

HEROES Evaluation Webinar #1

June 14, 2024



HEROES Health Outcomes

Maternal Health Outcomes

Significance: The U.S. experiences higher rates of Severe Obstetric Complications (SOC) than most other developed countries, and rates continue to rise.

Goal: Within a population of 5M, reduce rate of SOC during delivery hospitalization and 60 days after delivery by 20%.

Heart Attack and Stroke

Significance: Heart disease (#1) and Stroke (#5) are among the leading causes of death in the U.S. Annually, there are about 805,000 Heart Attacks and 795,000 Strokes.

Goal: Within a population of 700,000, reduce 10-year aggregate risk of Heart Attack and Stroke for people aged 40-70 years by 1% point.

Opioid Overdose

Significance: Opioid Use Disorder (OUD) affects over 2.1 million individuals and causes over 100,000 deaths annually in the U.S. Fewer than 10% of patients with diagnosed OUD receive medication-assisted treatment (MAT).

Goal: Within a population of 500,000, reduce the number of emergency medical service calls for opioid overdoses by 10%.

Alcohol-Related Health Harms

Significance: An estimated 1 in 5 deaths of people ages 20 - 49 result from excessive alcohol use. There are more than 140,000 alcohol-related deaths per year in the U.S.; excessive drinking, including binge drinking, costs the U.S. \$249B annually.

Goal: Within a population of 500,000, reduce the number of emergency medical service calls for alcohol-related emergencies by 10%.

Health Outcome Calculation

Establish the national baseline rate

Establish the geo-specific baseline rate

Compare national baseline to the national rate for the period of interest

Compare geo-specific baseline to the geo-specific rate for the period of interest

Calculate the “difference of differences” between the national and geo-specific rates

Compare the difference of differences to the time-specific target for the specific outcome

Calculate payments based on the overall capital pool available

Health Outcome Calculation

1. Establish national baseline rate/percentage for start of the program (t_0)
2. Establish geo-specific baseline rate/percentage for the start of program (t_0)
3. Compare the national baseline rate/percentage (t_0) to the rate/percentage at the time period of interest ($t_1=6, t_2=12, t_3=18, t_4=24, \text{ or } t_5=36 \text{ months}$) to get the difference
4. Compare the intervention geography baseline rate/percentage (t_0) to the rate/percentage at the time period of interest to get the difference
5. Find the difference of the national and intervention differences. The comparison is the “current” change relative to the initial baseline (t_0)
6. Compare the difference of differences to the time-specific target for the specific outcome (e.g., 5% reduction for opioid metric at month 6)
7. Calculate payments based on the overall capital pool available and the calculated difference in differences at each time point.

