Decreasing ER Use in Medicaid Populations

Barry S. Lachman, MD, MPH
Parkland Community Health Plan
Dallas, TX
March 25, 2009

Parkland Community Health Plan

- Owned by Parkland Health and Hospital System, the Dallas County Health and Hospital District
- 200,000 lives Medicaid and CHIP
- Dallas County and 7 surrounding counties
- About 1/3 of members PCP in PHHS owned clinics (COPC)
- Started 1996
- Largest HMO in Dallas
- 95% under age 21
- SSI voluntary only, no risk, <10% of membership
- 100 PCP's have >80% of members assigned
- 500 PCP's and 1500 specialists

Frequent Flyer Letter/Care Management Intervention

- Letters to members with 3 or more ER visits in 6 months
- Care Manager calls to members with highest utilization
- Case review process
- Improved PCP coordination
- Referral to State Limited Program (Lock In)
- Managed care disenrollment

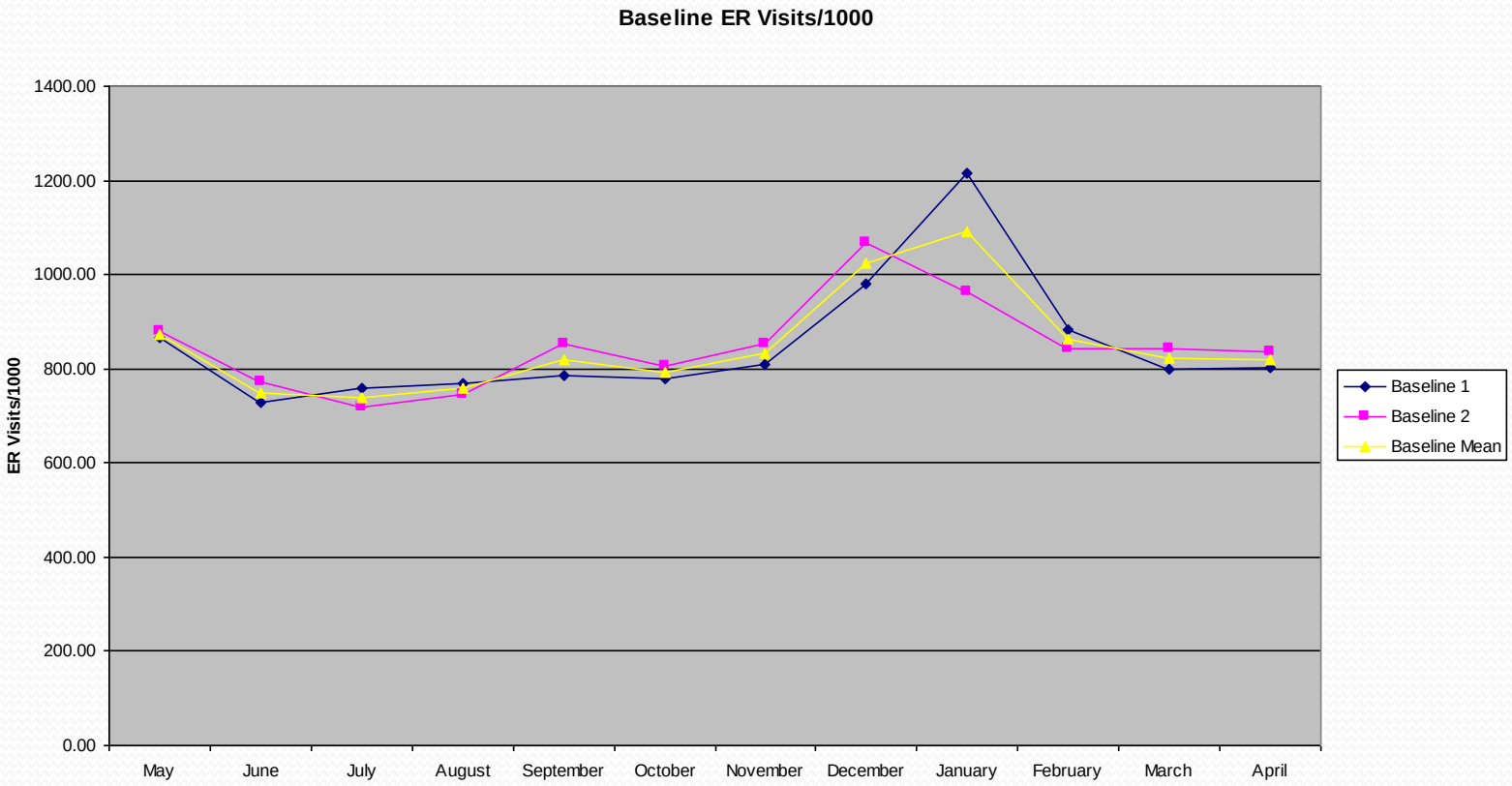
PCHP Strategy

- Use of BCAP Typology to develop data needs and interventions
- Data mining
- Development of a classification system for avoidable ER use
- Reinforcement of the Medical Home

