Giving Providers Access to Formulary Drug Cost Information – Association With Patients' Drug Costs and Medication Use

Deborah Taira, ScD

Daniel K. Inouye College of Pharmacy, Univ. of Hawaii, Honolulu, HI

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Presenter Disclosures

Deborah Taira

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No disclosures

Investigators

- Chien-Wen Tseng, MD MPH, Department of Family Medicine and Community Health, University of Hawaii John A. Burns School of Medicine, Honolulu, HI. Pacific Health Research and Education Institute, Honolulu, HI
- Deborah Taira, ScD, Daniel K. Inouye College of Pharmacy, University of Hawaii, Honolulu, HI
- Grace Lin, MD MAS, Department of Medicine, University of California, San Francisco, San Francisco, CA
- James Davis, PhD, Biostatistics Core, John A. School of Medicine, University of Hawaii, Honolulu, HI
- Jinoos Yazdany, MD MPH, Division of Rheumatology, Department of Medicine, University of California, San Francisco, San Francisco, CA
- Qimei He, PhD, Pacific Health Research and Education Institute, Honolulu, HI
- Allison Imamura, Cancer Prevention & Control Res/FSPH & JCCC, University of California, Los Angeles, Los Angeles, CA
- Chen Randi, MS, Pacific Health Research and Education Institute, Honolulu, HI
- Adams Dudley, MD MBA, Division of Pulmonary and Critical Care, Department of Medicine, University of California, San Francisco, San Francisco, CA

Accessing formulary and drug cost information is difficult

- **Multiple health plans.**
  - Hawaii survey – 7 in 10 physicians dealt with 6+ plans.[1]
- **Formularies vary.**
  - A drug may be covered for one patient but not the next.
- **Drug benefits often have 5 tiers of cost-sharing.**
  - Preferred generic, non-preferred generic, preferred brand-name, non-preferred brand-name, specialty tier.[2]
- **E-prescribing lack formulary & drug cost information**
  - fewer than half of providers with e-prescribing have access to formularies and fewer than one–third have copayments.[3]

1. Tseng CW, et al. Health information technology and physicians' knowledge of drug costs. Am J Manag Care.2010; 16:e105-10.
2. Duru OK, et al. Potential savings associated with drug substitution in Medicare Part D. *J Gen Intern Med.* 2014 Jan;29(1):230-6.
3. . Lack of formulary access tops PCP limitations with e-Prescribing. www.Drugs.com. September 26, 2013

The Prescribing Guide

- Statewide intervention to help providers access formulary and drug cost information.
- Six commercial and Medicaid health plans.

