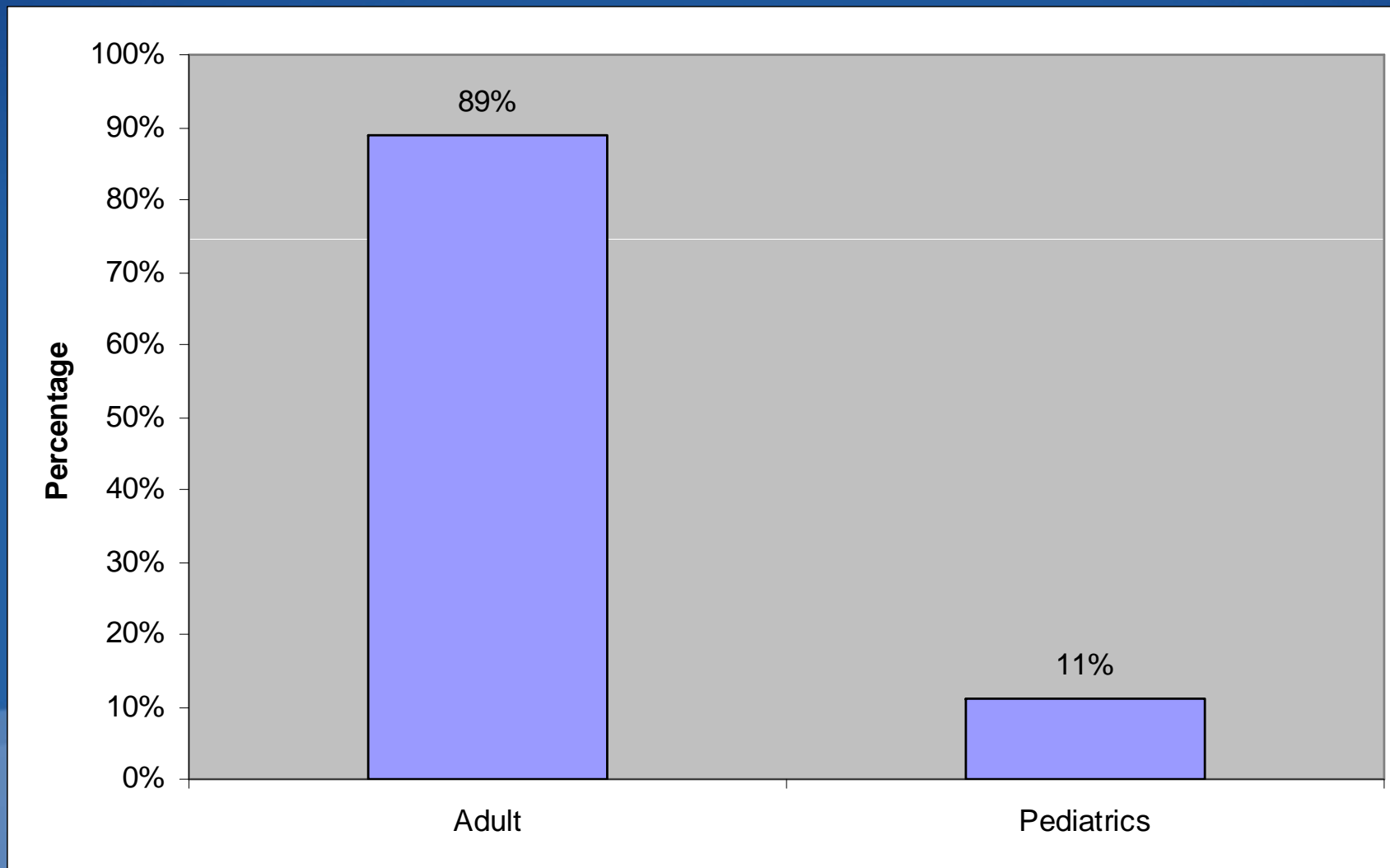


# Data

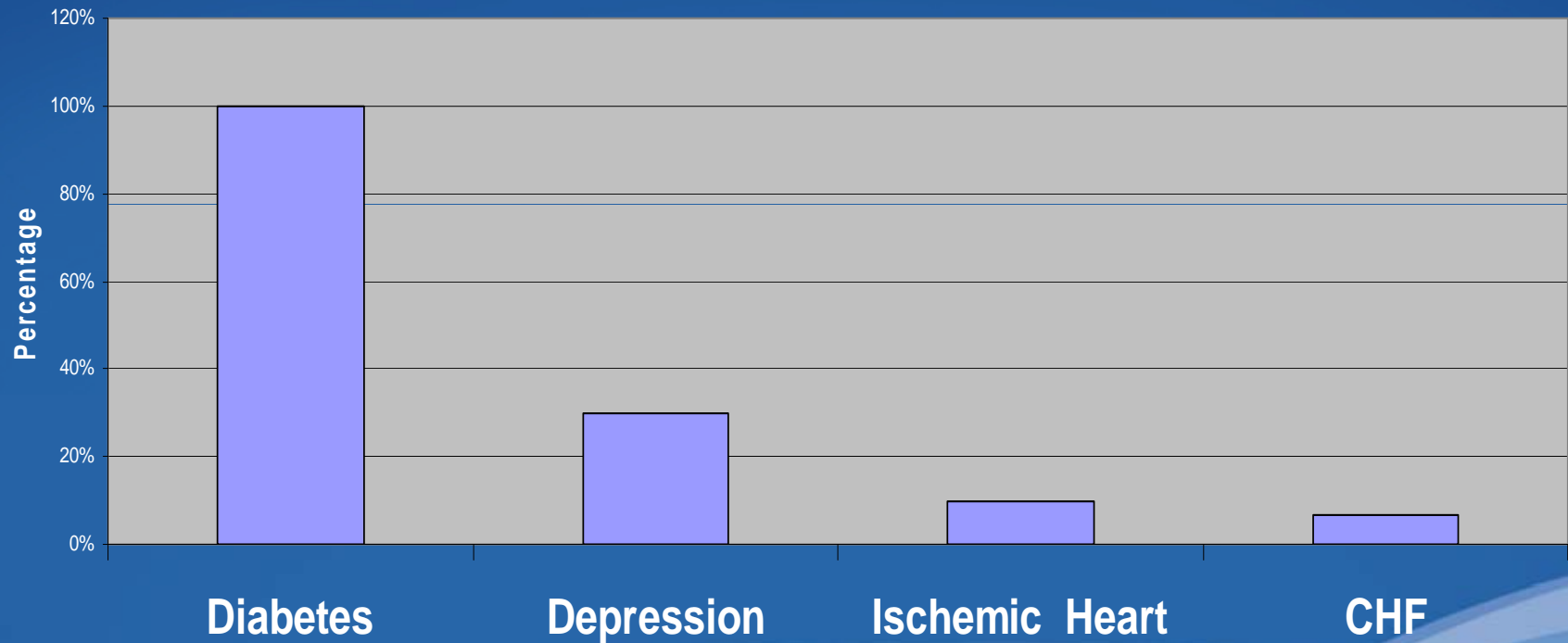
- **Why is data important**
- **What data is available**
- **How can data and reports impact clinical care**
- **What technologies are helpful**
- **How is data shared among partners in the system of care while assuring protections of confidentiality**

# Depression Registry Distribution of Pediatrics and Adults (N=214,170)



# Comorbidities - Patients with Diabetes

Percentage of Patients with Diabetes and Related Conditions



# Prevalence of Comorbidities in 2007 (N= 211.801)

Mental Health Comorbidity	Non Mental Health Comorbidity				Total
	Diabetes	Cardio	Multiple	None	
ADHD	0.00%	0.00%	0.00%	0.04%	0.04%
Anxiety	0.04%	0.01%	0.01%	0.43%	0.49%
Depression	1.30%	0.10%	0.10%	11.35%	12.86%
Other	0.01%	0.00%	0.00%	0.09%	0.10%
Psychosis	0.03%	0.01%	0.00%	0.19%	0.23%
Schizophrenia	0.00%	0.00%	0.00%	0.04%	0.04%
Substance Abuse	0.10%	0.02%	0.01%	1.62%	1.74%
Substance Abuse and Depression	0.10%	0.02%	0.01%	0.95%	1.08%
Multiple	1.85%	0.23%	0.19%	26.02%	28.28%
None	2.55%	0.09%	0.11%	52.39%	55.14%
<b>Total</b>	<b>5.99%</b>	<b>0.47%</b>	<b>0.43%</b>	<b>93.10%</b>	<b>100.00%</b>

## Key Messages

- **IT needs to be part of the team**
- **Receiving data at the point of care is preferred by clinicians and improves care**
- **Coded data will get into the data base more readily if entering it is part of the regular day to day process**
- **Population based data is also important to the system and clinicians**

