

Provider Update

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New Medicaid Director Named

Don Gregory has been named as the new Medicaid Director of the Bureau of Health Services Financing under the Department of Health and Hospital (DHH). Mr. Gregory attended Louisiana Tech University in Ruston where he received a Bachelor of Science degree in management. He has been employed with the Department for 34 years, and has previously held the positions as Deputy Assistant Secretary in the Office of Aging and Adult Services, Deputy Medicaid Director, Director of Eligibility Field Operations and as Section Chief for Medicaid's Program Integrity Section.

In addition to his duties at DHH, Mr. Gregory served as chairman of the Centers for Medicare and Medicaid Services' Fraud and Abuse Control Technical Advisory Group for nine years having been appointed to this position by the National Association of State Medicaid Directors. He has also served as President of the National Association of Program Integrity Officials.

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Pay for Performance Providers

Pay for Performance Benchmark Changes

In order to avoid a budget deficit, the Bureau of Health Services Financing determined that changes in the initial benchmark measurement for the Immunization Pay-for-Performance Initiative (P4P) were necessary. CommunityCARE Primary Care Physicians (PCPs) receive supplemental payments when a specified percentage of linked recipients who are 24 months of age are up-to-date with their appropriate vaccine series.

Beginning February 1, 2010, the following incremental changes have been made to the initial benchmark measurement of the "up-to-date" percentages:

| Effective Date | Percentage of linked recipients age 24 months who are up-to-date with appropriate vaccine series |
|------------------------------|--|
| February 1 - March 31, 2010 | 50% - 74% |
| April 1, 2010 and thereafter | 60% - 74% |

Detailed information regarding the P4P incentive payment initiative can be found on the Louisiana Medicaid website at www.lamedicaid.com following the Pay-for-Performance link. The Emergency Rules which implemented these percentage changes can be found in the February and March 2010 issues of the Louisiana Register on the Office of the State Register's website at <http://www.doa.louisiana.gov/osr/reg/register.htm> under the Emergency Rules link.

Questions regarding these changes should be directed to the Molina (formerly Unisys) Provider Relations Unit at (800) 473-2783 or (225) 924-5040.

Elderly and Disabled Adult Waiver Providers

Proposed New Service for the Elderly and Disabled Adult Waiver Program

Contingent upon approval from the Centers for Medicare and Medicaid Services (CMS), the Office of Aging and Adult Services (OAAS) is proposing to amend one of the services currently offered under the Elderly and Disabled Adult (EDA) Waiver effective July 4, 2010. Currently, recipients of EDA Waiver may receive companion care when supervision or stand-by assistance is needed and receive Long Term - Personal Care Service (LT-PCS) when personal care assistance is needed.

The proposed new service will combine these two services to allow recipients to receive assistance with both supervision and their personal care needs through the EDA Waiver. Providers will no longer have to deal with complex service delivery, documentation, and billing issues that arise from providing separate services to the same recipient.

OAAS is committed to making this transition as seamless as possible and will begin notifying providers and EDA Waiver recipients of proposed changes prior to implementation. Providers should check the OAAS website frequently at <http://www.oaas.dhh.louisiana.gov> for further updates regarding implementation of this new service.

All Providers

Remittance Advice Corner

The following is a compilation of messages that were transmitted to providers through Remittance Advices (RA) during March and April 2010:

Attention Professional Service Providers: Global Surgery Period (GSP) Updates

It has come to Louisiana Medicaid's attention that a number of procedure codes were inadvertently omitted from our Global Surgery Policy (GSP) editing that should have been included. The system update is complete and is effective with DATE OF PROCESSING February 22, 2010, and will appear on RA's from March 2, 2010 forward. Providers may see claim denials related to the GSP (Error Codes 690 or 691) on procedure codes that previously did not receive these denials. Providers can currently view the "GSP DAY" for individual procedures codes on the Professional Services Fee Schedule found on the Louisiana Medicaid website: www.lamedicaid.com, using the "Fee Schedule" link. Further updates on GSP editing are expected to occur related to the implementation of the McKesson "ClaimCheck" claims editing product, currently scheduled for mid-May 2010. Updates related to "ClaimCheck" implementation can be viewed via the specific "ClaimCheck" link also on the Medicaid website. Providers are encouraged to visit this site frequently for the latest information on "ClaimCheck."

All Providers

Attention: Certified Nurse Midwives and OB Providers Billing Information Update: First Assistant at Surgery

Effective with date of service May 1, 2010, Certified Nurse Midwives (CNM) who perform as the "first assistant at surgery" must use the "AS" modifier to identify these services. This billing update for Certified Nurse Midwives is to provide consistence in billing for non-physician providers who perform as the first assistant in surgery. There is no change in reimbursement methodology for CNMs. Questions concerning this update may be directed to Molina (formerly Unisys) Provider Relations at (800) 473-2783 or (225) 924-5040.