Funding

- Robert Wood Johnson Foundation
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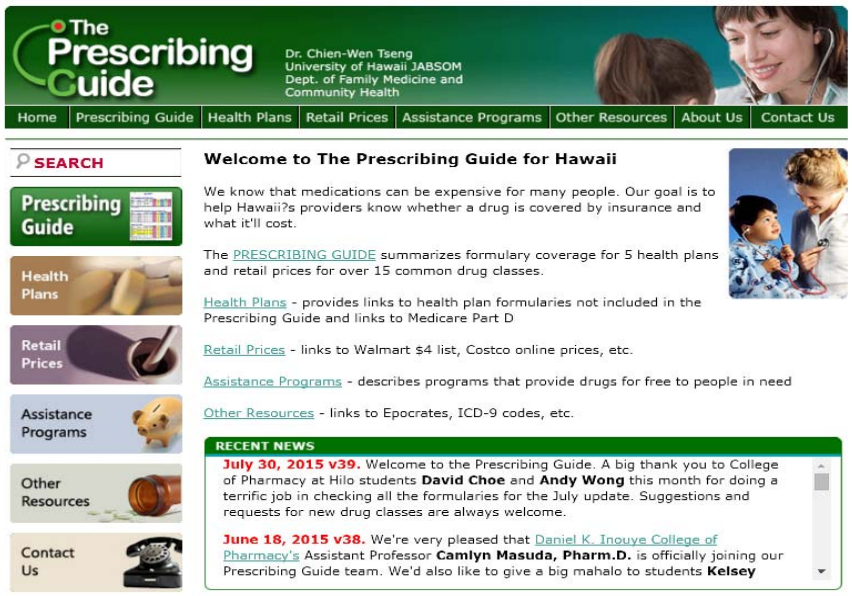
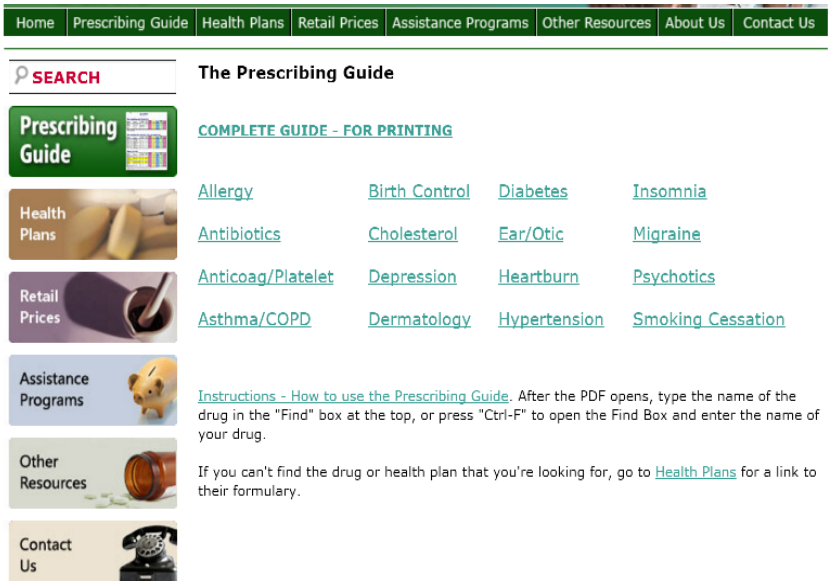


Sixteen health conditions



Formulary & drug cost information

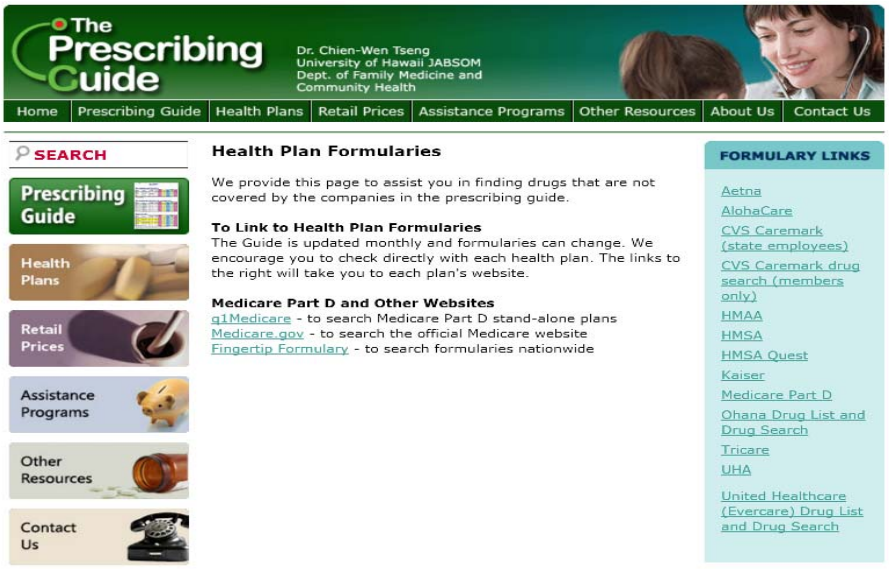
- Retail cost, covered or not, generic versus brand-name, copayment, prior authorization, highlight if widely covered.

