



SDIR BMI Pilot Project: Improving BMI Surveillance in SD County

San Diego County Childhood Obesity Initiative

San Diego Regional Immunization Registry

BMI Surveillance and Sampling: Federal Sources

Data Source	Population Covered	Strengths	Weaknesses	Findings
PedNSS	Children (Ages 0-4) receiving federal assistance, e.g., WIC	<ul style="list-style-type: none"> •Provides data on nearly half of all children •Focuses on high-risk populations 	<ul style="list-style-type: none"> •Misses data on half of children, ages 0-4, and older populations 	<ul style="list-style-type: none"> •Children (ages 2-4) : 14.6% obese •Unchanged rate since 2003 – 2008
YRBSS	High School Students	<ul style="list-style-type: none"> •Provides a national sample •Assesses risk behaviors 	<ul style="list-style-type: none"> •Data is self-reported •Misses data on children, ages 0-14 	<ul style="list-style-type: none"> •High School Students: 13.0% obese •Unchanged rate since 2005
NSCH	Children (Ages 10-17)	<ul style="list-style-type: none"> •Provides a national sample •@4 years 	<ul style="list-style-type: none"> •Reported by parents via phone 	<ul style="list-style-type: none"> •Children (ages 10-17): 16.4% obese •Increased 1.6% since 2003
NHANES	All Ages	<ul style="list-style-type: none"> •Historical •Provides direct measurements •Provides risk behavior and health information 	<ul style="list-style-type: none"> •Provides limited state/local analysis 	<ul style="list-style-type: none"> • Children (ages 2-5): 12.4% obese • Children (ages 6-11): 17.0% obese •Children (ages 12-19): 17.6% obese • Increased by two-thirds since 2006

BMI Surveillance and Sampling: State Models

	School Based	Registry Based	Hybrid
Characteristics	<ul style="list-style-type: none"> •Measure all or sample of kids in various grades and schools •Screen kids in school •Possibly provide results to parents with referrals •Opt in vs. opt out 	<ul style="list-style-type: none"> •Add ht/wt data fields to existing registry •Can produce growth chart for clinician use 	<ul style="list-style-type: none"> •Extracts ht/wt measurements from health examination forms required for school entry and at various grades
Leading Examples	<ul style="list-style-type: none"> •AR •CA (Fitnessgram) •PA 	<ul style="list-style-type: none"> •Michigan Care Improvement Registry •San Diego County Immunization Registry 	<ul style="list-style-type: none"> •IL •NY

State Models: Strengths and Weaknesses

	School Based	Registry Based	Hybrid
Pros	<ul style="list-style-type: none"> •Captures data on most school-aged children •Provides opportunities to integrate with other health screenings •Source of healthcare services for some children 	<ul style="list-style-type: none"> •Children already measured by clinically trained personnel •Ability to automate calculation of BMI/ BMI percentile •Ability to improve the quality of care •HIT \$ => EMRs=> data sharing 	<ul style="list-style-type: none"> •Leverages school mandates, e.g., physical exams •Utilizes clinical measurements
Cons	<ul style="list-style-type: none"> •Misses nonschool-aged and absent children •Competes with mission •Requires training, equipment and aggregation method– all necessitate funding •FERPA privacy issues •Requires development of referral methods •Concerns about stigma •Fitnessgram: validity issues 	<ul style="list-style-type: none"> •Needs robust IIS systems •HIPAA privacy issues •Concerns that EMR is a threat •Misses children not receiving medical care, particularly children less than 5 years of age 	<ul style="list-style-type: none"> •Potential to raise FERPA/ HIPAA issues •Requires a mechanism to extract/aggregate data •Errors/problems taking data from paper forms

San Diego Immunization Registry (SDIR) and BMI Surveillance

- ▲ San Diego Regional Immunization Registry (SDIR) expanded the registry's capacity in 2008 to include height and weight, e.g., Body Mass Index (BMI)
- ▲ San Diego County Childhood Obesity Initiative, SDIR, and Altarum Institute partnered on a 12-month pilot project to increase the utilization and capacity of the SDIR's BMI function

