

Identifying patient panels to improve continuity, access, and quality in family medicine teaching practices

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Project Aims

- To identify the physician who is the first source of primary care for each patient at two family medicine teaching sites
- To create a “panel list” of all patients for whom each physician acts as PCP
- To explore the consequences of explicit PCP assignments and panel lists



What is a “Primary Care Provider”?

- The first source of care for each patient
- The provider ultimately responsible for each patient’s chronic and preventive care
- Principle: Every patient should have one and only one PCP



What is a “Panel”?

- The list of patients for whom each provider serves as PCP
- The basis of continuity and patient satisfaction
- The source of demand for appointments for each provider



Why are panels important?

- Help to define and equitably divide the **work of the practice**
- Allow **individual feedback to providers** on aggregate demographics, processes and outcomes for the patients they treat
- Allow **rational transfer of patients** from one PCP to another when a provider enters or leaves a practice



Panels in teaching practices

- Special challenges to continuity
 - Most providers practice part-time
 - Care often shared between providers
 - Acute care often rendered by covering MD
 - Frequent provider turnover



Project setting

- Montefiore Residency Program in Family Medicine (Bronx, NY)
- Two teaching practices, each with
 - 15 residents
 - 4 attendings acting as resident team leaders
 - Several non-teaching attending physicians



Project setting

- Electronic medical record
 - GE Centricity Enterprise (a/k/a “CareCast”)
 - Robust hospital-based system with rudimentary outpatient component
 - Contains outpatient visit histories, labs, problem lists, medication lists, allergy lists—but not progress notes
 - All users see “PCP” for each patient

<div> <div> ESC F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 </div> <div> Lab Help Rx Help MICRO MEDEX MMC Intranet Applications </div> </div>									
<div> <div>Pt. Info</div> <div>Allergy/Clinical</div> <div>Problem List</div> <div>Results</div> <div>Meds</div> <div>Viewer</div> <div>Orders</div> <div>Tools</div> <div>Consent Charting</div> <div>Labels</div> <div>Tracking</div> <div>Ambulatory</div> </div>									
Name:			MR#:		Gender: F		DOB - Age: 12Oct1948=59		
			Floor:		Room Bed:		Bed Phone:		
			PCR: SOLOWAY, BRUCE		Attending:		ADMD LOS:		

Document Display

ALL LABS:

Legend: (I)nbox, (N)ote, [S]tatus; Values = (P)reliminary, (F)inal

Description	I	N	S	Coll. Date	Rpt. Date
SYPHILIS SCREEN			F	19Apr08 17:13	20Apr08
URINALYSIS,MICRO			F	19Apr08 17:13	20Apr08
URINALYSIS			F	19Apr08 17:13	19Apr08
SED RATE			F	19Apr08 17:13	19Apr08
HDL-CHOLESTEROL			F	19Apr08 17:13	19Apr08
CHOLESTEROL			F	19Apr08 17:13	19Apr08
BASIC METAB PAN...			F	19Apr08 17:13	19Apr08
LIVER TESTS			F	19Apr08 17:13	19Apr08
CBC			F	19Apr08 17:13	19Apr08

BASIC METAB PANEL (Chem7/Ca)
 Collected: 19Apr08 17:13
 Ordered By: Soloway Md , Bruce ,
 Accession #: 08-892421

Last Updated: 19Apr08 18:15
 Ord Priority:
 USN: 000000000237754547

Result Name	Result	Abnl	Normal Range	Units
Perf. Loc.				
SODIUM	146	h	135-145	mEq/L
POTASSIUM	3.9		3.5-5.0	mEq/L
CHLORIDE	108		98-108	mEq/L
CO2	23	l	24-30	mEq/L
GLUCOSE	57	l	70-115	mg/dL
UREA NITROGEN	22	h	6-20	mg/dL
CREATININE	0.8		0.5-1.5	mg/dL
CALCIUM	10.2		8.5-10.5	mg/dL
GFR Calculation	> 60			mL/min

Result Comment:
 Non African American Female, age 59 year(s)
 eGFR-MDRD values > 60 mL/min/1.73 sq. meter

Got 9 Results on Page 1 of 1

Next

Prev

Print

Detail

See Notes

My Inbox

Forward

Pending

Cancel

Result reviewed

LOV1RD

MOSES

LPOOL43

File Patient Session Navigate Help

ESC F1 F2 F3 S-F4 F4 F5 F6 F7 F8 F9 F10 F11 F12 OK [Icon] [Icon]

Lab Help Rx Help MICRO MEDEX MMC Intranet Applications

REG/ACCT CREATE UPDATE REG/ACCT INFO SCHED FIRST FREE APPT VISIT/ENCOUNTERS COPAY FUNCT. PRINT LABELS

Name: MR#: Gender: F DOB - Age: 12Oct1948=59
Floor: Room Bed: Bed Phone:
PCP: SOLOWAY, BRUCE Attending: ADMD LOS:

FIRST FREE APPOINTMENT

Reception First Free Long Form Short Form Wait Form Series Sequential Split Form

Desired Appointment
Facility: Dept: Provider: SOLOWAY, B Type: OPEN SCHEDULES ONLY
Open slots only (Always Select): Consecutive Opens:

Patient Availability
Day of Week
Mon Tue Wed Thu Fri Sat Sun
Start date: 20APR2008 SUN
Time of Day: 2:31PM to:

#	Fac	Dept	Provider	Type	Dur	Day	Date	Time	Text
1	MFHC	FMM	SOLOWA...	SDA	15	MON	21APR	2:45PM	
2	MFHC	FMM	SOLOWA...	SDA	15	MON	21APR	3:00PM	
3	MFHC	FMM	SOLOWA...	SDA	15	WED	23APR	8:45AM	
4	MFHC	FMM	SOLOWA...	SDA	15	WED	23APR	9:15AM	
5	MFHC	FMM	SOLOWA...	SDA	15	WED	23APR	9:30AM	
6	MFHC	FMM	SOLOWA...	SDA	15	WED	23APR	9:45AM	
7	MFHC	FMM	SOLOWA...	SDA	15	WED	23APR	10:30AM	
8	MFHC	FMM	SOLOWA...	SDA	15	THU	24APR	2:30PM	
9	MFHC	FMM	SOLOWA...	SDA	15	THU	24APR	2:45PM	
...	MFHC	FMM	SOLOWA...	SDA	15	THU	24APR	3:00PM	

Patient Appointments
D... Date Time Fac Dept R/R/P Dur ...
S... 7-JUN 08:15 MF... FMM SOLO... 15

Detail Expand Wait Add
Print Cancel Display
Alter WL

Make Waiting Wait Add Exit



Project setting

- CareCast PCP
 - The provider identified for each patient in the “PCP” field in CareCast
 - Should be controlled by clinicians based on real primary-care relationships negotiated with patients, but...
 - Clinical and administrative personnel can change this field
 - Often inaccurate due to provider turnover, unrecorded patient migration, administrative good intentions...



