

# Sublingual Immunotherapy (SLIT) in the U.S.

## Cost-Benefit Analysis and Other Pharmacoeconomic Issues

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*Presented at the 63<sup>rd</sup> AAAAI Annual Meeting*

*RSOD Interest Section Forum, February 25, 2007 San Diego, CA*

# SLIT: The Payer Perspective

- SLIT Working Group convened in November 2006 to:
  - Discuss Payer considerations regarding coverage and reimbursement of SLIT
  - Develop consensus guidance to be published for Payers

# Working Group

- **Payers**
  - Medical Director of a Health Plan System
  - Pharmacy Director (Medical and Pharmacy benefits) of HMO and POS Health Care Plans
  - Vice President, Pharmacy Services of Prescription Benefits Management company (PBM)
- **Specialty Medicine**
  - Linda Cox, MD
  - Spencer Atwater, MD
- **Coverage and Reimbursement Specialist**
  - Mary Bordeaux
- **Health Services Researcher**
  - Cheryl Hankin, PhD

# SLIT Working Group Agenda

- Review of SLIT Clinical Evidence
  - SLIT Task Force, Cochrane, TEC, U.S. Clinical Trials Data
    - Safety
    - Efficacy
    - Adherence
- Current Status of Allergy Immunotherapy
  - Potential as a disease modifier
  - Barriers to access
- Health Economics
- SLIT Place in Therapy
  - Importance of medical community endorsement
  - Venue(s) of Care
  - Patient Identification
  - Patient Instructions
- Coverage Determination
  - Benefit Design
  - Technology Assessment
- Billing and Reimbursement
  - CPT
- Next Steps

# Reviews of SLIT vs SCIT

- Cochrane Review<sup>1</sup>
  - Cochrane Collaboration is an Int'l, UK-based, non-profit organization
  - Provides highly-regarded systematic reviews of healthcare interventions
- SLIT Joint Task Force<sup>2</sup>
  - ACAAI and the AAAAI's Immunotherapy and Allergy Diagnostic Committee (dosing, efficacy, immunologic response, safety)
  - Specific Task: Provide comprehensive, updated (through 2005) report on SLIT for the North American allergy community
- BCBS Assn Technology Evaluation Center (TEC)<sup>3</sup>
  - Serves private and public sector clients (Kaiser Permanente, CMS)
  - Provides comprehensive reviews of clinical effectiveness and appropriateness of medical procedures, devices or drugs

**1.** Wilson DR, Torres Lima M, Durham SR. Sublingual immunotherapy for allergic rhinitis. The Cochrane Database of Systematic Reviews. 2003, Issue 2. Art. No.: CD002893. DOI: 10.1002/14651858.CD002893. **2.** Cox LS, Linnemann DL, Nolte H, Weldon D, Finegold I, Nelson HS. Sublingual immunotherapy: a comprehensive review J Allergy Clin Immunol. 2006 May;117(5):1021-35. **3.** Special report: interventions to improve patient adherence with medications for chronic cardiovascular disorders. TEC Bull (Online). 2003 Nov 6;20(3):30-1.

# TEC Report

- It is uncertain whether currently FDA-approved allergen extracts are suitable for sublingual administration
- Concentrations of FDA-approved allergen extracts may be insufficient to achieve therapeutically adequate doses for SLIT
- It could not be determined whether the reduction in symptom scores was sufficient to result in a clinically meaningful benefit to patients
- Evidence was insufficient to compare outcomes of SLIT with outcomes of injection immunotherapy

***“ The technology must have final approval from the appropriate governmental regulatory bodies.... Using FDA-approved allergen extracts for SLIT falls outside the labeled route and indication(s) and is an off-label use.”***

# Working Group Conclusions

- SLIT appears to be effective
- SLIT appears to be relatively safe
  - May be safer than SCIT although 2 recent cases of anaphylaxis have been reported
- Unanswered issues regarding administration:
  - What dose?
  - What schedule?
  - What duration?