DIABETES

Metformin

BRAND	*Generic*	Costco $ (30 pills)	Generic Brand	Aloha Care	CVS State employees	HMSA	HMSA Quest	Ohana	United Healthcare (Evercare)
Glucophage	***metformin***	**$7 (500mg) walmart $4**	**Generic**	**$0**	**$5-10**	**$5-10**	**$0**	**$0**	**$0**
Glucophage XR	***metformin ER***	**$7 (500mg) walmart $4**	**Generic**	**$0**	**$5-10**	**$5-10**	**$0**	**$0**	**$0**
Metaglip	***metformin/glipizide***	**$25 Epocrates**	**Generic**	**$0**	$5-10	$5-10	**$0**	**$0**	need PA
Glucovance	***metformin/glyburide***	**$7**	**Generic**	**$0**	**$5-10**	**$5-10**	**$0**	**$0**	**$0**
TZD/Others									
Actos	*pioglitazone*	$15 (15mg)	Generic	step therapy	$5-10	$5-10	$0	must fail metformin	step therapy*
Duetact	*pioglitazone/ glimepiride*	$293	Generic	step therapy	$5-10	$5-10	step therapy*	need PA	step therapy*
ACTOplus met	*pioglitazone/metf ormin*	$255	Generic	step therapy	$5-10	$5-10	step therapy*	must fail metformin	step therapy*
Byetta	*exenatide*	$474 (3ml)	Brand	need PA	$30	$15-20	need PA	need PA	need PA*

Health plan links & retail costs



Dissemination

- Mailed to all adult primary care physicians in Hawaii.
- 56% enrolled for updates & website link.
- One year survey - % of providers:
  - Checking formularies increased from 34% to 67%.
  - Knew drug costs increased from 11% to 29%.
- Less than $5,000/year to maintain website.

Study Objective

- How does physicians' use of the Prescribing Guide affect drug costs and medication use for patients?

Study Aims

- **Aim 1.** Compare changes in medication use from 2007 to 2009 for control vs. study patients.
- **Aim 2.** Compare changes in medication costs from 2007 to 2009 for control vs. study patients.

Health plan partnership

Collaboration with Hawaii's largest health plan Hawaii Medical Services Association, which covers ~70% of Hawaii's residents.

Study Design - Patients

- **Used enrollment and pharmacy claims.**
- **ICD-9 to identify members with diabetes.**
  - 85% of patients with diabetes require medications.
  - 14% to 49% of patients with diabetes report non-adherence to treatment due to cost.
- **Eligible patient if:**
  - Enrolled > 320 days in 2007 and 2009
  - Age 18 to 64
  - Not Medicaid or Medicare

Patient-Physician Linkage

- Each patient linked to a "**main prescriber"** who prescribed the greatest # of prescriptions for them in that year.
- Physicians were eligible if they were a general internist, family physician, general practitioner, endocrinologist or cardiologist.
- Patients had to be **linked to the same main prescriber** in both years.

Assignment to Control vs. Study

- **Control patient –** their main prescriber did not enroll to receive the Prescribing Guide.
- **Study patient**– their main prescriber voluntarily enrolled to receive the Prescribing Guide.

Methods – Medication use & cost

- **Medication use**
  - Number of prescriptions.
  - Days supply of medications.
- **Medication cost**
  - **Total drug costs** (paid by plan and patient) per year and per 30-day supply.
  - Patients' **copayments** per year and per 30-day supply.
- **Calculated**
  - For all drugs (including non-diabetes medications).
  - Separately for brand-name and generic drugs.

Analyses

- **Multivariate analyses.** SAS 9.4 Proc Mixed
- **Main outcomes.** Changes in medication use and drug costs.
- **Predictor.** Use of the Prescribing Guide.
- **Controlled for.** Physician specialty and clustering of patients by main prescriber.

Approved by the Institutional Review Board for human subjects at the University of Hawaii and at the VA Pacific Islands Health Care System

Results

Linked to same main prescribing physician in 2007 and 2009
- Enrolled ≥ 320 days
- One or more oral diabetes prescription
- Age 21- 64

↓

Linkage to main prescribing physician (n= 327 physicians)
- Physician who prescribed highest number of prescription for them in that year

↓

Linked to same main prescribing physician in 2007 and 2009
- **5883 patients** (5883 out of 6433 =91%)
- **299 physicians** (299 out of 327 = 91%)

Patients' medication use & cost

For the 5,883 patients in the final sample:

- 433,945 prescriptions
- 15.3 million days supply of medications
- $42.7 million in total drug costs
- $5.96 million in out-of-pocket drug costs

Tight linkage to main prescriber

- 299 main prescribers accounted for their patients.
  - 88% of prescriptions
  - 90% days supply of medications
  - 89% of total drug costs
  - 88% of copayment costs
- Most were general internist (69%), family physicians (17%), and endocrinologists (8%). The remainder were general practitioner (5%), cardiologist (1%).

