

# Identifying Widely Covered Drugs and Drug Coverage Variation Among Medicare Part D Formularies

Chien-Wen Tseng, MD, MPH

Carol M. Mangione, MD, MSPH

Robert H. Brook, MD, ScD

Emmett Keeler, PhD

R. Adams Dudley, MD, MBA

**N**EARLY 23 MILLION OF THE 43.9 million eligible Medicare beneficiaries have enrolled in the Medicare Part D prescription drug benefit, the largest new federal entitlement program since the introduction of Medicare.<sup>1</sup> The program provides coverage for many of the 1 in 5 individuals who previously lacked drug benefits.<sup>2</sup> However, clinicians often find it difficult to know which drugs are covered by Part D plan formularies.<sup>3</sup> Two thirds of clinicians say they lack familiarity with Part D formularies, and three fourths have been asked by pharmacies or patients to change a prescription to a different drug so that it would be covered by the patient's plan.<sup>3</sup> Difficulty navigating Part D formularies occurs because substantial variation exists among formularies.<sup>4-6</sup> In a study of 152 commonly used drugs, some plans covered less than 65% of these drugs, while others covered more than 95%.<sup>4</sup> In addition, many states have more than 50 Part D plans,<sup>7</sup> and the number is increasing, with 1875 stand-alone prescription drug plans in 2007 compared with 1429 in 2006.<sup>8</sup>

Wide formulary variation can lead clinicians to inadvertently prescribe drugs that are not covered by insurance or that require a high co-

**Context** Clinicians can find it difficult to know which drugs are covered for their Medicare patients because formularies vary widely among Medicare Part D plans and many states have 50 or more such plans.

**Objective** To determine whether Part D formularies in California (the state with the most Medicare beneficiaries) and Hawaii have at least 1 drug within each of 8 treatment classes for hypertension, hyperlipidemia, and depression that can be identified for clinicians as "widely covered" by the vast majority of Part D plans.

**Design and Setting** Use of the medicare.gov Web site (March 1-April 15, 2006) to examine 72 California and 43 Hawaii Part D formularies' coverage of 8 treatment classes (angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers,  $\beta$ -blockers, calcium channel blockers, loop diuretics, selective serotonin reuptake inhibitors, statins, and thiazide diuretics), with evaluation of how often drugs were widely covered (defined as inclusion in  $\geq 90\%$  of formularies at co-payments of  $\leq \$35$  without prior authorization).

**Main Outcome Measure** Identification of treatment classes with at least 1 widely covered drug.

**Results** For California, coverage for the 75 drugs examined ranged from 7% to 100%. Despite this variation, 7 of 8 classes (excluding angiotensin II receptor blockers) had at least 1 widely covered drug. Of the 34 widely covered drugs (45%), all but 2 were generic. Restricting widely covered to include 95% or more of formularies at co-payments of \$15 or less still resulted in 7 of 8 classes with at least 1 widely covered drug. Overall, 73% of generic drugs and 6% of brand-name drugs were widely covered. Findings were similar for Hawaii.

**Conclusions** Formularies varied substantially; however, all but 1 treatment class examined had 1 or more widely covered drugs at low co-payments. Knowing which drugs are widely covered would assist clinicians in prescribing, since not all generic drugs were widely covered. Clinicians should know that few brand-name drugs are widely covered and check coverage before prescribing.

*JAMA.* 2007;297:2596-2602

www.jama.com

payment, increasing patients' financial burden<sup>3</sup> and decreasing adherence to treatment.<sup>9-17</sup> In 1 survey of 1500 Medicare Part D enrollees, 12% reported leaving the pharmacy without a prescription because a drug wasn't covered or was unaffordable.<sup>18</sup> Furthermore, 59% of clinicians report that they rarely or never check Part D formulary coverage prior to prescribing.<sup>3</sup> This is likely because determining cover-

**Author Affiliations:** Department of Family Medicine and Community Health, John A. Burns School of Medicine at University of Hawaii, Honolulu (Dr Tseng); Pacific Health Research Institute, Honolulu (Dr Tseng); RAND Corporation, Santa Monica, Calif (Drs Mangione, Brook, and Keeler); Department of Medicine, David Geffen School of Medicine at UCLA and Department of Health Services, UCLA School of Public Health, Los Angeles, Calif (Drs Mangione and Brook); and Department of Medicine and Institute for Health Policy Studies, University of California, San Francisco (Dr Dudley).

