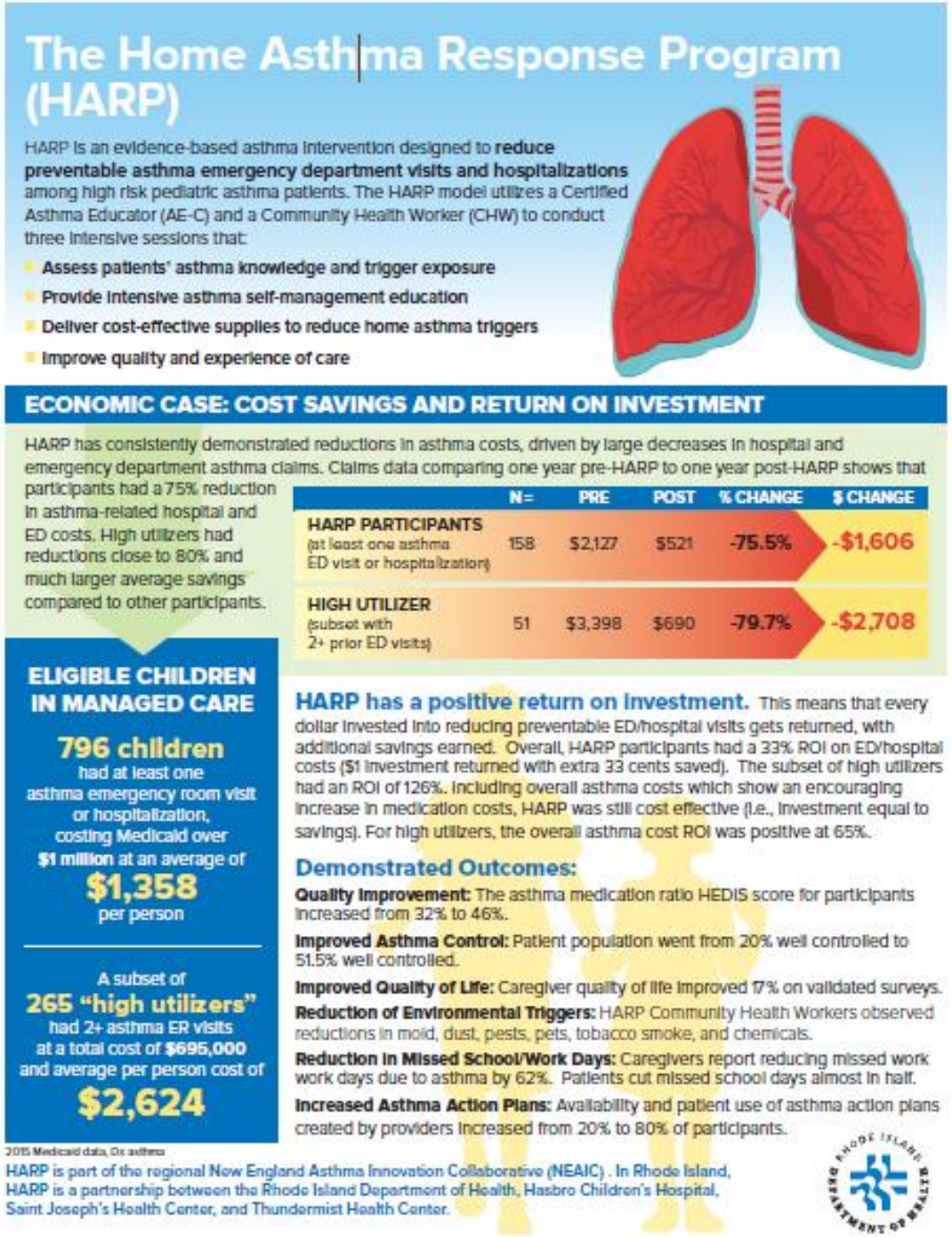
Rhode Island – additional analysis

- For participants funded by both NEAIC and RI DOH

- Includes only those with either:
  - One ED or hospitalization with asthma as primary Dx
  - Two + ED or hospitalization with asthma as primary DX

- Excludes participants with:
  - Only oral corticosteroids
  - ED or hospitalization for other reason

- Cost analysis:
  - focused on asthma ED and hospitalization costs
  - Intervention priced at $1200/pp



A Closer Look at RI Analysis

ELIGIBLE CHILDREN IN MANAGED CARE

796 children
had at least one asthma emergency room visit or hospitalization, costing Medicaid over **$1 million** at an average of

$1,358
per person

A subset of
265 "high utilizers"
had 2+ asthma ER visits at a total cost of **$695,000** and average per person cost of

$2,624

	N =	PRE	POST	% CHANGE	$ CHANGE
HARP PARTICIPANTS (at least one asthma ED visit or hospitalization)	158	$2,127	$521	-75.5%	-$1,606
HIGH UTILIZER (subset with 2+ prior ED visits)	51	$3,398	$690	-79.7%	-$2,708

HARP has a positive return on investment. This means that every dollar invested into reducing preventable ED/hospital visits gets returned, with additional savings earned. Overall, HARP participants had a 33% ROI on ED/hospital costs ($1 investment returned with extra 33 cents saved). The subset of high utilizers had an ROI of 126%. Including overall asthma costs which show an encouraging increase in medication costs, HARP was still cost effective (i.e., investment equal to savings). For high utilizers, the overall asthma cost ROI was positive at 65%.