Project setting

- “Clinical Looking Glass”
 - A physician-developed, user-friendly interface allowing practicing physicians to easily build structured queries addressing the entire hospital database
 - Initial focus on inpatient data
 - Evolving outpatient capabilities
 - Physician leadership eager to develop new features



Methods - Step 1

- Developed new query in Clinical Looking Glass to analyze outpatient visit histories (11/06)



Defining terms

- A clinic's patient panel
 - All patients seen at the clinic at least once in the past 18 months



Defining terms

- Visit-based PCP
 - The *active* provider seen most often by each patient in the last 18 months
 - Or, if there is a tie, the active provider seen most recently in the last 18 months
 - Some patients are “orphan patients”
 - No visit-based PCP, no active CareCast PCP
 - For the past 18 months, have only seen providers who have since left the practice

Clinical Looking Glass - Windows Internet Explorer

https://clg.emerginghealthit.com/clgnet/login.aspx

Google

Go

Bookmarks

PageRank

Popups okay

Check

Autolink

AutoFill

Send to

Settings

The Ne...

Gmail - ...

N Citrix(r)...

Current...

New Ro...

Democr...

RealCl...

Clini...

Page

Tools

CLG

Smart Reports

PCP Assignment - Practitioner View

Analysis

Smart Reports

Tools

Help

Home

Log Out

Reports List

- CLG Reports
 - ED Returns
 - Follow-up Encounter Detail
 - Index Event Detail
 - Show Labs
 - Show Meds
- Ad Hoc Reports
 - ACE-ARB Failure/MI
 - Birth Report
 - Comorbidity
 - Geocoding
 - Influenza Vaccination
 - MocVisits
 - Mot Visits
 - Nursing Station
 - PapQI
 - PCP Assignment - Practitioner View**
 - PCP Assignment - Supervisor Report
 - Pneumococcal Vaccination
 - Radiation Exposure
 - Resident Report Card

Criteria

Summary

Methods

Define Patients

Start Date: 09/01/2006

End Date: 04/01/2008

*Facility: USR: FM at FHC

*Provider Set: USR: FHC 9-07

Report Type

Individual

Pod

Output

Report

Spreadsheet

Comma Delimited (CSV)

Collapse All

Clear

Run Report

Report Viewer



The PCP Panel report

- For each provider, 3 “bands”:
 - Band 1 – Patients for whom the provider is both the CareCast PCP and the Visit-Based PCP
 - Band 2 – Patients for whom the provider is the CareCast PCP but not the Visit-Based PCP
 - Band 3 – Patients for whom the provider is the Visit-Based PCP but not the CareCast PCP

MMG Family Health Center

Carecast PCP is the primary care physician as defined in Carecast.

Visit-Based PCP is the provider who has seen the patients most frequently in the past 547 days in the clinic of interest. If a patient saw multiple physicians the same number of times, then the Visit-Based PCP is the one who saw the patient most recently.

Soloway Md, Bruce .

Band 1 All patients for whom the provider is both the Visit-Based PCP and Carecast PCP.

MRN	Patient Name	Total Primary Care Visits In the Past 547 Days	Total Number of Visits to You in the Past 547 Days	Most Recent Visit to You
	Patient #1	28	20	2/13/2008 9:11:00AM
	Patient #2	15	15	2/25/2008 11:24:00AM
	Patient #3	22	15	10/15/2007 1:15:00PM
	Patient #4	13	13	2/11/2008 11:39:00AM
	Patient #5	12	12	2/25/2008 11:50:00AM
	Patient #6	12	12	1/10/2008 2:31:00PM
	Patient #7	14	11	1/14/2008 10:57:00AM
	Patient #8	11	10	1/3/2008 1:33:00PM
	Patient #9	13	10	12/19/2007 8:44:00AM
	Patient #10	11	10	1/9/2008 8:13:00AM
	Patient #11	10	9	1/14/2008 1:39:00PM
	Patient #12	9	9	1/14/2008 3:38:00PM
	Patient #13	9	9	2/21/2008 1:53:00PM
	Patient #14	13	9	12/19/2007 9:02:00AM
	Patient #15	9	9	1/16/2008 10:53:00AM
	Patient #16	16	9	1/16/2008 10:55:00AM
	Patient #17	9	9	11/1/2007 1:55:00PM
	Patient #18	9	9	1/14/2008 10:55:00AM
	Patient #19	8	8	2/25/2008 3:19:00PM
	Patient #20	9	8	10/11/2007 3:36:00PM
	Patient #21	8	8	12/3/2007 12:57:00PM
	Patient #22	10	8	12/12/2007 9:32:00AM
	Patient #23	12	8	1/14/2008 12:44:00PM
	Patient #24	10	8	1/23/2008 9:28:00AM
	Patient #25	8	8	2/20/2008 11:04:00AM
	Patient #26	8	7	10/22/2007 2:06:00PM

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Soloway Md, Bruce

Band 2 All patients for whom the provider is the Carecast PCP but not the Visit-Based PCP. Suggested action: Consider removing your name as CareCast PCP.