**Corresponding Author:** Chien-Wen Tseng, MD, MPH, Pacific Health Research Institute, 846 S Hotel St, Suite 303, Honolulu, HI 96813 (cwtseng@hawaii.edu).

age involves substantial effort,<sup>19</sup> even with the use of Internet- and personal digital assistant–based tools that contain formulary information.<sup>20</sup> Potential policy responses to formulary variation would be to limit the number of Part D plans, require plans to cover more drugs, or force greater standardization among plan formularies.<sup>21</sup> However, even if the number of Part D plans were reduced drastically, say from 50 to 5 per geographical region, variation among even 5 plan formularies might still force clinicians to look up coverage for each drug and patient. Additionally, policies that force plans to have similar formularies could reduce competition in the health plan market and reduce the role of formularies as cost-control features,<sup>20,21</sup> for a program estimated to cost \$768 billion in the next 10 years.<sup>7</sup>

Previous studies on variation among Part D plan formularies<sup>4,5,8</sup> have focused on evaluating variation in coverage of individual drugs and have reported the variation among plans in the percentage of drugs they cover. In this study, we explore a more clinical question: Are there, among the drugs in important treatment classes, any widely covered drugs that could be used as first prescribing options within the class? If such drugs exist, a potential policy response to the variation among Part D formularies would be to assist clinicians in knowing which drugs within a given class are widely covered and likely to be most affordable for the patient. Our study is also the first, to our knowledge, to consider co-payment levels and prior authorization requirements in defining a drug as covered and to include Medicare Advantage plans (MA-PDs) in addition to stand-alone Medicare Prescription Drug Plans (PDPs) in analysis.<sup>4</sup> MA-PDs are relevant because, although most of the attention they have received focuses on their coverage of general health services, they do also offer drug coverage, and they cover 7.1 million Medicare Part D enrollees (30%).<sup>22</sup> We also explore whether generic or brand-name–only status can be used as a

shortcut to identifying which drugs are widely covered.

## METHODS

### Overview

The Medicare Web site (<http://www.medicare.gov>) is an interactive public Web site listing Part D plans and describing their formularies. We used the Medicare site between March 1 and April 15, 2006, to identify plans and abstract formulary data (co-payments, prior authorizations). Our primary outcome was whether a treatment class had at least 1 drug that was widely covered, eg, was covered by X% of formularies at co-payments of \$Y or less without prior authorization.

### Determining the List of Medicare Drug Benefits

Because of the effort required to abstract data from the Medicare site, we chose to study 2 states, one with a high number of Part D plans (California) and a second with a low number of plans (Hawaii). In these analyses, we included all nationwide Part D plans. We chose California as a state where the problem of Medicare formulary variation should be as severe as anywhere in the country. California is the state with the most Medicare beneficiaries (4 325 861, or 10% of the Medicare population)<sup>23</sup> and the fourth most Part D plans (n=69).<sup>24</sup> We also chose Hawaii, which has fewer plans (n=33; ranks 49th of 50 states in number of plans)<sup>24</sup> and fewer Medicare beneficiaries (169 346; ranks 40th of 50 states).<sup>23</sup> Since the results for the 2 states were similar, we present only the California results here.

To determine the list of Part D drug benefits in California, the Medicare Web site requires users to enter a ZIP code. Although this does not produce a complete list of Part D drug benefits in California (n=168), it does include benefits from all statewide and nationwide plans and also represents the likely number of formularies that clinicians will face in their practice region. We chose a sampling strategy to select a ZIP code associated with a

high number of Part D drug benefits and therefore potentially the greatest variation among plan formularies. We chose the California county (Los Angeles) with the greatest number of Medicare beneficiaries, randomly sampled 10% of ZIP codes in that county, and selected the ZIP code (90265) with the highest number of Part D drug benefits (from stand-alone PDPs, MA-PDs, and Special Needs plans). The number of formularies ranged 66 to 76 by ZIP code. Our list resulted in 76 formularies that included all statewide and nationwide Part D plans. We excluded 2 formularies that did not cover any of the drugs we examined and 2 whose drug benefits' existence we could not verify by contacting plan representatives, for a final sample of 72 formularies. For Hawaii, we selected our local ZIP code (96813) and found that it produced a list of 43 formularies that included drug benefits from all Hawaii statewide as well as all nationwide plans.