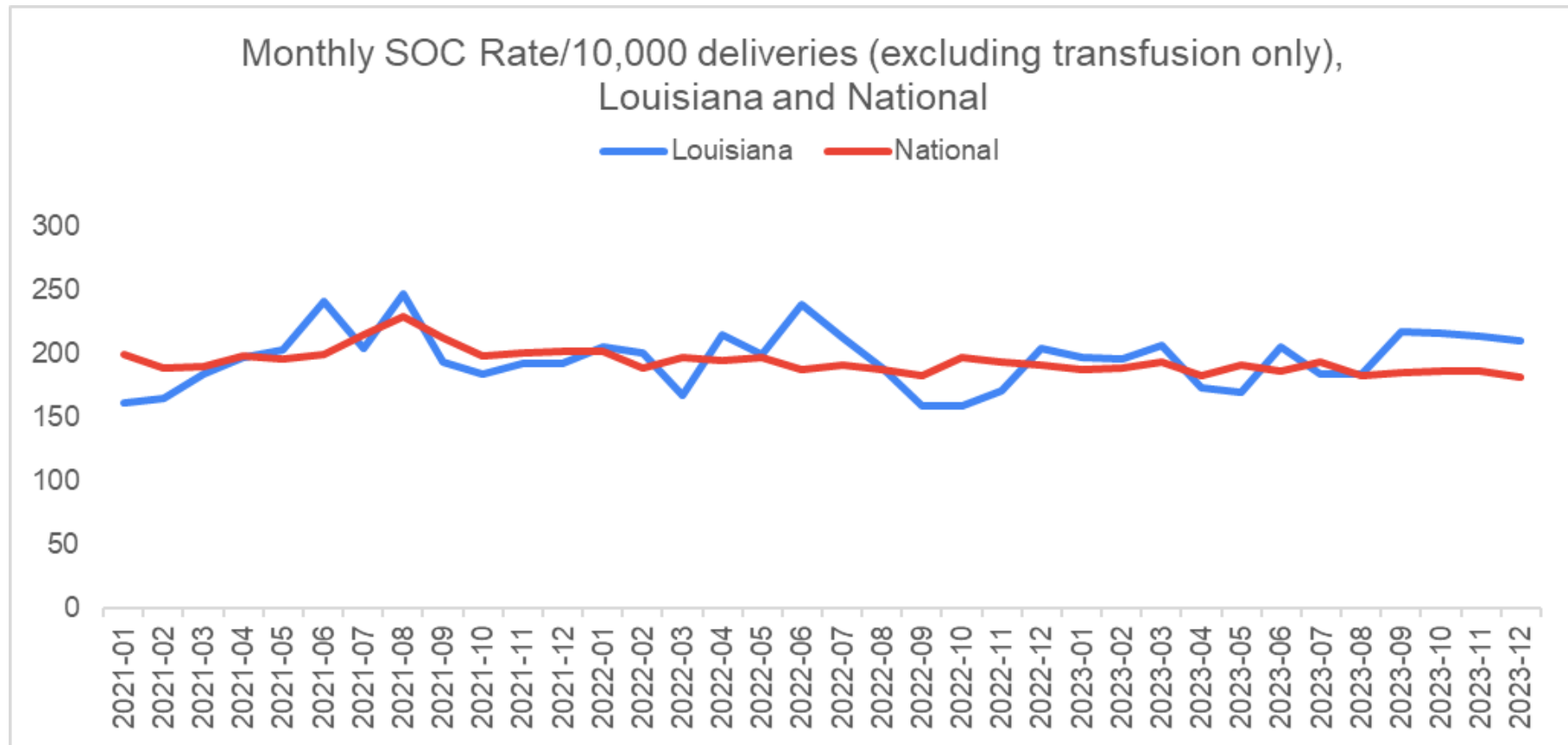
Maternal Health Illustrative Example

Outcome Measure: Rate of severe obstetric complications at delivery and 60 days after

Data sources: Open Claims, Closed Claims, and Charge Description Master

Example location: Louisiana (pop=4.6M)

Total capital pool: \$45M (\$15M ARPA-H & 2:1 match) if rate reduced by 20%



Maternal Health Illustrative Example

	January 1, 2024 (t0)	July 1, 2024 (t1)	January 1, 2025 (t2)	July 1, 2025 (t3)
National Baseline Rate*	189.4	189.4	189.4	189.4
National Rate	---	190.6	192.4	187.3
National Rate Difference	---	(1.2)	(3.0)	2.1
Geographic Baseline Rate	191.8	191.8	191.8	191.8
Geographic Rate	---	190.5	183.6	184.8
Geographic Rate Difference		1.3	8.2	7.0
Difference of Differences	---	2.5	11.2	4.9

*All rates per 10,000 ppl

Maternal Health Illustrative Example

	6 mo (t1)	12 mo (t2)	18 mo (t3)	24 mo (t4)	30 mo (t5)	36 mo (t6)	True Up
Payout Maximum	\$3.75M	\$3.75M	\$7.50M	\$7.50M	\$11.25M*	\$11.25M	\$45M
Target Rate Reduction	10%	10%	20%	20%	30%	30%	Overall Target: 20%
Example rate reduction	2.5/10,000	11.2/10,000	4.9/10,000	19.4/10,000	25.6/10,000	31.2/10,000	15.8/10,000
% change	$2.5/191.8 = 1.3\%$	$11.2/191.8 = 5.8\%$	$4.9/191.8 = 2.6\%$	$19.4/191.8 = 10.1\%$	$25.6/191.8 = 13.1\%$	$31.2/191.8 = 16.3\%$	Avg Rate Reduction = 8.2%
% of target achieved	$1.3\%/10\% = 13\%$	$5.8\%/10\% = 58\%$	$2.6\%/20\% = 13\%$	$10.1\%/20\% = 50.5\%$	$13.1\%/30\% = 43.7\%$	$16.3\%/30\% = 54.3\%$	$8.2\%/20\% = 41\%$
Hypothetical payment	<p>$13\% * 3.75M = 487,500K$ earned</p> <p>First payment bumped up to \$2M floor.</p>	<p>$58\% * 3.75 = \\$2.18M$ earned and paid out.</p> <p>Additional efforts can be trued up at the end of the program</p>	<p>$13\% * 7.5M = \\$975,000$ earned and paid out</p>	<p>$50.5\% * 7.5M = \\$3.79M$ earned and paid out</p>	<p>$43.7\% * 11.25M = \\$4.92M$ earned and paid out</p>	<p>$54.3\% * 11.25M = \\$6.1M$ earned and paid out.</p> <p>Total Money Paid out to-date: 19.97M</p>	<p>Total Money earned with true up: $41\% * 45M = 18.45M$</p> <p>HA paid more than true-up. No payback required.</p>