*Finally, if all outstanding issues  
are sufficiently addressed*

***Will SLIT be cost-effective compared to SCIT?***

# Unanswered Questions

- Before turning their attention to SLIT, Panelists raised many unanswered questions about SCIT
  - What types of patients currently receive SCIT?
  - What is the regimen?
  - What is the duration of treatment?
  - How adherent are patients to their regimens?
  - Does SCIT really work?
  - Do positive outcomes translate into less resource use?
  - Do positive outcomes translate into cost offsets?

# Cost-effectiveness Analysis

**Retrospective Claims Analysis of**

**Allergy Immunotherapy:**

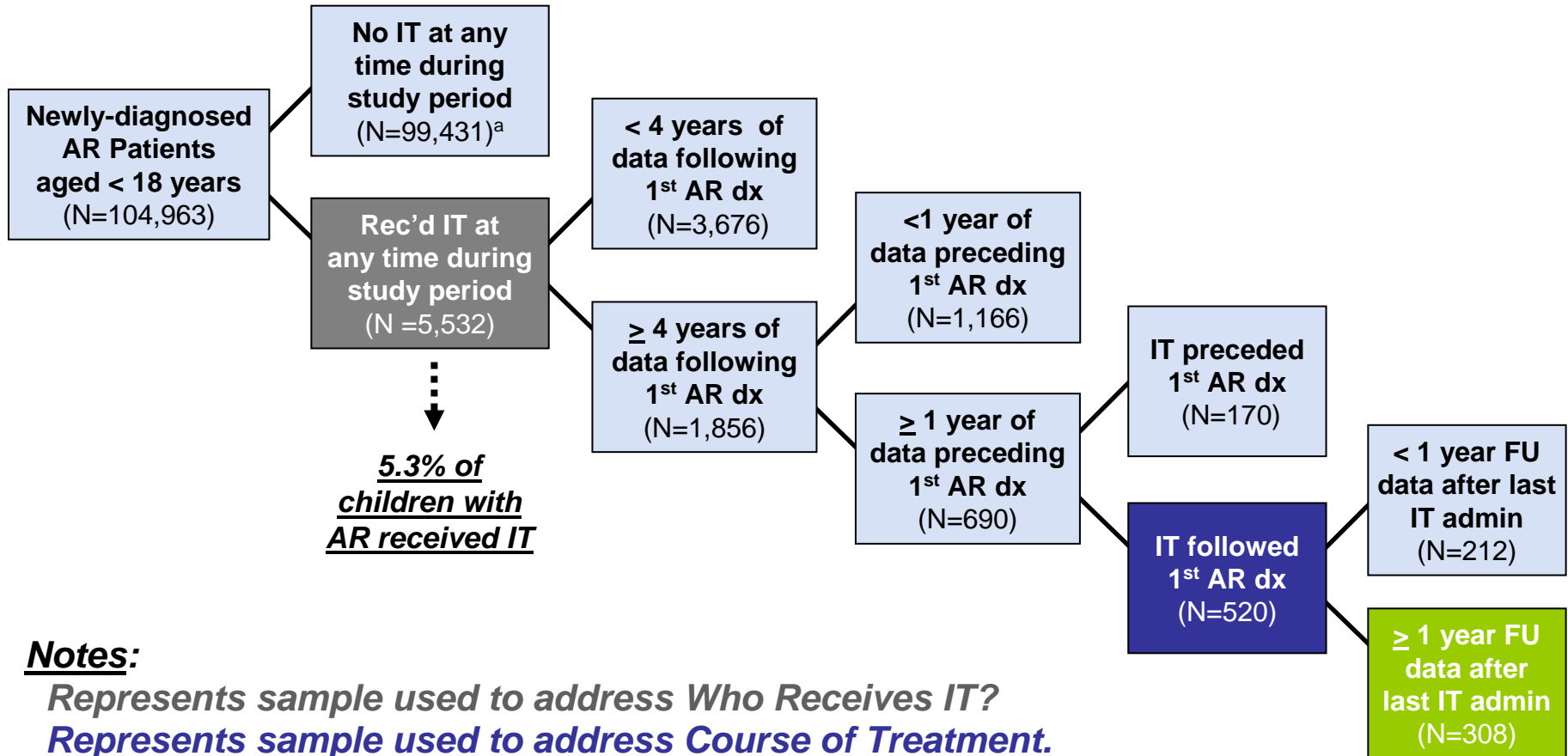
**Patterns of Care, Resource Use, and Costs  
among Florida Medicaid-Eligible Children with  
Allergic Rhinitis**