MRN	Patient Name	Total Primary Care Visits In the Past 547 Days	Total Number of Visits to You In the Past 547 Days	Most Recent Visit to You	Visit-Based PCP	Total Visits to Visit-Based PCP In 547 Days	Most Recent Visit to Visit-Based PCP
Patient #1		7	2	5/9/2007 8:16:00AM	Ritchin Md , Andrea ,	5	2/7/2008 10:53:00AM
Patient #2		10	2	1/14/2008 11:23:00AM	Grumet Md , Surah ,	4	11/9/2007 12:35:00PM
Patient #3		5	2	12/6/2007 2:32:00PM	Rosen Md , Zachary B,	3	9/6/2007 6:31:00PM
Patient #4		6	2	12/3/2007 12:51:00PM	Grumet Md , Surah ,	2	1/4/2008 1:38:00PM
Patient #5		4	2	6/13/2007 9:11:00AM	Grumet Md , Surah ,	2	11/27/2007 8:15:00AM
Patient #6		7	2	12/31/2007 3:58:00PM	ELAM, RASHIAH	2	2/25/2008 1:36:00PM
Patient #7		4	2	1/17/2008 3:35:00PM	O'connell Md , Daniel B,	2	2/8/2008 10:25:00AM
Patient #8		12	1	10/17/2007 8:54:00AM	Grumet Md , Surah ,	5	1/15/2008 10:59:00AM
Patient #9		7	1	8/9/2007 3:57:00PM	Rosen Md , Zachary B,	3	6/19/2007 7:45:00PM
Patient #10		4	1	3/21/2007 11:35:00AM	Kirchen Md , Nicole T,	2	10/27/2007 9:23:00AM
Patient #11		4	1	5/31/2007 2:17:00PM	Gross, Paul	2	2/5/2008 3:11:00PM
Patient #12		4	1	3/7/2007 9:20:00AM	ROOSE, ROBERT J	2	2/8/2008 12:19:00PM
Patient #13		4	1	2/28/2008 2:06:00PM	Ho, Thinh	2	8/20/2007 6:09:00PM
Patient #14		5	1	10/10/2007 12:04:00PM	Gross, Paul	2	9/26/2007 11:37:00AM
Patient #15		4	1	7/19/2007 2:13:00PM	Sanders Md , Barbara H,	2	4/14/2007 9:26:00AM
Patient #16		4	1	8/6/2007 2:11:00PM	Natal Md , Elizabeth ,	1	8/13/2007 10:12:00AM
Patient #17		2	1	1/29/2007 2:23:00PM	Stein Md , Tara B,	1	11/14/2007 9:55:00AM
Patient #18		2	1	12/24/2007 3:56:00PM	Natal Md , Elizabeth ,	1	2/25/2008 9:27:00AM
Patient #19		3	1	8/13/2007 1:32:00PM	Grumet Md , Surah ,	1	2/7/2008 9:37:00AM
Patient #20		3	1	2/21/2007 9:38:00AM	Shmelfarb Md , Marianna ,	1	8/24/2007 10:08:00AM
Patient #21		2	1	4/30/2007 10:47:00AM	Sanders Md , Barbara H,	1	2/27/2008 11:42:00AM
Patient #22		3	1	9/27/2007 2:21:00PM	Duggan Md , Mary francis ,	1	2/25/2008 10:16:00AM
Patient #23		2	1	8/16/2007 12:50:00PM	Ho, Thinh	1	8/23/2007 2:34:00PM
Patient #24		2	1	8/4/2007 8:51:00AM	O'connell Md , Daniel B,	1	11/3/2007 8:13:00AM
Patient #25		2	1	1/2/2008 8:55:00AM	Grumet Md , Surah ,	1	2/5/2008 9:39:00AM
Patient #26		2	1	8/13/2007 12:46:00PM	Grumet Md , Surah ,	1	11/6/2007 1:31:00PM
Patient #27		2	1	10/16/2006 2:58:00PM	Duker Md , Adjoa B,	1	8/28/2007 12:59:00PM

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Visit-Based PCP is the provider who has seen the patients most frequently in the past 548 days in the clinic of interest. If a patient saw multiple physicians the same number of times, then the Visit-Based PCP is the one who saw the patient most recently.

Soloway Md, Bruce

Band 3 All patients for whom the provider is the Visit-Based PCP but not the Carecast PCP. Suggested action: Consider changing CareCast PCP to your name.

MRN	Patient Name	Total Primary Care Visits In the Past 548 Days	Total Number of Visits to You in the Past 548 Days	Most Recent Visit to You	Carecast PCP	Total Visits to Carecast PCP In 548 Days	Most Recent Visit to Carecast PCP
	Patient #1	12	8	1/14/2008 12:44:00PM	O'connell Md , Daniel B,		
	Patient #2	7	7	1/23/2008 9:37:00AM	Duggan Md , Mary francis ,		
	Patient #3	7	6	7/9/2007 3:14:00PM	VALENCIA MD , HECTOR		
	Patient #4	6	4	12/24/2007 12:23:00PM	Portnoy Md , Darin A,		
	Patient #5	8	4	1/9/2008 9:14:00AM	NO PCP AT ALL MD , NO PCP AT A		
	Patient #6	18	3	1/23/2008 8:39:00AM	Schonberg Md , Dana ,	1	9/12/2007 2:08:00PM
	Patient #7	5	3	12/31/2007 12:03:00PM	GELLRICH, GABRIELLA C		
	Patient #8	3	3	6/13/2007 11:08:00AM	Nord Md , Nadia ,		
	Patient #9	10	2	12/17/2007 12:48:00PM	Anderson Md , Matthew R,	2	2/1/2008 11:09:00AM
	Patient #10	6	2	12/13/2006 10:27:00AM	Littleton Md , Andrea W,	1	2/12/2007 9:32:00AM
	Patient #11	5	2	10/29/2007 3:57:00PM	O'connell Md , Daniel B,	1	1/31/2008 3:40:00PM
	Patient #12	5	2	8/31/2007 2:52:00PM	Natal Md , Elizabeth ,	1	9/5/2007 9:50:00AM
	Patient #13	3	2	9/19/2007 8:51:00AM	Duggan Md , Mary francis ,		
	Patient #14	3	2	10/4/2007 3:17:00PM	Rosen Md , Zachary B,		
	Patient #15	2	2	10/30/2006 12:59:00PM	Joseph Md , Wayne P,		
	Patient #16	3	2	9/26/2007 9:05:00AM	Gold Md , Marjl ,		
	Patient #17	4	2	10/24/2007 10:46:00AM	Anderson Md , Matthew R,		
	Patient #18	6	2	11/27/2006 3:38:00PM	Bar Md , Ada ,		
	Patient #19	6	2	12/31/2007 3:58:00PM	O'connell Md , Daniel B,		
	Patient #20	2	2	11/1/2007 1:29:00PM	Vidal Md , Angela M,		
	Patient #21	3	2	7/16/2007 1:59:00PM	Joseph Md , Wayne P,		
	Patient #22	5	1	10/24/2007 9:17:00AM	Esteban Md , Manuel R,	3	6/7/2007 10:38:00AM
	Patient #23	4	1	7/25/2007 8:42:00AM	Jordan Md , William ,	3	3/26/2007 5:55:00PM
	Patient #24	4	1	1/9/2008 8:25:00AM	Kirchen Md , Nicole T,	1	12/13/2007 11:35:00AM
	Patient #25	2	1	8/2/2007 12:38:00PM	Sanders Md , Barbara H,	1	7/26/2007 3:09:00PM
	Patient #26	4	1	3/7/2007 11:09:00AM	Esteban Md , Manuel R,	1	8/21/2006 2:24:00PM
	Patient #27	3	1	9/19/2007 10:15:00AM	Sanders Md , Barbara H,	1	10/6/2006 11:54:00AM