### Treatment Classes of Interest

To determine which treatment classes to study, we examined the top classes of drugs used by seniors based on the National Ambulatory Medical Care Survey.<sup>25</sup> These classes included acid/peptic ulcer drugs, angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs), antiasthmatics, antidepressants, antihypertensives,  $\beta$ -blockers, blood glucose regulators, calcium channel blockers, hyperlipidemia drugs, loop diuretics, nonnarcotic analgesics, nonsteroidal anti-inflammatory drugs, and thiazide diuretics.<sup>25</sup> For our final list of classes, we focused on drugs for treating hypertension (ACE inhibitors, ARBs,  $\beta$ -blockers, calcium channel blockers, loop diuretics, and thiazide diuretics), selective serotonin reuptake inhibitors, and 3-methylglutaryl coenzyme A reductase inhibitors (statins) (TABLE 1). The selective serotonin reuptake inhibitors represent a "protected" class; ie, the Center for Medicare & Medicaid Services requires that all drugs within the class be

**Table 1.** Widely Covered Drugs Within Each Treatment Class

Definition of Widely Covered	No. in Treatment Class								Widely Covered Drugs (Over All 8 Classes), No. (%) (N = 75)
	ACE Inhibitors (n = 10)	ARBs (n = 7)	β-Blockers (n = 14)	Calcium Channel Blockers (n = 19)	Loop Diuretics (n = 4)	SSRIs (n = 8)	Statins (n = 7)	Thiazide Diuretics (n = 6)	
≥90% of formularies with co-payments ≤\$35 and without prior authorization	4	0	11	7	3	4	1	4	34 (45)
≥95% of formularies with co-payments ≤\$15 and without prior authorization	4	0	7	5	2	3	1	4	26 (35)

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin II receptor blocker; SSRI, selective serotonin reuptake inhibitor.

covered by plans but does not set guidelines on maximum co-payments or prior authorization requirements.<sup>4</sup>

### Drugs and Dosing in Each Class

We used ePocrates to identify drugs within each treatment class.<sup>26</sup> If a drug was available in formulations that required different dosing frequencies (eg, metoprolol [twice-per-day dosing] vs metoprolol extended release [once-per-day dosing]), we considered each formulation separately. We used the default dosages given by the Medicare Web site, since these were confirmed by ePocrates as common starting or maintenance dosages, and did not evaluate coverage for all possible dosages of a drug. For brand-name drugs with generic equivalents (eg, metoprolol vs Lopresor), we checked formulary coverage for the generic equivalent. This resulted in 75 drugs being evaluated across the 8 classes.

### Formulary Coverage, Co-payments, and Prior Authorization

We used the Medicare Web site to determine formulary status (covered or not covered), co-payments, and prior authorization requirements. For plans with specific dollar co-payments (eg, \$5), we used the dollar amount. For co-payments based on a percentage of a health plan's cost of a drug (eg, 25%), we estimated dollar co-payments by multiplying percentage co-payments by the 30-day price of the drug from drugstore.com, a nationwide Web-based pharmacy. We did not have health plans' actual drug costs at the time

of data collection. This occurred in 15% of the 4147 instances in which a drug was covered. In sensitivity analyses, we excluded these "percentage co-payments" from our calculations. We considered a drug to be not covered if prior authorization was required, since patients may not meet prior authorization criteria (eg, to have certain diagnoses).

We did not include prescribing restrictions such as step therapy (eg, requiring patient to first try another drug) and quantity limits (eg, restricting coverage to a maximum of 30 pills per month). Although these methods can restrict access, we found on several checks that health plans often could not confirm these requirements when contacted. Step therapy and quantity-limit restrictions affected 5% and 17% of the 4147 instances, respectively, in which a drug was covered. To check possible errors on the Web site (eg, a plan with no ACE inhibitors listed on its formulary), we contacted plans to confirm coverage or lack thereof for specific drugs.

### Defining "Widely Covered"

There is no consensus theoretical basis for defining wide coverage of a drug. However, since drugs that are on-formulary can still have high co-payments (eg, median nonpreferred brand-name co-payment, \$53),<sup>4</sup> we opted for a primary definition of coverage as a co-payment of \$35 or less. This was derived from literature showing that seniors are often taking multiple medications and that when total out-of-pocket costs are greater than

\$100/mo, their adherence to treatment decreases due to cost.<sup>27</sup> In sensitivity analyses, we evaluated maximum co-payment definitions from \$15 to \$35 in \$5 increments. For our definition of wide coverage of a drug, we varied the percentage of formularies covering a drug from 85% to 95%. Because our findings of whether classes had at least 1 widely covered drug did not differ for various combinations of \$15 to \$35 co-payments and coverage by 85% to 95% of plans, we present our findings for 90% or more of formularies at co-payments of \$35 or less and also for the more stringent criteria of 95% or more of formularies at co-payments of \$15 or less.

