Group Insurance Board Strategic Planning Workgroup

An Opportunity for Meaningful Healthcare Cost/Quality Improvement for State Employees
10/11/13

Presenter: Jeff Kessler, FACHE
Practice Executive, Allergy Associates of La Crosse, Ltd.

Why am I here?

- An initial meeting with Sec. Huebsch and staff yielded interest to talk further
- State Employees have asked me to come
- To ask you to consider a formative step facilitating a small probe study to determine how healthcare costs and employee quality of live can be positively impacted by treating allergic disease
- It's a public health issue too

Strategic Healthcare Planning

- Where is healthcare in WI headed?
- What tactics can be taken now?
- Would you be interested in a solution

  …that gets at the cause of healthcare costs

  …could save the State $150,000,000+ in 3 yrs

  …that would lead to increased productivity for employees by addressing one chronic disease

  …that would lead to a better chance to stay healthy and a better quality of life

What can the committee do?

- Due diligence (review this evidence)
- ...if it makes sense take the next step
- ...support a probe study
- …this won't end the healthcare cost crisis, but it will move us in a positive direction, and it will make a difference to patients!

Meet Russ

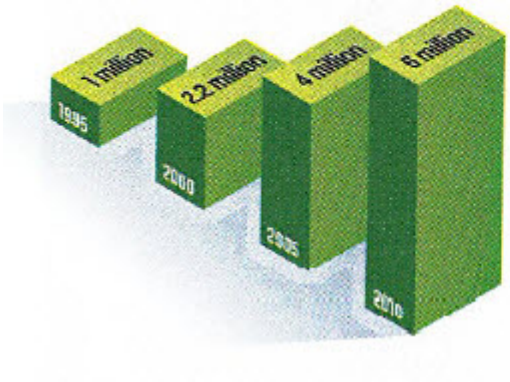
Why is this important to the committee and the State?

- Healthcare costs escalation, obvious
- Meaningful cost reduction by eliminating a hidden disease, with a long term solution
- Improve overall health, quality of life and productivity potential for employees

The increase in allergies has led to a 338% rise in related medical expenses and lost productivity.
(Fortune Magazine: 7/26/10)

LOST PRODUCTIVITY

Ithcy eyes, runny noses, and general malaise lead to more missed workdays.

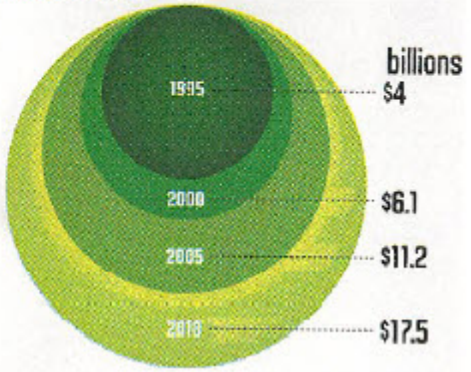


DOCTOR VISITS

They're on the rise as allergy sufferers turn to their dcotors for prescriptions, immunotherapy shots, and advice.

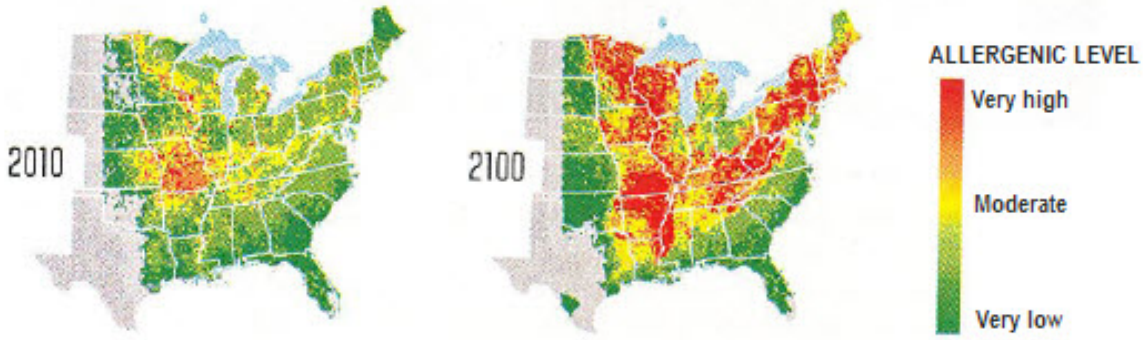
MEDICAL EXPENDITURES

Even with blockbusters like Claritin and Zyrtec going off patent, Americans are spending more looking for relief.



Its not our imaginations, allergies are getting worse:
In North America, spring is arriving 10-14 days earlier than it did 20 years ago and pollen season lengths are increasing. According to our pollen counts, the ragweed season has extended by 13 days since 1995*
*USDA Study. http://www.ars.usda.gov/is/pr/2011/110222.htm

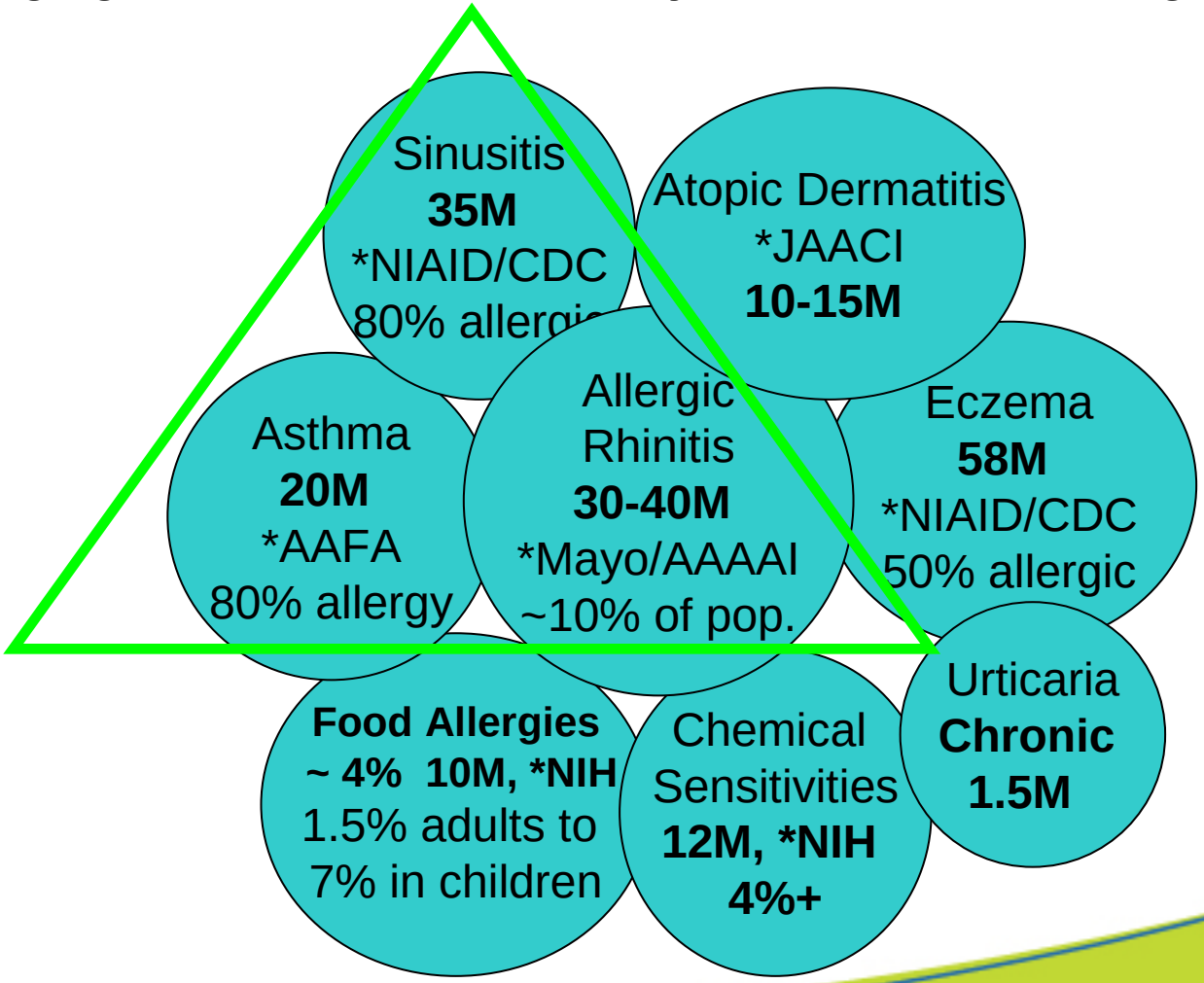
POLLEN PROLIFERATION
As temperatures rise, highly allergenic pollen-producing trees such as oaks and hickories become more prevalent across the U.S., particularly in the East. By 2100, based on fossil-fuel emissions growth rates, pollen production could double.