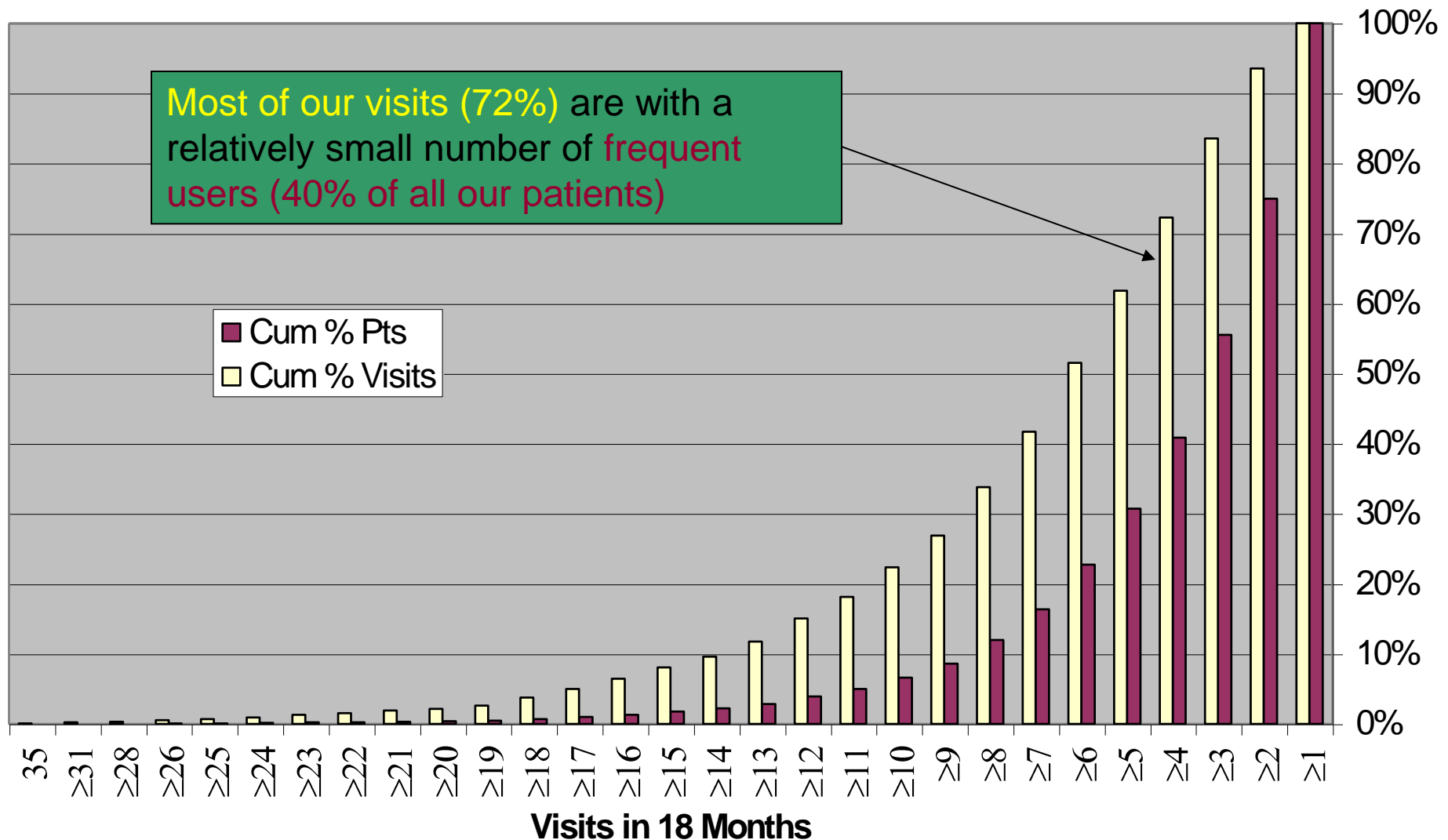


Introducing the panel reports

- First run reports distributed to MDs
- Physicians failed to recognize many patients on their panels, particularly infrequent users

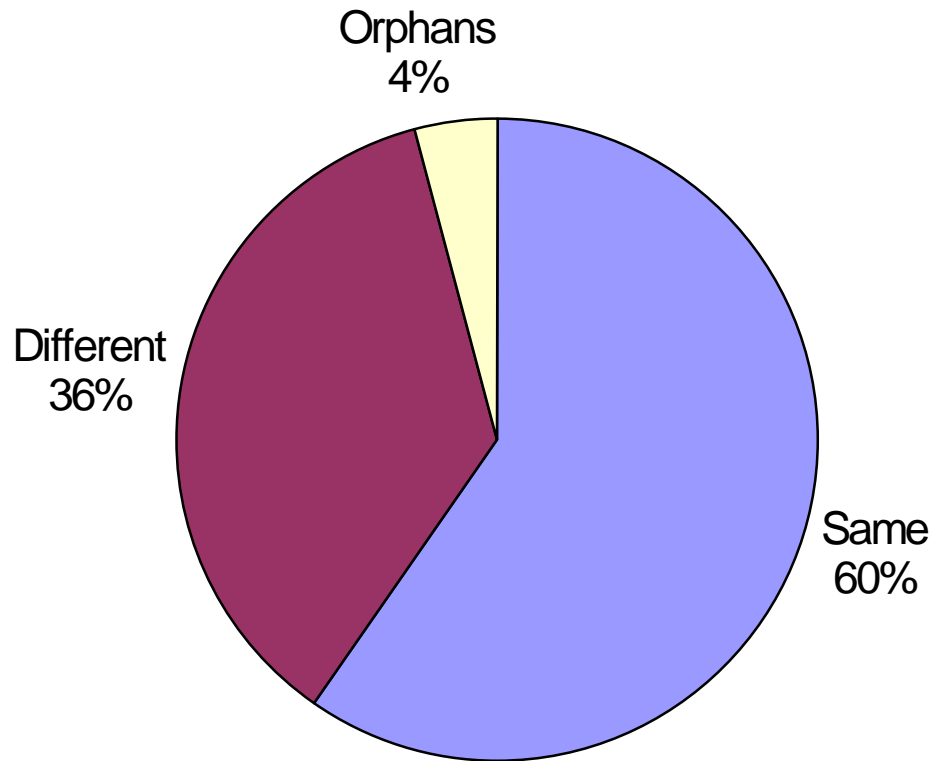
Cumulative Visits and Patients by Visit Frequency

Williamsbridge FP 7/05-12/06



Visit-Based vs. CareCast PCPs

FHC, February 2008





Inappropriate PCP assignments

- Many active patients assigned in CareCast to physicians who had left the practice or never worked there
- Active patients who had not seen their CareCast PCP in more than 18 months
 - Inappropriate assignments vs. infrequent users with recent acute care
 - CareCast PCPs recognized some of these patients (but not many)



Methods - Step 2

- Software module developed to reassign patients with inappropriate CareCast PCPs to their Visit-Based PCPs
 - Patients with CareCast PCPs not currently working in the practice
 - Patients who had not seen their CareCast PCPs in the past 18 months