Attention Hospital Providers

This is clarification on the necessity for hospitals to split bill inpatient claims:

Hospitals are required to split bill their inpatient claims when

- 1) The hospital changes ownership, or
- 2) At the end of the hospital's fiscal year, or
- 3) If total charges on the claim exceed \$999,999.99.

Hospitals have discretion to split bill their claims as warranted by other situations that may arise.

Any questions regarding this issue should be directed to Provider Relations.

Attention All Providers: 2010 HCPCS Update

The Louisiana Medicaid files have been updated to reflect the new and deleted Healthcare Common Procedure Coding System (HCPCS) codes for 2010. Refer to the Professional Services Fee Schedule on the LA Medicaid Website, www.lamedicaid.com. Claims denied due to use of the new 2010 codes prior to their addition to our system will be systematically adjusted and no action is required from providers. Appropriate editing and coverage determinations for the new codes are still underway and systematic adjustments for some previously processed claims may be necessary in the future. Please note that LA Medicaid will continue to allow the use of consultation procedure codes at this time. Also, as a part of these editing and coverage determinations, the newly created procedure code A4262 (Permanent Implantable Contraceptive Device) has been placed in non-pay status effective January 1, 2010. Providers should continue to monitor RA messages for future updates for 2010 HCPCS updates.

The 2010 "Current Procedural Terminology" manual includes information on the appropriate reporting of the new codes. It is the intent of Louisiana Medicaid that these instructions be followed. All payments are subject to post payment review and recovery of overpayments.

All Providers

Attention: Direct Service Providers - Freedom of Choice Lists

Notice to all enrolled Direct Service Providers with the following provider types: Adult Day Health Care (ADHC), EDA Waiver - Companion Services, Environmental (Home) Modifications (Environment Accessibility Adaptations), Personal Emergency Response System (PERS) and Long Term Personal Care Services (LTPCS). It is the responsibility of your agency to insure the accuracy of the Freedom of Choice Lists by updating and maintaining your agency information that is presented to users via the Provider Locator Tool (PLT). In order to access and use the PLT update feature, providers must register and obtain a valid account at www.lamedicaid.com. The PLT system can be accessed at www.dhh.la.gov/ and through a link on the OAAS website.

Attention: Outpatient Hospitals and Free-Standing ESRD Facilities H1N1 Influenza Administration

Effective with date of service October 1, 2009, Revenue code 771 (Vaccine Administration) is payable to outpatient hospitals and free-standing ESRD facilities, but only if billed with CPT code 90470 (H1N1 Immunization Administration). As the H1N1 vaccine is being supplied at no charge by the Office of Public Health (OPH) and to only those providers that previously registered with OPH, Medicaid will reimburse providers only for the administration of the vaccine. Detailed policy and a fee schedule specific to the H1N1 influenza vaccine administered by outpatient hospital and ESRD providers has been added to the "H1N1 Influenza Information" link on the home page of www.lamedicaid.com. Claims previously denied due to delay in implementation will be systematically adjusted and no action is required by providers. Providers should contact the Provider Relations unit at (800) 473-2783 or (225) 924-5040 with billing or policy questions. Questions related to the H1N1 vaccine including availability should be directed to the OPH Immunization Program at (504) 838-5300.

Online Medicaid Provider Manual Chapters

The following Medicaid Provider Manual Chapters are available on the Louisiana Medicaid website at www.lamedicaid.com under the "Provider Manual" link.

- American Indian 638 Clinics
- Dental
- Mental Health Clinics
- Mental Health Rehabilitation
- Multi-Systemic Therapy
- Personal Care Services
- Pharmacy

This list will be updated periodically as other Medicaid program chapters become available online.

Pharmacy Providers

Drug Utilization Review Committee Vacancy

The Department of Health and Hospitals is currently accepting nominations for a pharmacist opening on the **Region 4 Drug Utilization Review Committee**. The committee consists of three pharmacists and one physician who meet monthly to review clinical issues on recipient drug profiles and to send information to the medical community.

Committee members must be available to meet monthly for one to three hours and must meet all of the following requirements:

- Pharmacy degree from an accredited U.S. pharmacy school,
- Licensed to practice pharmacy in Louisiana,
- No previous sanctions from the state of Louisiana,
- Provides services to Louisiana Medicaid recipients, and
- Practices in one of the following parishes:

| | | | |
|-----------|--------------|-----------|--------------|
| Avoyelles | Bienville | Bossier | Caddo |
| Caldwell | Catahoula | Concordia | Claiborne |
| Desoto | East Carroll | Franklin | Grant |
| Jackson | LaSalle | Lincoln | Madison |
| Morehouse | Natchitoches | Ouachita | Rapides |
| Red River | Richland | Sabine | Tensas |
| Union | Vernon | Webster | West Carroll |

Nominations for the LMMIS Region Four Drug Utilization Review Committee should be submitted on the nomination form and returned with a brief resume to:

Molina: Louisiana Medicaid
8591 United Plaza Blvd., Suite 300
Baton Rouge, LA 70809
ATTN.: S. DELAVILLE

The nomination form can be downloaded from the Louisiana Medicaid website at www.lamedicaid.com under the Pharmacy link.