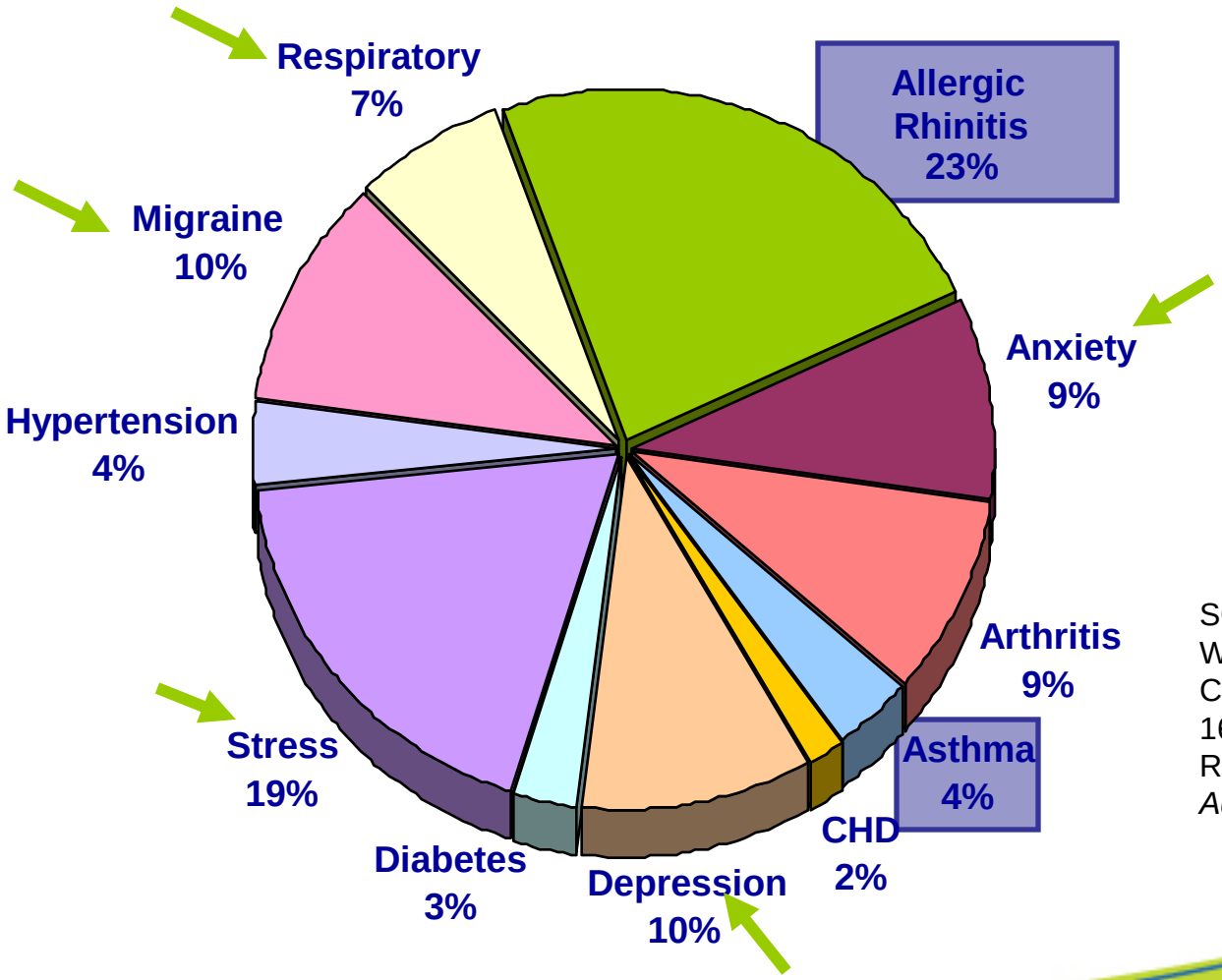
Additional factors:
Hygiene Hypothesis
Diet and lifestyle changes…

Allergies underlie many chronic condition, and numbers are growing

Changing environmental and lifestyle factors contributing



It's a Big Issue for Employers
Allergic Rhinitis Represents 23% of the Total Costs of Absenteeism and Lost Productivity



SOURCES:
Wellness survey, 53 Customers in Central DB (2002); 90 site locations 16,000 Employees surveyed.
Ratner, PR. JACI 2003, 111 (4):908
Adapted – Michael O'Connell, MD