A PCP dilemma

- Patients who had not seen their CareCast PCPs in the past 18 months
 - To change...
 - Might violate long-standing relationships, giving undue weight to recent pattern of acute care by others
 - ...or not to change
 - Might preserve assignments that do not represent real care relationships



PCP dilemma resolved

- Provider consensus
 - Reassign patients not seen by their CareCast PCP in the past 18 months to their Visit-Based PCP
 - Provide list of these reassigned patients to CareCast PCPs
 - CareCast PCPs reclaim (relatively few) patients with whom they still have meaningful PCP relationship



CareCast vs. Visit-Based PCP

- Patients with at least one visit to the CareCast PCP in the last 18 months were left unchanged, although the patient may have seen other physician(s) more often
- CareCast assignment to active PCP (confirmed by at least one recent visit) outweighed overall visit history

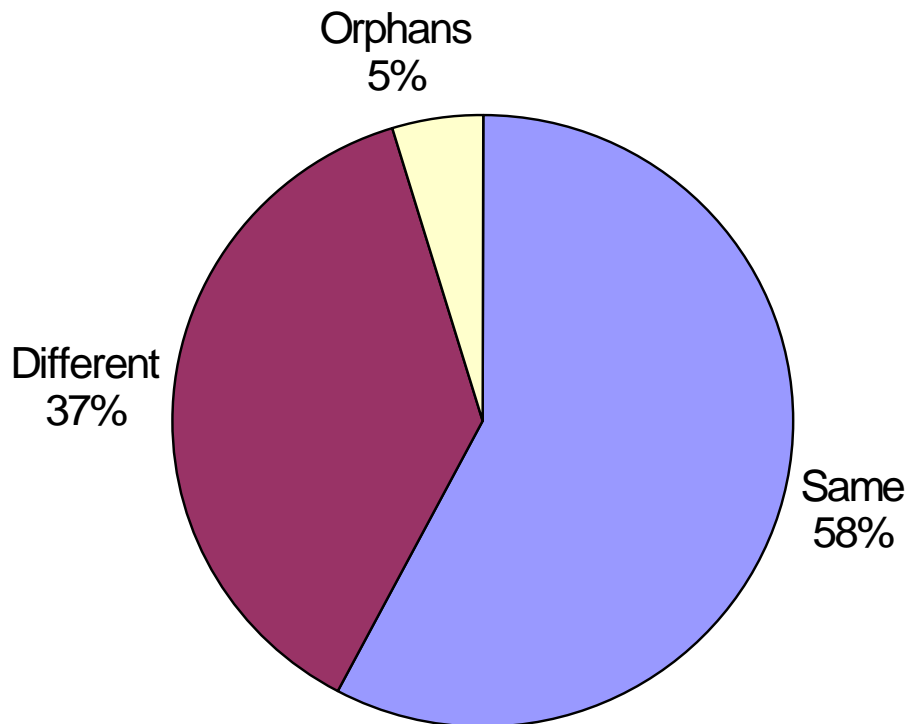


Pushing the button

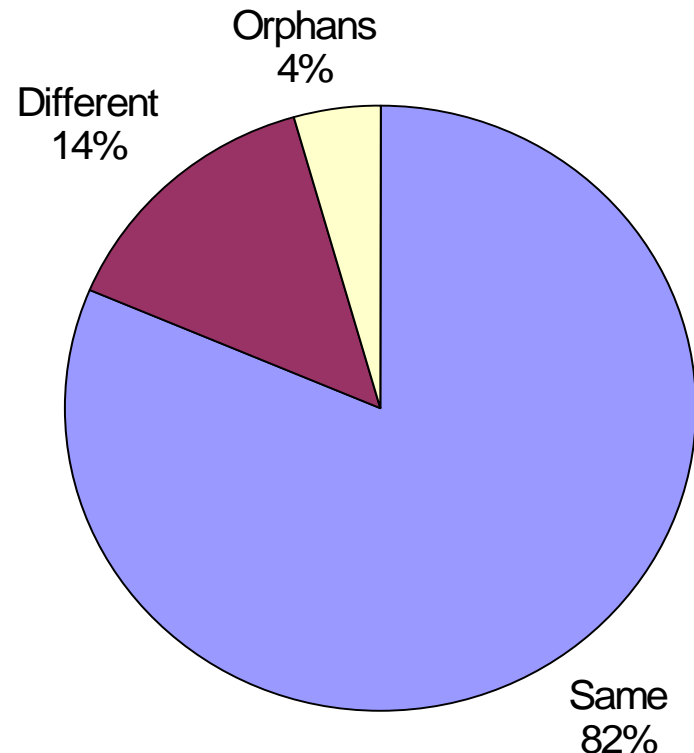
- On March 4, 2008, CareCast PCP fields were updated for nearly 6000 patients at both teaching sites based on recent visit history.

Visit-Based vs CareCast PCPs at FM teaching sites

February 2008



March 2008





Outcomes of PCP reassignment

- Accountability

- Every provider has received a list of his or her patient panel, and will now be held responsible for outcomes for that panel
- Next step: Develop provider-specific registries
 - Chronic disease
 - Prenatal
 - Health maintenance



Outcomes of PCP reassignment

- Analysis of resident panel demographics
 - All residents have been asked to categorize the most frequent users in their panels by age, gender, and chronic problems
 - Data will be used to balance patient panels by
 - Routing new patients to address panel deficits
 - Rational reassignment of patients to new PCPs at start of each academic year



Outcomes of PCP reassignment

- Panel size
 - Can calculate ideal panel size based on level of training and FTE in direct patient care
 - Compare actual to ideal panel size
 - Overpaneled providers may have difficulty with access
 - Underpaneled providers may have difficulty meeting productivity expectations



How big should a panel be?