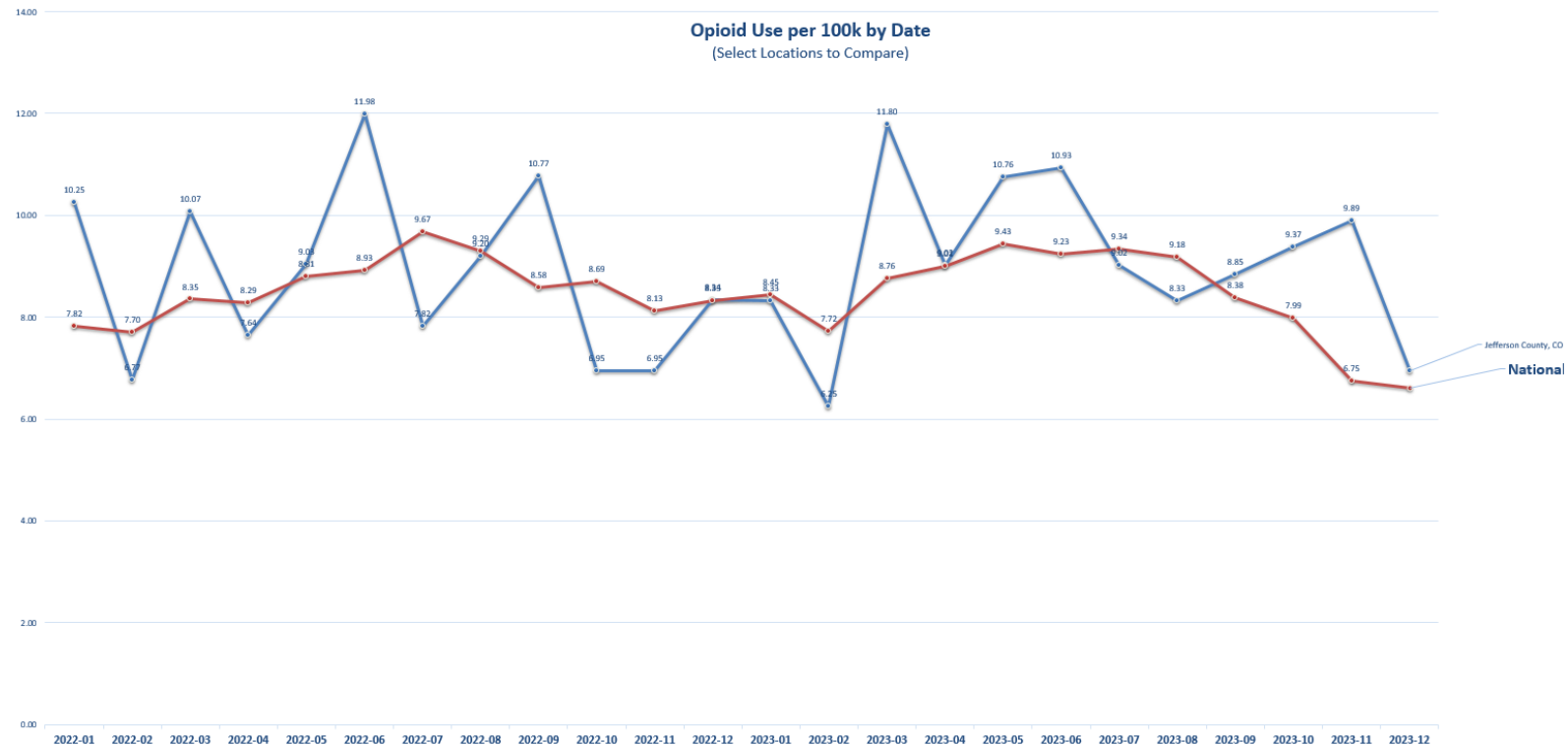
Opioid Overdose Illustrative Example

Outcome measure: # of non-fatal and fatal opioid overdose events/100,000 ppl

Data sources: EMS data

Example location: Jefferson County, CO (pop=580,000)