Baseline- Drug Cost and Use

BASELINE - 2007	All drugs			Generic drugs			Brand-name drugs		
Medication use (baseline)	control	study	p-value	control	study	p-value	control	study	p-value
Number of prescriptions	35.5	35.4	0.48	**19.9**	**21.1**	**0.02**	15.6	14.3	0.13
Days supply of medications	1233	1233	0.34	**675**	**727**	**0.003**	558	506	0.11
Total Drug costs (baseline)									
Total drug cost/year ($)	$3,340	$3,216	0.74	**$860**	**$925**	**0.02**	$2,480	$2,291	0.29
Total drug cost/30-day supply ($)	**$81**	**$77**	**0.03**	$40	$40	0.51	$129	$127	0.55
Copayment costs (baseline)									
Copayment cost/year ($)	$503	$473	0.39	**$112**	**$120**	**0.005**	$391	$353	0.15
Copayment cost/30-day supply ($)	**$12**	**$11**	**0.008**	$5	$5	0.11	$21	$20	0.22

*Multivariate analyses SAS Proc Mixed comparing Control (n= 3061) vs. Study patients (n=2822), controlling for provider specialty

Baseline - summary

- **Similar medication use** – similar # of prescriptions, days supply of medications.
- **Similar annual total drug costs and copayments.**
- **Control used less of generic drugs.**
  - Started with higher total drug costs and copayments per 30 day supply.

Follow-up – Drug Cost & Use

FOLLOW-UP - 2009	All drugs			Generic drugs			Brand-name drugs		
Medication use (follow-up)	**control**	**study**	**p-value**	**control**	**study**	**p-value**	**control**	**study**	**p-value**
Number of prescriptions	38.6	38.0	0.97	22.0	23.0	0.08	**16.6**	**15.0**	**0.04**
Days supply of medications	1374	1362	0.67	**768**	**815**	**0.02**	**606**	**547**	**0.049**
Total Drug costs (follow-up)									
Total drug cost/year ($)	$4,131	$3,800	0.11	$861	$890	0.29	**$3,270**	**$2,910**	**0.049**
Total drug cost/30-day supply ($)	**$90**	**$83**	**0.003**	**$36**	**$34**	**0.02**	$159	$152	0.08
Copayment costs (follow-up)									
Copayment cost/year ($)	$545	$504	0.18	**$127**	**$134**	**0.03**	$418	$370	0.07
Copayment cost/30-day supply ($)	**$12**	**$11**	**0.01**	**$6**	**$5**	**0.02**	**$21**	**$20**	**0.03**

*Multivariate analyses comparing Control (n= 3061) vs. Study patients (n=2822), controlling for provider specia

Follow-up summary

- **Control still used less of generic drugs.**
- **But control now also had higher brand-name drug use than study patients.**
  - Higher number of brand-name prescriptions and days supply of drugs.

Control vs. study patients' change in medication use and drug costs

CHANGE from 2007 to 2009	All drugs			Generic drugs			Brand-name drugs		
Medication use (change)	control	study	p-value	control	study	p-value	control	study	p-value
Number of prescriptions	3.2	2.7	0.24	2.1	1.9	0.43	1.1	0.8	0.32
Days supply of medications	141	129	0.40	93	89	0.63	48	41	0.45
Total drug costs (change)									
Total drug cost/year ($)	**$792**	**$584**	**0.02**	**$2**	**-$34**	**0.053**	**$790**	**$619**	**0.07**
Total drug cost/30-day supply ($)	**$9.40**	**$6.08**	**0.03**	-$3.42	-$5.11	0.065	$30.47	$25.28	0.20
Copayment costs (change)									
Copayment cost/year ($)	$41	$31	0.36	$15	$14	0.44	$26	$17	0.44
Copayment cost/30-day supply ($	-$0.23	-$0.19	0.996	$0.30	$0.13	0.19	$0.32	-$0.23	0.27