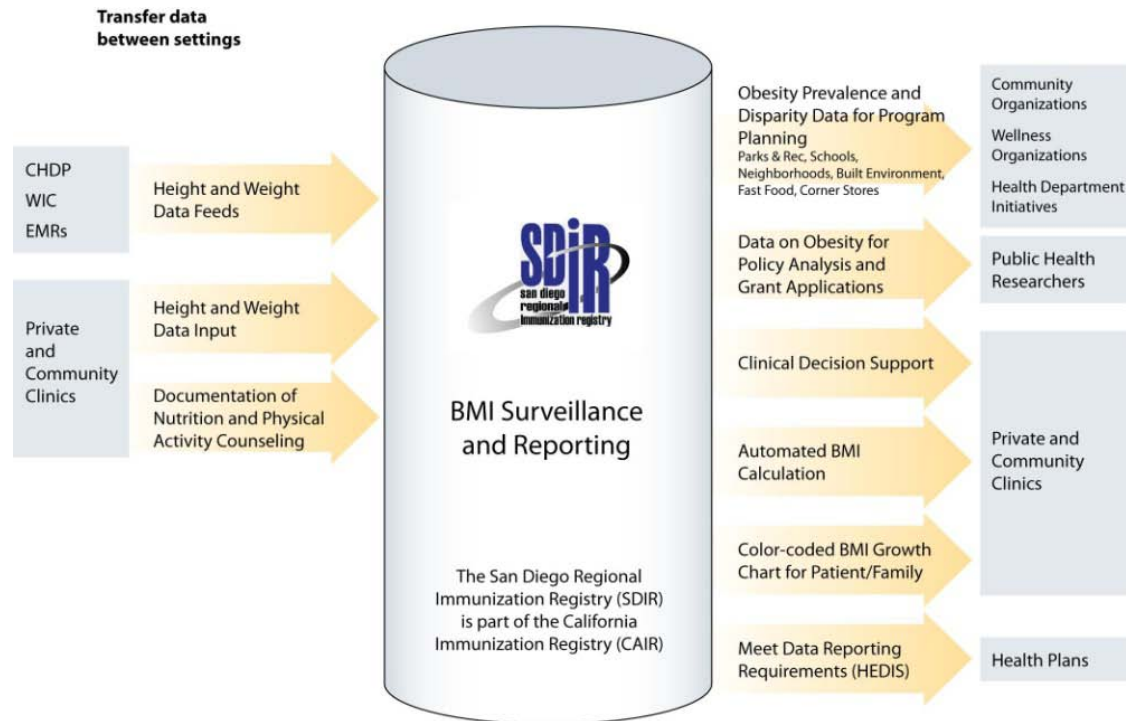
SDIR BMI Pilot Project: Implementation Goals

- ▲ Optimize input of height and weight into tool, accounting for redundant entry into multiple systems
- ▲ Use SDIR BMI interface to print child's BMI chart and growth trajectory (requires historical data and "real time" data from current visit)
- ▲ Print BMI chart and provide to physician
- ▲ Physician may use chart with family

Progress and evaluation of pilot project:

- ▲ Timely feedback on data quality and data entry volume
- ▲ Provide clinic SDIR BMI summary reports
- ▲ Obtain feedback for SDIR BMI/SD COI team for system improvement, process best practices and grant opportunities
- ▲ Set guidelines for post-pilot/ongoing access to summary reports

SDIR BMI Data Inputs and Outputs



SDIR BMI Reporting: Goals and Opportunities

▲ Current:

- Ad hoc requests for clinic-level summary reports
- Automated data quality programming for biologically implausible results and missing data
- Patient listings for clinic alerts and flags for follow-up checks
- BMI summary level reports:
 - Summary of Children's BMI for Age by BMI Percentile
 - Prevalence of Overweight and Obesity
 - Gender-specific Prevalence of Overweight and Obesity
- Monthly patient BMI data volume

▲ Future:

- Clinic obesity trend reports
- Comparative reports – clinic to clinic, public to private
- County-wide surveillance reports
- Special reports for program evaluation, planning and research

SDIR BMI Clinic Data Entry Activity Through 2009

▲ Pilot implementation locations:

– Clinic A(candidate “best practice” site):

- Implementing patient feedback model using SDIR BMI reports;
- Analysis of process, roles and clinic flow improvement
- Lean coaching with value mapping of current and future state;