# Study Objectives

- Retrospective Medicaid claims analysis (1997-2004) to address three major questions among children (<18 years) with allergic rhinitis (AR)
  - Who receives IT?
    - Demographic and comorbid allergy-related illness characteristics associated with receiving IT
  - What is the course of treatment?
    - Patterns of de novo IT care
  - Does IT save the healthcare system money?
    - Comparison of costs of care during the 6 months prior to IT initiation to costs incurred in the 6 months following IT termination

# Sample Identification

(among 4,807,429 total Florida Medicaid enrollees)



## Notes:

*Represents sample used to address Who Receives IT?*

*Represents sample used to address Course of Treatment.*

*Represents sample used to address Resource Use and Costs.*

# Results

# Age at 1<sup>st</sup> AR Diagnosis

Characteristic	All Patients (N=104,963)	Patients Receiving IT (N=5,532)	Patients Not Receiving IT (N=99,431)	p-value IT vs. No IT
Age (years) at first AR diagnosis, mean (SD)	7.1 (4.5)	7.7 (3.6)	7.0 (4.5)	< 0.0001

Children who received IT were significantly older at 1<sup>st</sup> AR diagnosis than those who did not receive IT

(mean age 7.7 years vs 7.0 years, SD 4.5,  $p < 0.001$ )

**Time from 1st AR diagnosis to IT initiation was approximately 1.5 years (543 days, SD 571 days).**

# Sex Distribution

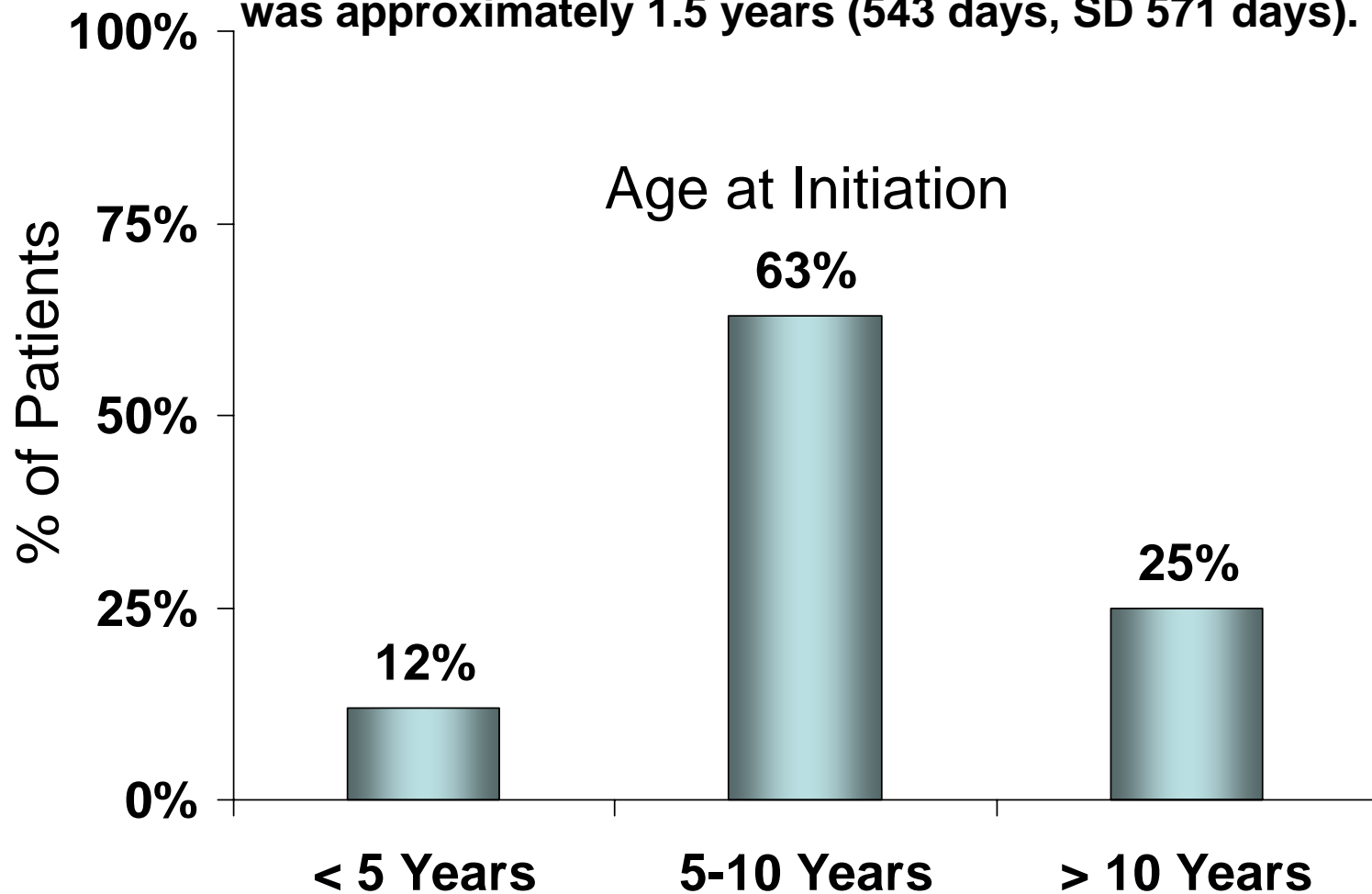
Characteristic	All Patients (N=104,963)	Patients Receiving IT (N=5,532)	Patients Not Receiving IT (N=99,431)	p-value IT vs. No IT
Male, % (N)	53.1% (55,709)	59.9% (3,314)	52.7% (52,395)	<0.0001

