Evidence on Costs

- Literature review: 1986-2006

Dozens of research intervention studies

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Fewer rigorous studies (RCT or well-designed pre-post)

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Fewer including a cost evaluation

- 16 asthma education studies; 2 environmental intervention studies
  - Additional cost evaluations needed
  - Standardized cost evaluation approaches needed

Evidence on Costs: Education

- Studies vary:
  - Setting: clinic, telephone, hospital or home; individual or group
  - # of visits: 1-8
  - Personnel: nurse, physician, respiratory therapist, medical social worker, health educator
- Similar content:
  1. basic physiology of asthma
  2. medications and medication compliance
  3. asthma triggers and trigger avoidance
  4. self management techniques

Evidence on Costs: Education (cont)

- Literature review demonstrates:
  - Vast majority: evidence of cost savings
    - High risk patients, lower health service utilization

Study	Delivery	Health Outcomes	Cost (per patient)	Cost Evaluation
Clark 1986	Health Ed; 6, 1hr; grp	58% fewer hospitalizations; 59% fewer ED visits	$1558	Saved $11.22 (direct), $1 spent on the program
Shelledy 2005	Resp. Therapist; 8, 1-2 hr; home	Reduction in hospitalizations (82%); ICU days (92%); ED (86%); missed school (65%); unscheduled Dr (66%)	$640	Saved $13.3 (direct) for every $1 spent on the program

Evidence on Costs: Environmental Interventions

- Study design:
  - Setting: home
  - # of visits: 5-9
  - Personnel: environmental counselor & community health worker

Interventions

- Home assessment
- Extensive education regarding trigger avoidance
- Mattress/pillow encasements
- Pest abatement
- Vacuum cleaner w/ HEPA filter
- Smoking cessation

Evidence on Costs: Environmental Interventions (cont)

- Program costs not offset by reductions in utilization

Study	Delivery	Health Outcomes	Cost (per patient)	Cost Evaluation
Kattan 2005	Env. Counselor; 5, 1hr, home	13% reduction rescue med; 19% reduction unscheduled Dr visits; 7% additional SFD	$1469	Each symptom-free day gained costs $28 ($16 if just 1 staff used)
Krieger 2005	CHW, 5-9, 1hr home	10% reduction in days w/ symptoms; 17% improvement in caregiver QOL; 45% reduction in urgent health services use; 13% fewer days w/ limited activity	$1124	Each symptom-free day gained costs $23 ($2 for low intervention)

Are Costs for Environmental Interventions Reasonable?

- Findings: $2-$28 per symptom free-day gained (SFD)
- Limitations: Based on 2 published cost evaluations
- Comparison with accepted pharmacotherapy:
  - $7.50 per SFD for inhaled corticosteriod
  - $11.30 per SFD for budesonide
  - $523 per SFD for Xolair

Evidence on Costs: Practice Literature

- Combining asthma education & environmental interventions
  - Optima Health: saved $4.10 for every $1 spent on their high-risk member program
  - Monroe Plan for Medical Care: realized a 20% reduction in total asthma-related medical costs