– Clinic B:

- Initial pilot site to uncover barriers and challenges through focus group;
- Increasing trend in data entry and first summary reports delivered;
- Recent commitment to use for all well child visits and requesting regular (3 month) reporting

– Clinic C:

- self-initiated high volume data entry site;
- possible use for additional sites and initiate regular SDIR reporting

SDIR BMI Reporting: Sample Summary Report and Patient Listings for Data Quality Review

▲ Summary of Children's BMI for Age by BMI Percentile

▲ Prevalence of Overweight and Obesity

ID (optional)	Name (optional)	Sex	Date of birth	Date of measurement	Height		Weight		BMI	BMI %ile
					Feet	Inches	Pounds			
1	Jane Doe	F	4/27/1998	10/1/2007	4	10.25	83.5	17.3	63.0	
2	Carlos Rodriguez	M	3/7/1998	10/1/2007	4	7.375	127	29.1	99.2	
3		F	6/2/1998	10/1/2007	4	5.125	64	15.9	39.9	
4	John Smith	M	6/2/1998	10/1/2007	4	8.375	67.5	14.9	19.1	
5		F	6/11/1998	10/1/2007	4	3.25	76.75	20.5	90.8	
6		F	9/5/1997	10/1/2007	4	9.25	79.75	17.1	53.7	
7		F	6/23/1998	10/1/2007	4	11.125	80.5	16.2	45.3	
8		F	4/24/1998	10/1/2007	4	7	85.5	19.9	87.3	
9		M	8/16/1998	10/1/2007	4	6.375	64.5	15.3	29.7	
10		M	5/14/1997	10/1/2007	4	9.125	79	17.0	53.5	
		M	11/7/1997	10/1/2007	4	9.375				
		M	12/28/1997	10/2/2007	4	5.375	67	16.5	50.5	
		F	1/10/1999	10/2/2007	4	5.125	62.25	15.5	36.6	
		F	11/22/1997	10/2/2007	4	9.125	106.5	22.9	95.2	
		F	1/24/1998	10/2/2007	4	9.25	1311.25			Ht or wt error
		M	2/10/1997	10/2/2007	5	0.25	144.5	28.0	98.6	
		M	9/14/1997	10/2/2007	4	9.125	97.5	21.0	92.2	
		M	8/24/1997	10/2/2007	4	11.375	100.5	20.0	88.3	
		M	10/8/1997	10/2/2007	5		69.5	13.6	1.1	
		M	7/13/1997	10/2/2007	5	2	101.75	18.6	77.4	
		F	11/12/1996	10/2/2007	4	9.375	113.5	24.2	95.3	
		F	12/12/1996	10/2/2007	4	9.125	76.25	16.4	34.5	
		x	3/20/1996	10/3/2007	4	11.375	106	21.1		Sex error
		M	4/8/1997	10/3/2007	5	0.125	88.5	17.2	55.9	
		M	4/8/1997	10/3/2007	4	11.375	91.5	16.2	71.4	

Summary of Children's BMI-for-Age

	Boys	Girls	Total
Number of children assessed:	108	132	240
Underweight (< 5th %ile)	1%	2%	1%
Normal BMI (5th - 85th %ile)	56%	47%	51%
Overweight or obese (≥ 85th %ile)*	44%	52%	48%
Obese (≥ 95th %ile)	20%	24%	23%

*Terminology based on: Barlow SE and the Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. Pediatrics. 2007;120 (suppl 4):s164-92.

