

New Mexico Health System Innovation (HSI) Economic Analysis of HIE

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Economic Analysis: Aims

User-friendly model to predict:

1. return on investment (ROI);
2. cases avoided (or well-managed) & cost per case avoided;
3. health care cost reduction (savings, gross and net); and
4. gains in patient access

...for New Mexico as it implements the HSI over a five year period and five years beyond.



Economic Analysis: Aims

The analysis focused on results predicted should three statewide programs be implemented in the HSI:

1. Patient-Centered Medical Home model (PCMH)
2. Chronic disease-focused Community Health Workers (CHW)
3. Health Information Exchange (HIE)*

3



Economic Analysis: Aims

The costs and benefits in the model are applied to Medicaid beneficiaries and the four HSI priority health areas:

1. behavioral health
2. diabetes
3. obesity
4. tobacco use

The analysis generates results for addressing each HSI health priority separately, as well as a combined analysis of all four simultaneously

4



Economic Analysis: Introduction

Notes on Model Inputs:

1. Medicaid data only (HSD)
2. Program costs were provided from a 2016 IATRIC Systems report
3. Approximately 50 peer-reviewed articles and 40 other scientific documents were reviewed to determine program impacts
4. We chose the most conservative numbers or statistics but also conducted post hoc sensitivity analyses
5. We also created "an outreach effect" which allows us to alter adoption rates over time

5



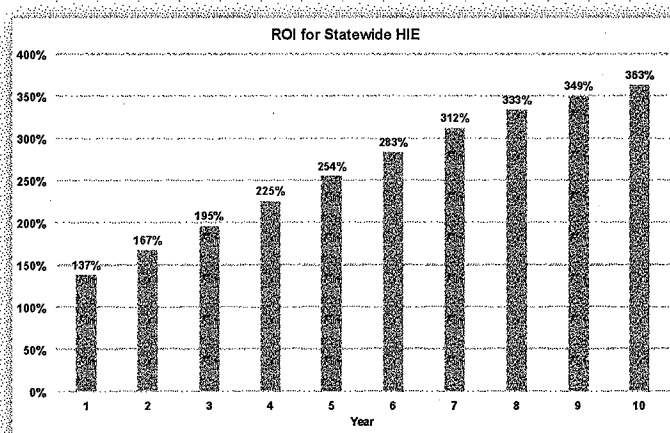
Model Output: All Four HSI Priority Diseases

Year	HIE Effect (savings)	Outreach Effect	Year	HIE Costs	Year	Net Savings, cumulative	ROI, average
1	1.00%	20.00%	1	\$ 847,000	1	\$ 1,187,874	137%
2	1.00%	25.00%	2	\$ 822,330	2	\$ 2,829,064	167%
3	1.00%	30.00%	3	\$ 798,379	3	\$ 4,896,155	195%
4	1.00%	35.00%	4	\$ 764,143	4	\$ 7,373,607	225%
5	1.00%	40.00%	5	\$ 741,887	5	\$ 10,225,410	254%
6	1.00%	45.00%	6	\$ 720,278	6	\$ 13,427,655	283%
7	1.00%	50.00%	7	\$ 699,299	7	\$ 16,957,511	312%
8	1.00%	50.00%	8	\$ 678,931	8	\$ 20,384,554	333%
9	1.00%	50.00%	9	\$ 659,157	9	\$ 23,711,781	349%
10	1.00%	50.00%	10	\$ 639,958	10	\$ 26,942,099	363%

6



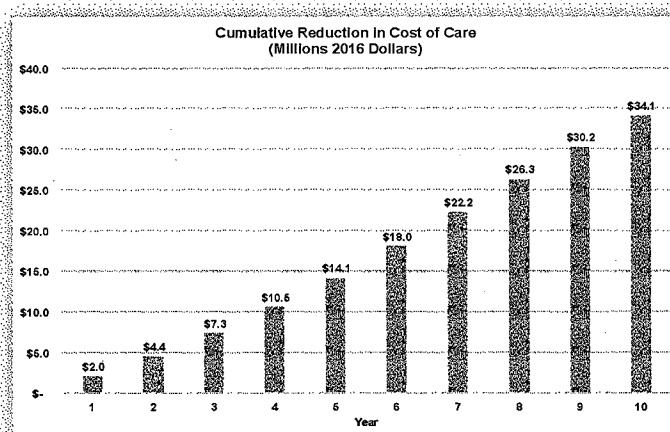
Model Output: All Four HSI Priority Diseases



7



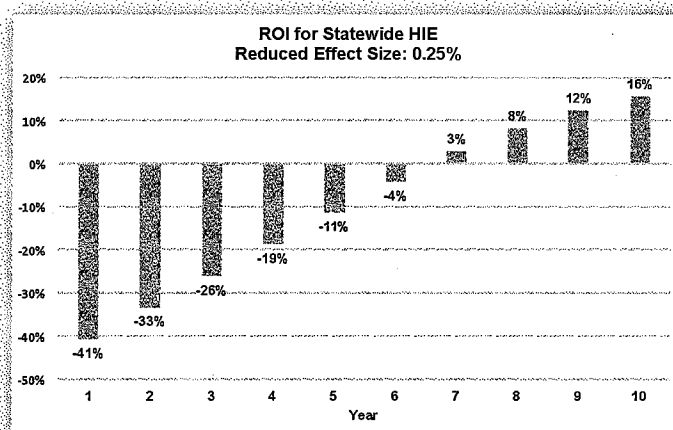
Model Output: All Four HSI Priority Diseases



8



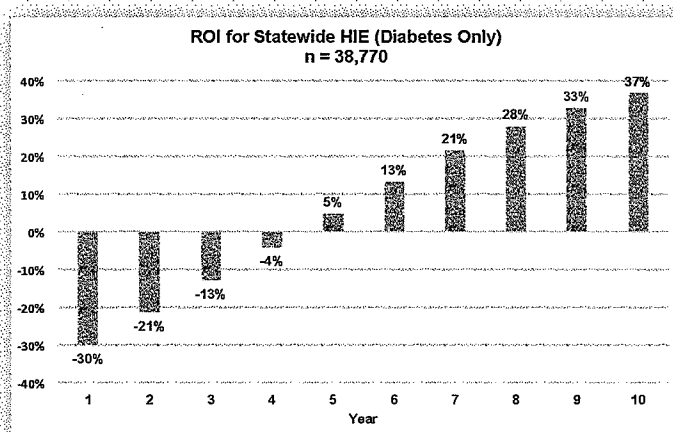
Model Output: All Four HSI Priority Diseases



9



Model Output: Diabetic Medicaid Enrollees Only



10



Discussion

So what's driving these predicted savings and positive ROI?

1. Reducing the cost of testing agencies that deliver test results
2. Better medical decision making that shortens hospital stays
3. Reduced staff time and possible reductions in required personnel
4. Fewer adverse drug events

Of note: Our calculated savings effect does *not* include any changes from improved health status, as when a pre-diabetes diagnosis does not progress to one of diabetes

11



Discussion

Some caveats:

1. The organizations responsible for financing HIT are not necessarily the same ones who benefit from HIT
2. As with all HIT adoption processes, maturation and optimization of the HIT is often a years-long process
3. Some direct and many indirect costs of HIE adoption for providers are not included in our cost calculations

12



Conclusions

Under our assumptions, a statewide HIE:

- Generates positive ROI after its first year despite conservative estimates
- Improves health outcomes for NM Medicaid enrollees
- Lowers total cost of NM Medicaid