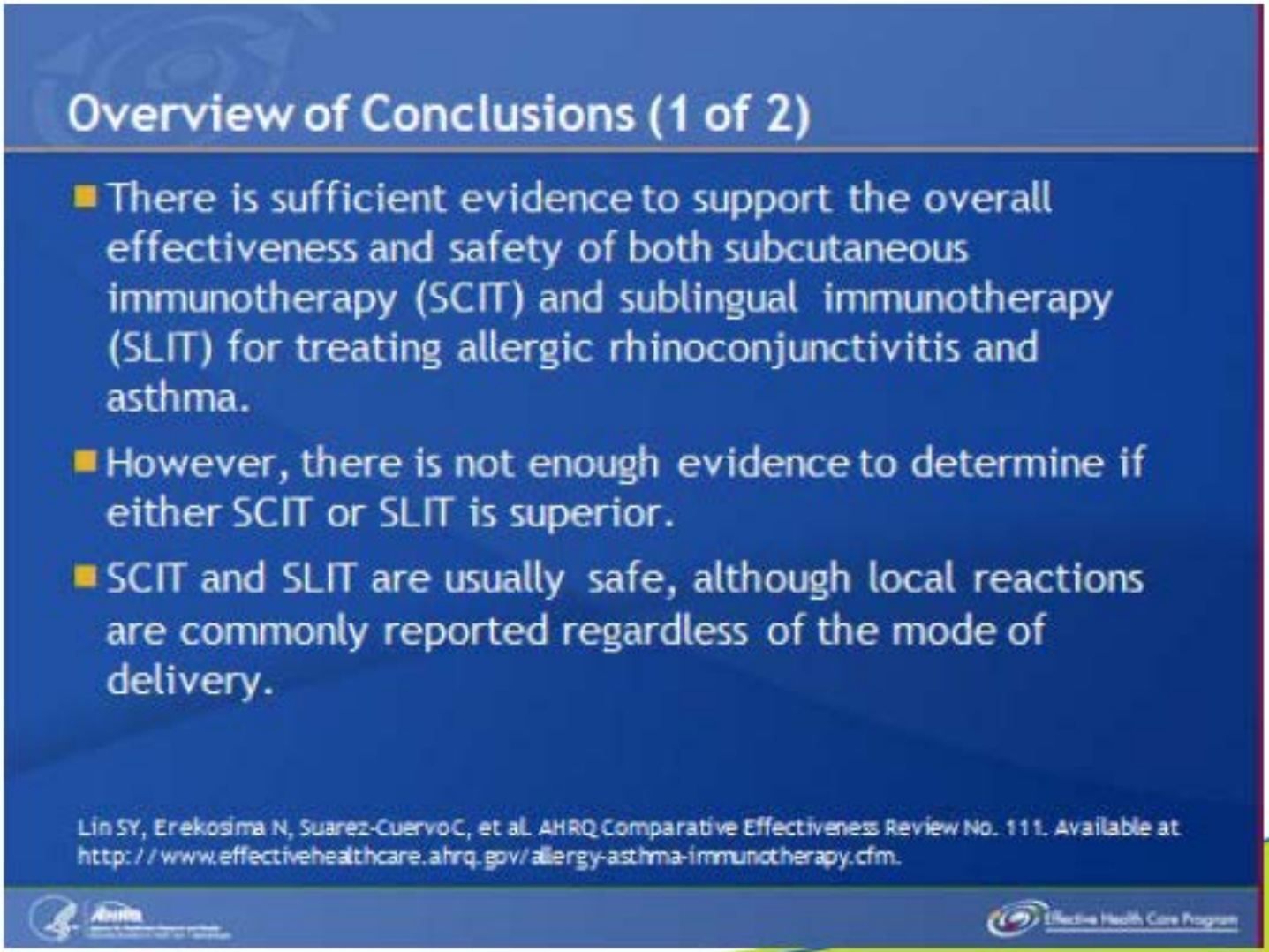
Research: Loss of Productivity, examples

- Presenteeism greater impact than absenteeism
  - Current Medical Research Opinions, 2006 Jun;22(6):1203-10 Study of 8267 US employees, 47 employer locations
    - 55% ee's w/AR Sx for avg 52.5 days/yr, 3.6 days absent, 2.3 hrs/day diminished
  - Progressive Insurance, 2006 Cornell University Review, presenteeism avg. 60% of total worker illness costs, allergies 80%
  - Harvard Business Rev, 2004, $150B U.S. loss
  - Hughes Electronics Study – 38.5% workers w/allergies averaged 4 days of productivity loss ~ $900,000 (2004)
  - Lockheed Martin 2002 study, ~60% employee w/allergy/sinus
  - 2007 Econtech Study, allergic disease cost Australian economy $250B
  - Canadian Study, Asthmatics 31.4 days/yr of Major Activity Loss
  - Employer Health Coalition (Tampa, FL)
    - Presenteeism, 7.5x greater than Absenteeism costs
  - Related consideration…cost of increased on the job accidents

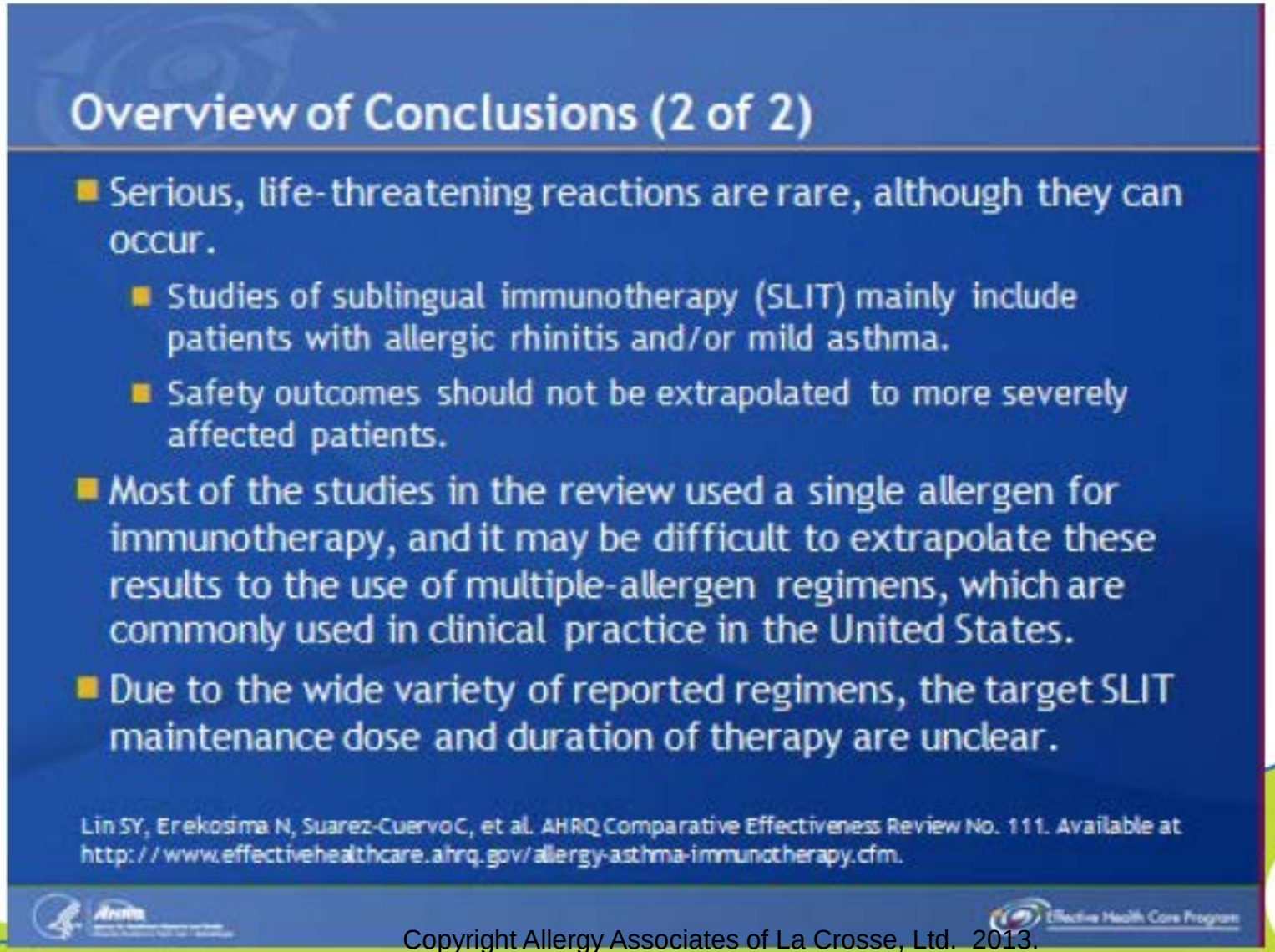
Immunotherapy (IT): only disease modifying treatment for allergy, it works and its safe