Louisiana Drug Utilization Review Education

Clinical Considerations for Proton Pump Inhibitor (PPI) Use

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Proton pump inhibitors are among the most frequently prescribed medications in the world, most likely due to their efficacy in reducing gastric acid and positive safety profile.¹ However, decisions to prescribe PPIs must include an assessment of patient-specific factors, such as concomitant medication use and the potential for adverse effects. Because proton pump inhibitors are used in long-term management for certain indications, these assessments become all the more important.

Interaction between Clopidogrel (Plavix®) and Proton Pump Inhibitors (PPIs)

- The prodrug, clopidogrel, is metabolized to a bioactive form by the cytochrome P450 (CYP2C19) isoenzyme. Studies have shown that patients with reduced activity of CYP2C19 due to loss-of-function polymorphism of the enzyme experience a diminished clinical effectiveness of clopidogrel.²⁻⁴
- In vitro studies have shown that the FDA-approved PPIs exhibit competitive inhibition for CYP2C19 at varying degrees of affinity by agent, which has led to the suspicion of an interaction between PPIs and clopidogrel.⁵
- The findings of several observational studies have supported the suspicion that the use of PPIs possibly alter clopidogrel's pharmacokinetics and potentially increase the risk of adverse cardiac outcomes.⁶⁻¹⁰
- Not all studies have been able to reproduce these findings as noted in an observational study by Simon, et al¹¹ and a nonrandomized study by Siller-Matual, et al.¹² Additionally, researchers that conducted a posthoc analysis of data from the PRINCIPLE-TIMI 44 and TRITON-TIMI 38 trials were not able to show that the use of PPIs is associated with increased risk of adverse clinical outcomes when used with clopidogrel or the new oral antiplatelet drug in these studies, prasugrel (Effient®).^{13,14} However, authors reported, "In our analysis, individual subgroups might have been underpowered to show an association between PPI use and risk of pharmacodynamic or clinical outcomes, if such a relation existed."¹⁵
- In a January 2009 Early Communication, the FDA recommended a thorough investigation of the potential interaction between clopidogrel and PPIs and asked healthcare providers to reevaluate the need of initiation or continuation of PPI treatment in patients taking clopidogrel.¹⁶
- In November 2009, the FDA issued a follow-up to its January Early Communication and required labeling revisions regarding the interaction. The follow-up is based on study results from the manufacturer of clopidogrel and advised prescribers AGAINST the concomitant use of clopidogrel with two specific PPIs, omeprazole and esomeprazole. According to the FDA, there is currently not enough information about drug interactions between clopidogrel and the other PPIs to advise against concomitant use.¹⁶⁻¹⁸

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- In addition to omeprazole and esomeprazole, the FDA advised AGAINST the co-administration of clopidogrel with other potent inhibitors of the CYP2C19 isoenzyme. These inhibitors include: cimetidine, fluconazole, ketoconazole, voriconazole, etravirine, felbamate, fluoxetine, fluvoxamine, and ticlopidine.¹⁷
- Figure 1 provides an excerpt from the FDA Postmarketing Drug Safety Information on the interaction.¹⁸ For the complete update, visit:
<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm190787.htm>

Figure 1. FDA Information for Healthcare Professionals: Clopidogrel-Omeprazole Interaction

Considerations for Healthcare Professionals

- The concomitant use of omeprazole and clopidogrel should be avoided because of the effect on clopidogrel's active metabolite levels and anti-clotting activity. Patients at risk for heart attacks or strokes, who are given clopidogrel to prevent blood clots, may not get the full protective anti-clotting effect if they also take prescription omeprazole or the OTC form (Prilosec OTC).
- Separating the dose of clopidogrel and omeprazole in time will not reduce this drug interaction.
- Other drugs that should be avoided in combination with clopidogrel because they may have a similar interaction include: esomeprazole (Nexium), cimetidine (which is available by prescription Tagamet and OTC as Tagamet HB), fluconazole (Diflucan), ketoconazole (Nizoral), voriconazole (VFEND), etravirine (Intelence), felbamate (Felbatol), fluoxetine (Prozac, Serafem, Symbyax), fluvoxamine (Luvox), and ticlopidine (Ticlid).
- At this time FDA does not have sufficient information about drug interactions between clopidogrel and PPIs other than omeprazole and esomeprazole to make specific recommendations about their co-administration. Healthcare professionals and patients should consider all treatment options carefully before beginning therapy.
- There is no evidence that other drugs that reduce stomach acid, such as most H2 blockers ranitidine (Zantac), famotidine (Pepcid), nizatidine (Axid), except cimetidine (Tagamet and Tagamet HB - a CYP2C19 inhibitor) or antacids interfere with the anti-clotting activity of clopidogrel. Ranitidine and famotidine are available by prescription and OTC to relieve and prevent heartburn and antacids are available OTC to relieve heartburn.
- Talk with your patients about the OTC medicines they take. Be aware that patients may be taking non prescription forms omeprazole and cimetidine.