Total capital pool: \$30 Million (\$15M ARPA-H + \$15M Matched) if rate reduced by 10%



Opioid Overdose Illustrative Example

	January 1, 2024 (t0)	July 1, 2024 (t1)	January 1, 2025 (t2)	July 1, 2025 (t3)
National Baseline Rate*	8.45	8.45	8.45	8.45
National Rate	---	8.45	8.40	8.35
National Rate Difference	---	0	0.05	0.10
Geographic Baseline Rate	8.97	8.97	8.97	8.97
Geographic Rate	---	8.87	8.2	8.00
Geographic Rate Difference	---	0.10	.77	0.97
Difference of Differences	---	0.10	0.72	0.87

*All rates per 100,000 ppl

Opioid Overdose Illustrative Example

	6 mo (t1)	12 mo (t2)	18 mo (t3)	24 mo (t4)	30 mo (t5)	36 mo (t6)	True Up
Payout Maximum	\$3.75M	\$3.75M	\$7.50M	\$7.50M	\$11.25M*	\$11.25M	\$45M
Target Rate Reduction	5%	5%	10%	10%	15%	15%	Overall Target: 10%
Example rate reduction/ Diff of Diff from previous slide	0.10/100,000	0.72/100,000	0.87/100,000	0.89/100,000	0.92/100,000	1.4/100,000	0.82/100,000
% change	$0.10/8.97 = 1.1\%$	$0.72/8.97 = 8\%$	$0.87/8.97 = 9.7\%$	$0.89/8.97 = 9.9\%$	$0.92/8.97 = 10.26\%$	$1.4/8.97 = 15.6\%$	Avg Rate Reduction = 9.09%
% of Target achieved	$1.1\%/5\% = 22\%$	$8\%/5\% = \text{over } 100\%$	$9.7\%/10\% = 97\%$	$9.9\%/10\% = 99\%$	$10.26\%/15\% = 68.4\%$	$15.6\%/15\% = \text{over } 100\%$	$9.09\%/10\% = 90.9\%$
Hypothetical payment	22% * 3.75M = 825K earned. First payment bumped up to 2M floor. Amount received = \$2M	100% = 3.75M Max Payout achieved. Additional efforts can be tried up at the end of the program	$97\% * 7.5M = \$7.28M$ earned and paid out	$99\% * 7.5M = \$7.43M$	$68.4\% * 11.25M = \$7.67M$	100% = \$11.25M Total Money Paid out to-date: 39.38M	Total Money earned with true up: $90.9\% * 45M = \$40.91M$

*Given only \$30M total in funding, the money will run out for rewards in Month 30 in this example if no additional Outcome Buyer funds are secured in the 1st year of implementation.