- Adjusting for the sex distribution among children in the overall dataset, significantly more males than expected were diagnosed with AR
- Males were 10% more likely to be diagnosed with AR than females (OR 1.10, 95% CI 1.09 to 1.11,  $p < 0.0001$ )

- After adjusting for the variation in AR diagnosis by sex, significantly more males received IT than females.
- Adjusted results indicated that males were 34% more likely to receive IT than females (OR 1.34, 95% CI 1.27 to 1.42,  $p < 0.0001$ )

# Treatment Initiation

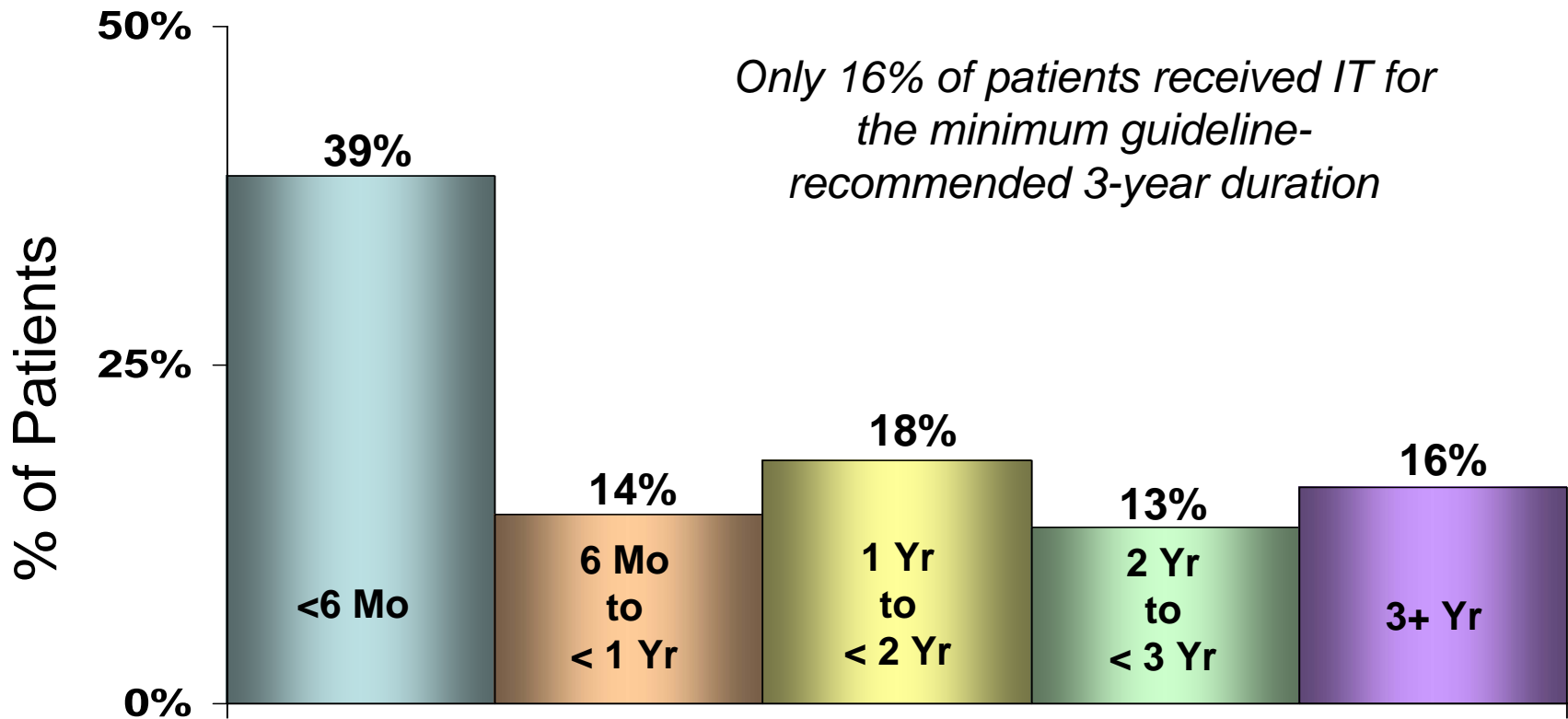