- FHC

12,780 unique patients / 9.5 FTE

= 1345 patients per FTE x 2.77 visits/yr/pt

= 3740 visits per yr per FTE

- WB

8814 unique patients / 6.1 FTE

= 1452 patients per FTE x 2.59 visits/yr/pt

= 3724 visits per year per FTE



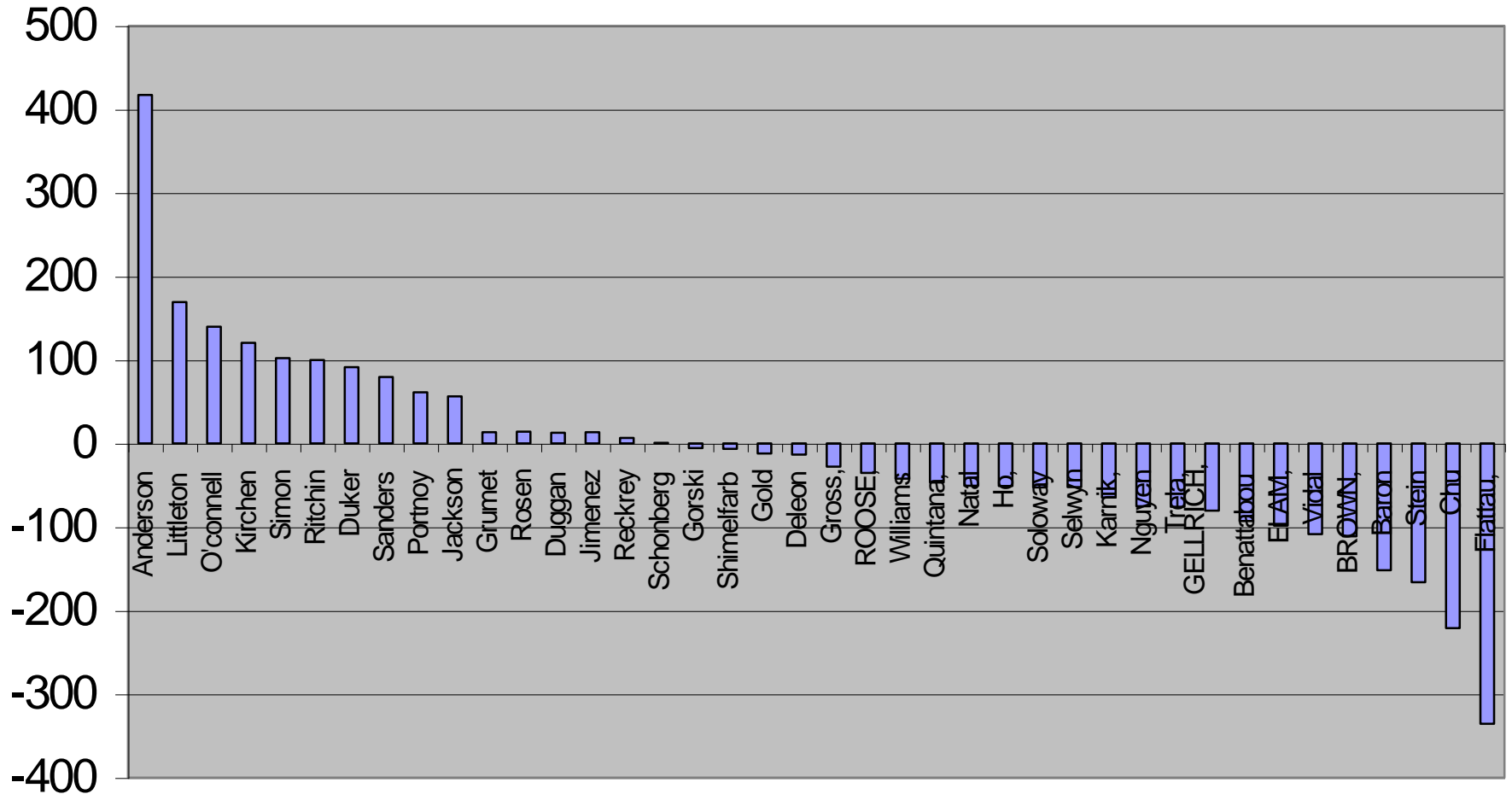
Ideal panel size by provider

- Assuming 1400 patients per FTE:

	FTE	Panel Size
PGY-1	0.035	49
PGY-2	0.15	210
PGY-3	0.23	322
Attending	0.3	420
	0.4	560
	0.5	700
	0.6	840
	0.7	980