- Comparative Effectiveness, Agency for Healthcare Research and Quality - report, March 27, 2013
- Allergen-Specific Immunotherapy for the Treatment of Allergic Rhinoconjuncitivits and/or Asthma: Comparative Effectiveness Review http://effectivehealthcare.ahrq.gov/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=1428
- Meta-analysis: 142 studies included. All were RCTs. 74 subcutaneous immunotherapy, 60 sublingual immunotherapy and 8 studies comparing the to routes of delivery

AHRQ Findings 8/22/13



AHRQ Findings 8/22/13



Patients with allergies that take immunotherapy reduce costs

- Impact on Cost: Medicaid Programs and Immunotherapy
- Chose these studies because they show cost savings over time, and demonstrates a challenge with immunotherapy
- Florida Studies
  - 2008
  - 2013

Journal of Clinical Immunology, 2008 121(1)227-32 Children enrolled in Florida Medicaid, receiving IT

- BACKGROUND: Although research demonstrates that allergy immunotherapy (IT) improves allergic rhinitis (AR) outcomes, little is known about IT patterns of care and associated resource use and costs among US children with diagnoses of AR. OBJECTIVE: We sought to examine characteristics associated with receiving IT, patterns of IT care, and health care use and costs incurred in the 6 months before versus after IT. METHODS: We performed retrospective Florida Medicaid claims data (1997-2004) analysis of children (<18 years of age) given new diagnoses of AR. RESULTS: Of 102,390 patients with new diagnoses of AR, 3048 (3.0%) received IT. Male patients, Hispanic patients, and those with concomitant asthma were significantly more likely to receive IT. Approximately 53% completed less than 1 year and 84% completed less than 3 years of IT. Patients who received IT used significantly less pharmacy (12.1 vs 8.9 claims, P < .0001), outpatient (30.7 vs 22.9 visits, P < .0001), and inpatient (1.2 vs 0.4 admissions, P = .02) resources in the 6 months after versus before IT. Pharmacy ($330 vs $60, P < .0001), outpatient ($735 vs $270, P < .0001), and inpatient ($2441 vs $1, P < .0001) costs (including costs for IT care) were significantly reduced after IT. CONCLUSION: Despite suboptimal treatment persistence (only 16% of patients completed 3 years of IT), resource use and costs after treatment were significantly reduced from pre-IT levels.

Key Findings 2008 JACI article

- 102,390 patients with new diagnoses of AR, 3048 (3.0%) received IT
- only 16% of patients completed 3 years of IT
- Those who completed - Pharmacy ($330 vs $60, P < .0001), outpatient ($735 vs $270, P < .0001), and inpatient ($2441 vs $1, P < .0001) costs (including costs for IT care) were significantly reduced after IT.
- UTILIZATION-ADHERENCE ISSUE

Journal of Allergy and Clinical Immunology,

Hankin, et al - April 2013

Allergy immunotherapy: reduced health care costs in adults and children with allergic rhinitis.

- J Allergy Clinical Immunol. 2013; 131(4):1084-91 (ISSN: 1097-6825)
- BACKGROUND: Research demonstrates significant health care cost savings conferred by allergen-specific immunotherapy (AIT) to US children with allergic rhinitis (AR).
- OBJECTIVE: We sought to examine whether AIT-related cost benefits conferred to US children with AR similarly extend to adults.
- METHODS: A retrospective (1997-2009) Florida Medicaid claims analysis compared mean 18-month health care costs of patients with newly diagnosed AR who received de novo AIT and were continuously enrolled for 18 months or more versus matched control subjects not receiving AIT. Analyses were conducted for the total sample and separately for adults (age≥18 years) and children (age<18 years).
- RESULTS: Matched were 4,967 patients receiving AIT (1,319 adults and 3,648 children) and 19,278 control subjects (4,815 adults and 14,463 children). AIT-treated enrollees incurred 38% ($6,637 vs $10,644, P<.0001) lower mean 18-month total health care costs than matched control subjects, with significant savings observed within 3 months of AIT initiation. Compared with control subjects, significantly lower 18-month mean health care costs were demonstrated overall (38%; $6,637 for patients receiving AIT vs $10,644 for control subjects, P<.0001), and for both AIT-treated adults (30%; $10,457 AIT vs $14,854 controls, P<.0001) and children (42%; $5,253 AIT vs $9,118 controls, P<.0001). The magnitude of 18-month health care cost savings realized by AIT-treated adults and children did not significantly differ ($4,397 vs $3,965, P=.435).
- CONCLUSIONS: Patients with newly diagnosed AR initiating AIT incurred significantly lower health care costs than matched control subjects beginning 3 months after AIT initiation and continuing throughout the 18-month follow-up period. The significant cost benefits achieved by children with AR diagnoses who initiated AIT were also observed for adults with AR diagnoses who initiated AIT.

Key Findings 2013 JACI article

- From 1997-2009, 5,760 AIT-treated patients and 297,178 control subjects
- The average savings over 18 months in healthcare utilization ~$4,000
  - Reduction 30% adults, 42% children
- <2% were treated and completed 18 mo
  - Opportunity cost
  - Dropout cost, wasted healthcare expenditure
  - UTILIZATION-ADHERENCE ISSUE

The Opportunity

- ❒ Improve overall organization productivity (employee wellness and quality of life)
- ❒ Reduce healthcare expenditures
- ❒ Control future healthcare expenditures

By, identifying and eliminating allergies in your organization; for employees and their dependents

Historical Allergy Treatment Approach Is Working But Not Solving Problem

1) Avoidance (a.k.a. Environmental Control)
   - ❑ Stay away from offenders, indoors with AC on…
     - ❑ Marginal help, not practical (CAPPS, SPACE studies)
2) Pharmacotherapy (Medications)
   - ❑ A myriad of medications
     - ❑ Marginal help, possible added problems from side effects
     - ❑ New classes of drugs…expensive, unknown LT effects
3) Immunotherapy (Allergy Shots, Subq, SCIT)
   - ❑ Long-term injection sequence create allergens tolerance
   - ❑ Issues with safety and compliance.