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Possible Safety Issues Related to the Long-term Use of PPIs

For over a decade, concerns have been raised regarding the appropriateness of long-term antisecretory therapy (AST) for treatment of gastroesophageal reflux disease (GERD) symptoms, predominately with PPIs. According to studies, up to 70% of patients on chronic AST lack an indication verified endoscopically.^{19,20} Indications for long-term AST include symptomatic GERD, GI bleeding, erosive esophagitis, NSAID prophylaxis, and pathologic GI hypersecretory conditions (e.g., Zollinger-Ellison, multiple endocrine adenomas, systemic mastocytosis).²¹ Potential risks associated with prolonged and potentially imprudent use of PPIs have been investigated and are discussed below.

Nutritional Deficiency

- **Vitamin B-12:** Vitamin B-12 deficiency has been associated with PPI long-term use, yet no association has been determined between either past or short-term PPI use.²²⁻²⁴ Recent studies have produced mixed results.^{25,26} The overall body of evidence is based on case reports and small nonrandomized retrospective studies, which cannot firmly establish the association of PPI use with B-12 deficiency or the need for routine monitoring of B-12 levels.
- **Iron:** Several clinical studies have suggested that prolonged gastric acid hyposecretion might result in clinically significant iron malabsorption.^{27,28} Poor response to oral iron supplement absorption in 2 iron-deficient individuals improved after cessation of omeprazole in a published report.²⁹ One study showed that continuous treatment with omeprazole for 6 years did not cause decreased body iron stores or iron deficiency in patients with Zollinger-Ellison syndrome, suggesting that monitoring for iron deficiency is not necessary.³⁰ There is a need for long-term safety studies regarding iron deficiency in patients using PPIs for more general indications.
- **Calcium:** Increased risk of osteoporosis with AST has been speculated to be related to a reduction in absorption of calcium. However, the mechanism for increased fracture risk with AST has not been proven. Studies have demonstrated a reduction of calcium absorption with PPI use.^{31,32} Multiple studies have investigated the association between long-term PPI therapy and hip fracture, however, results are conflicting.³³⁻³⁶ Currently, there is not enough evidence to suggest all patients on long-term PPI therapy be screened for osteoporosis.³² However, there remains an urgent need to understand the effects of PPIs on calcium metabolism. It is recommended that these patients receive increased dietary calcium from food sources or calcium supplements. Supplements in the form of calcium citrate may allow greater bioavailability when acid-suppression therapy is being used and may be absorbed better than calcium carbonate regardless of whether co-administered with food. Calcium carbonate supplements taken with a meal may increase bioavailability.^{33, 37}

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Infectious Disease

- *Clostridium difficile*: There are data that link PPI use with an increase in *C. difficile* colitis³⁸⁻⁴¹ and bacterial gastroenteritis,⁴² but in each case the magnitude of risk is slight. The most recent evidence suggested only a slight association and concluded that "in settings with low rates of *C. difficile* infection (CDI), the benefit of PPI therapy outweighs the risk of developing CDI."⁴³
- Community-Acquired Pneumonia (CAP): Results from observational studies have suggested that PPI use is associated with an increased risk for developing CAP.⁴⁴⁻⁴⁶
 - The results of these studies demonstrated a temporal association between PPI use and risk for CAP, with risk being most pronounced among current users who initiated PPI therapy within the past 7⁴⁶ to 30^{44, 45} days. Of note, the study by Sarkar et al found that CAP risk was not associated with long-term PPI use.⁴⁵ Interestingly, Laheij et al observed a dose-response relationship among current users of PPIs such that persons using greater than 1 defined daily dose had a 2.3 times greater risk of CAP compared with past users of PPIs.⁴⁴ For this study, daily doses were defined as: omeprazole 20mg, esomeprazole 20mg, lansoprazole 30mg, pantoprazole 40mg, and rabeprazole 20mg.
 - "It should be considered that certain patients (e.g., those with pleuritic chest pain, hypothermia, systolic hypotension, tachypnea, diabetes mellitus, neoplastic disease, neurologic disease, bacteremia, leukopenia, multilobar pulmonary infiltrate) are at increased risk for developing infections and in these individuals community-acquired pneumonia may be associated with increased mortality."⁴⁷ Therefore, PPI use in these individuals and in other patient populations for whom pneumonia is often severe should be considered only when necessary and at the lowest effective dose.^{44,47}