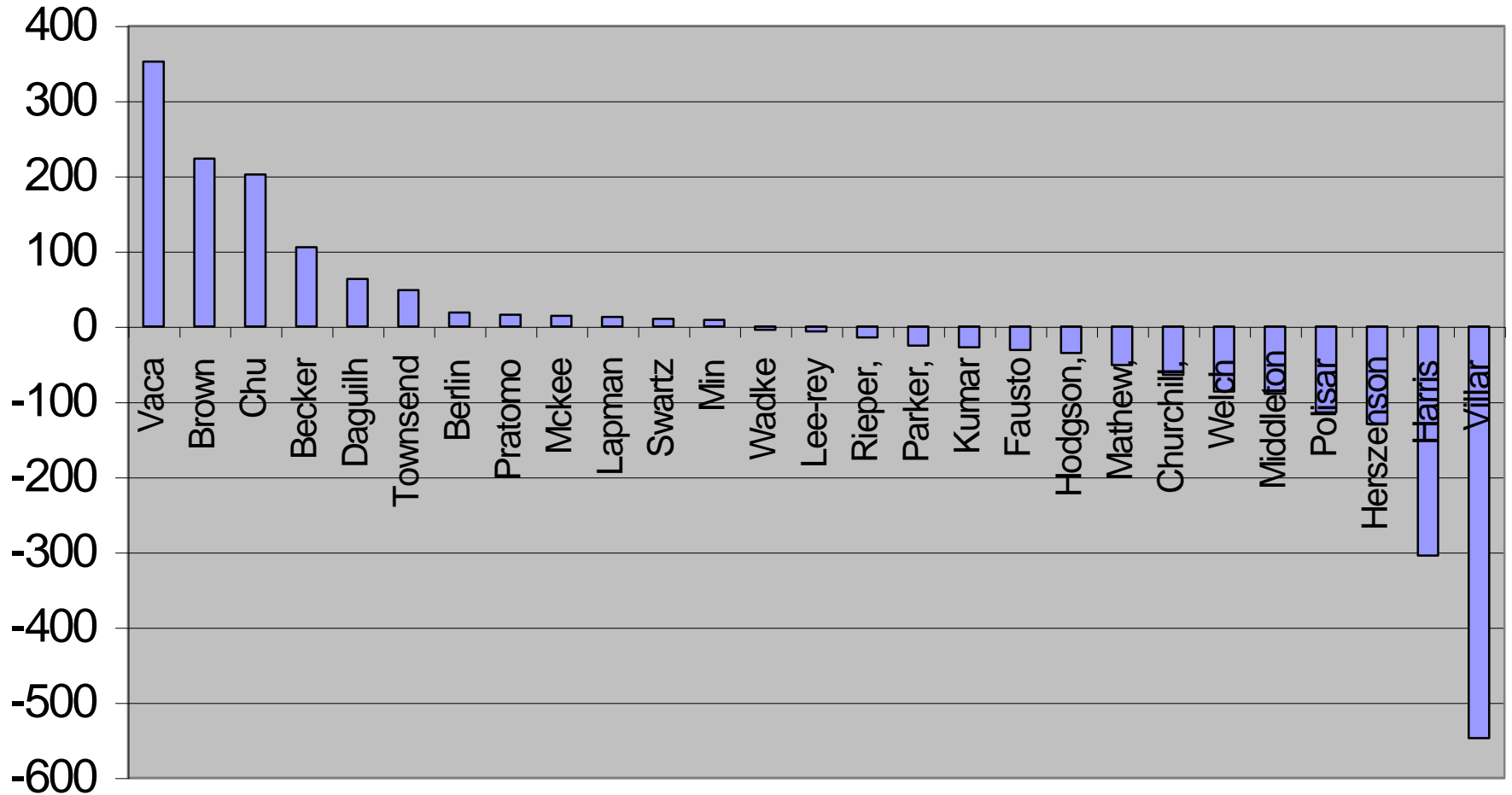
Based on
ACGME
expected
visits/year

Actual - Expected Panel Size FHC, February 2008



Actual - Expected Panel Size

Williamsbridge, February 2008





Correcting panel sizes

- Encourage overpaneled providers to relinquish excess patients
 - Should improve access for these providers
- Assign unclaimed and “orphan” patients to underpaneled providers
 - Should improve productivity for these providers
- Should improve overall continuity of care by providing every patient with an **accessible** PCP

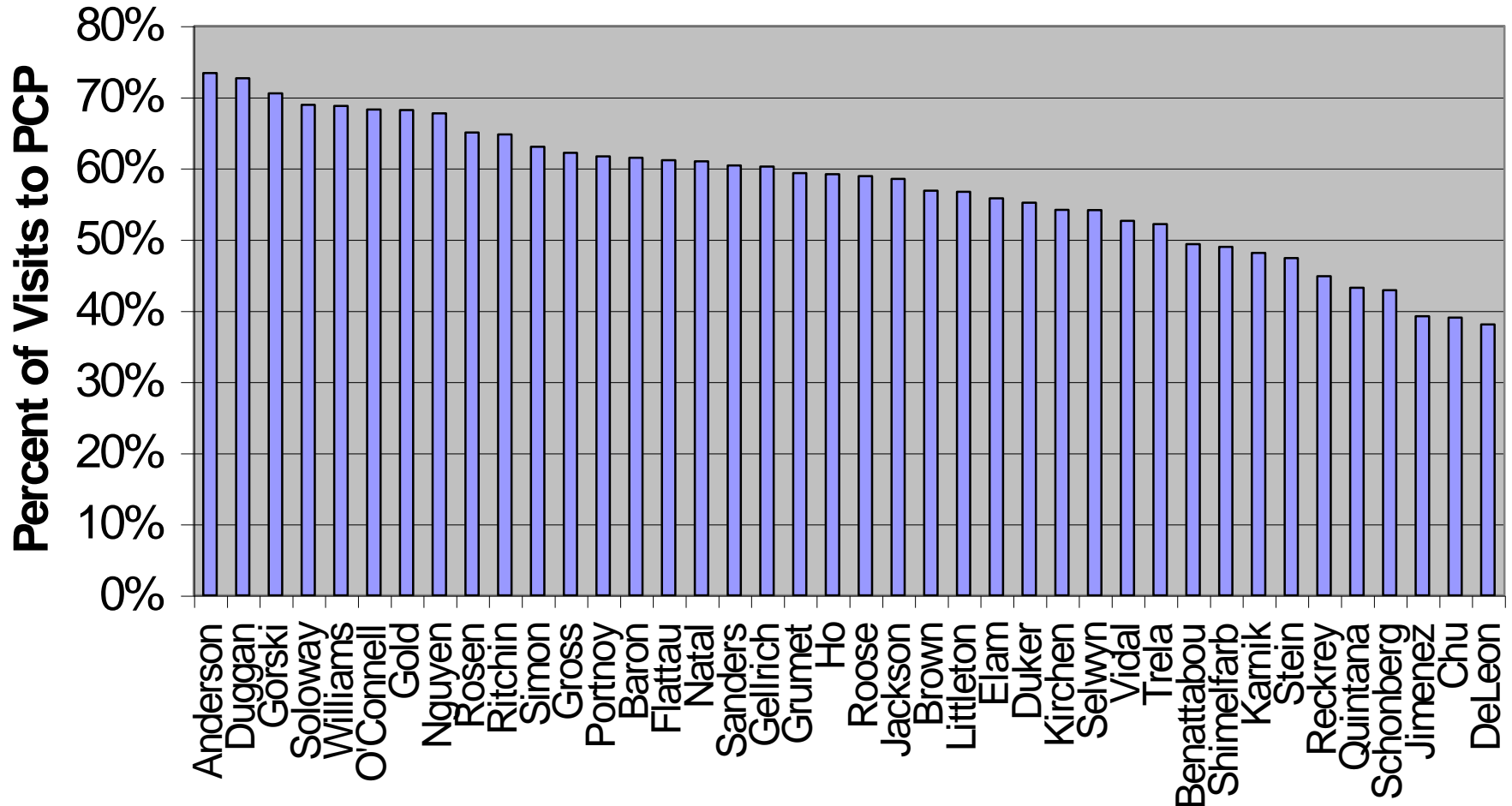


Outcomes of PCP reassignment

- Measuring continuity of care
 - During a given interval (e.g. 18 months), at what percent of all visits made by members of a provider's panel did the patient see the PCP (rather than another provider)?