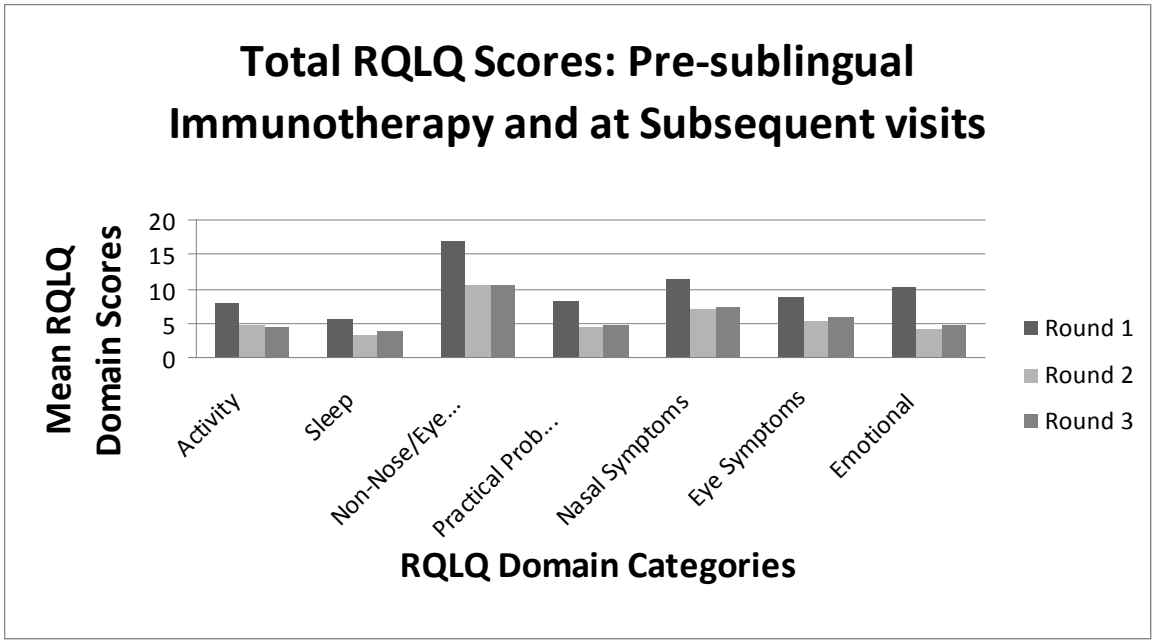
The missing answer: Immunotherapy

- The only disease modifying treatment
- <5% of total population w/ allergic disease on shots
- Subcutaneous Injections – guidelines used 50+ yrs
  - For 80% of these patients it works well
  - Issues: safety/reactions, convenience/compliance
- Allergy Drops "Sublingual" Under the Tongue
  - Same extracts as SCIT, route of delivery via privileged area
  - Superior safety profile, treat a broader range of sufferers

La Crosse Method Protocol

- History and Background: In use since 1970
  - Allergy Associates of La Crosse clinic
- Over 135,000 patients
- Current active patients> 12,000
- Comprehensive, Flexible, “Family of Protocols”: Multiple Inhalants, Foods and Chemicals, Pre-seasonal Inhalants
- Protocol manual continuously enhanced

Research: Allergy Associates of La Crosse Patient Quality of Life Improvements



Study achieved statistical significance (p=.05) in 6 of 7 categories by patient's second appointments. First U.S. RQLQ prospective study with sufficient power (51 patients). Published: Journal of Allergy, 2012

Patient Survey Results

The following data is compiled from 5 research studies conducted at Allergy Associates of La Crosse. In 2003, the survey was answered by a randomly selected group of 250 patients, 75 patients in 2004, and 112 patients in 2005. In 2006, a select population of Medicare patients were surveyed. Response rates average 40% The questionnaire was developed by a University research team. Demographic information for each year is listed below the findings. The children's asthma study on the right below was conducted and presented in 2005 in conjunction with a graduate school researcher looking at 241 children aged 1-6 that were treated with drops at Allergy Associates of La Crosse for at least two years.

Key Questions	2003	2004	2005	Medicare '06
Chronic Condition* prior to coming to AAOL	**61%**	**63%**	**73%**	**86%**
Hypothesis: sublingual immunotherapy allows the treatment of patients that are significantly compromised by their allergies				
Number of Dr visits now vs. prior to AAOL	**48% less**	**88% less**	**80% less**	**68% less**
Hypothesis: actively treated sublingual immunotherapy patients will require less healthcare utilizations	1.19 v 3.69	1.61 v 5.01	2.2 v 5.5	1.9 v.4.5
ER visits now vs. prior to AAOL	**80% less**	**81% less**	**88% less**	**68% less**
Hypothesis: actively treated sublingual immunotherapy patients will require less healthcare utilizations	.15 v .76	11 v 57	.1 v .7	.6 v.1.4
Hospitalizations now vs. prior to AAOL	**48% less**	**73% less**	**100% less**	**75% less**
Hypothesis: actively treated sublingual immunotherapy patients will require less healthcare utilizations	.07 v .13	3 v 11	0 v .2	.2 v. .8
Medicine now vs. prior to AAOL	**up to 60% less**	**60% less**	**40% less**	**13% less*** **
Hypothesis: actively treated sublingual immunotherapy patients will require less healthcare utilizations	2.19 v 2.59	1.62 v 3.23	1.5 v 2.5	2.7 v. 3.1
School/work missed now vs. prior to AAOL	**80% less**	**73% less**	**78% less**	**61% less**
Hypothesis: actively treated sublingual immunotherapy patients will require less healthcare utilizations	2.80 v 7.23	.89 v 3.29	.5 v 2.1	1.2 v. 3.1
Quality of Life improved vs. prior to AAOL**	**4.11**	**4.47**	**4.6**	**4.2**
Hypothesis: Does treatment via the La Crosse Method result in an improvement in the patients ability to participate in life	(5 = very positively 4=quite positively 3 = some 2 = very little 1 = not at all)			
Demographic Questions				
Number of respondents	250	75	112	212
Average Age	46	47.5	38	71
Tested for allergies before coming to AAOL	48%	54%	60%	47%
Treated with other immunotherapy before AAOL	38%	16%	25%	25%

* Chronic Conditions that are caused by allergies: asthma, sinusitis, eczema, urticaria, etc.
** Respondents were asked to rate the impact of AAOL on their Quality of Life (QoL) on a scale of 1-5, 5 being the best. No
***15 percent of Medicare respondents report taking beta blockers

2005 Pediatric Study
Impact of Allergy Drops on children developing asthma

Hypothesis: Sublingual immunotherapy has a significant impact on the development of asthma in children with allergic conditions

