration errors. *Arch Intern Med*. 2010;170(8): 683-90.
- Whittington J, Cohen H. OSF healthcare's journey in patient safety. *Qual Manag Health Care*. 2004;13(1):53-59.
- Winterstein AG, Hartzema AG, Johns TE, et al. Medication safety infrastructure in critical-access hospitals in Florida. *Am J Health-Syst Pharm*. 2006;63(5): 442-50.
- Wulff K, Cummings GG, Marck P, et al. Medication administration technologies and patient safety: a mixed-method systematic review. *J Adv Nurs*. 2011;67(10): 2080-95.