Malignancy

- The risk of increased gastric and colon malignancy associated with long-term PPI use has been theorized due to results of animal studies, but has not been observed in humans.⁴⁸
- A study conducted by Jalving et al to determine whether PPI use contributed to fundic gland polyp development concluded the following: "Long-term (1-5 years) proton pump inhibitor use is associated with an up to fourfold increase in the risk of fundic gland polyps. Risk of dysplasia is negligible. Aetiologically, these polyps seem to arise because of parietal cell hyperplasia and parietal cell protrusions resulting from acid suppression."⁴⁹
- The FDA's Gastrointestinal Drugs Advisory Committee stated the following in the F-D-C Report ("*The Pink Sheet*"): "In the presence of [*Helicobacter pylori*] infection, data do not demonstrate that long-term antisecretory drug treatment increases the prevalence of atrophic gastritis, the prevalence of intestinal metaplasia, or the risk of developing gastric adenocarcinoma."⁵⁰ The committee also agreed that the evidence does not lead to the conclusion that "it is unsafe to treat *H. pylori*-positive patients with long-term antisecretory drugs."⁵⁰

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PPI Withdrawal

- Though past studies investigating rebound acid hypersecretion (RAHS) after cessation of PPI treatment have not provided strong supportive evidence for acid rebound,⁵¹⁻⁵³ data from a more recent, well-designed study suggested that discontinuation of PPI therapy results in acid-related symptoms.⁵⁴ This evidence raises a concern that if a patient who does not truly need a PPI reports withdrawal effects after discontinuation, the clinician might conclude that a relapse has occurred and resume PPI therapy unnecessarily.
- Future studies investigating how long RAHS symptoms persist may help guide decisions regarding the resumption of PPI therapy.
- Tapering of therapy over a 3-week period has not demonstrated an advantage over instant discontinuation for preventing RAHS.⁵⁵ Because studies have indicated that acid rebound may persist longer than 8 weeks, tapering over a longer period of time may be worthy of consideration.^{52,56}

Step-Down, Intermittent and On-Demand Therapy Strategies

- Concerns about cost, inconvenience, and/or potential adverse effects of continuous maintenance treatment using PPIs have led to the evaluation of various long-term strategies, including 'Step-Down,' 'Intermittent,' and 'On-Demand' therapy. These strategies are supported by clinical trials that have demonstrated efficacy, cost-effectiveness, and patient preference. According to a study conducted by Inadomi et al, almost 80% of patients taking a higher PPI dose could be reduced to a standard once daily dosing.⁵⁷
 - 'Step Down' therapy involves using a lower PPI dose or alternate day dosing, a less expensive PPI, or *stepping down* to an alternate therapy such as an H₂-receptor antagonist.⁵⁷ In GERD, patients taking more than once daily or high-dose PPI treatment, a *step down* to once daily or standard dose therapy should be attempted.⁵⁸
 - 'Intermittent' therapy uses repeated short courses (2-4 weeks) of AST to manage relapses. This method has been shown to be effective in about half of the patients in one study.⁵⁸
 - 'On-Demand' therapy is the administration of medication in response to symptoms followed by discontinuation after symptoms are alleviated. 'On-demand' PPI treatment may be appropriate in endoscopy-negative reflux disease.⁵⁸
- The best candidates for these strategies are patients with GERD symptoms that resolve with PPI treatment and that do not have complicated disease, such as those with esophageal stricture, Barrett's esophagus, extra-esophageal manifestations or diagnosed GERD.^{58,59}

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Conclusion

Patient safety is an important consideration in all prescribing decisions, including the potential for drug-drug interactions or the possibility of adverse effects associated with long-term treatment. These are important considerations, even for medications, such as PPIs, that are considered safe, very efficacious, and are frequently prescribed.

In light of current information, the FDA has advised against the co-administration of clopidogrel (Plavix®) and omeprazole (Prilosec®) or esomeprazole (Nexium®). Additionally, the FDA indicated that this interaction is not reduced by separation of doses. The FDA further recommended that clopidogrel and other potent CYP2C19 inhibitors should not be used together. Further studies are ongoing.

A variety of potential adverse effects related to long-term PPI use have been evaluated. While there is not sufficient evidence to establish a causal relationship, many of these observational studies have demonstrated an association between long-term PPI use and an increased risk for certain adverse effects. However, considering the number of patients using PPIs, these findings of possible risk for adverse effects warrant consideration in patient care.