Time from 1st AR diagnosis to IT initiation was approximately 1.5 years (543 days, SD 571 days).



# Treatment Regimen

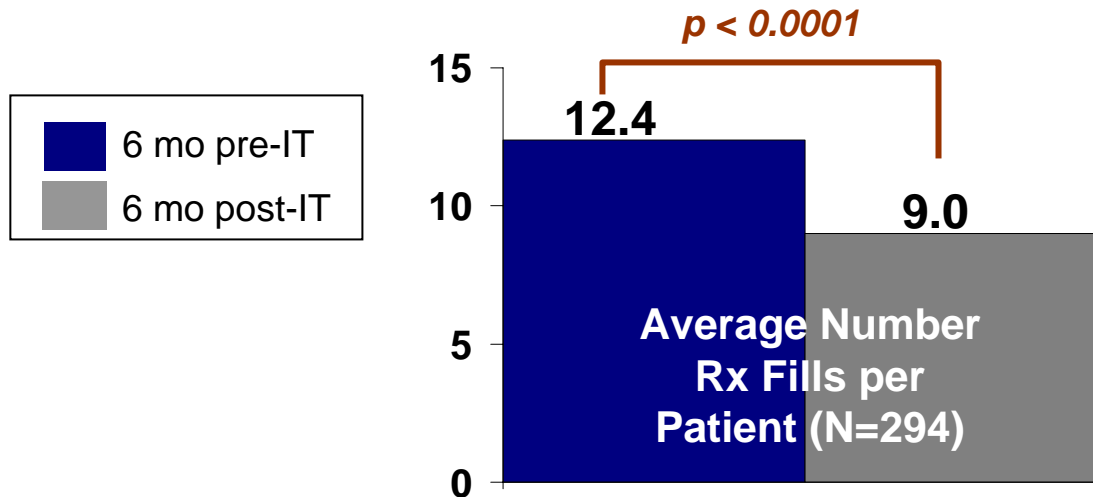
- **Average number of days between administrations**
  - **Overall**
    - 27.2 (SD 68.8, range 1 to 1,117)
  - **Buildup phase**
    - 16.2 days (SD 17.5, range 1 to 171)
    - 33.8% of patients received injections on average > 2 weeks apart
  - **Maintenance phase**
    - 24.9 days (SD 31.8, range 1 to 363)
    - 9.7% received injections on average > 6 weeks apart

