al antipsychotic medications . . . unless they have been initi-
ated by a psychiatrist.” Aripiprazole and quetiapine are both
approved by the US Food and Drug Administration for aug-
mentation pharmacotherapy of major depressive disorder.
Given a shortage of psychiatrists, and wait times of up to 3
months to see a psychiatrist, and in an age when psychia-
tric disorders are the leading source of medical disability, it
is imperative for primary care physicians to learn how to
safely use any and all available interventions, including the
appropriate use and monitoring of atypical antipsychotics.

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ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Karp reported re-
ceiving grants from the National Institutes of Health and the National Alliance for
Research on Schizophrenia and Depression; holding stock in Corcept; and receiv-
ing medication supplies for investigator-initiated trials from Pfizer and Reckitt Benck-
sier. Dr Whyte reported receiving grants from the National Institute of Mental Health,
the National Institute of Child Health and Human Development’s National Center
for Medical Rehabilitation Research, and the National Institute of Neurological Dis-
orders and Stroke Small Business Innovation Research; and the provision of study
drugs from Eli Lilly and Pfizer.

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In Reply: Drs Karp and Whyte raise 2 important points re-
garding the management of depression in primary care set-
tings. First, depressive symptoms can overlap with those of
OSA. Therefore, in a patient with OSA, it is important to
inquire about compliance with the CPAP device, verify proper
mask fit, and consider modafinil if excessive daytime sleepi-
ness persists despite appropriate therapy.

Second, patients with depression have a high prevalence of
comorbid anxiety disorders, and screening with the 2-item
Generalized Anxiety Disorder scale can improve case iden-
tification. Whether routine screening for anxiety disorders
benefits primary care patients has not been determined. How-
ever, first-line therapies (cognitive behavioral therapy and
selective serotonin reuptake inhibitors) are the same for both
depression and anxiety disorders, so patients treated for
major depressive disorder will usually receive therapy for
both conditions.

Karp and Whyte also are concerned about my state-
ment that “Primary care physicians should not prescribe
atypical antipsychotic medications . . . unless they have
been initiated by a psychiatrist.” They suggest there are
cases when it might be appropriate for a primary care

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RESEARCH LETTER

Prone vs Supine Positioning for Breast Cancer Radiotherapy

To the Editor: Adjuvant radiotherapy to the breast contrib-
utes to improved outcomes in breast cancer patients after
breast preservation surgery.1 However, whole breast radio-
therapy is associated with damage to the heart and lung, in-
creased cardiovascular mortality, and lung cancer develop-
ment, with risks that remain 15 to 20 years after treatment.2
These consequences occur when breast cancer patients are
treated supine. Preliminary data on prone positioning sug-
gest that radiation exposure to the heart and lung can be
reduced compared with supine positioning3,4 with similar
efficacy. To test the hypothesis that prone positioning is
superior to standard supine positioning, we compared the
volume of heart and lung within the radiation field in a pro-
spective study of patients who underwent simulation in both positions.

Methods. From November 15, 2005, to December 26, 2008, patients with stage 0-IIA breast cancer, segmental mastectomy, negative surgical margins, and 3 or fewer involved lymph nodes referred to New York University Radiation Oncology were eligible for the study. Each patient underwent 2 computed tomography (CT) simulation scans, first supine and next prone. The dose from the second CT was justified ethically because additional imaging enabled the treating physician to choose the position that best spared heart and lung. The treating physician contoured target and normal structures and placed the treatment fields. Comparable coverage of the breast regardless of position was ensured by placing the posterior edge of the field on a plane connecting the midline to the anterior extent of the latissimus dorsi muscle, visualized at CT (FIGURE). In-field heart and lung volumes were then measured by 2 physicists (J.K.D. and G.J.) as reliable surrogates for dose. Four hundred consecutive patients were prospectively accrued, approximately 60% of those eligible. Median age was 56.3 years (range, 30.7-94.3 years). Ethnicity was 322 (80.5%) white, 22 (5.5%) black, 21 (5.2%) Hispanic, 28 (7%) Asian, and 7 (1.7%) of other ethnicity. The primary insurance carrier was private in 310 (77%) patients, Medicare in 76 (19%), and Medicaid in 14 (4%). Eighty-six (21.5%) patients had ductal carcinoma in situ. Among the 314 (78.5%) patients with invasive breast cancer, 47 (14.96%) had involved sentinel or axillary lymph nodes.

Results. Four hundred consecutive patients were prospectively accrued, approximately 60% of those eligible. Median age was 56.3 years (range, 30.7-94.3 years). Ethnicity was 322 (80.5%) white, 22 (5.5%) black, 21 (5.2%) Hispanic, 28 (7%) Asian, and 7 (1.7%) of other ethnicity. The primary insurance carrier was private in 310 (77%) patients, Medicare in 76 (19%), and Medicaid in 14 (4%). Eighty-six (21.5%) patients had ductal carcinoma in situ. Among the 314 (78.5%) patients with invasive breast cancer, 47 (14.96%) had involved sentinel or axillary lymph nodes.

In all patients, the prone position was associated with reduced in-field lung volumes compared with supine (TABLE) (mean difference: 104.6 cm³ [95% CI, 94.26-114.95 cm³], an 86.2% reduction for right breast cancer; 89.85 cm³ [95% CI, 80.16-99.55 cm³], a 91.1% reduction for left breast cancer). In patients with left breast cancer, the prone position was associated with a reduction of in-field heart volumes compared with supine (mean difference: 7.5 cm³ [95% CI, 5.16-9.85 cm³], an 85.7% reduction). However, in 15% of patients with left breast cancer, the supine position was associated with less in-field heart volume compared with prone (mean difference: 6.15 cm³; 95% CI, 2.97-9.33 cm³). These reductions were statistically significant regardless of breast volume (with the exception of heart in women with breast size <750 cm³).

Comment. Prone positioning was associated with a reduction in the amount of irradiated lung in all patients and in the amount of heart volume irradiated in 85% of patients with left breast cancer.

The study is limited to a single institution. A multi-institutional prospective trial with outcome measures is warranted to confirm these findings. If prone positioning better protects normal tissue adjacent to the breast, the risks...
of long-term deleterious effects of radiotherapy may be reduced.

Silvia C. Formenti, MD  
J. Keith DeWyngaert, PhD  
Judith D. Goldberg, ScD  

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Author Contributions: Dr Formenti had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.  
Study concept and design: Formenti, DeWyngaert, Goldberg.  
Acquisition of data: DeWyngaert, Jozsef.  
Analysis and interpretation of data: Formenti, DeWyngaert, Goldberg.  
Drafting of the manuscript: Formenti, DeWyngaert, Goldberg.  
Critical revision of the manuscript for important intellectual content: Formenti, Jozsef, Goldberg.  
Statistical analysis: Jozsef, Goldberg.  
Administrative, technical, or material support: Formenti, DeWyngaert.  
Study supervision: Formenti, Goldberg.  

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CORRECTION  

Incorrect Author’s Name: In an Editorial entitled “The JAMA Network Journals: New Names for the Archives Journals,” published in the July 4, 2012, issue of JAMA (2012;308[1]:85), one of the names in the byline had the wrong middle initial. The name should have appeared as Rita F. Redberg, MD, MSc. The article has been corrected online.