# Key Messages

- **IT needs to be part of the team**





How the customer explained it



How the Project Leader understood it



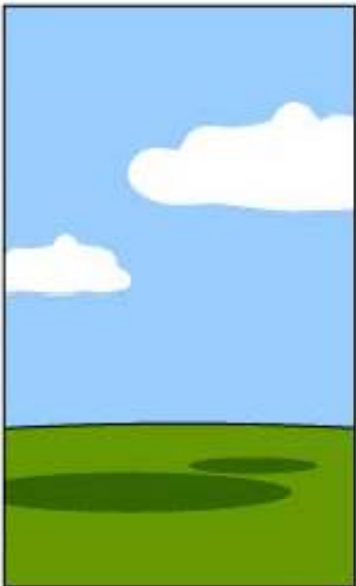
How the Analyst designed it



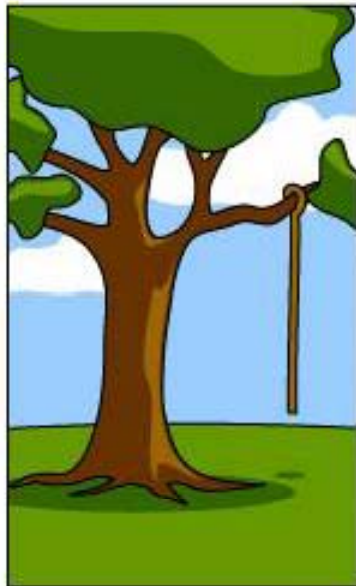
How the Programmer wrote it



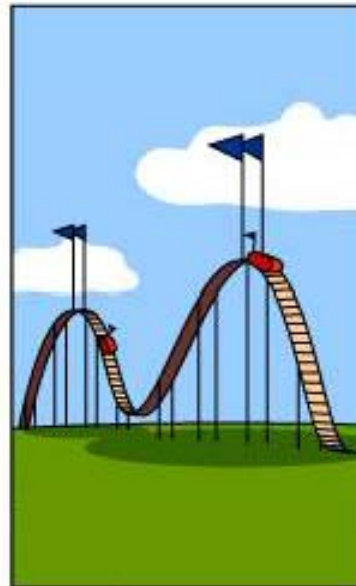
How the Business Consultant described it



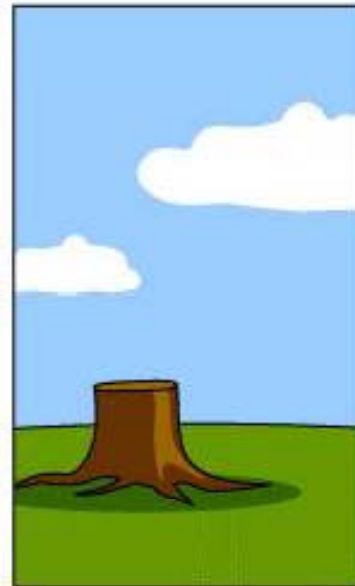
How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

## Key Messages

- **IT needs to be part of the team**
  - **Understand the process**
  - **Understanding of the condition**
  - **Provide meaningful input in all areas of project development**
  - **Cheerleader**
  - **Advocate**
  - **Thinking out side the box**

# Key Messages

- **Receiving data at the point of care is preferred by clinicians and improves care**
- **Coded data will get into the data base more readily if entering it is part of the regular day to day process**

Microsoft PowerPoint - [Board Goal Peds Final.ppt] | HELP2 Clinical Desktop (Version 2009.M1.65) - Microsoft Internet Explorer

**HELP2 clinical desktop** | **TEST, ALERT RESP** | Home Ph: (801) 442-3600 | DOB: 05/05/1955 | Last Ht: 170.2cm | Work Ph: | MRN: 3128124 | Logout

Age: 53Y | Sex: M | Last Wt: 81.65kg | Cell Ph: | MMI: 540958523 | Options | Change User

**Web Forms** | Settings | Load Last | Form: SOAP Note for Voice Recognition | Date: 2/6/2009 13:10

Type: Progress Note | Load Data | POC: Intermountain Bryner Clinic | Clinician: CANNON, WAYNE H.

Status: Preliminary/Signable | Worksheet | Save & Print | Save | Clear | Current Encounter: Not Encounter Related

**Asthma** | **Diabetes** | **Function Disability** | **Mental Health** | **POC Labs** | **Physical Exam**

**SOAP Note VR** | **PMH** | **Surgical-Hospital Hx** | **Family Hx** | **Preventive/Social Hx** | **ROS** | Preferences | Max | Min

Weight(lb): [ ] [ kg] | Height(in): [ ] [ cm] | Temp(F): [ ] [ C] | SBP: [ ] | HR: [ ] | SaO2: [ ] | WC: [ ] in | Pain Score: [ ] | BSA: [ ]

DBP: [ ] | RR: [ ] | O2 LPM: [ ] | BMI: [ ]

Comments: [ ]

**Allergies:** [Load] x [ ] (FT=Free Text, += New, -= Inactive, a = Active)  
 (a) Amoxicillin, Reaction(s): Urticaria (Hives)

**Problems:** [Load] x [ ] (FT=Free Text, += New, -= Inactive, a = Active, r = Reviewed)  
 (a) Depression  
 (a) Asthma  
 (a) Heart failure  
 (a) Diabetes  
 (a) Attention Deficit Disorder

**Meds:** [Load] x [ ] (FT=Free Text, += New, -= Inactive, a = Active)  
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 (a) Prozac (Fluoxetine Hcl), 10Mg, Tablet, Oral, 0.5 TABLET, PO, QD (daily)  
 (a) Flovent (Fluticasone Propionate), 44Mcg, Aer W/Adap, Inhalation, 2 Puff, Inhalant Spacer, QD (daily), Refill: 4

WAYNE C. | Physician | Intermountain Bryner Clinic | Timeout Status: ● | Fri Feb 06, 2009 13:38

Start | Items to have at prese... | Board Goal Peds Final... | Board Goal Training Fa... | Board Goal Adult Final... | HELP2 Clinical Desk... | BCLZ10 | 1:39 PM

Microsoft PowerPoint - [Board Goal Peds Final.ppt]  
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Asthma | Diabetes | Function Disability | Mental Health | POC Labs | Physical Exam | Preferences | Max | Min

SOAP Note VR | PMH | Surgical-Hospital Hx | Family Hx | Preventive/Social Hx | ROS

Weight(lb): [ ] [ kg] | Height(in): [ ] [ cm] | Temp(F): [ ] [ C] | SBP: [ ] | HR: [ ] | SpO2: [ ] | BPM: [ ] | RR: [ ] | O2 LPM: [ ] | WC: [ ] in | Pain Score: [ ] | BSA: [ ]

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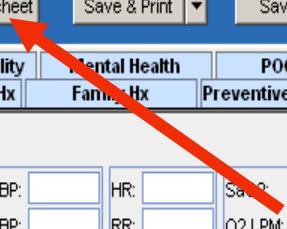
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WAYNE C. | Physician | Intermountain Bryner Clinic | Timeout Status: ● | Fri Feb 06, 2009 13:38

Slide 23 of 72 | Blank Presentation

Start | Items to have at prese... | Board Goal Peds Final... | Board Goal Training Fa... | Board Goal Adult Final... | HELP2 Clinical Desk... | BCLZ10 | 1:39 PM



02/28/2009

# PATIENT WORKSHEET

## Problems

Depression  
Heart failure  
Attention Deficit Disorder

Asthma  
Diabetes

## Active Medications

1. - Metformin Hcl (Glucophage Xr), 500mg, Tab.Sr 24H, Oral; No dose found
2. - Corgard (Nadolol), 80Mg, Tablet, Oral; No dose found
3. - Prozac (Fluoxetine Hcl), 10Mg, Tablet, Oral; 0.5 TABLET; QD (daily)
4. - Flovent (Fluticasone Propionate), 44Mcg, Aer W/Adap, Inhalation; 2 Puff; QD (daily)

## Allergies

Amoxicillin; Reaction(s): Urticaria (Hives)

## Disease Management

ADL		Dysthymia		Family Pattern Profile (FPP)		Functional Difficulty		MMSE	
06/22/2006	3	10/17/2007	No	12/05/2006	Confused/Chaotic	10/17/2007	Somewhat	06/22/2006	5
09/08/2004	6	10/12/2007	No	04/27/2006	Confused/Chaotic	10/12/2007	Somewhat	09/08/2004	29
10/21/2003	2	06/18/2007	Yes	04/26/2006	Confused/Chaotic	06/18/2007	Somewhat	10/21/2003	29
				03/01/2006	Secure/Balanced	12/05/2006	Very		
				01/28/2006	Confused/Chaotic	11/01/2006	Somewhat		
				11/24/2004	Disconnected/Avoidance				
Pain Score (0-10)		Readiness for Change		PHQ-9 Symptom Count		PHQ-9 Severity Score			
02/14/2006	6	12/05/2006	Action	09/11/2008	0	09/11/2008	2		
		04/27/2006	Action	05/21/2008	4	05/21/2008	15		
		04/26/2006	Contemplation	10/19/2007	4	10/19/2007	22		
		03/01/2006	Maintenance	10/17/2007	7	10/17/2007	22		
		11/24/2004	Action	10/17/2007	4	10/17/2007	20		
		09/08/2004	Action	10/17/2007	3	10/17/2007	11		