A Closer Look at RI Analysis

Demonstrated Outcomes:

Quality Improvement: The asthma medication ratio HEDIS score for participants increased from 32% to 46%.

Improved Asthma Control: Patient population went from 20% well controlled to 51.5% well controlled.

Improved Quality of Life: Caregiver quality of life improved 17% on validated surveys.

Reduction of Environmental Triggers: HARP Community Health Workers observed reductions in mold, dust, pests, pets, tobacco smoke, and chemicals.

Reduction in Missed School/Work Days: Caregivers report reducing missed work work days due to asthma by 62%. Patients cut missed school days almost in half.

Increased Asthma Action Plans: Availability and patient use of asthma action plans created by providers increased from 20% to 80% of participants.

A Closer Look at RI Analysis

OVERALL ASTHMA COSTS							
Intervention Group	**N =**	**Cost: Pre**	**Cost: Post**	**% change**	**$ change**	**cost pp**	**ROI**
PILOT (initial HARP)							
Base (1+ ED or hospital visit)	41	$ 1,981.44	$922.52	-53.4%	($1,058.92)	$1,200	-11.8%
High Utilizer (2+ ED or hosp)	14	$ 3,160.01	$632.04	-80.0%	($2,527.97)	$1,200	110.7%
EXPANSION (NEAIC)							
Base (1+ ED or hospital visit)	117	$ 2,521.00	$1,327.00	-47.4%	($1,194.00)	$1,200	-0.5%
High Utilizer (2+ ED or hosp)	37	$ 3,652.00	$1,876.00	-48.6%	($1,776.00)	$1,200	48.0%
COMBINED DATA							
Base (1+ ED or hospital visit)	158	$ 2,380.99	$1,222.04	-48.7%	($1,158.95)	$1,200	-3.4%
High Utilizer (2+ ED or hosp)	51	$ 3,516.94	$1,534.52	-56.4%	($1,982.42)	$1,200	65.2%
Note: ROI of 0 = cost effective, initial investment returned. Positive ROI = savings, percent of initial investment which returns as income. Negative ROI = percent of initial investment which does not come back. ROI of -100% is a full loss of initial investment							
COST PER PERSON:	**$1,200**						
Assumptions: Intevention cost as defined in row 17							
Comparison group data not taken into account.							

A Closer Look at RI Analysis

HOSPITAL AND ER ASTHMA COSTS: HARP ROI

PILOT (initial HARP)	N =	Pre	Post	% change	$ change	ROI
Base (1+ ED or hospital visit)	41	$1,277	$102	-92.0%	($1,175)	-2.1%
High Utilizer (2+ ED or hosp)	14	$2,449	$182	-92.6%	($2,268)	89.0%
EXPANSION (NEAIC)	**N =**	**Pre**	**Post**	**% change**	**$ change**	**ROI**
Base (1+ ED or hopital visit)	117	2,425	668	-72.5%	($1,757)	46.4%
High Utilizer (2+ ED or hosp)	37	3,757	883	-76.5%	($2,874)	139.5%
COMBINED DATA	**N =**	**Pre**	**Post**	**% change**	**$ change**	**ROI**
Base (1+ ED or hospital visit)	158	$2,127	$521	-75.5%	($1,606)	33.8%
High Utilizer (2+ ED or hosp)	51	$3,398	$690	-79.7%	($2,708)	125.6%

NEAIC (HARP Expansion) - ROI Calculations with comparison group

EXPANSION (NEAIC)	N =	Pre	Post	% change	$ change
Base (1+ ED or hospital visit)	117	$2,425	$668	-72.5%	($1,757)
High Utilizer (2+ ED or hosp)	37	$3,757	$883	-76.5%	($2,874)
Comparison (NEAIC)	**N =**	**Pre**	**Post**	**% change**	**$ change**
Base (1+ ED or hospital visit)	172	$1,859	$374	-79.9%	($1,485)
High Utilizer (2+ ED or hosp)	34	$2,403	$829	-65.5%	($1,574)
ROI With Comparison					
Base (1+ ED or hospital visit)		-77%			
High Utilizer (2+ ED or hosp)		8%			

COST PER PERSON:	**$1,200**

Assumptions: Intevention cost as defined in previous row

Defining Return on Investment (ROI)

ROI of 0 = cost effective, initial investment returned. not come back. ROI of -100% is a full loss of initial investment

Positive ROI = savings, percent of initial investment which returns as income.

Negative ROI = percent of initial investment which does get returned. An ROI of -100% means none of the initial investment gets returned

ROI calculations on left side only include changes in asthma-related hospital and ER visits for participants, and do not include a comparison group

ROI calculations on right side include just NEAIC data results and incorporate the NEAIC comparison data. This should be interpreted with caution, due to the fact that the comparison group may include family members of those who received the intervention, or individuals who received some other intervention through Medicaid managed care. The comparison group did much better than expected, which brings down the overall ROI results. If other interventions were delivered to comparison group members, those costs would not be included in the calculations and would therefore artificially bring down the true return on investment of the intervention.