Population Data

Baseline

Baseline Data

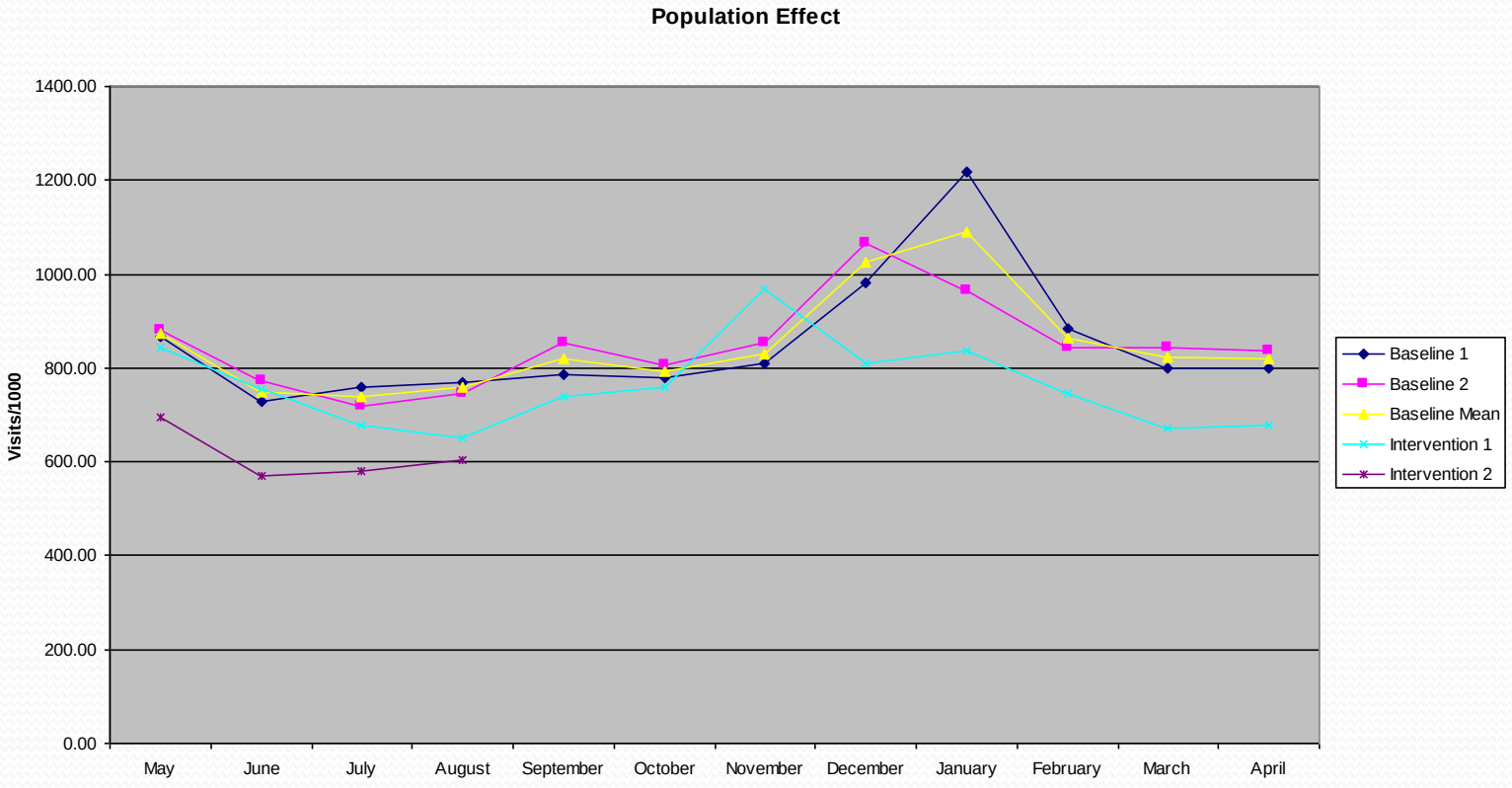


- Average ER visits per 1000 = 848

Population Data

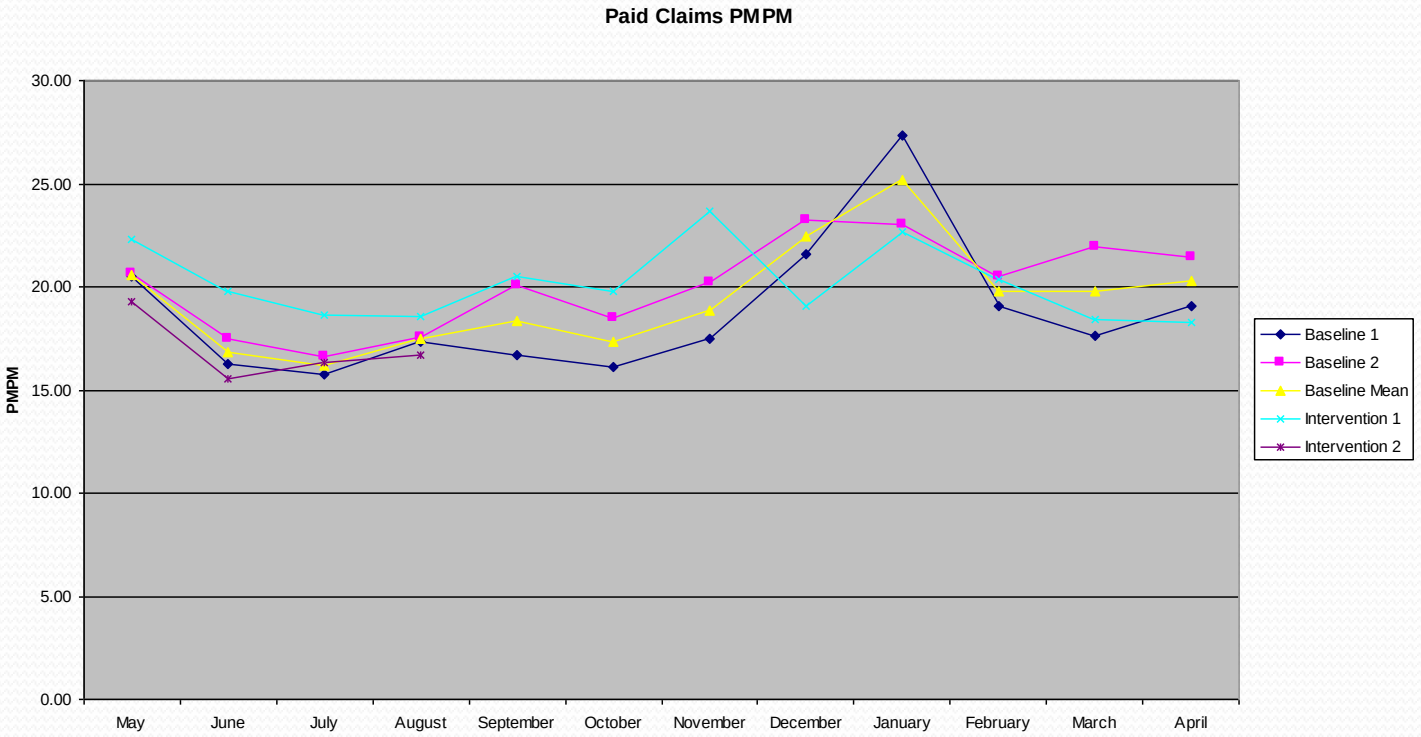
Intervention Results

Intervention Population Effect Visit/1000



Average Monthly Decrease 9.6% Intervention Year 1
Average Monthly Decrease Yr 2 (4 mos) 21.5%

PMPM ER Cost



- PMPM Cost increases Year 1 4.9% due to Chargemaster increases (average cost/visit increases average of 16%)