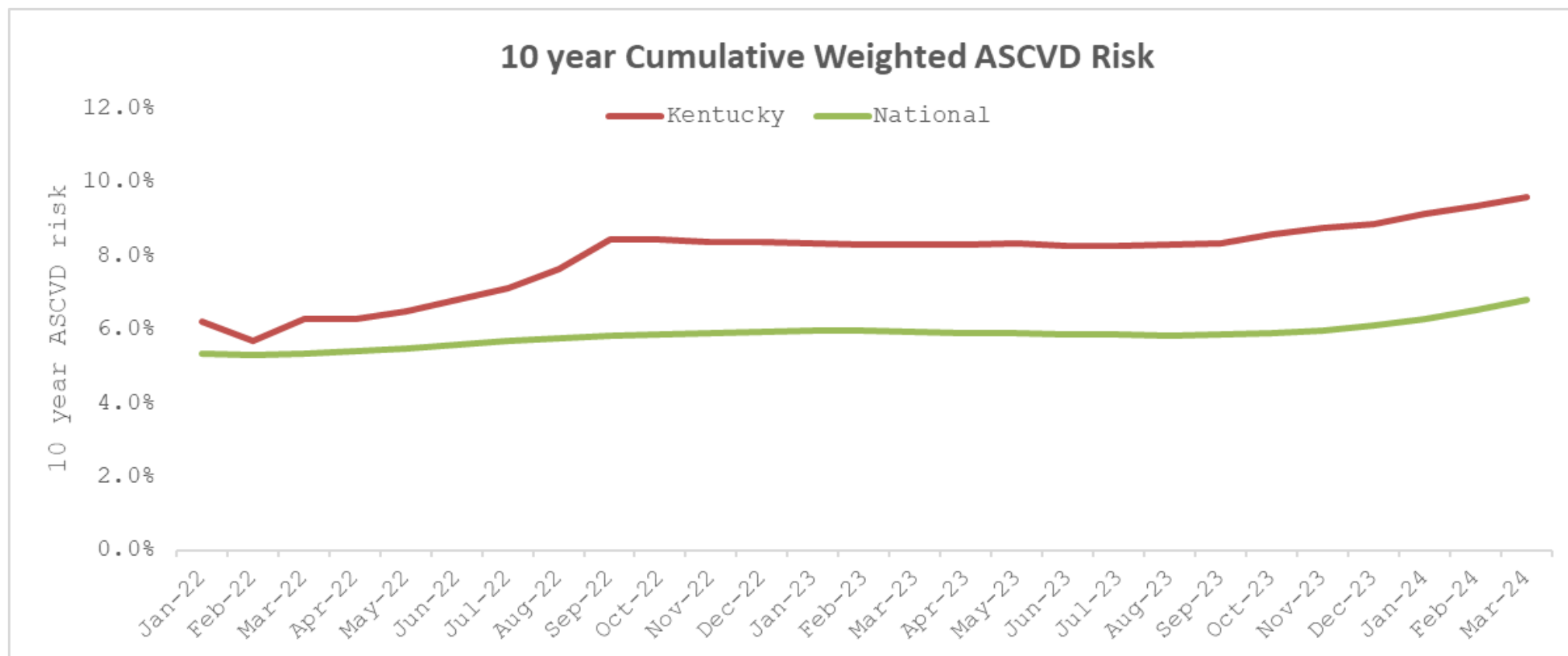
Risk of Heart Attack and Stroke Illustrative Example

Outcome Measure: 10-year Cumulative Risk of Heart Attack or Stroke among 40-70 y.o.

Data sources: EHRs

Example location: Kentucky (pop=4.5M)

Total capital pool: \$45M (\$15M ARPA-H & 2:1 match) if 1 percentage point reduction



Risk of Heart Attack and Stroke Illustrative Example

	January 1, 2024 (t0)	July 1, 2024 (t1)	January 1, 2025 (t2)	July 1, 2025 (t3)
National Baseline 10 yr Risk of ASCVD	5.8 %	5.8%	5.8%	5.8%
National 10 yr Risk of ASCVD	---	5.8%	5.8%	5.9%
National Difference	---	0.000	0.000	(0.1)
Geographic Baseline 10 yr Risk of ASCVD	7.8%	7.8%	7.8%	7.8%
Geographic 10 yr Risk of ASCVD	---	7.7%	7.4%	7.3%
Geographic Difference	---	0.1%	0.4%	0.5%
Difference of Differences	---	0.1%	0.4%	0.6%

Risk of Heart Attack and Stroke Illustrative Example

	6 mo (t1)	12 mo (t2)	18 mo (t3)	24 mo (t4)	30 mo (t5)	36 mo (t6)	True Up
Payout Maximum	\$3.75M	\$3.75M	\$7.50M	\$7.50M	\$11.25M	\$11.25M	\$45M
Target Reduction	0.5 percentage points	0.5 percentage points	1.0 percentage point	1.0 percentage point	1.5 percentage point	1.5 percentage point	Overall Target: 1.0 percentage point
Example score Reduction	0.1 percentage points	0.4 percentage points	0.6 percentage points	0.8 percentage point	0.9 percentage point	1.3 percentage points	Avg Rate Reduction = 0.68
Relative % of target achieved	0.1/0.5= 20%	0.4/0.5= 80%	0.6/1.0= 60%	0.8/1.0 = 80%	0.9/1.5= 60%	1.3/1.5= 87%	0.68/1.0= 68%
Hypothetical payment	20% * \$3.75M = 750K earned. First payment bump-ed up to \$2M floor. Amount received = \$2M	80% * \$3.75M = \$3M earned and paid out	60%* \$7.5M = \$4.5M earned and paid out	80% * \$7.5M = \$6M earned and paid out	60% * \$11.25= \$6.75M earned and paid out	87% * \$11.25= \$9.8M earned and paid out	Total Money earned = \$32.05M With true up: 68%*45M = \$30.6M HA keeps \$32.05M earned



Webinar #2 will include:

- Adjustment methods
- External data verification and validation process