

pressure and lipid levels at first and final visits. Chi-square test compared the proportion of patients within goal at first and final visits.

**Results:** Patients were primarily men (70%) with a mean age of 40.67 (range = 26 to 62) years. Mean ( $\pm$  SD) number of visits with pharmacists was 6.97  $\pm$  3.05. Statistically significant improvements were seen for SBP ( $P = .016$ ) and DBP ( $P = .039$ ) before stratification. For patients with diabetes ( $n = 37$ ), no statistically significant differences between first and final visits for weight, blood pressure, or lipid levels were found. For patients without diabetes ( $n = 19$ ), DBP improved ( $P = .039$ ). Among people with diabetes, a 44.4% increase in the proportion of patients within LDL treatment goal was seen ( $P = .06$ ,  $n = 9$ ); however, negative nonsignificant trends were noted for HDL cholesterol and triglycerides.

**Conclusion:** A cardiovascular risk management program provided in the workplace by pharmacists improved clinical outcomes including blood pressure and the proportion of patients/employees meeting LDL cholesterol goals.

## APhA-APPM Hospital and Institutional Practice

### 87—PHARMACIST'S APPROACH TO MANAGING ANEMIA OF CHRONIC DISEASE USING DARBEPOETIN IN THE CORRECTIONAL ENVIRONMENT. Valente K,

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**Objective:** To incorporate a pharmacist in effectively managing anemia of chronic disease in inmates with chronic renal failure or cancer using the Federal Bureau of Prisons' first line formulary agent, darbepoetin (Aranesp).

**Methods:** In 2002, the Federal Bureau of Prisons recommended once a week darbepoetin as first line management of dialysis patients. Locally, at the Federal Medical Center at Devens, Mass. (FMC Devens), the Health Services Department decided to expand this recommendation to all patients with anemia of chronic disease or patients receiving chemotherapy. In doing so, the Health Services Department incorporated a pharmacist to monitor the patients' hemoglobin levels monthly and subsequently adjust their dose. The goal of this pharmacist intervention was to introduce a multidisciplinary level of care to the inmates, prevent blood transfusions, reduce costs, and improve patient outcomes and quality of life. The FMC Devens pharmacy-run anemia clinic was implemented in May 2004. Due to darbepoetin's long half-life (49 hours) the dose can only be adjusted in 4–6 weeks intervals. A protocol was developed to ensure patients' hemoglobin levels were in target range of 11.0–12.9 g/dL. The individual's darbepoetin dose is then adjusted per the manufacturer's recommendations to optimize the dose–response relationship. All patients are seen monthly by the pharmacist and counseled about their current level and what their next dose will be.

**Results:** The clinic first started with five predial-

ysis chronic renal failure patients in an ambulatory setting. Currently, there are 57 patients: 47 current receiving dialysis, 9 predialysis patients, and 1 cancer patient. Since the clinic started, FMC Devens reported 4 blood transfusions a year, down from 16 in previous years before the clinic. FMC Devens has also seen a cost savings of 25% in erythropoietic agent purchasing.

**Conclusion:** It is beneficial for an institution to incorporate a pharmacist in the drug–disease management of patients with anemia of chronic disease.

### 88—ASSESSMENT OF CARDIOVASCULAR RISK FACTORS AND GOAL ATTAINMENT IN A LONG-TERM CARE FACILITY. Buckley T, Pfizer Inc., Memoli P, Consultant Pharmacist, E-mail: thomas.e.buckley@pfizer.com

**Objective:** To evaluate cardiovascular (CV) risk factors, calculate blood pressure (BP) and lipid goal attainment, and assess the appropriateness of laboratory tests for residents of a long-term care facility (LTCF).

**Methods:** All LTCF residents were evaluated for the presence of CV risk factors. Residents with at least two risk factors were assessed for cardiac medications, lipid panels, liver function tests, and blood pressure measurements. Goal attainments for lipid parameters and blood pressure were determined based on national guidelines.