Allergic condition	*Number of Children**
Allergic Rhinitis	201
Atopic Dermatitis	70
Wheeze	63
Inhalant Antigen	235
Animal Dander	120
Dust Mite	209
Egg White	209
Wheat	205
Alternaria (Mold)	48
Cases of Asthma post treatment at AAOL**	**10**

* Most children exhibited more than one condition

This study was a retrospective chart review of 241 children who were diagnosed with at least one condition that is known to progress to asthma. About half of these 241 children could be expected to develop asthma. All patients received at least two years of treatment at Allergy Associates of La Crosse. ***10 children (4.1%) developed asthma.*

Medication use reduced avg. of 45%

Healthcare utilization reduced 40-80%

Missed work/school reduced 60-78%

Reduced the onset of Asthma

Advantages of Allergy Drop Treatment

- Well researched*, proven protocol 40 years
- Patient friendly
  - Convenient, easy to use/take at home
  - Only 1-2 allergy office visits per year
- Extremely Safe
- Cost and time effective for patient
- Adherence rates 70-80%

*Bibliography available, 400+ citations

Why am I coming to you now

- Its time to act, the problems are getting worse, employees/patients deserve it, the State (all employers) need
- We have an identified population, UWL
- We have the research expertise at UWL
  - Dr. Dan Duquette, Chair/Dept. Health Education & Promotion
  - “Real World, Epidemiological, Longitudinal Study, providing immediately useful information”
- We have the allergy treatment center, Allergy Associates of La Crosse ready to treat

Assessing an Employee Population

- Employees identified through utilization review, self-reporting, or Health Risk Assessments
  - Allergies consistently top-reported chronic condition
  - Same concept applies, 10-20% of patients make up 80% of your coverage costs
    - ER visits, hospitalizations
    - Medications: steroids, asthma meds, allergy shots
    - Sinus infections and surgeries
  - Indirect expenses
    - Productivity assessment (Indirect costs - HR)
      - Sick days, PTO, diminished work days

Allergy Utilization Analysis: Review population: Diagnosis Codes(ICD-9)*

Highly Correlated 70-80%

1. Sinusitis
2. Nasal Polyps
3. Asthma (various)
4. Allergic Rhinitis (various)
5. Food Allergy (AR)
6. Dermatitis
7. Urticaria
8. Angiodema
9. Bronchitis
10. Conjunctivitis

Moderately Correlated ~50%

1. Otitis Media
2. Ear Tubes
3. Headache/Migraine
4. Aspergiliosis
5. Farmers Lung
6. Stinging Insect
7. Voice Disturbance
8. Wheezing
9. Laryngitis
10. Pharyngitis

*ICD-9 and CPT Procedure codes can be provided to Employer

Medication Utilization

Example: Moderate to severe allergy sufferers typically take 2 or more drugs monthly.

- Allergy related medications (subset):
  - Inhaled Steroid ($50-100, Nasonex, Pulmacort, asthma, sinusitis)
  - Bronchodilator "long acting" ($50-100, (Serevent…, asthma)
  - Bronchodilator "quick help" ($20, Albuterol…,asthma)
  - Leukotriene blocker ($150-225, Singulair, AR, asthma and urticaria)
  - Antihistamine ($50-100, Allegra, Zyrtec, AR, urticaria and sinusitis)
  - Nasal Steroid ($75-150, Nasacort AQ, Flonase ,sinusitis, asthma)
  - Combination Respiratory ($150-250, Advair, asthma)
  - Antibiotics (various) ($25-100, included for ear/sinus/respiratory infections)
  - Xolair – Anti IgE ($15,000 – 20,000/ Yr*, moderate/severe asthma)

    * if you find any of this used we should discuss immediately.

(Monthly AWP-Average Wholesale Price estimate, drug (s), common condition)

- Average estimate of medication costs - $2-3000/year (Health Plan, PBM dependent)
- Over-the-counter medications (important to include)
  - Decongestants including: Sudafed $25, Claritin $40, are very prevalent, surveys or FSA/HSA accounts could reveal how much employee/members use for reimbursement.

Estimation: State Employee impact

Allergy Control Program

Impact assessment of allergy population treatment for State of WI

Date: October 2013

Considered Moderate-Severe Asthma, Sinusitis, Urticaria, Food anaphylaxis

Overview Allergy Associates of La Crosse, LTD.

- for estimation purposes only

The impact assessment tool was developed to provide an aggragate estimate of the impact of treating an identified allergic population with sublingual immunotherapy. The tool includes an assessment of direct costs/savings and indirect costs/savings the analysis is driven by the group providing data/assumptionts to a variety of measures. These measures are all indicated by cells that are colored gold.

Assumptions

There are several assumptions to be made in the analysis tool. For example the population that will be treated. Industry measures indicate 10 to 20% of a population suffers from allergic disease. The group then decides what % of those will be treated. Next are a series of utilization assumptions. On the following worksheet a comparison is made between the populations actively treated and those only taking medications.

repiratory, sinus or ear infections most common...

See Common Drug Regimen for Chronic Condition Patients

Industry findings on the impact of allergies being treated

The Cochrane Review on sublingual treatment, along with most of the studies that including over 150,000 patients, indicates that symptom reduction and medication use are reduced between 40% and 60% annually. This analysis tool is set-up in a way that the group can determine what % of imrovement they would like to consider for their popultation. A conservative improvement % would be 33%. Enter the % here. 35%

Direct Costs Assumptions/Parameters

		Total Employees	247,000
#1 Employees covered (including dependent)		247,000	
#2 % of Patient w/Chronic Cond/Allergies	49,400	20%	
#3 % of Chronic/High Risk Patients treated	18,525	7.5%	
#4 Unplanned MD visits/yr	3	Cost/visit	$ 100
#5 Avg annual ER/hospitalizations/surgeries		5%	
Cost of an ER, hosptital stay or surgery		$ 5,000	
#6 Medication Annual Cost Assumption		$ 3,000	
Monthly, common regimen cost		$ 250	

*Avg. Wholesale Prices**

Inhaled Steroid $75-175 (Flonase) s*

Bronchodilator "long acting" $85 (Serevent) a*

Bronchodilator "quick help" $20 (Albuterol) a*

Leukotriene blocker $114 (Singular) a u*

Antihistamine $84 (Xyzal, Allegra) a s*

Nasal Steroid $85 (Nasacort AQ) a*

Combination Asthma Drug $170 (Advair) a

OTC - Decon Sudafed $25, Claritin, Zyrtec $40+

Antibiotics (various $50-100) s (Zantac $150)

Topical steroids- $125-225 (Verdeso..) u

s = sinusitis

a = asthma

u = urticaria, ezcema

various studies show about 12% w/ER visits, 1% hosp stay, 1% surgery for severe chronic patients ear tubes, reuccrent polyps...

Indirect Costs Assumptions/Parameters *Allergy Related

The indirect cost savings for group typically eclipse the direct costs savings. This is primarily due to the fact that productivity loss from allergy related diseases, measured in terms of both absenteeism and presenteeism (at work but not functional) have a daily and cumulative effect. If personnel costs are high, the cost to replace these key (highly compensated or cost) people can make the totals considerably higher.