# Duration of Treatment

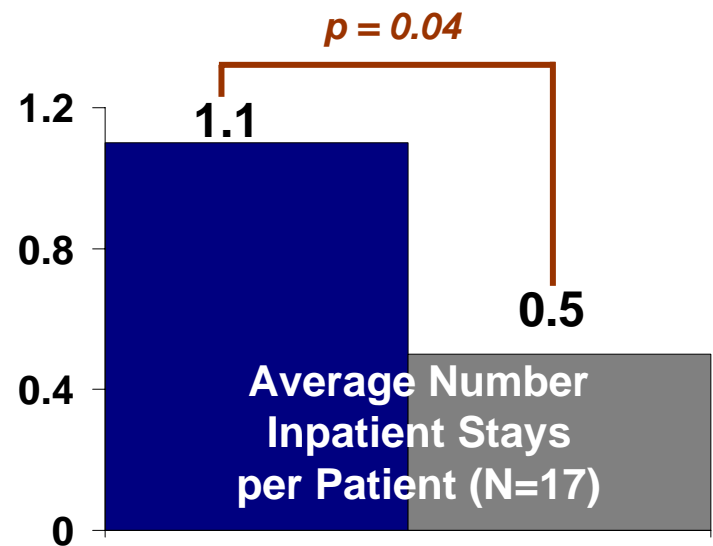
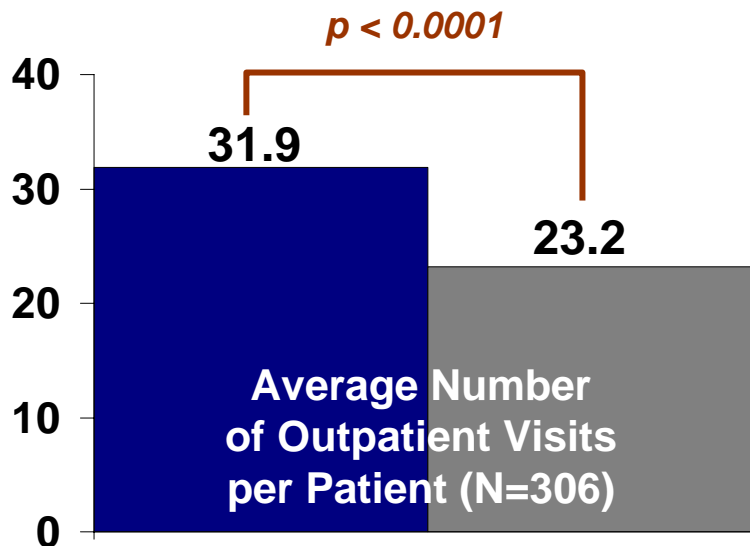


- Patients received an average of 31.3 IT administrations (SD 34.3).
- The mean duration of treatment was 17 months (SD 17.6).