## RESULTS

### Variation Among Part D Formularies

Our analyses included 72 formularies, 8 treatment classes, 75 drugs, and 4147 instances in which the drugs examined were covered by formularies. Coverage for specific drugs ranged from 7% to 100% of formularies and averaged 69% across all drugs. Formulary coverage (percentage of formularies covering each drug, averaged across all drugs within a class) was highest for thiazide diuretics (90%) and β-blockers (85%), followed by selective serotonin reuptake inhibitors (69%), calcium channel blockers (66%), ACE inhibitors (66%), statins (49%), and ARBs (39%). However, even for thiazide diuretics, the most-often covered drug class, there was 1 drug (methyldiuretic) that was covered by only 67% of formularies. For other classes,

there were drugs in each class that were covered by as few as 7% (ARBs) to 22% (loop diuretics) of formularies.

### Widely Covered Drugs by Treatment Class

Overall, less than half of drugs (34/75 [45%]) were widely covered (Table 1). However, 7 of 8 treatment classes (ACE inhibitors,  $\beta$ -blockers, calcium channel blockers, loop diuretics, selective serotonin reuptake inhibitors, statins, and thiazide diuretics) had at least 1 widely covered drug. For instance, among ACE inhibitors, 4 of 10 drugs—benazepril, captopril, enalapril, and lisinopril—were covered by at least 96% of formularies (TABLE 2). The ARBs comprised the only class without any widely covered drugs; the maximum coverage for any single ARB was 81% for valsartan. Among statins, lovastatin was covered by 100% of formularies, followed by simvastatin (71%) and atorvastatin (65%). In Hawaii, with 43 formularies, the same 7 of 8 treatment classes had at least 1 widely covered drug.

### Sensitivity Analyses

Changing the definition of widely covered to include 95% or more of plans at co-payments of \$15 or less still resulted in 7 of 8 classes with at least 1 widely covered drug. The number of widely covered drugs decreased from 34 to 26 (Table 1). Disregarding co-payments and prior authorizations in defining wide coverage led to all 8 classes having at least 1 widely covered drug. Excluding drugs with percentage co-payments still resulted in 7 of 8 classes with at least 1 widely covered drug.

### Generic vs Brand-Name Drugs

Nearly all widely covered drugs (32/34 [94%]) were generic drugs, and three fourths of generic drugs (32/44 [73%]) were widely covered. On average, generic drugs were covered by 90% of formularies, ranging from 11% (verapamil SA) to 100% (atenolol, citopralam, fluoxetine, lisinopril, lovastatin, metoprolol, paroxetine, and propranolol).

Only 2 of the 33 brand-name-only drugs (6%) were widely covered. Brand-name drugs were covered on average by 33% of formularies, ranging from 7% (eprosartan, fluoxetine weekly) to 94% (carvedilol).

### COMMENT

In this study to evaluate Medicare Part D plan formulary variation, the coverage of individual drugs varied extensively, indicating the potential difficulties that clinicians can face in knowing

**Table 2.** List of Drugs Widely Covered by 90% or More of 72 California Part D Formularies With Co-payments of \$35 or Less and Without Prior Authorization, April 2006 (n = 34)\*

Treatment Class/Chemical Name	Generic/Brand-name	Dose, mg	Formularies Covering Each Drug, %
ACE inhibitors			
Benazepril	Generic	20	97
Captopril	Generic	25	97
Enalapril	Generic	10	96
Lisinopril	Generic	10	100
$\beta$ -Blockers			
Acebutolol	Generic	200	90
Atenolol	Generic	50	100
Bisoprolol	Generic	5	99
Carvedilol	Brand-name	25	94
Labetalol	Generic	200	99
Metoprolol	Generic	50	100
Metoprolol ER	Brand-name	50	93
Nadolol	Generic	40	97
Pindolol	Generic	5	97
Propranolol	Generic	20	100
Sotalol	Generic	80	94
Calcium channel blockers			
Diltiazem	Generic	360	99
		240	90
Diltiazem ER	Generic	240	97
Felodipine	Generic	5	99
Nifedipine ER	Generic	90	99
Verapamil	Generic	80	99
Verapamil SR	Generic	240	97
Loop diuretics			
Bumetanide	Generic	1	99
Furosemide	Generic	40	100
Torsemide	Generic	20	92
SSRIs†			
Citalopram	Generic	20	100
Fluoxetine	Generic	20	100
Fluvoxamine	Generic	100	96
Paroxetine	Generic	20	100
Statins‡			
Lovastatin	Generic	40	100
Thiazide diuretics			
Chlorthalidone	Generic	25	97
Hydrochlorothiazide	Generic	25	100
Indapamide	Generic	2.5	97
Metolazone	Generic	2.5	99

Abbreviations: ACE, angiotensin-converting enzyme; SSRI, selective serotonin reuptake inhibitor.