Missed Work Days/Mo	1
Missed School Days/Mo	1
Dimished Work Days/Mo	3
Disability claims allergy linked/yr	1
Cost of personnel missing work + paying a replacement:	$ 100
% of productivity diminished	30%
wages/hr	$20
Overhead %: tax/benefits...	15%

Annual cost of sublingual allergy treatment $ 960

Drops/month $ 30 (inhalant only) Visits & Testing/year $ 600 (internal cost)

Total Cost savings

For the assumptions made by this group in Year 1:

Taken together, Direct costs of $ 21,708,984 and indirect costs of $ 24,559,108 in year one,

given the investment (cost) in sublingual allergy treatment $ 17,784,000 # of employees 18,525

Yields an annual ROI of: 260%

*other values to consider, children get off the atopic march to asthma.

	Direct Health Care Savings	Indirect	Cost to Treat
Year 2	$18,346,002	$ 40,522,528	$ 18,317,520
Year 3	$27,739,472	$ 43,829,237	$ 18,867,046
Cumulative 3 Year Total	**$ 176,705,331**	**ROI**	**321%**

Direct Cost – estimate

Allergy Treatment Impact Analysis - Health Care Utilization Avoidance — Gold cells: Assumptions entered by group on Overview worksheet

Prepared for Organizatons evaluating the Allergy Control Program

Note: treatment duration is typically 3-5 years, then sensitivities are gone and costs = avg. patient

Considered Moderate-Severe Asthma, Sinusitis, Urticaria, Food

Utilization 3x normal population,

Avg.: ER charge, $750
one-day charge $1500
Physician/Med charges, $750
Hospital stay - 3 days $7000
Surgeries, CT, MRI - Not est.

			YEAR 1		YEAR 2		YEAR 3
Personnel and dependents/covered lives	247,000						
% of Patient w/Chronic Cond/Allergies	37,050	15%					
% of Chronic/High Risk Patients Treated	18,525	7.5%					
ANNUAL COSTS NO IMMUNOTHERAPY		Cost/per	Total	Cost/per	Total	Cost/per	Total
Avg MD visits	3	$ 100	$ 5,557,500	$ 100	$ 5,557,500	$ 100	$ 5,557,500
Average annual ER/hospitalizations	5%	$ 5,000	$ 4,631,250	5% $ 5,000	$ 4,631,250	5% $ 5,000	$ 4,631,250
Avg annual medication spend (# of drugs)	4	$ 3,000	$ 55,575,000	4 drugs $ 3,000	$ 55,575,000	4 drugs $ 3,000	$ 55,575,000
*does not assume price increases		Yearly cost	$ 65,763,750		$ 65,763,750		$ 65,763,750
		per/ee	$ 3,550				
ANNUAL COSTS W/IMMUNOTHERAPY		Cost/per	Total	Cost/per	Total	Cost/per	Total
Avg MD visits	1.95	$ 150	$ 5,418,563	1.27 $ 150	$ 3,522,066	0.82 $ 150	$ 2,289,343
Average annual ER/hospitalizations	3%	$ 3,250	$ 1,956,703	2% $ 3,500	$ 1,369,692	1% $ 3,500	$ 890,300
Avg annual medication spend (# of drugs)	2.6	$ 1,980	$ 36,679,500	1.7 $ 1,307	$ 24,208,470	1.1 $ 862	$ 15,977,590
35% % Improvement Year to Year		Yearly cost	$ 44,054,766		$ 29,100,228		$ 19,157,233
		per/ee	$ 2,378				
HEALTH CARE SPENDING GROSS REDUCTION			$ 21,708,984	GROSS REDUCTION	$ 36,663,522	GROSS REDUCTION	$ 46,606,517
						TOTAL SAVINGS	$ 104,979,024
Costs of sublingual allergy treatment*	$ 960.00		$ 17,784,000	$ 988.80	$ 18,317,520	$ 1,018.46	$ 18,867,046
				(incl. 3% cost escalator)		TOTAL 3yr Treat COST	$ 54,968,566
ANNUAL NET MEDICAL COST REDUCTION			$ 3,924,984		$ 18,346,002		$ 27,739,472
				CUMULATIVE NET MEDICAL COST REDUCTION			$ 50,010,458
					ROI	191%	
Copyright: Allergy Associates of La Crosse, Worksheet is for estimation purposes only				**Per Treated Employee 3 Yr Cost Reduction**			$2,700

Indirect Costs – hidden & higher

In-Direct Costs/Savings of allergic employee/dependents being treated								Percent reduction		35%	
				Days No immunotherap		Cost per day	Yearly cost		Days With SLIT	Cost per day	Yearly cost
Missed Work Days/Mo			1	18,525		$ 100	$ 22,230,000		12,041	$ 100	$ 14,449,500
Missed School Days/Mo			1	18,525		$ 50	$ 11,115,000		12,041	$ 50	$ 7,224,750
Dimished Work Days/Mo			3	55,575	30%	$ 55	$ 36,812,880		36,124	$ 55	$ 23,928,372
						Totals	$ 70,157,880			**Totals**	$ 45,602,622
						cost per year					
	Disability Claims			1		$ 11,000	$ 11,000		1		$ 7,150
	(1% of Severe/chronic empl)					***Annual Costs***	***$ 70,168,880***				***$ 45,609,772***
Research indicates 2 hours missed per week								**Total Annual Savings Yr**		**$ 24,559,108**	
									this savings continues to increase each year		
				Cost of replacement worker/day:			$ 100		and should be added to direct cost savings		
		Cost of personnel missing work + paying a replacement:					$ 100				
							$ 50	Cost caring for sick child:			
Average:	wages/hr	plus:% tax & benefits									
	$20	15%		$ 184.00	Total Cost of Employee/8 hr day				**Total Annual Savings Year 2**		**$ 40,522,528**
									Total Annual Savings Year 3		**$ 43,829,237**
		gold cells are numbers the employer provides									
		you can decide what your costs are and plug these in							**Cumulative 3 years savings**		**$ 108,910,873**
Prevention of the onset of Asthma											
Children on Atopic March				$ 250,000.00	Lifetime cost (est)						
A)	Eczema		15%								
B)	Food Allergies		7%								
	Co-morbidity						Copyright: Allergy Associates of La Crosse, LTD. - for estimation purposes only				
	(80% of A&B)		6%	13,832							

Probe Study: 30 patients

Allergy Control Program

Impact assessment of allergy population treatment for State of WI

Date: October 2013

Considered Moderate-Severe Asthma, Sinusitis, Urticaria, Food anaphylaxis

Overview Allergy Associates of La Crosse, LTD.

- for estimation purposes only

The impact assessment tool was developed to provide an aggragate estimate of the impact of treating an identified allergic population with sublingual immunotherapy. The tool includes an assessment of direct costs/savings and indirect costs/savings the analysis is driven by the group providing data/assumptionts to a variety of measures. These measures are all indicated by cells that are colored gold.

repiratory, sinus or ear infections most common...