Sample BMI Summary Reports

Patient Listing Ht, Wt, BMI & BMI Percentile

2009, age 2 – 19 years

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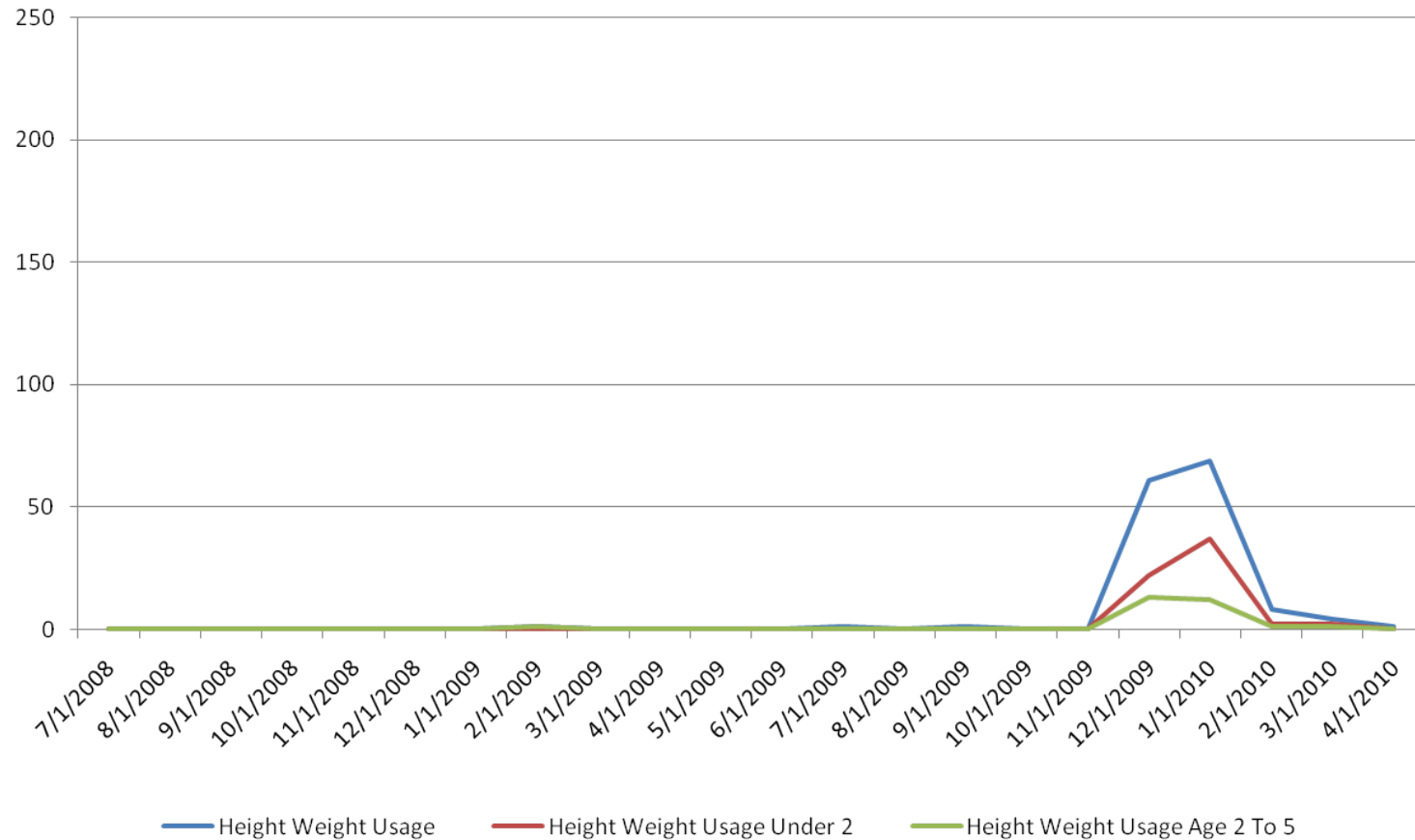
Height and Weight: Clinic B