- PMPM Cost decrease Year 2 (4 mos) 4.4%
- PMPM Cost decrease 12/2003-4/2004 6.3%
- Need to measure cost avoided to measure true PMPM savings

Adjusted Savings

- Method 1 – Calculate Corrected PMPM based on increases in average cost/visit
  - Adjusted PMPM savings Intervention Yr 1 $1.61 PMPM
  - Avoided cost savings Yr. 1 $1.48 million

- Method 2 – Paid claims * % decrease in ER use
  - Savings $1.87 million/yr
  - $2.03 PMPM adjusted PMPM savings Yr 1

Number of Frequent Flyers

	Member Receiving Letters	Percentage Decrease from Baseline
April	1,631	
May	1,489	8.7%
June	1,411	13.5%
July	1,301	20.2%
Aug	1,245	23.7%
Sept	1,144	29.9%
Oct	1,125	31.0%
Nov	1,097	32.7%

Effect of the Intervention by Ethnic Group

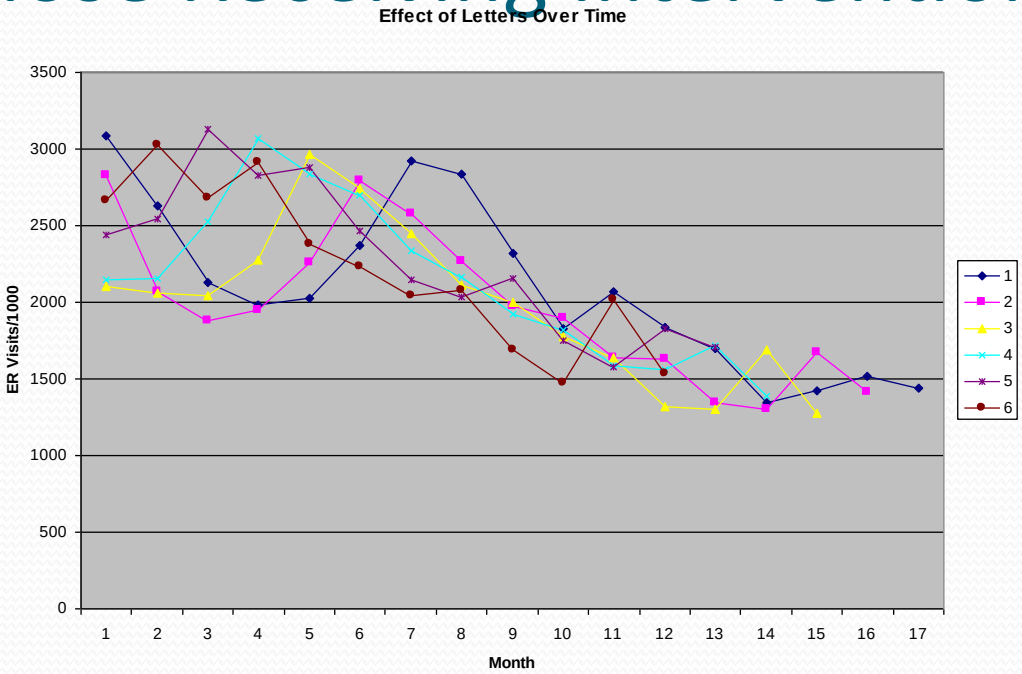
	PreIntervention	Year 1	Year 2
African-American	917.44	839.99	507.00
Native American	586.91	527.25	424.60
Asian	490.56	398.04	229.21
Hispanic	772.49	680.59	403.86
Other	1186.24	1062.28	791.49
White	994.81	948.84	624.75