**Results:** Of the 330 residents in this facility, 81 met the study criteria of at least two CV risk factors; the mean number of risk factors was 2.98. Hyperlipidemia (HL) was diagnosed in 95% of study residents, and all but 6.5% were receiving lipid-lowering medications. Hypertension (HTN) was present in 64% of study residents, and all received HTN medication; 68% of the study residents were receiving both HL and HTN medications. Goal attainment for the treated population was as follows: BP 72%, total cholesterol 88%, LDL 44%, HDL 56%, and triglycerides 74%. Dual diagnosis (HL and HTN) goal attainment was 29%. Baseline and annual lipid panels were attained in 52% and 51%, respectively, while baseline and twice-yearly liver function tests were performed in 31% and 38% of residents, respectively.

**Conclusion:** Goal attainment was lower than the most recently published adult study, but higher than studies in the elderly. The study revealed that residents with multiple risk factors require more intensive monitoring. Consultant pharmacists can assist in improving these variables by assessing CV risk and patient monitoring as part of their drug regimen reviews.

### 89—ASSOCIATION BETWEEN IN-HOSPITAL FALLS IN ADULTS AND CHRONIC DISEASES, DRUG USE, AND ANEMIA: A MATCHED CASE-CONTROL STUDY. Angalakuditi M, Managed Care, Walgreen's Health Initiatives, Coley K, Kirisci L, University of Pittsburgh, E-mail: hydmallik02@hotmail.com

**Objective:** To assess the association of in-hospital falls with anemia status before the fall, chronic diseases, and drug use in adult inpatients.

**Methods:** A retrospective case–control study was conducted at a university medical center for patients admitted between January 1, 1998, and June 30, 2003. To be included as a case, patients had to be 18 years of age or older, hospitalized for more than 24 hours, have a hemoglobin test within 14 days before the fall, and experience an in-hospital fall. Control patients were matched 1:1 on age, gender, race, service, and year of admission. Drug utilization was identified 2 days before the fall date for cases and the reference fall date for controls. Statistics performed were t tests, chi-square, and logistic regression analysis.

**Results:** A total of 1,126 fall cases met study criteria. The mean age was 65  $\pm$  16 years, 49% of case patients were women, and 83% were white. Case patients were more likely to be anemic (75% versus 70%) and have a longer length of stay (13  $\pm$  10 days versus 8  $\pm$  13 days for controls). Multiple comorbidities were common in the cases ( $P < .001$ ), with at least two comorbidities in 41.1% of cases. Compared with controls, more cases received at least one drug group of interest before the fall (79.4% versus 48.8%,  $P < .001$ ). Regression analysis demonstrated that patients with chronic kidney disease (OR, 1.6), dementia (OR, 1.9), diabetes (OR, 1.2), and gastrointestinal disease (OR, 1.4), and those receiving benzodiazepines (OR, 1.9), antiarrhythmics (OR, 1.6), antipsychotics (OR, 1.6), antidepressants (OR, 2.7), and anticonvulsants (OR, 2.5) were more likely to experience an in-hospital fall.

**Conclusion:** In-hospital fall contributed to the longer length of stay, and anemia did not contribute to the likelihood of having an in-hospital fall.

### 90—CONVERSION OF VETERANS TO ATORVASTATIN—ARE WE ADHERING TO THE NATIONAL FORMULARY? Balvanz T,

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**Objective:** To assess the nonformulary process of switching patients to atorvastatin, change in LDL-cholesterol (LDL) after conversion, and the cost implications of inappropriate conversion.

**Methods:** Patients were retrospectively reviewed if they were converted from simvastatin to atorvastatin between July 1, 2003, and December 31, 2004. All patients without missing data were evaluated. Prescription records and lipid profiles relating to lipid-lowering agent (LLA) therapy were assessed. Patients were evaluated to determine if conversion was appropriate (met ATP III guidelines), if they reached their LDL goal, had appropriate follow-up, and adjustments to their LLA therapy. Appropriate conversion was defined as not at LDL goal on prescribed dose of simvastatin 80 mg daily, atorvastatin dose prescribed was 80 mg daily after conversion, and/or appropriate follow-up after conversion. Descriptive statistics and a paired t test were used in statistical analysis.

**Results:** A total of 217 patients were identified, and 142 patients meeting the study criteria were evaluated. Overall, 28% ( $n = 40$ ) of the patients