## Preventive Care

Pneumovax    Tetanus Vacc    Influenza Vacc    Colonoscopy    Tobacco Use

# Use and Impact of a Computer-Generated Patient Summary Worksheet for Primary Care

Adam Wilcox, PhD<sup>1,2</sup>, Spencer S. Jones<sup>1</sup>, David A. Dorr, MD MS<sup>3</sup>, Wayne Cannon, MD<sup>1</sup>, Laurie Burns, PT MS<sup>1</sup>, Kelli Radican<sup>1</sup>, Kent Christensen<sup>1</sup>, Cherie Brunner, MD<sup>1</sup>, Ann Larsen<sup>1</sup>, Scott P. Narus, PhD<sup>1,2</sup>, Sidney N. Thornton, PhD<sup>1,2</sup>, Paul D. Clayton, PhD<sup>1,2</sup>

<sup>1</sup>Intermountain Health Care, Salt Lake City, UT

<sup>2</sup>Department of Medical Informatics, University of Utah, Salt Lake City, UT

<sup>3</sup>Department of Medical Informatics and Clinical Epidemiology,  
Oregon Health & Science University, Portland, OR

*Advanced clinical information systems have been proposed to improve patient care in terms of safety, effectiveness, and efficiency. In order to be effective, such systems require detailed patient-specific clinical information in a form easily reviewed by clinicians. We have developed a patient summary worksheet for use in outpatient clinics, which presents a structured overview of patient health information. The worksheet provides patient demographic information, specific problems and conditions, the patient's current medication profile, laboratory test*

*physician workflow.*<sup>2</sup> The associated disadvantages of computerized records has resulted in unsuccessful implementations, limiting the potential benefits of such systems.<sup>8</sup>

We propose using paper-based summary reports or worksheets within an electronic medical record to achieve the benefits of a computerized patient record while also maintaining the benefits of a paper-based record. In this paper we analyze the usage of summary worksheets, and their impact on physician performance.

Microsoft PowerPoint - [Board Goal Peds Final.ppt] | HELP2 Clinical Desktop (Version 2009.M1.65) - Microsoft Internet Explorer

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Age: 53Y | Sex: M | Last Wt: 81.65kg | Cell Ph: | MMI: 540958523 | Options | Change User

**Web Forms** | Settings | Load Last | Form: SOAP Note for Voice Recognition | Date: 2/6/2009 13:10

Type: Progress Note | Load Data | POC: Intermountain Bryner Clinic | Clinician: CANNON, WAYNE H.

Status: Preliminary/Signable | Worksheet | Save & Print | Save | Clear | Current Encounter: Not Encounter Related

**Asthma** | **Diabetes** | **Function Disability** | **Mental Health** | **POC Labs** | **Physical Exam**

**SOAP Note VR** | **PMH** | **Surgical-Hospital Hx** | **Family Hx** | **Preventive/Social Hx** | **ROS** | Preferences | Max | Min

Weight(lb): [ ] [ kg] | Height(in): [ ] [ cm] | Temp(F): [ ] [ C] | SBP: [ ] | HR: [ ] | SaO2: [ ] | WC: [ ] in | Pain Score: [ ] | BSA: [ ]

DBP: [ ] | RR: [ ] | O2 LPM: [ ] | BMI: [ ]

Comments: [ ]

**Allergies:** [Load] x [ ] (FT=Free Text, += New, -= Inactive, a = Active)  
 (a) Amoxicillin, Reaction(s): Urticaria (Hives)

**Problems:** [Load] x [ ] (FT=Free Text, += New, -= Inactive, a = Active, r = Reviewed)  
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WAYNE C. | Physician | Intermountain Bryner Clinic | Timeout Status: ● | Fri Feb 06, 2009 13:38

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Asthma | Diabetes | Function Disability | **Mental Health** | POC Labs | Physical Exam

SOAP Note VR | PMH | Surgical-Hospital Hx | Family Hx | Preventive/Social Hx | ROS

Weight(lb): [ ] [ kg] | Height(in): [ ] [ cm] | Temp(F): [ ] [ C] | SBP: [ ] | HR: [ ] | SaO2: [ ] | BSA: [ ]

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WAYNE C. | Physician | Intermountain Bryner Clinic | Timeout Status: ● | Fri Feb 06, 2009 13:38

Slide 23 of 72 | Blank Presentation

Start | Items to have at prese... | Board Goal Peds Final... | Board Goal Training Fa... | Board Goal Adult Final... | HELP2 Clinical Desk... | BCLZ10 | 1:39 PM



▼ TEST, ALERT RES Home Ph: (801) 442-3600 DOB: 05/05/1955 Last Ht: 165.1cm Work Ph: MRN: 3128124 Logout  
 Age: 51Y Sex: M Last Wt: 49.90kg Cell Ph: MMI: 540958523 Options

- Select Patient
- Web Forms
- Clinical Notes
- Problems
- Rx
- Allergies
- Lab
- Micro
- Message Log
- Report Manager
- Demographics
- Height/Weight
- Vital Signs
- ECG
- HotText
- Web Kids
- E-Resources
- Need Help?
- Password
- CD Info

Comments

**Webforms**

Date: 1/26/2007 16:51

Note Type: Progress Notes Form: SOAP Note for Voice Recognition

Note Status: Preliminary/Signable POC: IHC Health Center - Bryner Clinic

Encounter: Not Encounter Related

**PHQ-9 Questionnaire**

SNo.	Over the last 2 Weeks, how often have you been bothered by any of the following problems?	Not at All(0)	Several Days(1)	More than Half the Days(2)	Nearly Every Day(3)
1.	Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Feeling down, depressed or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	Trouble falling/staying asleep; sleeping too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	Feeling tired or having little energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	Poor appetite or overeating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	Feeling bad about yourself, or that you are a failure, or having let yourself down or your family down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	Trouble concentrating on things, such as reading the newspaper or watching TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Thoughts that you would be better off dead or of hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A.	How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	<input type="radio"/> Not difficult at all	<input type="radio"/> Somewhat difficult	<input type="radio"/> Very difficult	<input type="radio"/> Extremely difficult
B.	In the past two years have you felt depressed or sad most days, even if you felt okay sometimes?	<input type="radio"/> Yes	<input type="radio"/> No		

**Mood and Anxiety/Sleep**

**Pediatric Only**

# Key Messages

- **Population based data is important to the system and also clinicians**

MHI Depression Summary Report - Cognos Viewer - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://edwbi/cognos/cgi-bin/cognos.cgi?b\_action=cognosViewer&ui.action=run&ui.object=storeID(%227079321F857D4A3A97A3EDF14546A66D%22)&ui.name=MHI%20Depression%20Summary%20Report&run.outputFormat=run.p

Cognos Viewer - MHI Depression Summary Report John Wadsworth Log On About

Keep this version Add this report

### Intermountain Primary Care Clinical Programs: Patients with Depression

Reporting Period starting: 01-OCT-07  
Provider:

EMPI	LAST_NM	FIRST_NM	IDX_MRN	Age	PCP last non mh	PCP last mh	Last phq9	severity	symptom	phq9 count	PHQ9 Trend	Days btw PHQ9	last mh visit	prvdr type	inpt dt	Inpt Cnt	er dt	er cnt	Payor	Complexity	RX order dt	RX o
<a href="#">540220204</a>			1221750	34	9/23/08	9/23/08	9/23/08	27	9	1									SELECTHEALTH		9/23/08	VENL HC
<a href="#">356192</a>			1454751	27	9/9/08	8/20/08	8/14/08	26	9	2	4	9							SELECTHEALTH		8/20/08	GABA
<a href="#">540004242</a>			1004242	62	9/23/08	9/11/08	8/11/08	26	9	4	7	26	9/18/08	Other	7/16/08	2			SELECTHEALTH	D	9/2/08	DESIF HC
<a href="#">540038780</a>			1038780	30	9/10/08	8/12/08	8/13/08	26	9	3	17	211							Private/Charity		8/12/08	DUL HC
<a href="#">540144229</a>			1139801	42	8/13/08	4/21/08	4/22/08	26	9	7	7	227							IHC Contracted		8/13/08	GABA
<a href="#">540610503</a>			1716221	47	1/10/08	12/19/07	12/20/07	25	8	1									Private/Charity		12/19/07	ALPR
<a href="#">540020742</a>			1020742	58	9/24/08	1/15/08	1/15/08	24	8	1									IHC Contracted		9/24/08	ALPR
<a href="#">540122390</a>			1123248	13	3/12/08	2/13/08	1/23/08	24	8	1									Private/Charity			
<a href="#">544781163</a>			5144162	21	2/14/08	1/22/08	1/23/08	23	9	3	12	48							Private/Charity		12/5/07	DUL HC
<a href="#">1285201</a>			3494203	22	12/6/07	12/6/07	12/7/07	22	8	2	0	402							Private/Charity		12/6/07	FLU HC
<a href="#">540006409</a>			1006409	35	2/28/08	2/28/08	2/29/08	22	7	2	-5	345							IHC Contracted			
<a href="#">540006597</a>			1006597	19	9/15/08	3/21/08	1/23/08	22	9	3	5	235	4/15/08	PSYCHOL					SELECTHEALTH		8/5/08	SER HCL
<a href="#">550154270</a>			9161109	50	9/15/08	5/29/08	5/29/08	22	8	1									Private/Charity		5/29/08	BUPROPI
<a href="#">350904</a>			2054329	24	9/25/08	8/28/08	8/28/08	21	8	2	-6	21							Private/Charity		8/28/08	FLU HC
<a href="#">251405</a>			2124075	40	9/25/08	5/10/08	4/24/08	21	7	1									SELECTHEALTH		5/10/08	BUPROPI