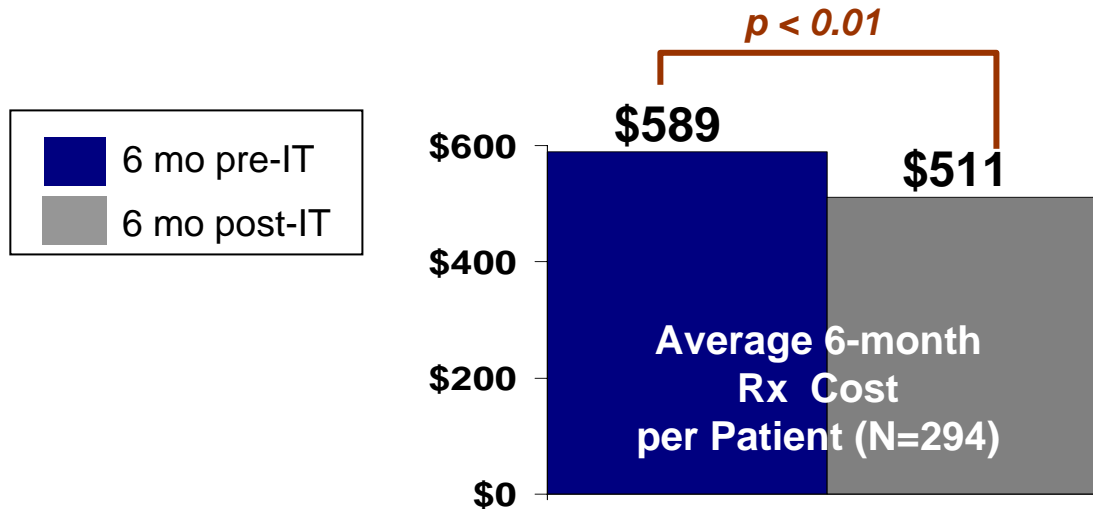
# Medical Resource Utilization



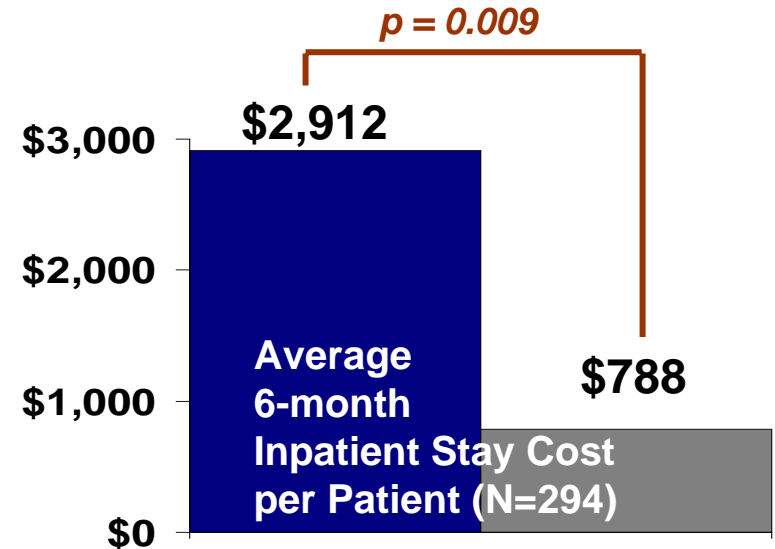
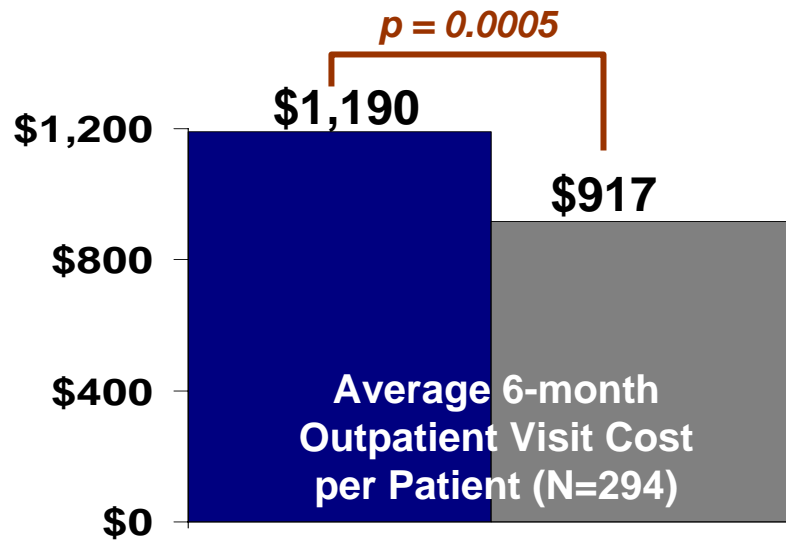
Medical resource utilization significantly decreased in the 6 months following IT discontinuation versus the 6 months prior to IT initiation, despite the fact that the average duration of therapy was 17 months.