\*Angiotensin II receptor blockers are not reported in this table because the most widely covered drug within the class (valsartan) was covered by only 81% of formularies.

†Sertraline became available as a generic in 2006 and as of December 8, 2006, was widely covered by 100% of the 72 California Part D formularies examined.

‡Simvastatin became available as a generic in 2006 and as of December 8, 2006, was widely covered by 93% of the 72 California Part D formularies examined.

which drugs are covered or are more affordable.<sup>4,5</sup> However, 7 of 8 treatment classes examined had at least 1 widely covered drug under Part D formularies in California and Hawaii. Thus, a potential way to address formulary variation would be to identify, within a class, which drugs are widely covered and generally more affordable for clinicians to consider. This could substantially reduce clinicians' administrative burden from formulary variation and lower the risk that Medicare beneficiaries are inadvertently prescribed noncovered or higher cost-sharing drugs. Clinicians should also be alerted to those classes with no widely covered drugs, from which they should not prescribe without first checking formulary coverage. For example, the maximum coverage for any single ARB was 81% of formularies. If this type of coverage information were made available in interactive fashion via a Web site, personal digital assistant-based tool, or e-prescribing software, clinicians could use this knowledge in the clinical encounter during collaborative decision making on selecting medications. Ideally, clinicians could also individualize such a prescribing tool to determine the list of widely covered drugs for the most common Part D plans in their geographic location or their practice.

### **Potential Impact on Administrative Burden, Health, and Drug Costs**

To our knowledge, our study is the first to examine whether treatment classes include widely covered drugs under Part D. We know of no publicly available nationwide database of Part D claims, or studies based on private health plan data, that describe how often clinicians are prescribing these widely covered drugs and whether this has changed since implementation of Part D. Despite the substantial success of Part D in increasing Medicare beneficiaries' access to medications,<sup>2</sup> recent studies indicate that clinicians face significant administrative burden from variation in the Part D formulary, and patients can still experience problems

with prescription costs.<sup>3</sup> In one study, two thirds of clinicians said that helping Medicare patients to obtain drugs under Part D or to decide about drug benefits placed "a lot" of administrative burden on themselves and staff,<sup>3</sup> and 44% said the administrative burden to deal with prescriptions was worse under Part D compared with commercial plans (7% said it was better).<sup>3</sup> Of greater concern, 59% of clinicians also reported that their Medicare patients had problems getting prescriptions filled under Part D, and 17% of these clinicians said their patients experienced a serious medical consequence because of problems filling a prescription.<sup>3</sup> Thus, the ability to identify widely covered drugs has the potential to improve Part D by adding to clinicians' ability to know when drugs are covered and more affordable for their patients. While there is no perfect substitute for clinicians checking formulary coverage for each drug and each patient, this is currently not practical for most clinicians, especially those without electronic prescribing or electronic health records. Therefore, future research should evaluate the impact of interventions to identify widely covered drugs on clinicians' administrative burden and on patient adherence to treatment.

With respect to drug costs, it has been shown that there is potential to generate cost savings by increasing the use of generic drugs.<sup>28</sup> Since in our study nearly all widely covered drugs were generic, future studies should also explore whether increasing use of these widely covered drugs (and therefore use of generic drugs) results in any cost savings for health plans, Medicare, or both.

Helping clinicians identify widely covered drugs poses an alternative to limiting the number of drug benefits or to standardizing formularies, both of which reduce competition among plans. Making known which drugs are widely covered could stimulate competition, since pharmaceutical firms may consider lowering prices for a particular drug if they perceive that a "widely cov-

ered" designation could increase their market share.

### **Effectiveness of Widely Covered Drugs**

An important clinical question is whether widely covered drugs are as effective and safe as less well-covered drugs in the same class. Clearly this varies by treatment class, the specific drugs that are widely covered, the particular treatment indication, and, most importantly, each individual patient's clinical needs (eg, past medications tried, comorbid conditions). For the drug classes we studied, there are few head-to-head studies of drugs in the same class.<sup>29-32</sup> However, many of the widely covered drugs are well accepted and have been used successfully (eg, carvedilol, chlorthalidone, citalopram, diltiazem ER, enalapril, fluoxetine, furosemide, hydrochlorothiazide, lisinopril, metoprolol, nifedipine ER, sertraline, and simvastatin).<sup>31,32</sup> Clearly, there will be situations in which a noncovered or higher cost-sharing drug is the more appropriate clinical choice for individual patients. The convenience of prescribing a widely covered drug should not take precedence over discussing with patients any greater clinical benefits from less well-covered or more expensive drugs. Easier access to such comparative information, or at least making clearer when data are lacking on which drug(s) should be preferred within a class, could aid clinicians and patients in knowing when and how these discussions to balance medication cost and effectiveness should occur.