Done Local intranet

All Visits (1 year)

VISIT_DT	PRVDR_ID	CLINIC_NM	MED_DIR_REGION	LAST_NM	FIRST_NM	PRMRY_SPCLTY_CD	PRVDR_TYPE_CD	PT_TYPE_CD
9/16/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
9/8/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
9/3/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
9/2/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
8/25/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
8/1/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
7/21/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
6/24/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
5/27/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
5/12/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
4/14/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
4/2/08	4440	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
3/25/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
3/10/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/27/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/19/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/15/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/11/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/8/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
2/7/08	25235			Johnson	Marc			MH-I
1/22/08	3248			Van Uiterk	Dennis	PSY	PSYCHOL	MH-O
1/22/08	4448	Intermountain Medical Group - Layton	URBAN NORTH	Porter	Joel	FP	PCP	Non-MH
1/22/08	4448			Porter	Joel	FP	PCP	MH-O
1/21/08	30302	Intermountain Taylorsville Clinic	CENTRAL SALT LAKE	Smith	Douglas	FP	PCP	Non-MH
12/14/07	30302	Intermountain Taylorsville Clinic	CENTRAL SALT LAKE	Smith	Douglas	FP	PCP	Non-MH
12/8/07	33962			Lister	Margit			MH-I
10/11/07	31410	Intermountain Medical Group - Layton	URBAN NORTH	Bell	Christopher	FP	PCP	Non-MH
10/11/07	31410			Bell	Christopher	FP	PCP	MH-O

PHQ9 History (2 years)

TEST_DT	TEST_NM	SEVERITY	SYMPTOM
1/23/08	phq9	21	7
10/11/07	phq9	17	6
3/6/07	phq9	23	8

All RX Ordered and/or Filled (1 year)

Med Dt	Order Name	Order Dt	Order Prvdr	Order Qty	Order Days Supply	Fill Name	Fill Dt	Fill Prvdr	Fill Qty	Fill Days Supply
9/22/08						ALPRAZOLAM, 0.5MG	9/22/08		30	8
9/3/08						FLUCONAZOLE, 150MG	9/3/08		1	1
7/21/08						ALPRAZOLAM, 0.5MG	7/21/08		30	8

# Management of Chronic Disease in Primary Care

**Diabetes, Asthma, Heart Failure, Mental Health, Obesity, etc.**

**cared for routinely in primary care**

**Consult**

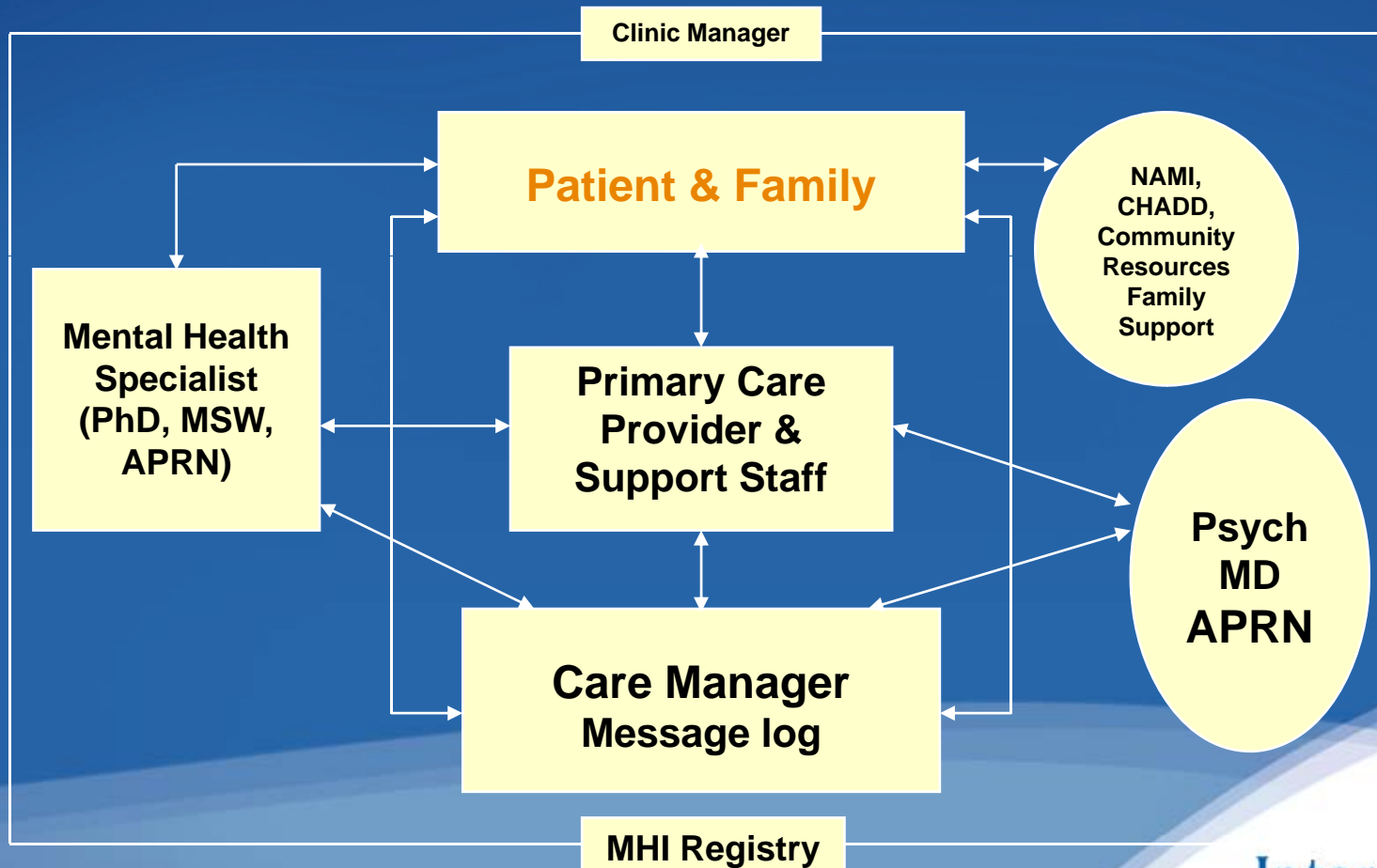
**Refer**

**Primary Care Physician  
General Internist or Pediatrician  
Family Practitioner**

**PCP with  
Consultation  
from specialist**

**Specialist\***

# Clinical Integration/Operational Model



# Mental Health Integration Treatment Cascade Model

## Transformation of Delivery and Cost at Intermountain Healthcare

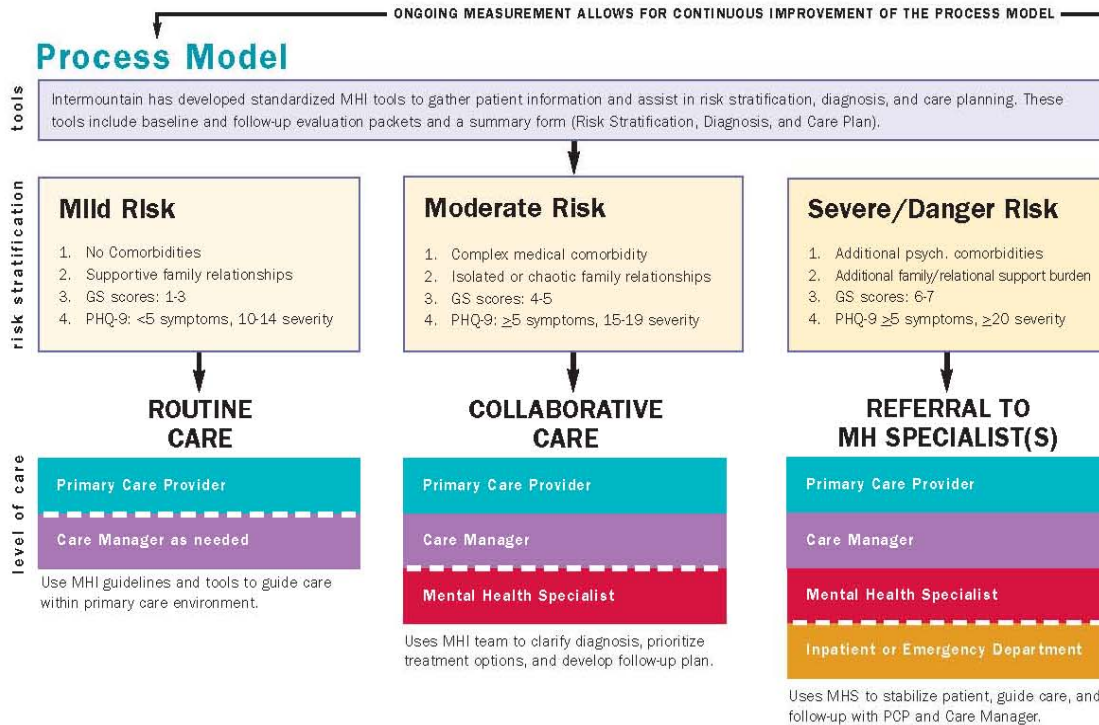


Brenda Reiss-Brennan, MS, APRN, CS, MHI Leader • Wayne Cannon, MD, Primary Care Clinical Leader • David Gardiner, MBA/HSA, MPH, Director of Clinical Operations Support • Terri Flint, PhD, LCSW, HR Leader • Adam Wilcox, PhD, Information System Leader  
 • Pascal Briot, MBA, Cost Analysis Leader • Tracy Vayo, MA, Clinical Education Leader • Brent James, MD, Vice President, Quality Research Leader • Sherri Wittwer, Executive Director NAMI, Consumer Leader • Community Health Plan Partners:  
 IHC, DMBA, Medicaid, PEHP, UHC • National Partners: RWJF, Dartmouth University/MacArthur, Columbia University, Hartford Foundation, SAMHSA, Carter Center, University of Pittsburgh, Maine Health Systems, Providence Health Systems

### Objectives

Intermountain Healthcare has implemented a Mental Health Integration process—tools, training, and data systems—to achieve improvements in the following:

- **Detection** of depression in PC settings
- **Treatment** for depression and other MH disorders based on best practice guidelines
- **Clinical outcomes** in terms of symptoms, severity, and functional status
- **Satisfaction** of patients, providers, employers
- **Costs** to patients and employers, and to IHC utilization and operations



### Measures

Data systems allow Intermountain to measure and analyze progress on the 5 objectives of the project, and to continuously improve our process model.