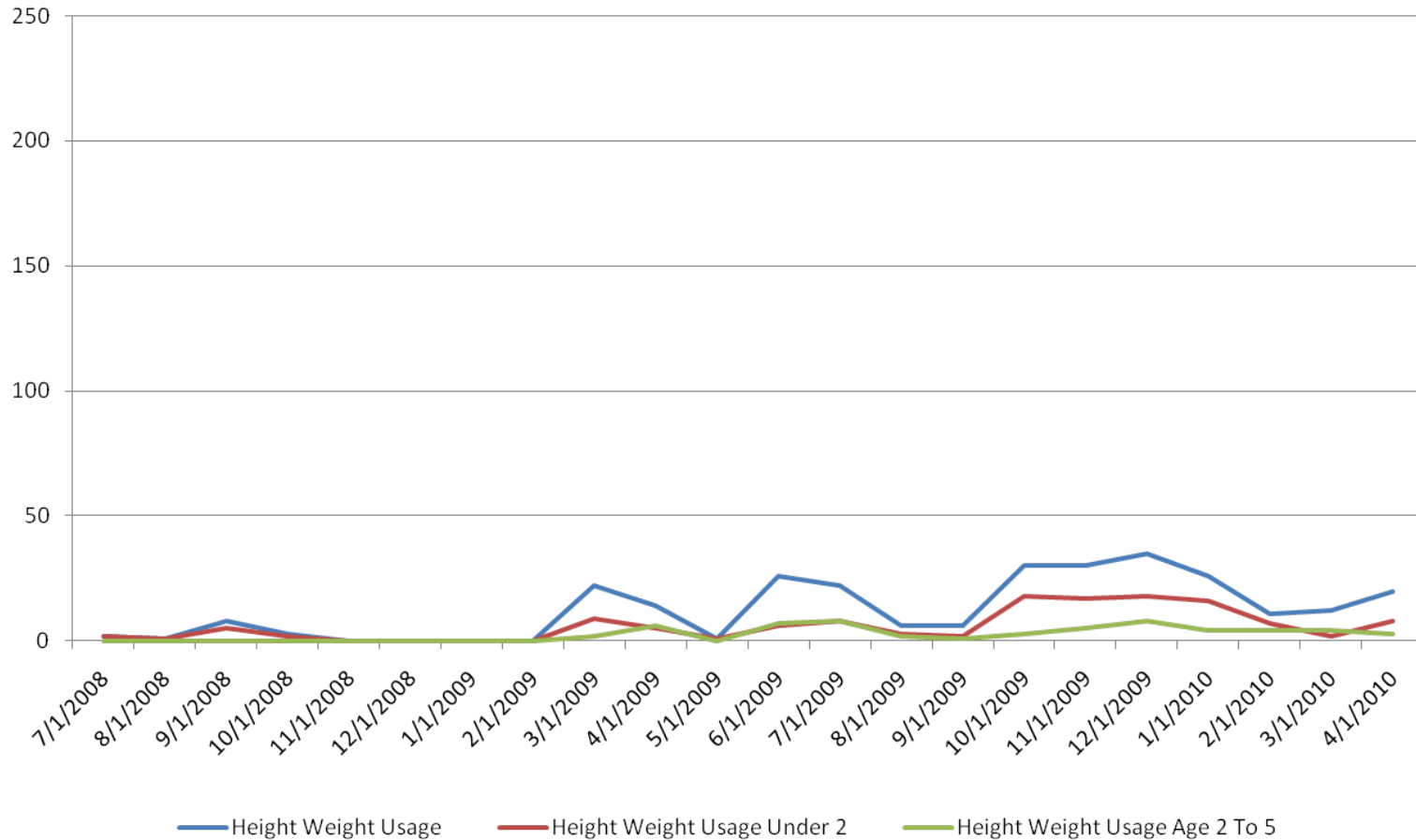
Height and Weight: Clinic C



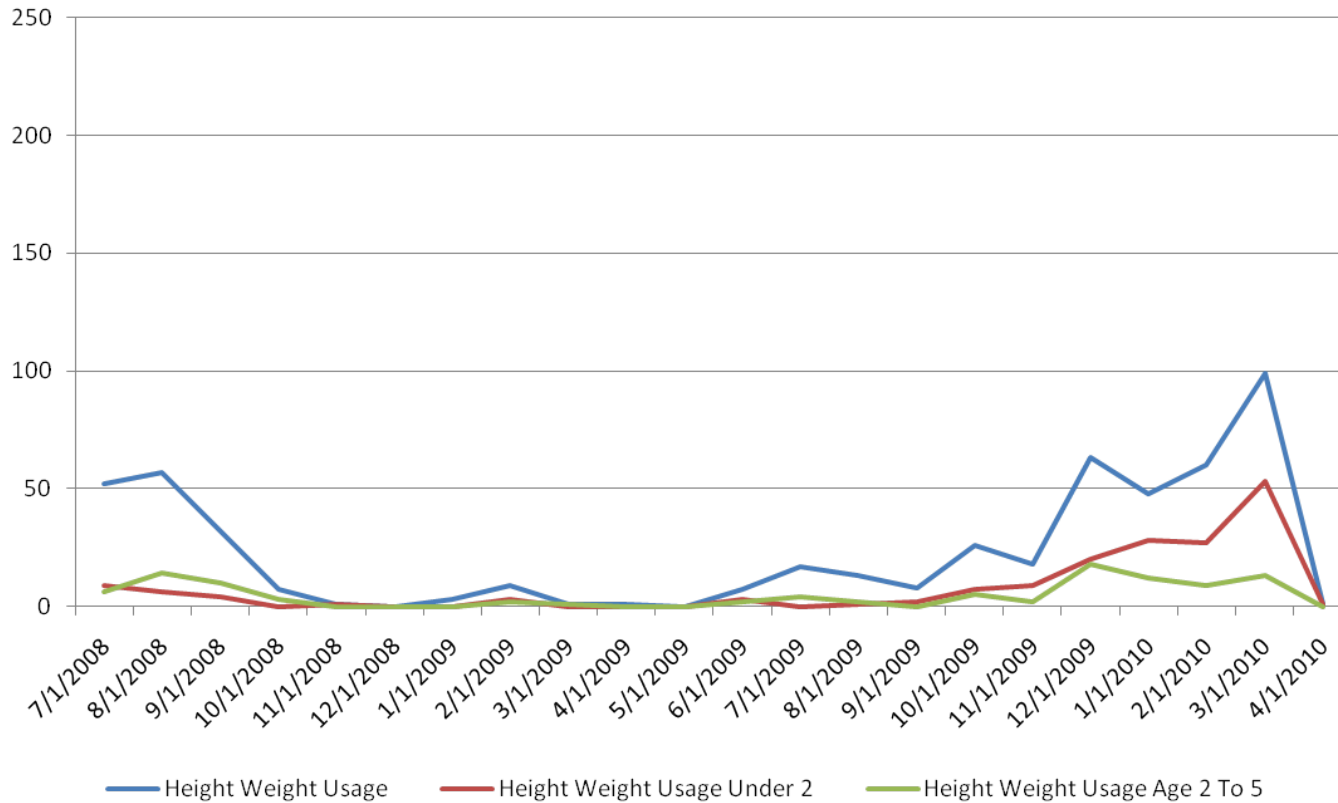
Height and Weight: Clinic D



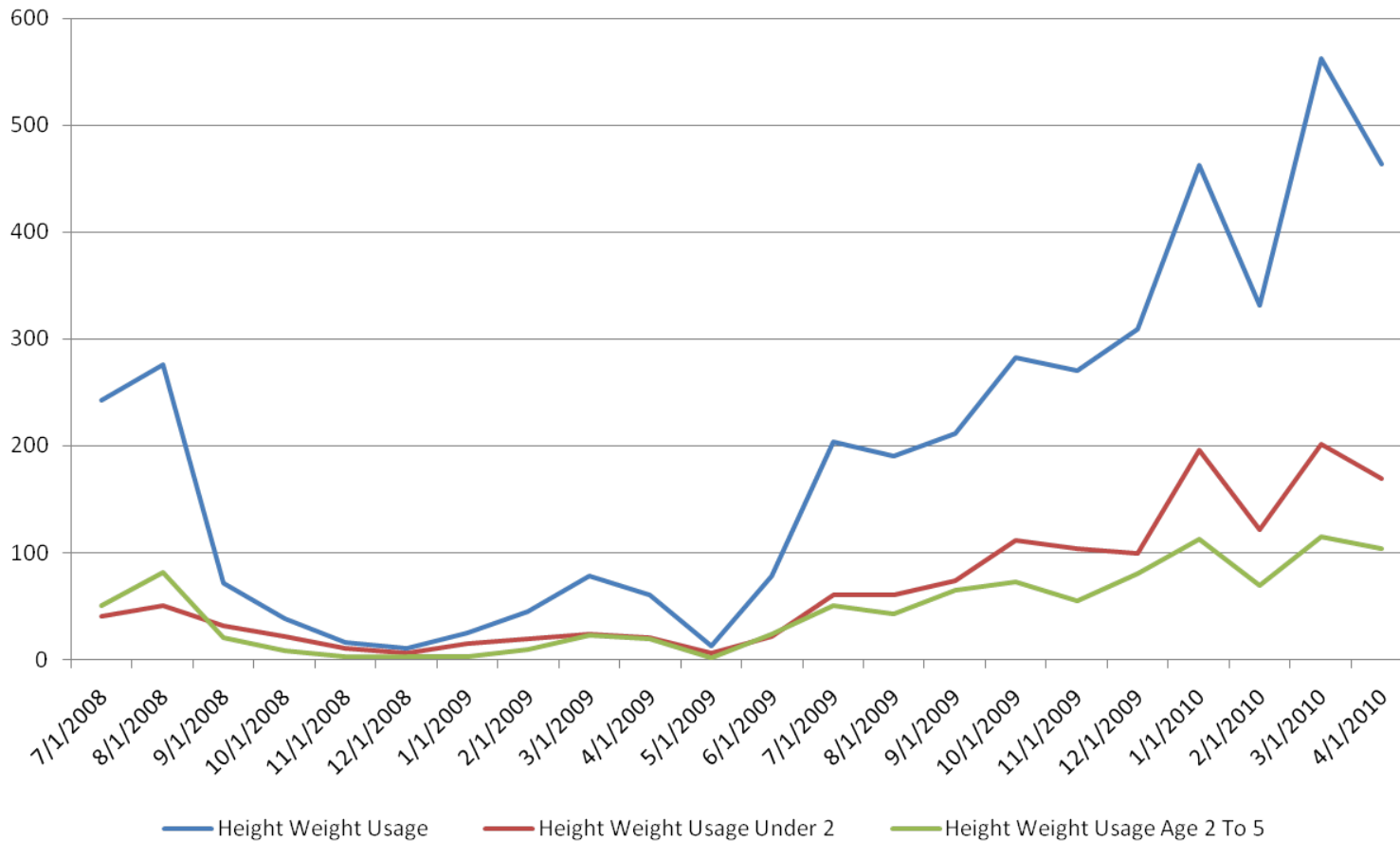
Height and Weight: Clinic E



Height and Weight: Clinic F



Height and Weight: Total of All Clinics



Key Findings from Pilots

- ▲ Significant increase in data entry since June/July 2009
- ▲ Pilot clinics establish protocol for routine entry of height and weight on all well-child visits (~300 children per month per clinic)
- ▲ Pilot clinics' physicians would value seeing BMI summary reports on their clinic population
- ▲ Clinic flow design changes resulted in more MD time with patients and use of growth charts with family
- ▲ Modest changes in SDIR features could improve data quality and increased use of BMI feature