# Medical Costs



Medical costs significantly decreased in the 6 months following IT discontinuation versus the 6 months prior to IT initiation, despite the fact that the average duration of therapy was 17 months.



# Key Payer Considerations

- Few patients (16%) completed the guideline-recommended minimum course of therapy (3 years).
- Despite the high premature discontinuation rate, resource use and costs following treatment were significantly reduced from pre-IT initiation levels.
- Current barriers to access likely contribute to high SCIT discontinuation rates.
- Improved access to IT care may yield even greater health and cost advantages.
- Future U.S. introduction of oral-sublingual IT (SLIT), which will be self-administered at home, may redress some of these barriers to access of care.

# **SLIT Working Group Consensus Statement**

# Working Group Consensus Statement

- Allergy immunotherapy is the only currently available disease-modifying treatment
- Many of the existing barriers to allergy immunotherapy are addressed by SLIT
- When evaluating evidence of SLIT safety and efficacy, payers are advised:
  - Be aware that current technology reviews (Cochrane, TEC) aggregate findings across an array of sublingual treatments
  - Therefore, each manufacturer's FDA-approved SLIT product should be evaluated individually

# Working Group Consensus Statement (cont'd)

- Medical community endorsement of SLIT is essential
  - Payers are advised to look to Joint Task Force Practice Parameters
  - In the absence of Practice Parameters, Payers should look to
    - Interim Statements
    - National and Local Physician Experts (Allergists, ENTs, Pulmonologists)
- Guidance will be provided re current and expected costs of therapy that should be considered in any cost analysis (including costs of procedures and potential cost offsets for medications)

# Working Group Consensus Statement (con't)

- SLIT does not essentially change the practice of allergy immunotherapy: only route of administration and DFU are changed
  - Consequently, most payers will continue to regard SLIT as they have SCIT – as a medical benefit
  - Supplementary interim guidance for those plans that may initially interpret SLIT as a pharmacy benefit will be provided
- A new code is recommend in order to facilitate tracking of SLIT versus SCIT
  - Interim coding recommendations will be provided

# Next Steps

- Three-article supplement in a journal that is widely read by health plan Medical and Pharmacy Directors
  - **Clinical Evidence:** Efficacy and Safety of Allergy Immunotherapy (substantiate and elevate as the only disease modifying treatment)
  - **Health Economics of Allergy Immunotherapy** (cost benefits and current barriers to care for this cost-effective, disease modifying treatment)
  - **Coverage and Reimbursement Considerations** for SLIT (the Working Group Consensus Statement)

# Backup

# Learning Objectives

1. Compare the efficacy of sublingual with subcutaneous immunotherapy in terms of symptoms and medication use based on a comparative review of the published literature
2. Discover impact of allergen immunotherapy patterns of care on long-term health outcomes and costs
3. Discuss the process that will be used by payers in assessing published evidence of sublingual immunotherapy and efficacy
4. Recognize payer considerations that may be applied in determining coverage and reimbursement of sublingual immunotherapy

# Cochrane Review

“SLIT is a safe treatment which significantly reduces symptoms and medication requirements in allergic rhinitis. The size of this benefit compared to that of other available therapies, particularly injection immunotherapy, is not clear, having been assessed directly in very few studies. Further research is required concentrating on optimising allergen dosage and patient selection.”

# Joint Task Force

“Despite clear evidence that SLIT is an effective treatment, many questions remained unanswered, including effective dose, treatment schedules, and overall duration of treatment. Until these have been determined, an assessment of the cost/benefit ratio of the treatment cannot be made. SLIT does appear to be associated with few serious side effects, but it has not been administered in high-risk asthmatic patients, nor in the studies reviewed has it been administered as a mixture of non-cross-reacting allergens. Furthermore, there is currently no allergy extract approved for this use in the United States, nor is there a Current Procedural Terminology code for billing purposes. All of these factors should be given careful consideration by anyone contemplating initiating SLIT treatment for their allergic patients.”