*Multivariate analyses comparing Control (n= 3061) vs. Study patients (n=2822), controlling for provider specialty

Total drug costs savings

- **Both group had similar increases in medication use.**
- **Total drug costs and copayments increased for both groups.**
- **But Control patients had higher increases in annual total drug costs.**
  - Control patients had increases in annual total drug costs of $792 versus $584 for study patients (p = 0.02).
  - Driven by greater cost increases for both brand-name and generic drugs.
- **Copayment increases were similar for both groups.**

Higher total drug cost per 30-day supply

- **Greater increases in total drug costs for control patients, but similar increases in brand-name & generic drug use.**
- **Therefore savings NOT due to**
  - switching from brand-name to generic drugs.
  - switching from non-preferred to preferred drugs.
- **Likely due to higher cost of brand-name and generic drugs per 30-day supply for control patients.**
  - Trend for control patients to have higher increase in the total drug costs per 30-day supply for brand-name drugs (+$30.47 vs. +$25.28, p = .20) and slower drop in cost of generic drugs (-$3.42 vs. -$5.11, p = 0.065).

May be due to highlighting widely covered drugs

- Prescribing Guided highlighted drugs in treatment class which were **widely covered** by all 6 health plans.
- Leads to lower total drug costs if these drugs are widely covered because they are **less expensive for health plans** to purchase.

Summary

- No change in medication use
- No change in copayments
- Lower total drug costs for health plans

Health Policy

- **Prescribing Guide**
  - Easy development.
  - Low cost to maintain.
  - Free. No proprietary software or user licenses required.
- **Integrate formulary and drug cost information into e-prescribing.**

Integrate cost into e-prescribing

- Fischer et al.[1]
  - Integrate formulary support into e-prescribing for 1.5 million patients. Estimated total drug cost savings of $845,000 per 100,000 patients with a 20% uptake among physicians.
- McMullin et al. [2]
  - E-prescribing with preferred drug options for clinical practice of 38 primary care physicians. Estimated total drug cost savings of $1.2 million per 100,000 patients.
- Zuker, et al.[3]
  - E-prescribing with formulary support for 647 physicians. Total drug cost savings of 4%.

1. Fischer MA, et al.. Effect of electronic prescribing with formulary decision support on medication use and cost. *Arch Intern Med*. 2008 Dec 8;168(22):2433-9.
2. McMullin ST, et a;/ Twelve-month drug cost savings related to use of an electronic prescribing system with integrated decision support in primary care. *J Manag Care Pharm*. 2005 May;11(4):322-332.
3. Zuker A, et al.. Electronic notifications about drug substitutes can change physician prescription habits: a cross-sectional observational study. *Med Decis Making*. 2011 May-Jun;31(3):395-404.

Limitations

- **Not a randomized control trial.**
  - Physicians who enrolled to use the Prescribing Guide may be more sensitive to drug costs for patients.
- **Could not control for patient characteristics.**
  - Age, gender, income, co-morbidities.
- **Relied on providers' self-reported use.**
  - Use of Prescribing Guide based on annual surveys.

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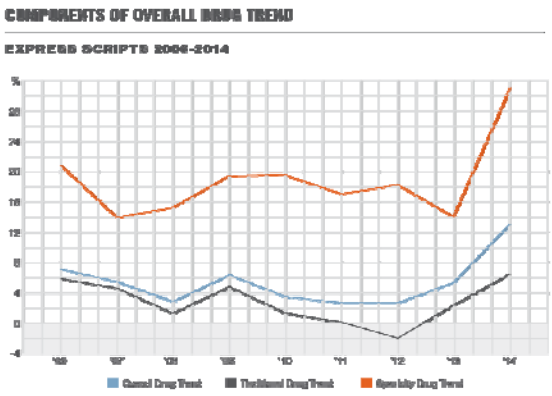
- Pacific Health Research and Education Institute