PPIs are effective medications with a good safety profile; however, they should be prescribed only when clearly indicated, at the lowest effective dose, and for the shortest duration of treatment. Treatment decisions should be re-evaluated on a frequent basis. "After all, in the absence of benefit, a risk-benefit ratio is always unacceptable."³²

The Louisiana Drug Information Center (DIC) located at the University of Louisiana at Monroe (ULM) College of Pharmacy (COP) provides assistance with areas such as literature retrieval and evidence-based recommendations. The DIC provides a healthcare provider-focused service for the State of Louisiana that is also available to Medicaid providers through support from the Louisiana Medicaid Pharmacy Benefits Management Program. Healthcare providers can contact us at the following telephone number for drug information requests:

318-342-5501

References

1. Ali T, Roberts D, Tierney W. Long-term safety concerns with proton pump inhibitors. *Am J Med*[serial online]. October 2009;122(10):896-903.
2. Kim KA, Park PW, Hong SJ, Park JY. The effect of CYP2C19 polymorphism on the pharmacokinetics and pharmacodynamics of clopidogrel: a possible mechanism for clopidogrel resistance. *Clin Pharmacol Ther.* 2008 Aug;84(2):236-42.
3. Mega JL, Close SL, Wiviott SD, Shen L, Hockett RD, Brandt JT, et al. Cytochrome p-450 polymorphisms and response to clopidogrel. *N Engl J Med* 2009 Jan 22;360(4):354-62.
4. Plavix [package insert]. Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership, New York, NY; May 2009.
5. Li XQ, Andersson TB, Ahlström M, Weidolf L. Comparison of inhibitory effects of the proton pump-inhibiting drugs omeprazole, esomeprazole, lansoprazole, pantoprazole, and rabeprazole on human cytochrome P450 activities. *Drug Metab Dispos.* 2004 Aug;32(8):821-7.
6. Pezalla E, et al. Initial assessment of clinical impact of a drug interaction between clopidogrel and proton pump inhibitors. *J Am Coll Cardiol.* 2008;52:1038.

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7. Ho M, et al. Risk of adverse outcomes associated with concomitant use of clopidogrel and proton pump inhibitors following acute coronary syndrome. *JAMA*. 2009;301:937(external link).
8. Society for Cardiovascular Angiography and Interventions statement on "A national study of the effect of individual proton pump inhibitors on cardiovascular outcomes in patients treated with clopidogrel following coronary stenting: The Clopidogrel Medco Outcomes Study". Available online at <http://www.scai.org/Press/detail.aspx?cid=d5661afe-976d-46fa-aed0-101ab694a9c6>. Accessed February 24, 2010.
9. Juurlink D, et al. A population-based study of the drug interaction between proton pump inhibitors and clopidogrel. *CMAJ*. 2009;180:713-8 (external link).
10. Gilard M, Arnaud B, Cornily JC, Le Gal G, Lacut K, Le Calvez G, et al. Influence of omeprazole on the antiplatelet action of clopidogrel associated with aspirin: the randomized, double-blind OCLA (Omeprazole CLopidogrel Aspirin) study. *J Am Coll Cardiol*. 2008 Jan 22;51(3):256-60.
11. Simon T, Verstuyft C, Mary-Krause M, Quteineh L, Drouet E, Méneveau N, et al. Genetic determinants of response to clopidogrel and cardiovascular events. *N Engl J Med*. 2009 Jan 22;360(4):363-75.
12. Siller-Matula JM, Spiel AO, Lang IM, Kreiner G, Christ G, Gilma B. Effects of pantoprazole and esomeprazole on platelet inhibition by clopidogrel. *Am Heart J*. 2009 Jan;157(1):148.e1-5.
13. Wiviott SD, Braunwald E, McCabe CH, Montalescot G, Ruzyllo W, Gottlieb S, et al. Prasugrel versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*. 2007 Nov 15;357(20):2001-15.
14. Wiviott SD, Antman EM, Gibson CM, et al. Evaluation of prasugrel compared with clopidogrel in patients with acute coronary syndromes: design and rationale for the TRial to assess Improvement in Therapeutic Outcomes by optimizing platelet Inhibition with prasugrel Thrombolysis in Myocardial Infarction 38 (TRITON-TIMI 38). *Am Heart J*. 2006 Oct;152(4):627-35.
15. O'Donoghue, M., E. Braunwald, E. Antman, S. et al. Pharmacodynamic effect and clinical efficacy of clopidogrel and prasugrel with or without a proton-pump inhibitor: an analysis of two randomised trials. *Lancet*. 2009 Sep 19; 374(9694):989-97.
16. Food and Drug Administration. Early communication about an ongoing safety review of clopidogrel bisulfate (marketed as Plavix). Available at www.fda.gov/cder/drug/early_comm/clopidogrel_bisulfate.htm. Accessed August 2009.
17. Food and Drug Safety Information. Follow-Up to the January 26, 2009, Early Communication about an Ongoing Safety Review of Clopidogrel Bisulfate (marketed as Plavix) and Omeprazole (marketed as Prilosec and Prilosec OTC). Available at <http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm190784.htm>. Accessed February 24, 2009.
18. FDA Safety Information: Information for Healthcare Professionals: Update to the labeling of Clopidogrel Bisulfate (marketed as Plavix) to alert healthcare professionals about a drug interaction with omeprazole (marketed as Prilosec and Prilosec OTC). Available at <http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm190787.htm>. Accessed February 19, 2010.
19. Lassen A, Hallas J, Schaffalitzky de Muckadell OB. Use of anti-secretory medication: a population-based cohort study. *Aliment Pharmacol Ther*. 2004; 20: 577- 83.
20. Jacobson BC, Ferris TG, Shea TL, Mahlis EM, Lee TH, Wang TC. Who is using chronic acid suppression therapy and why? *Am J Gastroenterol*. 2003;98:51-8.
21. Micromedex Healthcare Series Online. <https://www.thomsonhc.com/hcs/librarian/>. Accessed August 10, 2009.
22. Force RW, Meeker AD, Cady PS et al. Increased vitamin B12 requirement associated with chronic acid suppression therapy. *Ann Pharmacother*. 2003;37:490-3.
23. Valuck RJ, Ruscin JM. A case-control study on adverse effects: H2 blocker or proton pump inhibitor use and risk of vitamin B12 deficiency in older adults. *J Clin Epi*. 2004;57:422-8.