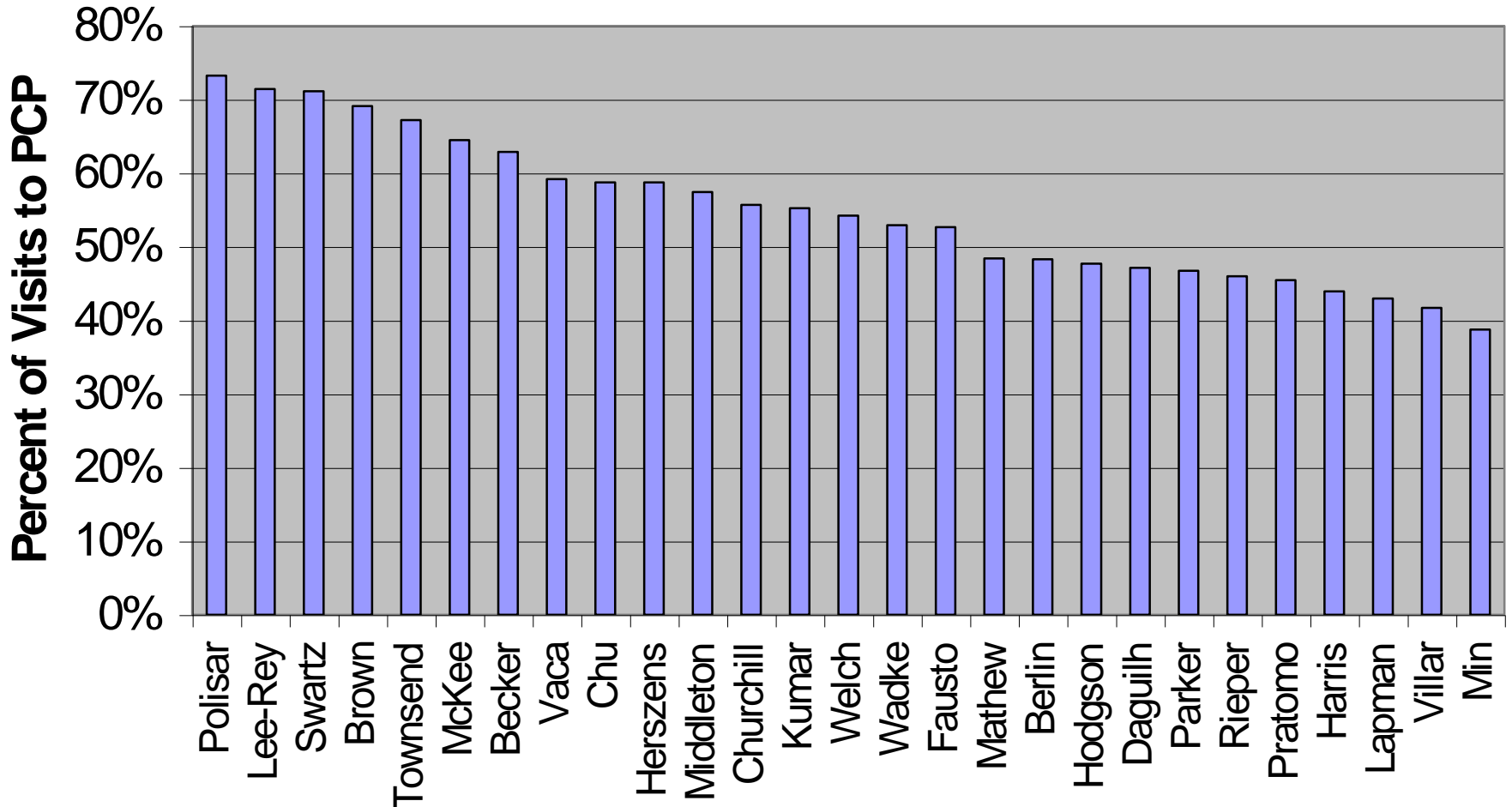
Continuity by PCP Panel

FHC, 9/06 - 2/08

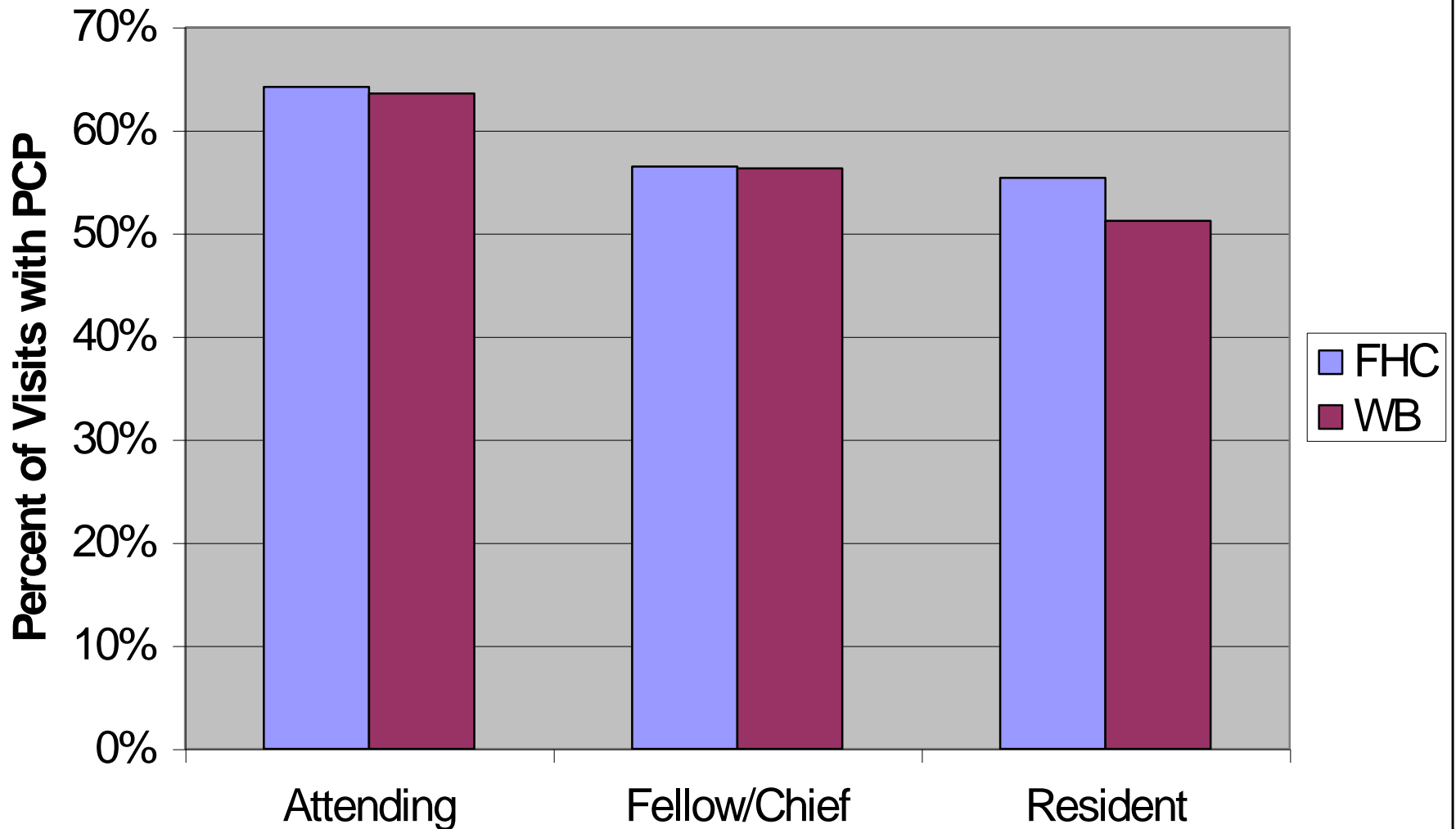


Panel Continuity by Visit-Based PCP

Williamsbridge FP, 9/06 - 2/08



Continuity by Status of Visit-Based PCP





Conclusions

- Meaningful patient panels can be constructed from retrospective visit histories in the hospital database
- Panel lists have many potential applications:
 - Accountability for patient care and outcomes
 - Correction of panel sizes to balance productivity and access
 - Measurement of continuity
 - Characterization, balance, and rational transfer of resident panels