- Measures include:**
- **Detection:** changes in detection rate
  - **Treatment:** use of standard tools, Rx retention rates and types, referral rates
  - **Clinical outcomes:** PHQ-9 and other tools, productivity surveys
  - **Satisfaction:** surveys of patients, providers, employers
  - **Costs:** claims costs, absenteeism rates, operational costs, utilization costs

### Data Systems

#### COLLECTION

##### Internal:

- Longitudinal EMR with assessment and communication tools
- EMR for follow-up alerts
- Outpatient clinics billing system IDX
- EMR for communication and follow-up
- IHC Health Plans billing system
- Medical claims system
- Rx claims system
- HR system

##### External:

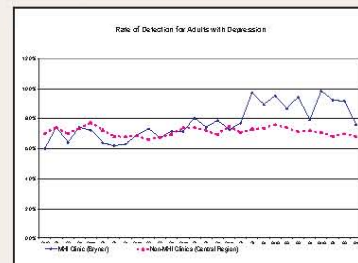
- Satisfaction surveys
- Productivity surveys
- EAP database
- 3rd party payors

#### EXTRACTION

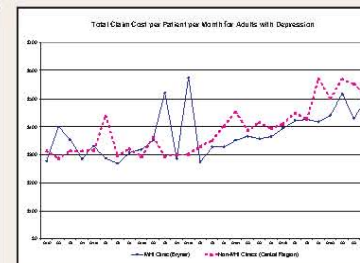
##### Mental Health Registry

- **Inclusive:** information from various internal and external systems is stored centrally
- **Standardized:** more accurate data, easier reporting
- **Comprehensive:** more data, more links to other dbs and systems

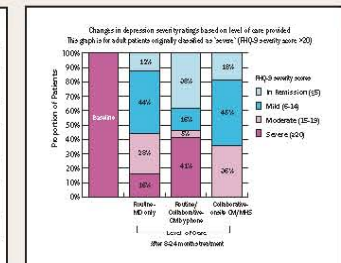
### Example Reports



These data will allow us to report improvements in rate of detection of depression in patients diagnosed with depression, and compare costs between patients at MHI and non-MHI clinics.



These data will allow us to report improvements in PHQ-9 depression severity based on level of care received.



These data will allow us to report improvements in PHQ-9 depression severity based on level of care received.

### Evaluation and Implementation Tools

Care Process Model (CPM) • Baseline and Follow-up Packets • Risk Stratification and Tracking Forms • Patient Education Materials

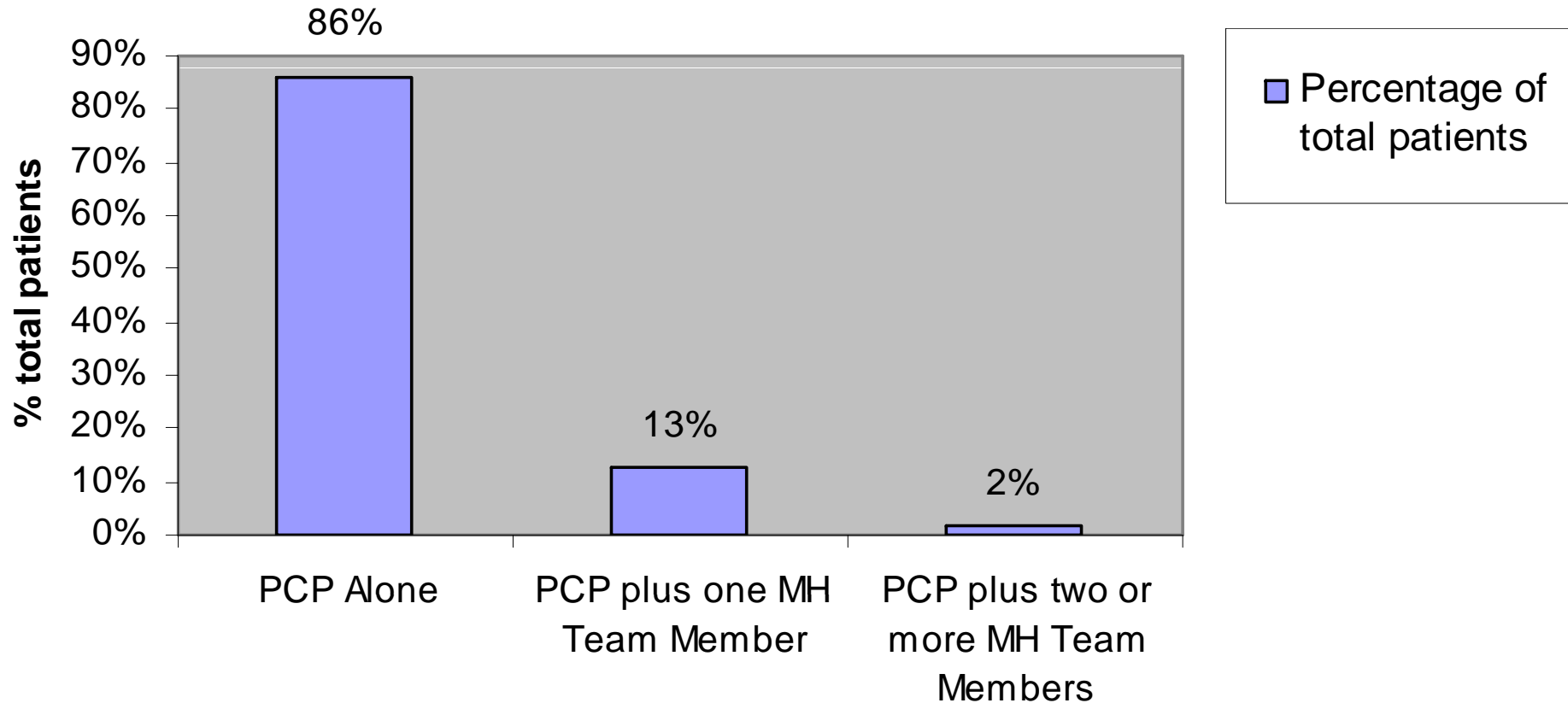
- **For Clinicians:** [intermountainhealthcare.org/xp/public/physician/clinicalprograms/primarycare/mentalhealth/](http://intermountainhealthcare.org/xp/public/physician/clinicalprograms/primarycare/mentalhealth/)
- **For Patients:** [intermountainhealthcare.org/mentalhealth](http://intermountainhealthcare.org/mentalhealth)
- **For Online Forms:** [intermountainhealthcare.org/mhi](http://intermountainhealthcare.org/mhi)

This document contains some preliminary findings, and is not to be copied or distributed without written permission from the author.