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24. Howden C. Vitamin B12 levels during prolonged treatment with proton pump inhibitors. *J Clin Gastro.* 2000;30: 29-33.
25. den Elzen WP, Groeneveld Y, de Ruijter W, et al. Long-term use of proton pump inhibitors and vitamin B12 status in elderly individuals. *Aliment Pharmacol Ther.* 2008 Mar 15;27(6):491-7.
26. Hirschowitz BI, Worthington J, Mohnen J. Vitamin B12 deficiency in hypersecretors during long-term acid suppression with proton pump inhibitors. *Aliment Pharmacol Ther.* 2008 Jun 1;27(11):1110-21.
27. Cook JD, Brown GM, Valberg LS. The Effect of Achylia Gastrica on Iron Absorption. *J Clin Invest.* 1964 Jun;43: 1185-91.
28. Koop H. Review article: metabolic consequences of long-term inhibition of acid secretion by omeprazole. *Aliment Pharmacol Ther.* 1992;6:399-406.
29. Sharma VR, Brannon MA, Carlsson EA. Effect of omeprazole on oral iron replacement in patients with iron deficiency anemia. *South Med J.* 2004;97:887-9.
30. Stewart CA, Termanini B, Setliff VE, et al. Iron absorption in patients with Zollinger-Ellison syndrome treated with long-term gastric acid antiseretory therapy. *Aliment Pharmacol Ther.* 1998;12:83-98.
31. O'Connell MB, Madden DM, Murray AM, et al. Effects of proton pump inhibitors on calcium carbonate absorption in women: a randomized crossover trial. *Am J Med.* 2005;118:778-81.
32. Kahrilas PJ, Shaheen NJ, Vaezi MF. American Gastroenterological Association Institute technical review on the management of gastroesophageal reflux disease. *Gastroenterology.* 2008 Oct;135(4):1392-1413.
33. Yang YX, Lewis JD, Epstein S, et al. Long-term proton pump inhibitor therapy and risk of hip fracture. *JAMA.* 2006;296:2947-53.
34. Vestergaard P, Rejnmark L, Mosekilde L. Proton pump inhibitors, histamine h(2) receptor antagonists, and other antacid medications and the risk of fracture. *Calcif Tissue Int.* 2006;79:76-83.
35. Targownik LE, Lix LM, Metge CJ, et al. Use of proton pump inhibitors and risk of osteoporosis-related fractures. *CMAJ.* 2008 Aug 12;179(4):319-26.
36. Kaye JA, Jick H. Proton pump inhibitor use and risk of hip fractures in patients without major risk factors. *Pharmacotherapy.* 2008 Aug;28(8):951-9.
37. Sakhaee K, Bhuket T, Adams-Huet B, Rao D. Meta-analysis of calcium bioavailability: a comparison of calcium citrate with calcium carbonate. *Am J Ther* [serial online]. November 1999;6(6):313-21.
38. Dial S, Alrasadi K, Manoukian C, et al. Risk of Clostridium difficile diarrhea among hospital inpatients prescribed proton pump inhibitors: cohort and case-control studies. *CMAJ.* 2004;171:33-8.
39. Dial S, Delaney JAC, Barkun AN et al. Use of gastric acid-suppressive agents and the risk of community-acquired Clostridium difficile -associated disease. *JAMA.* 2005;294:2989-95.
40. Aseeri M, Schroeder T, Kramer J, Zackula R. Gastric acid suppression by proton pump inhibitors as a risk factor for clostridium difficile-associated diarrhea in hospitalized patients. *Am J Gastroenterol.* 2008 Sep;103(9):2308-13.
41. Jayatilaka S, Shakov R, Eddi R et al. Clostridium difficile infection in an urban medical center: five-year analysis of infection rates among adult admissions and association with the use of proton pump inhibitors. *Ann Clin Lab Sci.* 2007;37:24-7.
42. Leonard J, Marshall KJ, Moayyedi P. Systematic review of the risk of enteric infection in patients taking acid suppression. *Am J Gastroenterol* 2007;102:2047-56.
43. Dalton B, Lye-Maccannell T, Henderson E, Maccannell D, Louie T. Proton pump inhibitors increase significantly the risk of Clostridium difficile infection in a low-endemicity, non-outbreak hospital setting. *Aliment Pharmacol Ther* [serial online]. March 15, 2009;29(6):626-34.