- ▲ WIC sites willing to do double data entry to access SDIR BMI features

Identified Next Steps

- ▲ Assess awareness/impact of SDIR BMI efforts
- ▲ Promote SDIR BMI use in clinics, including results of Lean clinic flow improvements at North County
- ▲ Enhance SDIR functionality to optimize data quality and reporting features
- ▲ Enhance provider training around BMI screening and counseling
- ▲ Leverage pay-for-performance incentives to promote BMI screening and reporting into SDIR (HEDIS)
- ▲ Use of SDIR in WIC clinics and WIC data exchange

Immediate Needs to Clarify and Address

- ▲ Designate coordinator to maintain momentum and follow-up of next steps: include SDIR, Epidemiology, Chronic Disease, and Community Partners
- ▲ Plan for implementation of Health Officer Order
 - Standardize data entry guidelines across provider groups
 - Revise provider agreements with SDIR
- ▲ Plan for action on ARRA funding to create data exchanges between EMRs and SDIR

Federal Legislation Supporting Registry-based BMI Surveillance

- ▲ HR 5209, Healthy Communities through Helping to Offer Incentives and Choices to Everyone in Society (Rep. Kind)
- ▲ HR 3955, Surveillance, Tracking, Observation and Prevention of Obesity (Rep. Carney)
- ▲ HR 4053 (Rep. Moran)

111TH CONGRESS
1ST SESSION

H. R. 4053

To establish the Office of Childhood Overweight and Obesity Prevention and Treatment within the Office of Public Health and Science of the Department of Health and Human Services, and for other purposes.

Contact Information

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