# Cascading use of Services

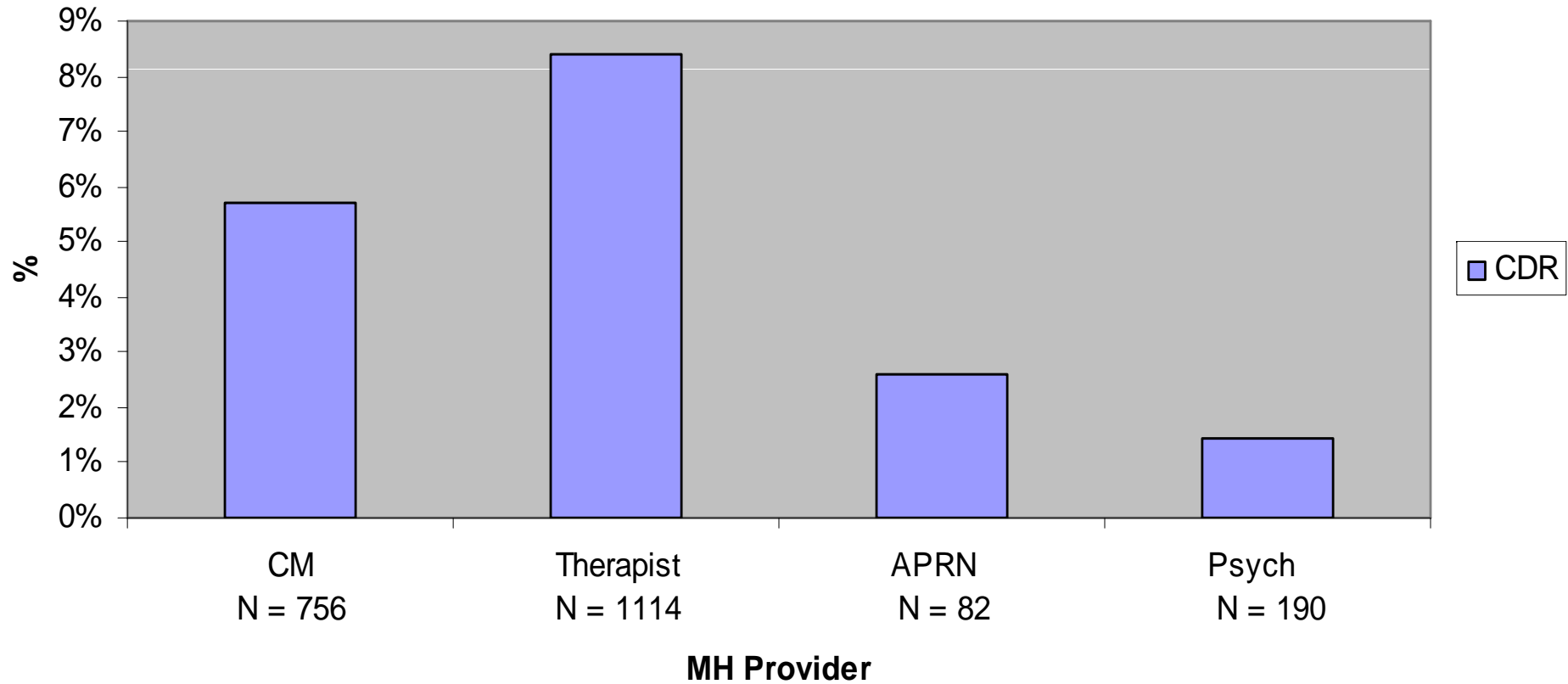
## Cascading Provider Services For 6 Routinized Clinics (N=13,288)

Oct. 1, 2007 - Sept 30, 2008



# Cascading use of Services

**For 6 Routinized Clinics ( N=13,288 - Adults & Peds)**  
**Percent of PCP "active" depressed patients seen by MH Team**  
Oct. 1, 2007 - Sept 30, 2008

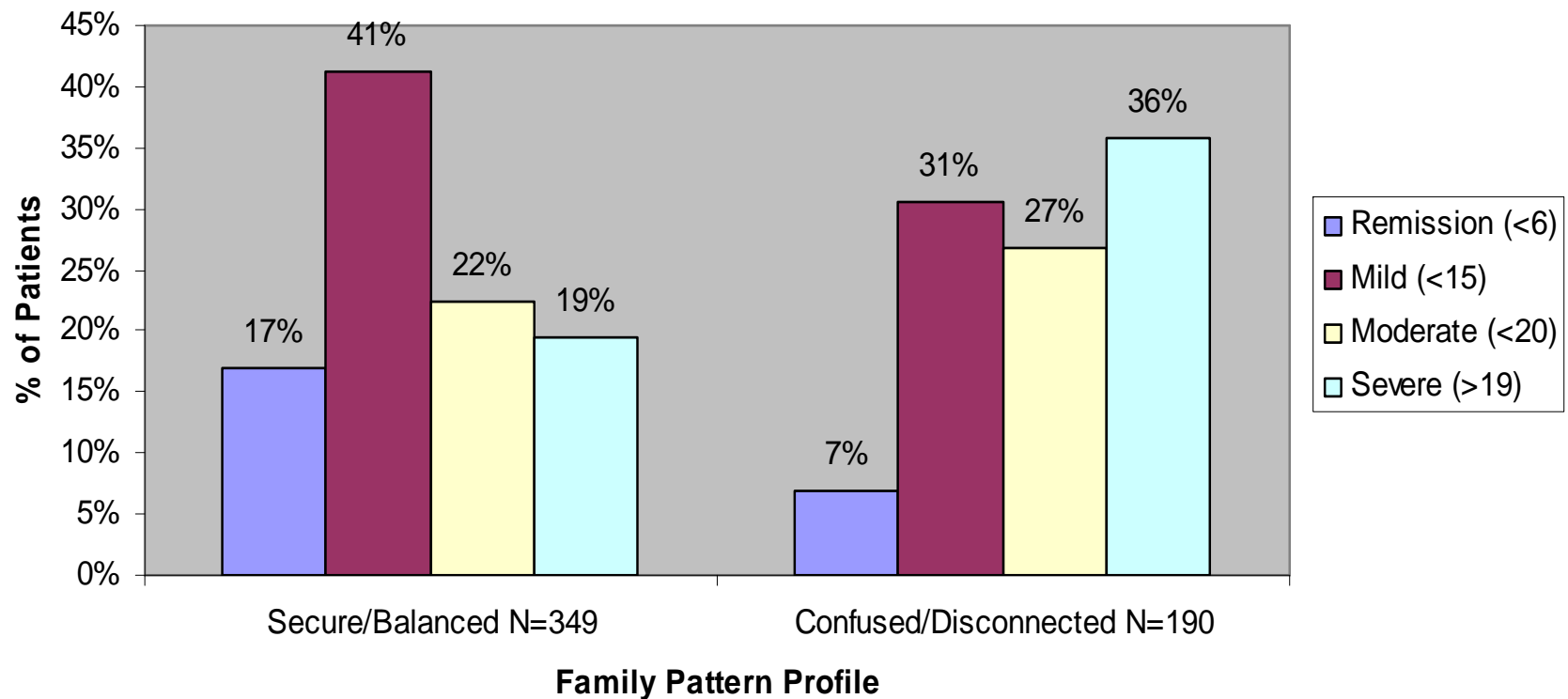


# Initial PHQ-9 and "Family Style"

## PHQ 9 Severity Status Per Family Pattern Profile

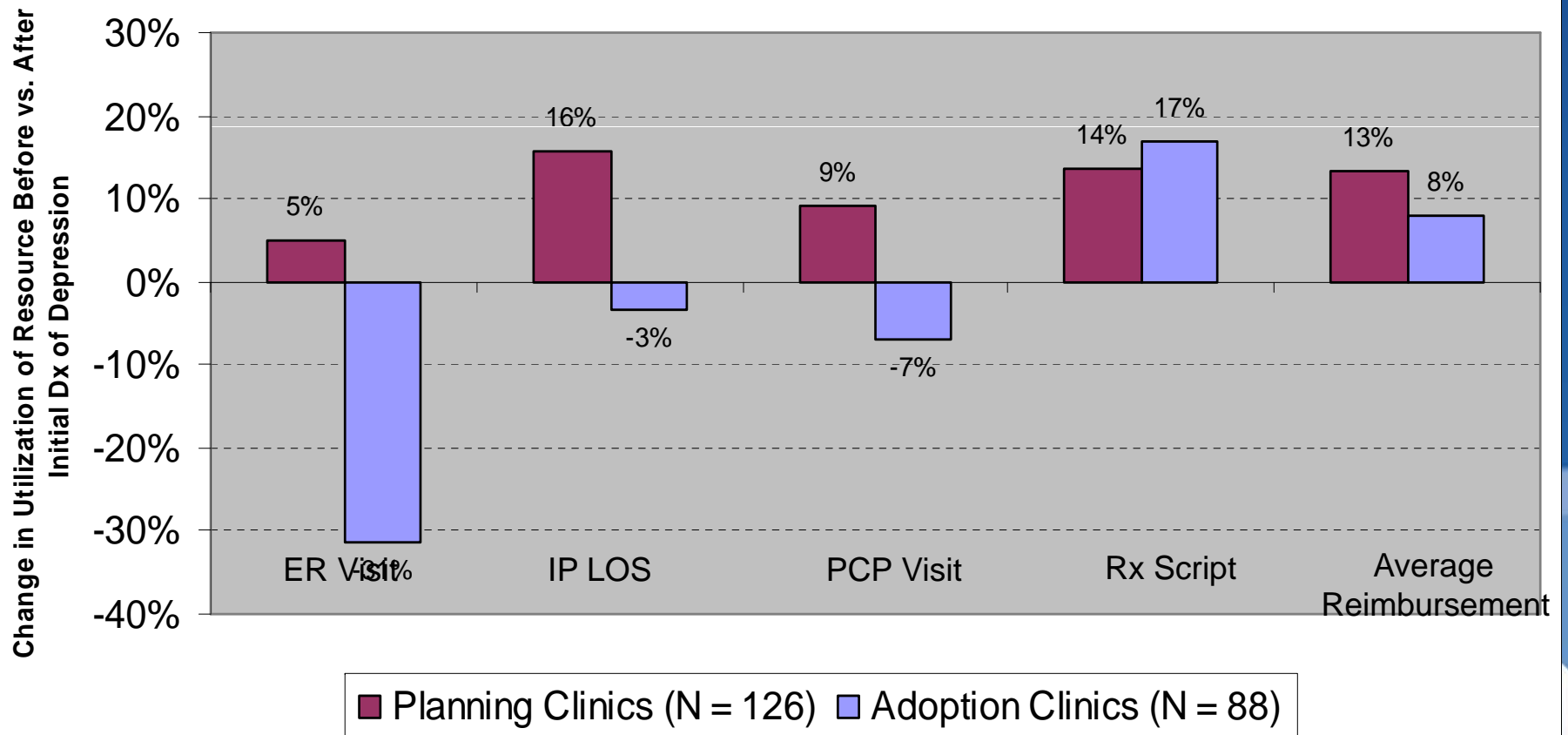
Patients with Depression and Coded FPP & PHQ 9