### **Generic Drugs vs Widely Covered Drugs**

Although it has been shown that generic drugs are more likely to be covered than brand-name drugs,<sup>4,8</sup> to our knowledge ours is the first study to examine how likely it is for generic drugs to be widely covered and to address the question of coverage at the drug class level, rather than the individual drug level. We found that 94% of widely covered drugs were generic and that almost no brand-name drugs (6%) were

widely covered. Clinicians could use a shortcut by assuming that generically available drugs are mostly covered and therefore choosing generic over brand-name drugs whenever clinically appropriate. This would also reduce patients' out-of-pocket drug costs, since co-payments for generic drugs are lower than those for brand-name drugs.<sup>4,8</sup> However, this approach alone is likely not a sufficient solution to the issue of variation among Part D formularies. Even if clinicians allowed direct generic substitution for all brand-name prescriptions or chose to prescribe only generic drugs, formulary coverage for generic drugs averaged only 90%; thus, there would still be a potential 10% risk of prescribing a noncovered generic drug. Additionally, generic drug coverage ranged from 13% to 100% of formularies, and one fourth of the 44 generic drugs were not widely covered. Therefore, it is not safe to assume that all generic drugs are low cost. Classes (eg, ARBs) also exist in which no generic drugs are available, and there were brand-name drugs that were widely covered. Thus, while encouraging use of generic drugs provides a partial answer, identifying widely covered drugs would be a better policy response to formulary variation.

### Relevance to Part D Formularies in Other States

We found similar results for Part D formularies in California and Hawaii, and our analyses included all nationwide and statewide plans. However, since formularies and co-payments can differ from state to state or even within a state (eg, plans may offer lower co-payments in more competitive local markets), the formulary status and co-payments of specific drugs may differ among geographical locations. However, we believe it is reasonable to expect that our main finding, that 7 of 8 treatment classes had at least 1 widely covered drug, will hold true nationwide. This is because nearly all widely covered drugs were generic drugs, which makes it highly likely that they will be covered uniformly nationwide

and at low co-payments (<\$15).<sup>4,8</sup> Similarly, we expect the list of widely covered drugs to be reasonably similar from region to region because of its generic nature, though some brand-name drugs may show geographical variation in coverage. Even if there is regional variation, however, it would be much more effective and efficient to help clinicians know which drugs are widely covered within their geographical region than for all clinicians to attempt to figure it out themselves.

### Tracking Formulary Variation Over Time

Clearly, formularies will change over time as drugs are added or dropped, and co-payments can also change annually. Our main finding, that many classes had at least 1 widely covered drug, is likely to hold true over time, since nearly all widely covered drugs were generic. The specific list of which drugs are widely covered, though, will likely change, and any prescribing tool will need to be updated regularly.<sup>8,33</sup> For example, simvastatin (Zocor) and sertraline (Zoloft) became available as generic drugs later in 2006. A repeat check of their coverage on December 8, 2006, found that simvastatin and sertraline were then widely covered by 93% and 100% of formularies examined, compared with 71% and 74% previously, when they were available only as brand-name drugs. Additionally, new studies indicating that one drug is substantially better than another or that a particular drug has a previously unrecognized clinically significant adverse effect (eg, rofecoxib) will also affect whether a drug stays widely covered or not. However, this only points to the difficulty that clinicians currently face in knowing which drugs are covered and gives further support for interventions (to be updated regularly) to identify widely covered drugs for clinicians.

### Limitations

A limitation of this study is that we studied Medicare formularies from only 2 states. However, we included drug benefits from all nationwide Part D

plans, and our findings represent 1 out of every 10 Medicare beneficiaries, since California is the state with the most beneficiaries.<sup>24</sup> The total number of MA-PD and PDP plans varies widely across the 50 states, ranging from 27 to 76 plans and averaging 50 plans per state in 2006.<sup>24</sup> Therefore, California (with 66 MA-PD and PDP plans offering 168 Part D drug benefits) is more a "worse" rather than a "typical" state in terms of evaluating formulary variation. The California findings are bolstered by their confirmation in Hawaii, where there are far fewer Part D formularies (n=43). For states with fewer Part D plans (Alaska has the fewest plans [n=27]<sup>24</sup>), it is plausible that there is a greater likelihood of a drug being widely covered, since there are fewer plans. Our study is less useful for clinicians who wish to prescribe a particular drug because of a patient's specific medical needs. For this, an evaluation of variation in coverage of specific drugs is more useful and has been the focus of previous studies.<sup>4,5</sup> We studied 8 important treatment classes, but studies of other classes such as antimicrobials, analgesics, and asthmatic and diabetes medications clearly are needed.