Percentage Decrease PreIntervention to Intervention

African-American	8%
Native American	10%
Asian	19%
Hispanic	12%
Other	10%
White	5%

- Effect of intervention varies by groups
- Access issues not addressed by this intervention

Effect on Those Receiving Intervention



- Each months group as a cohort
- Study those with at least 12 mos since intervention
- Seasonal effect is greater than intervention effect
- Even with intervention group 2x average utilization

Typology Avoidable ER Use

- Lack of Medical Home
  - Education
  - Attachment
  - Access
- Chronic Disease
  - Out of control
  - Baseline of greater need
- Behavioral issue driven
  - Substance abuse/ Drug seeking
  - Mental health (both patient and parent)
- Avoidable true emergency such as accidents

Intent of Evaluation

- More rigorous analysis of zip code based ER utilization on zip codes which contribute high percentages of COPC utilization
- Followup on HF ER Zip Code analysis for five year period
- Comparison of effect of COPC in area and PCHP intervention of ER utilization in HF members by zip code of residence.

Methods

- Definition of zip codes that use each COPC – High use defined as those zip codes contributing 60-85% of total COPC site users
- Comparison of ER utilization comparing total HF, Dallas County HF and non COPC zip codes (those contributing less than 30-40% to each COPC) to each COPC and COPC zip codes served in aggregate

Limitations

- Since 2007 was not complete, 2007 results not used. Since the intervention was started in April, 2003, results for 2003 show less dramatic results
- Since PCHP autoassignment (about 50% of new members) is geographic (not related to historic patterns of COPC overall use by Zip Code), ER use by COPC without use of High COPC use data is likely to make the individual COPC results look high
- COPC results are negatively effected by autoassignment because members show higher ER utilization results in the first year of membership.
- Results are only related to HealthFirst members but reflect all ER use.
- The data do not allow separation of the effect of private provider access in areas with COPC's.
- The data do not measure the effect of COPC assignment in Non COPC areas.

Results 1

ER Visits/1000	2002	2003	2004	2005	2006	2007
COPC High Volume	842	814	678	696	717	742
Non COPC	919	856	700	702	716	755
COPC Area Without Vickery & Garland	805	772	633	634	668	676
Vickery Garland	990	975	851	935	909	991

- COPC High Volume Zip Codes have lower HF ER utilization compared to non COPC areas
- COPC High Volume Zip Codes without Vickery and Garland have even lower ER utilization rates compared to Non COPC areas
- The PCHP intervention reduced ER use in all areas of Dallas County with greatest effect in Non COPC areas
- Vickery and Garland had higher baseline ER utilization and showed modest improvement with intervention

Results 2

Comparison to Non COPC Areas	2002	2003	2004	2005	2006	2007
COPC High Volume	77	42	21	7	-1	13
Non COPC						
COPC Area Without Vickery & Garland	114	84	67	68	49	78
Vickery Garland	-71	-119	-151	-233	-192	-236

- The PCHP ER intervention improved ER utilization more dramatically in non COPC areas
- While Garland and Vickery improved in ER utilization, the dramatic improvement in Non COPC zip codes hides improvement in Garland and Vickery zip codes

Results 3

Percent Compared to Non COPC	2002	2003	2004	2005	2006	2007
COPC High Volume	92%	95%	97%	99%	100%	98%
Non COPC						
COPC Area Without Vickery & Garland	88%	90%	90%	90%	93%	90%
Vickery Garland	108%	114%	122%	133%	127%	131%

- At baseline COPC zip codes show about an 8% lower ER utilization than Non COPC zip codes
- The PCHP serves to decrease the disparity between Non COPC and COPC zip codes
- While Garland and Vickery improve, the results are obscured by the dramatic improvement in Non COPC Zip Codes