Jan 1, 2008 - Nov 1, 2008

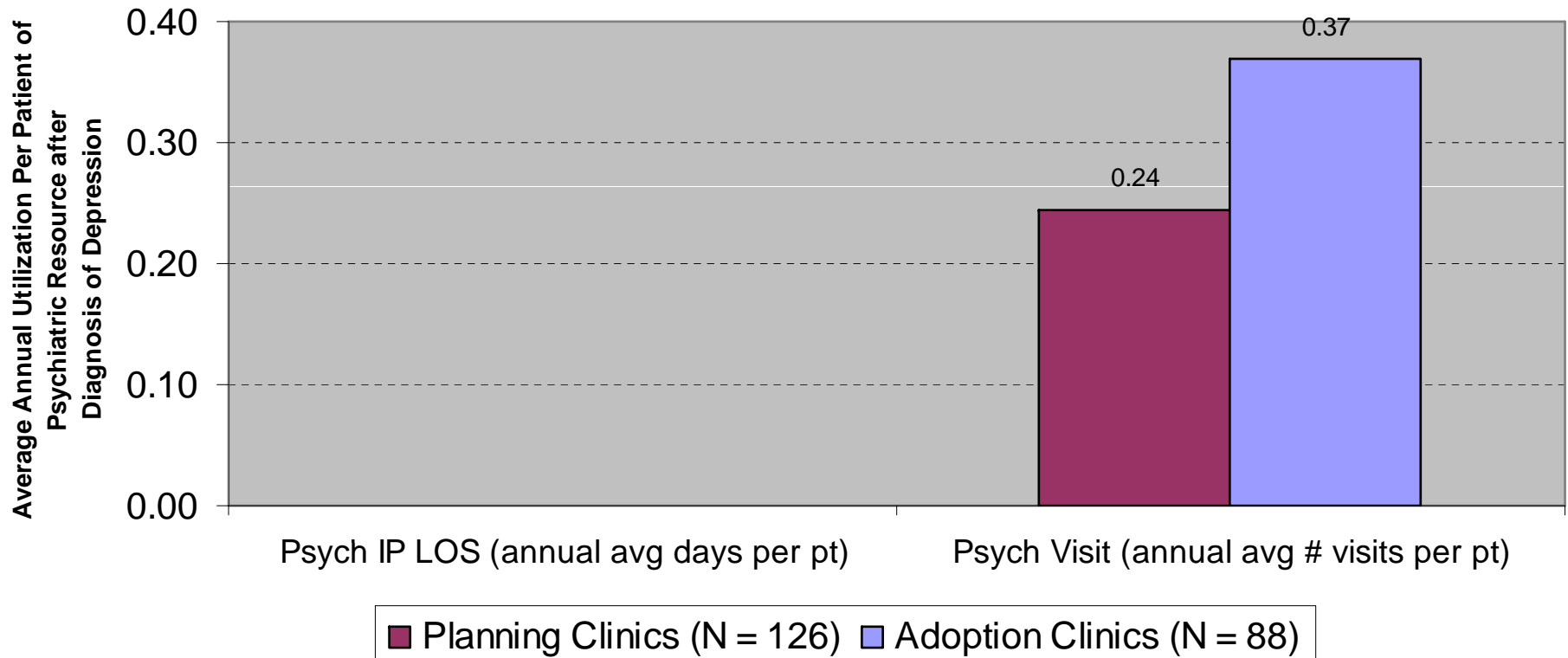


# Patients with Depression and No Comorbidity

Adoption vs. Planning - Patients with Depression Only  
Intermountain Employees & Dependents  
Continuously Covered by SelectHealth for 8 Years

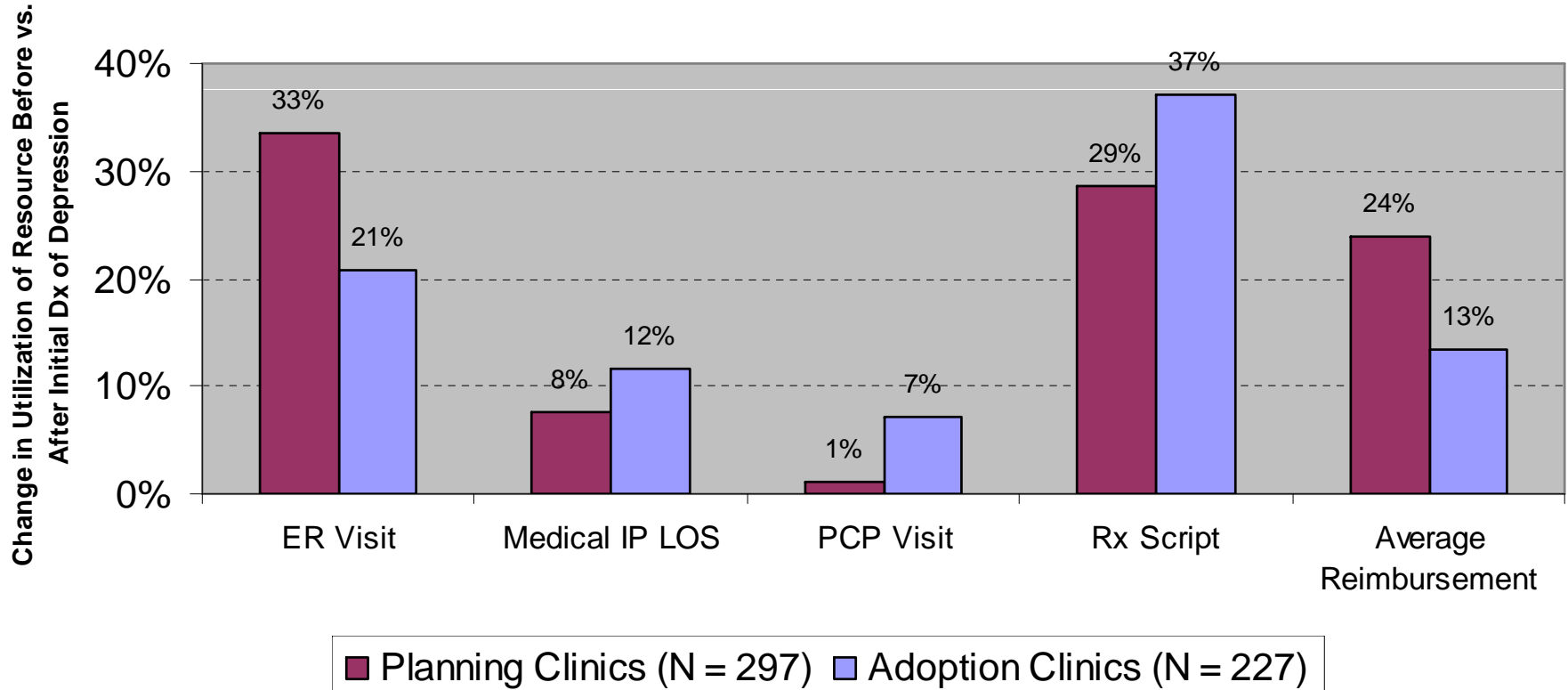


**Adoption vs. Planning - Patients with Depression Only  
Intermountain Employees & Dependents  
Continuously Covered by SelectHealth for 8 Years**