### CONCLUSIONS

Our study shows that despite significant variation among Medicare Part D formularies, many treatment classes have at least 1 drug that is widely covered by nearly all Part D plans. Thus, a highly practical approach would be to help clinicians identify these widely covered drugs in dealing with variation among formularies.

**Author Contributions:** Dr Tseng 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:* Tseng, Mangione, Brook.  
*Acquisition of data:* Tseng.

*Analysis and interpretation of data:* Tseng, Mangione, Brook, Keeler, Dudley.

*Drafting of the manuscript:* Tseng.

*Critical revision of the manuscript for important intellectual content:* Tseng, Mangione, Brook, Keeler, Dudley.

*Statistical analysis:* Tseng, Keeler.

*Obtained funding:* Tseng, Mangione, Dudley.

*Administrative, technical, or material support:* Tseng.

*Study supervision:* Tseng, Mangione, Brook, Keeler, Dudley.

**Financial Disclosures:** The authors reported no financial disclosures. Dr Brook reports that his spouse, Dr Jacqueline Kosecoff, is the CEO of Ovations Pharmacy Solutions.

**Funding/Support:** Dr Tseng is funded by the Robert Wood Johnson Foundation (RWJF) Generalist Physician Faculty Scholars Program (051085). Dr Mangione is partially supported by the University of California, Los Angeles Resource Center for Minority Aging Research (RCMAR), NIA grant AG21684. Dr Dudley's work on this article was supported by an RWJF Investigator Award in Health Policy.

**Role of the Sponsors:** The funding organizations had no role in the design and conduct of the study; the collection, management, analysis, or interpretation of the data; or the preparation, review, or approval of the manuscript.

**Acknowledgment:** We thank Eric Jackson, PharmD, BCPS (University of Connecticut School of Medicine, Farmington), and St Francis Hospital and Medical Center, Hartford), for his invaluable help in evaluating the evidence-based literature on treatment classes and Luella Manlucu (Department of Family Medicine and Community Health, John A. Burns School of Medicine at the University of Hawaii, Honolulu) for her dedication in compiling Medicare formulary data. Dr Jackson's contributions were funded through a paid consultant role with Dr Tseng's RWJF grant; Ms Manlucu's contributions were funded through a 0.5 FTE research assistant position with Dr Tseng's RWJF grant.