Results 4

Comparison to Non COPC Baseline	2002	2003	2004	2005	2006	2007
COPC High Volume	77	106	241	224	202	178
Non COPC		63	220	217	203	165
COPC Area Without Vickery & Garland	114	148	286	285	252	243
Vickery Garland	-71	-56	68	-15	11	-71

- Compared to the Non COPC baseline, COPC High Volume Zip Codes, High Volume without Vickery and Garland and Non COPC Zip Codes show dramatic improvement
- Vickery Garland HF ER utilization shows modest improvements and almost declines to NON COPC Zip Code baselines

Conclusions

- COPC's decrease ER utilization in the areas served by about 10% compared to Non COPC served areas
- PCHP intervention stressing the role of the Medical Home mimics the effect of having a COPC in the area
- Some COPC sites with limited space and capacity do not show as much improvement
- The combination of a COPC and PCHP intervention is the most powerful in decreasing ER utilization in the HF population
- The Medical Home and interventions to provide a Medical Home decrease ER utilization and save public dollars in low income and underserved populations
- New COPC expansion in non COPC areas and existing COPC expansion in North and Northeast Dallas has the potential to decrease ER use and save more money.

Chronic Frequent User Analysis

Methods

- Random sample of 32,000 pediatric members
- Define Chronic Frequent Users as those who occur as Frequent Users over two or more quarters
- Compare chronic frequent users to non chronic user population
- Moving average analysis comparing slope of utilization curve before and after intervention
- Use trend before intervention to define regression to the mean

Results

- Intervention decreases ER use by chronic frequent users by average of 4 visits per year
- Intervention does not have an effect on ER utilization by frequent users when adjustment made for regression to the mean
- Several factors are weak predictors of chronic frequent ER use
- Chronic frequent users are only 4% of frequent users but account for 20% of frequent user volume

Results (2)

- Chronic frequent users use both PCP and ER more often for acute care
- Chronic frequent users are less likely to seek preventive care

Predictive Factors of Chronic Frequent ER Use

	Odds Ratio	P>z	95% CI
Age			
Enrollment age < 1	4.29	<.001	3.48, 5.29
1< Enrollment age <2	2.94	<.001	2.39, 3.61
2< Enrollment age <4	1.87	<.001	1.51, 2.32
4< Enrollment age < 18 (reference)			
Gender			
Female	0.9	0.118	0.80, 1.03
Male (reference)			
Ethnic Status			
Black	0.7	0.001	.56, .87
Hispanic	0.56	0.001	.72, .97
Other	0.62	0.08	.81, 1.27
White (reference)			
Season			
Summer	1.23	0.025	1.03, 1.48
Fall	0.95	0.608	.79, 1.14
Winter	0.96	0.646	.81, 1.14
Spring (reference)			

Receiver Operator Score C=0.64

Implications

- PCHP intervention has an large effect on chronic frequent users but their use remains higher
- Non systematic analysis and other literature suggests that psychosocial factors drive chronic frequent use
- Our results suggest chronic and episodic frequent user populations are different
- Parent behavior not medical need drives chronic frequent use

Implications (2)

- PCP behavior is changed by the PCHP intervention and accounts for population data in non frequent users
- PCHP results reinforce the value and power of the Medical Home
- Demographic and claims data are of limited value in predicting ER use
- Psychosocial intervention and new models of care are needed for the chronic frequent user population

Where We Are Headed

- More data modeling using claims and user data
- Efforts to use behavior risk assessment data at health plan entry
- Readiness to change analysis
- Motivational counseling
- Integrating behavioral health into primary care
- Point of service interventions ER and PCP office

Where We Are Headed (2)

- Electronic notification
- Use of promotoras and community health workers
- Shared medical appointments
- Breaking down silos in MCO operations
- Rengineering of reimbursement and office visit
- Use of Electronic Health Record data
- Spreading PCP Best Practices

It's All About Improvement