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44. Laheij RJ, Sturkenboom MC, Hassing RJ, et al. Risk of community- acquired pneumonia and use of gastric acid-suppressive drugs. *JAMA*. 2004;292:1955-60.
45. Sarkar M, Hennessy S, Yang YX. Proton-pump inhibitor use and the risk for community-acquired pneumonia. *Ann Intern Med*. 2008 Sep 16;149(6):391-8.
46. Gulmez SE, Holm A, Frederiksen H et al. Use of proton pump inhibitors and the risk of community-acquired pneumonia: a population-based case-control study. *Arch Int Med*. 2007;167:950-5.
47. Gerald K. McEvoy, ed. 2009. AHFS Drug Information®. Bethesda, MD. American Society of Health-System Pharmacists, Inc. ISBN 978-1-58528-206-7. ISSN 8756-6028. STAT!Ref Online Electronic Medical Library. <http://online.statref.com/document.aspx?fxid=1&docid=969>. 12/7/2009 10:32:18 PM CST (UTC -06:00).
48. Laine L, Ahnen D, McClain C, et al. Review article: potential gastrointestinal effects of long-term acid suppression with proton pump inhibitors. *Aliment Pharmacol Ther*. 2000;14:651-68.
49. Jalving M, Koornstra JJ, Wesseling J, et al. Increased risk of fundic gland polyps during long-term proton pump inhibitor therapy. *Aliment Pharmacol Ther*. 2006;24:1341-8.
50. Proton pump inhibitor relabeling for cancer risk not warranted; long-term studies recommended. F-D-C Rep 1996;58(Nov 11).
51. Waldum H, Arnestad J, Brenna E, Eide I, Syversen U, Sandvik A. Marked increase in gastric acid secretory capacity after omeprazole treatment. *Gut* [serial online]. November 1996;39(5):649-53. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
52. Gillen D, Wirz A, Ardill J, McColl K. Rebound hypersecretion after omeprazole and its relation to on-treatment acid suppression and *Helicobacter pylori* status. *Gastroenterology* [serial online]. February 1999;116(2):239-247. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
53. Hunfeld N, Geus W, Kuipers E. Systematic review: Rebound acid hypersecretion after therapy with proton pump inhibitors. *Aliment Pharmacol Ther* [serial online]. January 1, 2007;25(1): 39-46. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
54. Reimer C, Søndergaard B, Hilsted L, Bytzer P. Proton-pump inhibitor therapy induces acid-related symptoms in healthy volunteers after withdrawal of therapy. *Gastroenterology* [serial online]. July 10, 2009;137(1):80. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
55. Björnsson E, Abrahamsson H, Simrén M, et al. Discontinuation of proton pump inhibitors in patients on long-term therapy: a double-blind, placebo-controlled trial. *Aliment Pharmacol Ther* [serial online]. September 15, 2006;24(6):945-54. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
56. Fossmark R, Johnsen G, Johannessen E, Waldum H. Rebound acid hypersecretion after long-term inhibition of gastric acid secretion. *Aliment Pharmacol Ther* [serial online]. January 15, 2005;21(2):149-54. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
57. Inadomi J, McIntyre L, Bernard L, Fendrick A. Step-down from multiple- to single-dose proton pump inhibitors (PPIs): a prospective study of patients with heartburn or acid regurgitation completely relieved with PPIs. *Am J Gastroenterol* [serial online]. September 2003;98(9):1940-4. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 8, 2009.
58. Lee T, Fennerty M, Howden C. Systematic review: Is there excessive use of proton pump inhibitors in gastro-oesophageal reflux disease? *Aliment Pharmacol Ther* [serial online]. December 2004;20(11-12):1241-51. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed December 7, 2009.
59. Heidelbaugh J, Goldberg K, Inadomi J. Overutilization of proton pump inhibitors: a review of cost-effectiveness and risk [corrected]. *Am J Gastroenterol* [serial online]. March 2009;104 Suppl 2:S27-S32.



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