## REFERENCES

1. Kaiser Family Foundation. Medicare—a primer. March 2007. <http://www.kff.org/medicare/upload/7615.pdf>. Accessed February 21, 2007.
2. Kaiser Family Foundation. Medicare at a glance. September 2005. <http://www.kff.org/medicare/upload/1066-08.pdf>. Accessed February 21, 2007.
3. Kaiser Family Foundation. National survey of physicians. November 2006. <http://www.kff.org/kaiserpolls/upload/7584.pdf>. Accessed February 21, 2007.
4. Kaiser Family Foundation. An in-depth examination of formularies and other features of Medicare drug plans. April 2006. <http://www.kff.org/medicare/upload/7489.pdf>. Accessed February 21, 2007.
5. California HealthCare Foundation. The Medicare drug benefit: how good are the options? March 2006. <http://www.chcf.org/documents/policy/TheMedicareDrugBenefitHowGoodAreTheOptions.pdf>. Accessed February 21, 2007.
6. California HealthCare Foundation. The Medicare drug benefit in California—facts and figures. September 2006. <http://www.chcf.org/documents/insurance/TheMedicareDrugBenefitInCalifornia.pdf>. Accessed February 21, 2007.
7. Kaiser Family Foundation. The Medicare prescription drug benefit. November 2006. <http://www.kff.org/medicare/upload/7044-05.pdf>. Accessed February 21, 2007.
8. Kaiser Family Foundation. Benefit design and formularies of Medicare drug plans: a comparison of 2006 and 2007 offerings. November 2006. <http://www.kff.org/medicare/upload/7589.pdf>. Accessed February 21, 2007.
9. Soumerai SB, Pierre-Jacques M, Zhang F, et al. Cost-related medication nonadherence among elderly and disabled Medicare beneficiaries: a national survey 1 year before the Medicare drug benefit. *Arch Intern Med*. 2006;166:1829-1835.
10. Goldman DP, Joyce GF, Escarce JJ, et al. Pharmacy benefits and the use of drugs by the chronically ill. *JAMA*. 2004;291:2344-2350.
11. Gibson TB, Ozminkowski RJ, Goetzel RZ. The effects of prescription drug cost sharing: a review of the evidence. *Am J Manag Care*. 2005;11:730-740.
12. Federman AD, Adams AS, Ross-Degnan D, et al. Supplemental insurance and use of effective cardiovascular drugs among elderly Medicare beneficiaries with coronary heart disease. *JAMA*. 2001;286:1732-1739.
13. Piette JD, Heisler M, Wagner TH. Cost-related medication underuse among chronically ill adults: the treatments people forgo, how often, and who is at risk. *Am J Public Health*. 2004;94:1782-1787.
14. Tseng CW, Brook RH, Keeler E, et al. Cost-lowering strategies by Medicare beneficiaries who exceed drug benefit caps and have a gap in drug coverage. *JAMA*. 2004;292:952-960.
15. Tamblyn R, Laprise R, Hanley JA, et al. Adverse events associated with prescription drug cost-sharing among poor and elderly persons. *JAMA*. 2001;285:421-429.
16. Hsu J, Price M, Huang J, et al. Unintended consequences of caps on Medicare drug benefits. *N Engl J Med*. 2006;354:2349-2359.
17. Wilson IB, Rogers WH, Chang H, et al. Cost-related skipping of medications and other treatments among Medicare beneficiaries between 1998 and 2000: results of a national study. *J Gen Intern Med*. 2005;20:715-720.
18. Kaiser Family Foundation. Seniors' early experiences with their new Medicare drug plans—June 2006. July 2006. <http://www.kff.org/kaiserpolls/pomr072706pkg.cfm>. Accessed February 21, 2007.
19. Landon BE, Reschovsky JD, Blumenthal D. Physicians' views of formularies: implications for Medicare drug benefit design. *Health Aff (Millwood)*. 2004;23:218-226.
20. Huskamp HA, Keating NL. The new Medicare drug benefit: formularies and their potential effects on access to medications. *J Gen Intern Med*. 2005;20:662-665.
21. Medical News Today. McClellan says CMS hopes to help Medicare beneficiaries understand new drug benefit better, but will not reduce number of available drug plans. February 14, 2006. <http://www.medicalnewstoday.com/medicalnews.php?newsid=37539>. Accessibility verified May 21, 2007.
22. Peterson S, Gold M. Tracking Medicare health and prescription drug plans: monthly report for April 2007. May 1, 2007. <http://www.kff.org/medicare/upload/medicaretracking0407.pdf>. Accessed May 24, 2007.
23. Kaiser Family Foundation. State health facts. <http://www.statehealthfacts.org/cgi-bin/healthfacts.cgi?previewid=292&>. Accessed February 21, 2007.
24. Kaiser Family Foundation. Medicare Part D enrollment and plan characteristics, 2006. Publication 7426-02. <http://www.kff.org/medicare/upload/7426-02.pdf>. Accessed February 21, 2007.
25. National Ambulatory Medical Care Survey. Health—United States 2005. <http://www.cdc.gov/nchs/data/hus/05.pdf#092>. Accessed February 21, 2007.
26. ePocrates Web site. <http://www.epocrates.com>. Accessibility verified May 21, 2007.
27. Piette JD, Heisler M, Wagner TH. Problems paying out-of-pocket medication costs among older adults with diabetes. *Diabetes Care*. 2004;27:384-391.
28. Haas JS, Phillips KA, Gerstenberger EP, Seger AC. Potential savings from substituting generic drugs for brand-name drugs: Medical Expenditure Panel Survey, 1997-2000. *Ann Intern Med*. 2005;142:891-897.
29. The Cochrane Collaboration. The Cochrane Library. <http://www.cochrane.org/index.htm>. Accessed February 21, 2007.
30. The Medical Letter. The Medical Letter. <http://www.medicalletter.com>. Accessed February 21, 2007.
31. The Medical Letter. Treatment Guidelines. <http://www.medicalletter.com>. Accessed February 21, 2007.
32. Oregon Health & Science University. Drug Effectiveness Review Project. <http://www.ohsu.edu/drugeffectiveness/reports/final.cfm>. Accessed February 21, 2007.
33. Shrank WH, Ettner SL, Glassman P, et al. A bitter pill: formulary variability and the challenge to prescribing physicians. *J Am Board Fam Pract*. 2004;17:401-407.