Assumptions

There are several assumptions to be made in the analysis tool. For example the population that will be treated. Industry measures indicate 10 to 20% of a population suffers from allergic disease. The group then decides what % of those will be treated. Next are a series of utilization assumptions. On the following worksheet a comparison is made between the populations actively treated and those only taking medications.

See Common Drug Regimen for Chronic Condition Patients

Industry findings on the impact of allergies being treated

The Cochrane Review on sublingual treatment, along with most of the studies that including over 150,000 patients, indicates that symptom reduction and medication use are reduced between 40% and 60% annually. This analysis tool is set-up in a way that the group can determine what % of imrovement they would like to consider for their popultation. A conservative improvement % would be 33%. Enter the % here. 35%

Direct Costs Assumptions/Parameters

		Total Employees	247,000
#1 Employees covered (including dependent)		400	
#2 % of Patient w/Chronic Cond/Allergies	80	20%	
#3 % of Chronic/High Risk Patients treated	30	7.5%	
#4 Unplanned MD visits/yr	3	Cost/visit	$ 100
#5 Avg annual ER/hospitalizations/surgeries		5%	
Cost of an ER, hosptital stay or surgery		$ 5,000	
#6 Medication Annual Cost Assumption		$ 3,000	
Monthly, common regimen cost		$ 250	

*Avg. Wholesale Prices**

Inhaled Steroid $75-175 (Flonase) s*

Bronchodilator "long acting" $85 (Serevent) a*

Bronchodilator "quick help" $20 (Albuterol) a*

Leukotriene blocker $114 (Singular) a u*

Antihistamine $84 (Xyzal, Allegra) a s*

Nasal Steroid $85 (Nasacort AQ) a*

Combination Asthma Drug $170 (Advair) a

OTC - Decon Sudafed $25, Claritin, Zyrtec $40+

Antibiotics (various $50-100) s (Zantac $150)

Topical steroids- $125-225 (Verdeso..) u

s = sinusitis

a = asthma

u = urticaria, ezcema

various studies show about 12% w/ER visits, 1% hosp stay, 1% surgery for severe chronic patients ear tubes, reuccrent polyps...

Indirect Costs Assumptions/Parameters *Allergy Related

The indirect cost savings for group typically eclipse the direct costs savings. This is primarily due to the fact that productivity loss from allergy related diseases, measured in terms of both absenteeism and presenteeism (at work but not functional) have a daily and cumulative effect. If personnel costs are high, the cost to replace these key (highly compensated or cost) people can make the totals considerably higher.

Annual cost of sublingual allergy treatment $ 960

Drops/month $ 30 (inhalant only) Visits & Testing/year $ 600 (internal cost)

Missed Work Days/Mo	1
Missed School Days/Mo	1
Dimished Work Days/Mo	3
Disability claims allergy linked/yr	1
Cost of personnel missing work + paying a replacement:	$ 100
% of productivity diminished	30%
wages/hr	$20
Overhead %: tax/benefits…	15%

Total Cost savings

For the assumptions made by this group in Year 1:

Taken together, Direct costs of $ 35,156 and indirect costs of $ 43,616 in year one,

given the investment (cost) in sublingual allergy treatment $ 28,800 # of employees 30

Yields an annual ROI of: 274%

*other values to consider, children get off the atopic march to asthma.

	Direct Health Care Savings	Indirect	Cost to Treat
Year 2	$ 29,710	$ 71,966	$ 29,664
Year 3	$ 44,922	$ 77,838	$ 30,554
Cumulative 3 Year Total	**$ 303,208**		**ROI 341%**

Probe Study: Direct Costs

Allergy Treatment Impact Analysis - Health Care Utilization Avoidance — Gold cells: Assumptions entered by group on Overview worksheet

Prepared for Organizatons evaluating the Allergy Control Program

Note: treatment duration is typically 3-5 years, then sensitivities are gone and costs = avg. patient

Considered Moderate-Severe Asthma, Sinusitis, Urticaria, Food

Utilization 3x normal population,

Avg.: ER charge, $750
one-day charge $1500
Physician/Med charges, $750
Hospital stay - 3 days $7000
Surgeries, CT, MRI - Not est.

			YEAR 1		YEAR 2		YEAR 3
Personnel and dependents/covered lives	400						
% of Patient w/Chronic Cond/Allergies	60	15%					
% of Chronic/High Risk Patients Treated	30	7.5%					
ANNUAL COSTS NO IMMUNOTHERAPY		Cost/per	Total	Cost/per	Total	Cost/per	Total
Avg MD visits	3	$ 100	$ 9,000	$ 100	$ 9,000	$ 100	$ 9,000
Average annual ER/hospitalizations	5%	$ 5,000	$ 7,500	$ 5,000	$ 7,500	$ 5,000	$ 7,500
Avg annual medication spend (# of drugs)	4	$ 3,000	$ 90,000	4 drugs $ 3,000	$ 90,000	4 drugs $ 3,000	$ 90,000
*does not assume price increases		Yearly cost	$ 106,500		$ 106,500		$ 106,500
		per/ee	$ 3,550				
ANNUAL COSTS W/IMMUNOTHERAPY		Cost/per	Total	Cost/per	Total	Cost/per	Total
Avg MD visits	1.95	$ 150	$ 8,775	1.27 $ 150	$ 5,704	0.82 $ 150	$ 3,707
Average annual ER/hospitalizations	3%	$ 3,250	$ 3,169	2% $ 3,500	$ 2,218	1% $ 3,500	$ 1,442
Avg annual medication spend (# of drugs)	2.6	$ 1,980	$ 59,400	1.7 $ 1,307	$ 39,204	1.1 $ 862	$ 25,875
35% % Improvement Year to Year		Yearly cost	$ 71,344		$ 47,126		$ 31,024
		per/ee	$ 2,378				
HEALTH CARE SPENDING GROSS REDUCTION			$ 35,156	GROSS REDUCTION	$ 59,374	GROSS REDUCTION	$ 75,476
						TOTAL SAVINGS	$ 170,007
Costs of sublingual allergy treatment*	$ 960.00		$ 28,800	$ 988.80	$ 29,664	$ 1,018.46	$ 30,554
				(incl. 3% cost escalator)		TOTAL 3yr Treat COST	$ 89,018
ANNUAL NET MEDICAL COST REDUCTION			$ 6,356		$ 29,710		$ 44,922
				CUMULATIVE NET MEDICAL COST REDUCTION			$ 80,989
					ROI 191%		
Copyright: Allergy Associates of La Crosse, Worksheet is for estimation purposes only				**Per Treated Employee 3 Yr Cost Reduction**			$2,700

Next Steps

- ❑ Sufficient interest to continue discussion
- ❑ Determine probe study research project

A step towards control of the impact of allergies on healthcare cost and productivity for State of WI employees and their families

Thank you.