US prescription drug expenditures

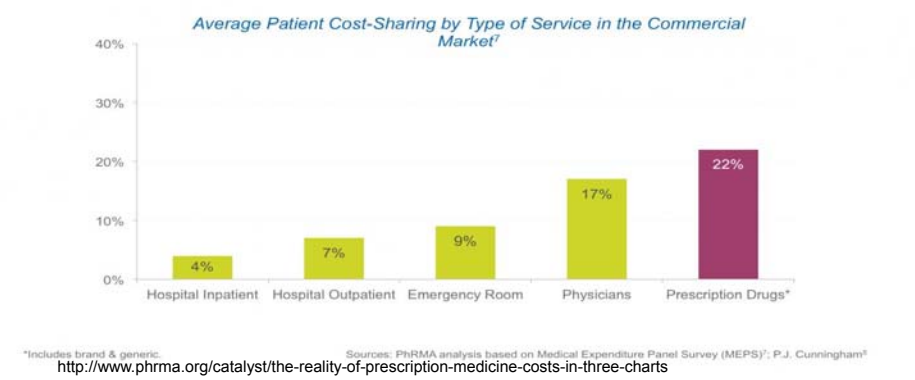
- $374 billion in 2014
- 13.1% yearly increase in 2014, highest in a decade
- Driven by increasing prices, more than use



Express Scripts 2014 Drug Trend Report - % increase in expenditures

Cost-sharing for patients

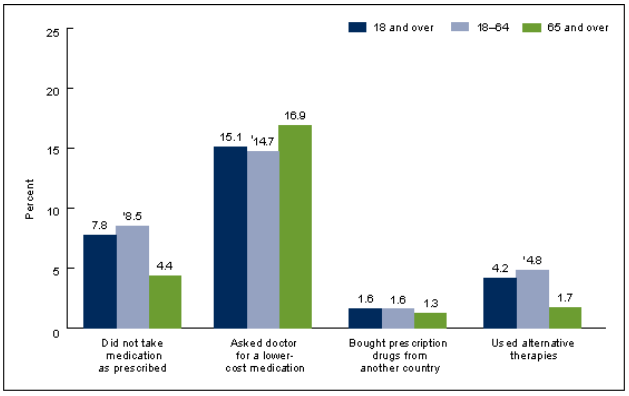
- Patients pay for one-fifth (22%) of drug expenditures out-of-pocket.
- For example, the average copayment under the Medicare Part D drug benefit, which covers 39 million beneficiaries, would be $45/month or $540 per year, even with drug coverage.



http://www.phrma.org/catalyst/the-reality-of-prescription-medicine-costs-in-three-charts

Medication use affected by cost

- 2013 national survey: Among those ages 18-64, about 1 in 12 did not take a prescription as prescribed due to cost.
- 1 in 6 asked their doctor for a lower-cost medication.



CDC/NCHS, National Health Interview Survey, 2013.

Providers wish to help with drug costs but lack cost information

Statewide survey of 247 adult primary care physicians in Hawaii

Table 1. Barriers to Considering Drug Costs for Patients When Prescribing (n = 247 physicians)*	
Difficulty knowing which drug is on the formulary	94%
Difficulty knowing my patient's copayment	91%
Difficulty knowing if there are less expensive but equally effective alternative drugs	68%

*Tseng CW, Brook RH, Alexander GC, et al. Health information technology and physicians' knowledge of drug costs. Am J Manag Care.2010; 16:e105-10.

Knowing drug cost information could lead to lower cost

- A study of 1.1 million insured persons
  - Nearly half could potentially switch to lower cost drugs within the same treatment class.
  - Decrease total drug costs by $389 to $452 /person annually.
  - Decrease out-of-pocket costs by $22 to $113/person annually.

1. Duru OK, Ettner SL, Turk N, et al. Potential savings associated with drug substitution in Medicare Part D: the Translating Research into Action for Diabetes (TRIAD) study. *J Gen Intern Med.* 2014 Jan;29(1):230-6.