

# Comparing "Event-Specific Admissions" to "Total Admissions": Implications for Validity

**Ariel Linden, DrPH, MS**  
**President, Linden Consulting Group**  
**[www.LindenConsulting.org](http://www.LindenConsulting.org)**



# Population NND Analysis (1)

## Assumptions

- Population Size = 100,000
- Discharge Rate = 1045 per 100,000
- ALOS = 4.8 days
- Hospital Day Rate = \$1000
- Cost per admit = \$4800
- Vendor fees =  $\$0.90 \times 100,000 \times 12 = \$1,080,000$

# Population NND Analysis (2)

To break-even:

$$\frac{\text{Vendor fees}}{\text{Cost/Admit}} = \frac{\$1,080,000}{\$4800} = 225$$

225 admissions (from these 4 diseases) must be reduced in order to break even on fees.

Percent decrease from baseline =  $225 \div 1045 = 21.5\%$



# Population NND Analysis (3)

Table 1. Assume \$0.90 PMPM program fees

ROI	Cost/day = \$1000		Cost/day = \$2000	
	NND	% Decrease	NND	% Decrease
1.0	225	21.5	113	10.8
1.5	338	32.3	170	16.2
2.0	450	43.0	226	21.6
2.5	563	53.8	283	27.0
3.0	675	64.5	339	32.4



# Criticism of Disease-Specific Measures

- ✓ Reviewing disease-only hospitalization data disregards changes in acute utilization for comorbidities of the primary condition
- ✓ As a result, savings are underestimated

# Disease Specific vs. Non Disease?

- ✓ We would expect the intervention to decrease utilization in the targeted disease (primary outcome) and only then impact other non-specific outcomes.
- ✓ “Therapeutic Specificity”: it should not be assumed that an intervention targeting one disease will impact another.

# Intervention Specificity

Example: Diabetes management and heart disease

- ✓ Clinical trials have not yet shown that aggressive management of HbA1c in diabetics leads to statistical reductions in CV events.
- ✓ Intensive BP and lipid management is more cost effective than targeting HbA1c as a means of reducing CAD.



# NND in a Diabetic Population (1)

- ✓ Claims data from a medium-sized health plan were retrieved for the period between 2001 and 2004
- ✓ Diabetics in a health plan were identified retrospectively using HEDIS 2006 criteria
- ✓ Overall prevalence was 5%

# NND in a Diabetic Population (2)

**Table 3.** Characteristics of the diabetic cohort under study

	Commercial (77.8%)	Medicare (14.2%)	Medicaid (8.0%)
Age	48.9	71.3	46.5
Female (%)	59.8	66.0	60.3
Enrollment (months)	25.0	20.0	27.0

# Research Findings

- ✓ Using a disease specific cohort elicits even more stringent performance requirements than at the population level for DM to break-even
- ✓ Expanding the diagnoses to include nearly everything related to the disease does not mitigate the “burden of proof” needed to demonstrate ROI

# References

Linden A. What will it take for disease management to demonstrate a return on investment? New perspectives on an old theme. *Am J Manage Care* 2006;12(4):217-222.

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# Q & A

Ariel Linden, DrPH, MS  
Email: [alinden@Lindenconsulting.org](mailto:alinden@Lindenconsulting.org)