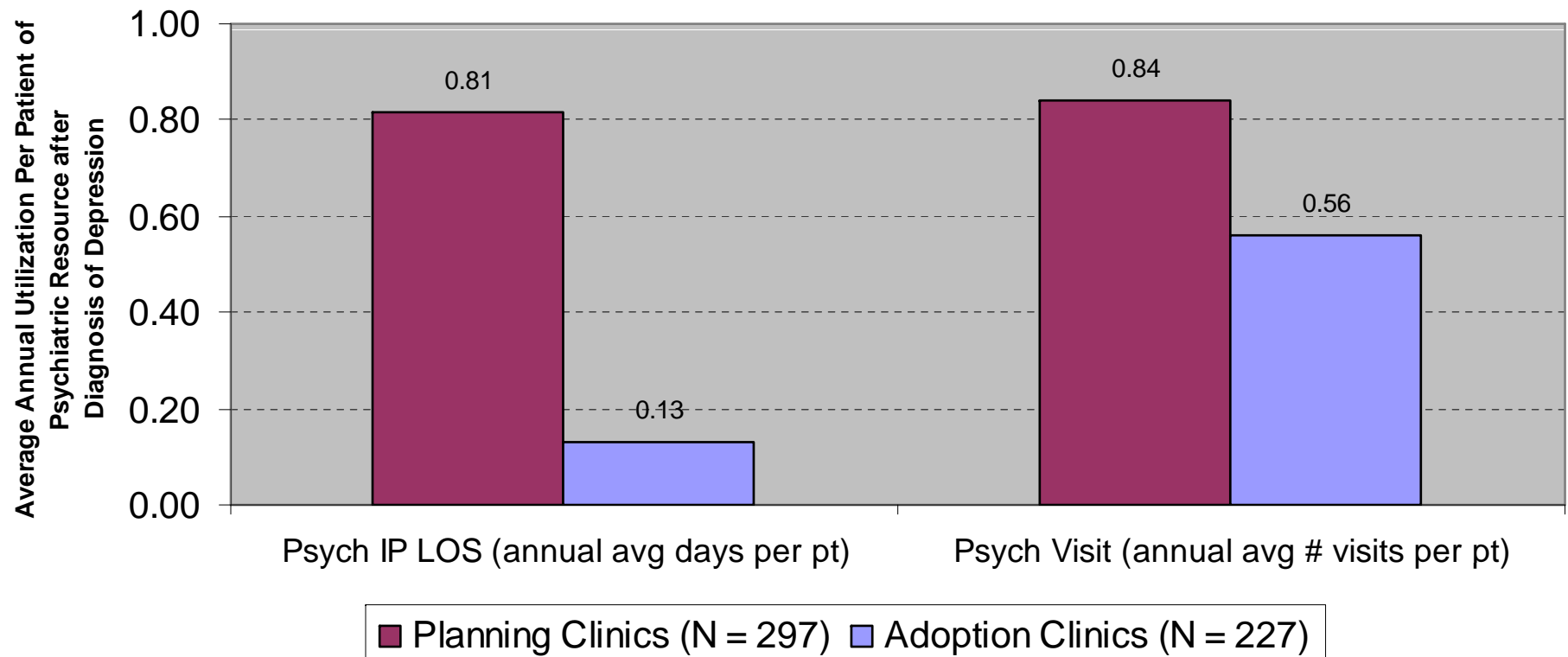
# Patients with Depression and One Comorbidity

Adoption vs. Planning - Patients with Depression Plus one Comorbidity  
Intermountain Employees & Dependents  
Continuously Covered by SelectHealth for 8 Years



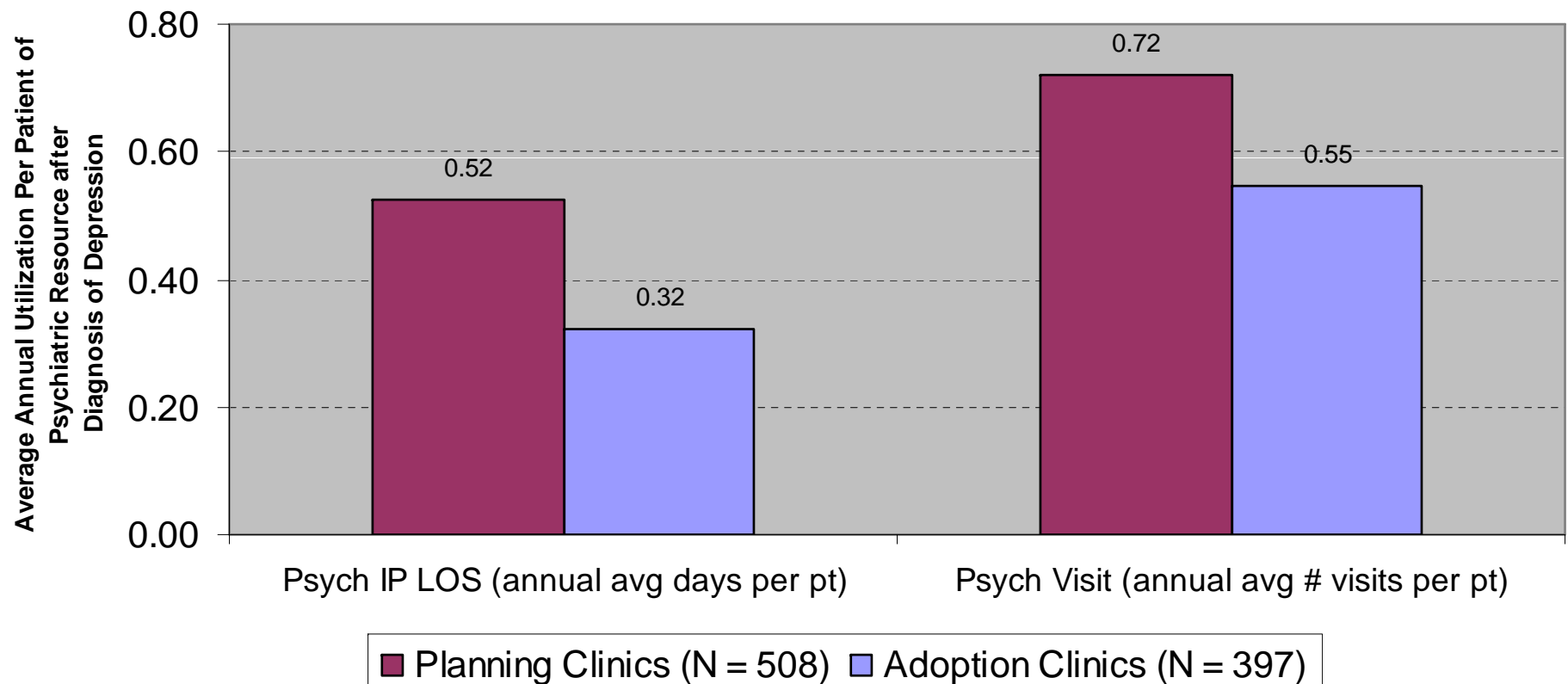
# Patients with Depression and One Comorbidity

**Adoption vs. Planning - Patients with Depression Plus One Comorbidity  
Intermountain Employees & Dependents  
Continuously Covered by SelectHealth for 8 Years**



# Patients with Depression

**Adoption vs. Planning - All Patients  
Intermountain Employees & Dependents  
Continuously Covered by SelectHealth for 8 Years**

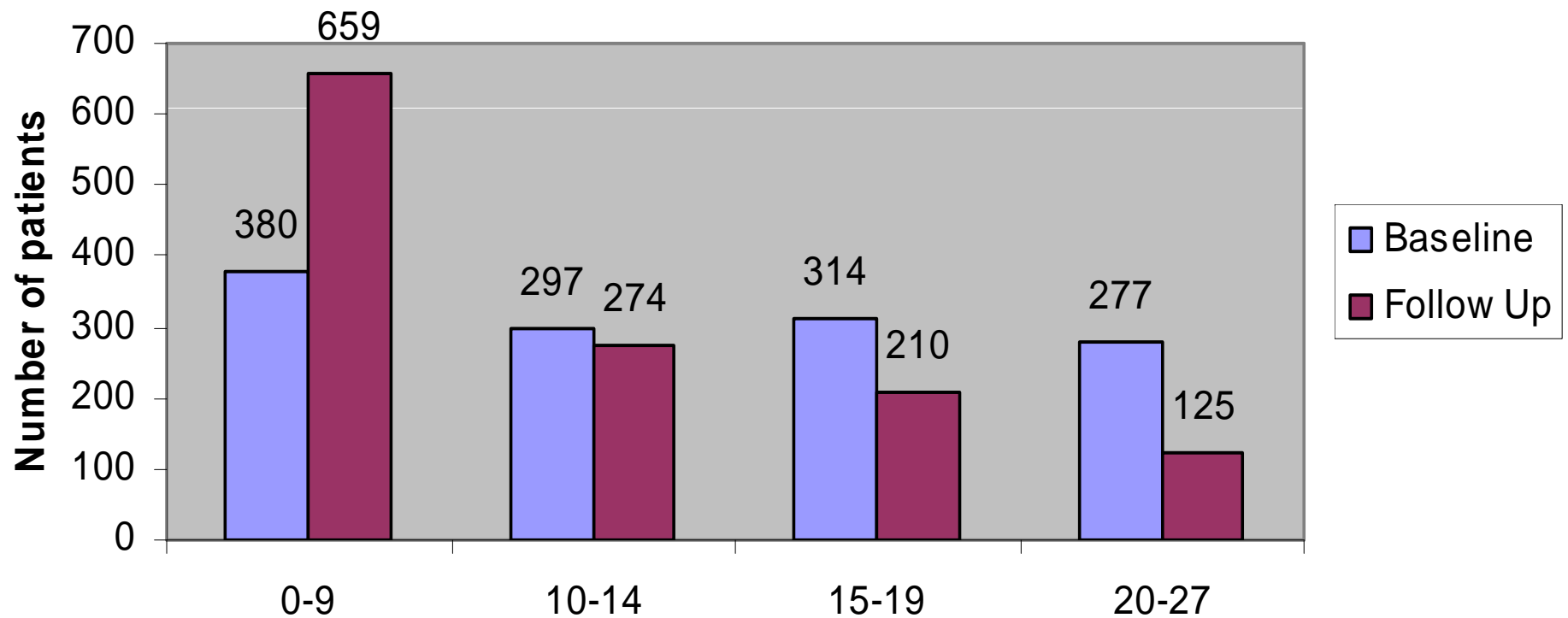


# Outcomes

## Outcomes - Change in PHQ-9 Score

Active depressed patients in routinized clinics (N=1799)

Oct. 1, 2007 - Sept 30, 2008



Follow up PHQ9 was within one year of Baseline  
Follow up in reporting period



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# Intermountain Healthcare

*Healing for life*<sup>SM</sup>