Spinraza Access Webinar

May 4, 2017

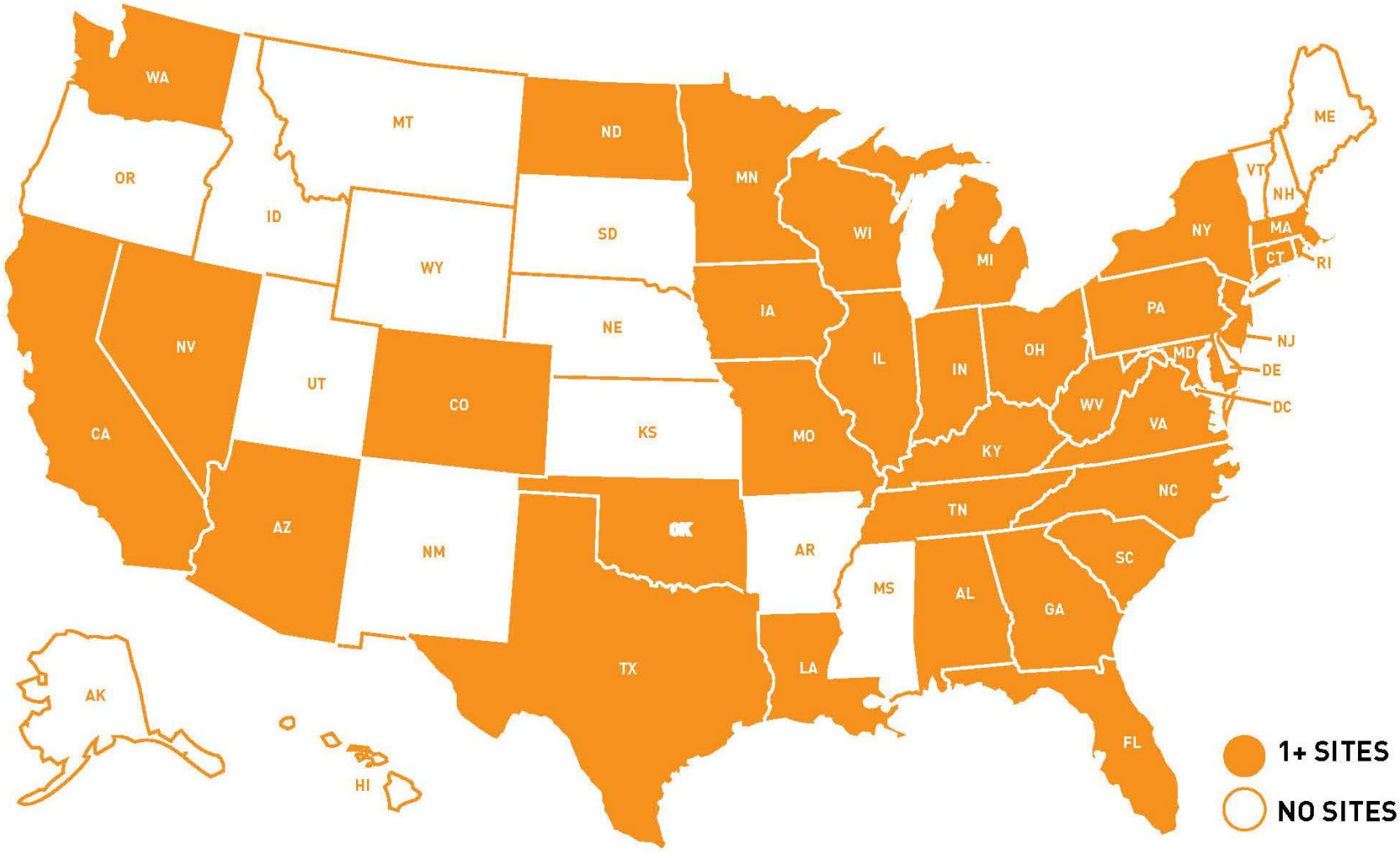
cure SMA

Make today a breakthrough.

Current Dosing Access Metrics

- ~250 patients have been dosed:
  - 200 commercially (not trials)
  - ~400 doses
  - 50 through Biogen's support programs
- Ages from a few weeks to 60s
- 100 commercial plans and 65 Medicaid plans have approved at least one patient
- ~90 sites in 36 states (including DC) have dosed at least one patient:
  - We need to connect with all these
- ~200 sites have submitted a start form
- 100's to 1,000's

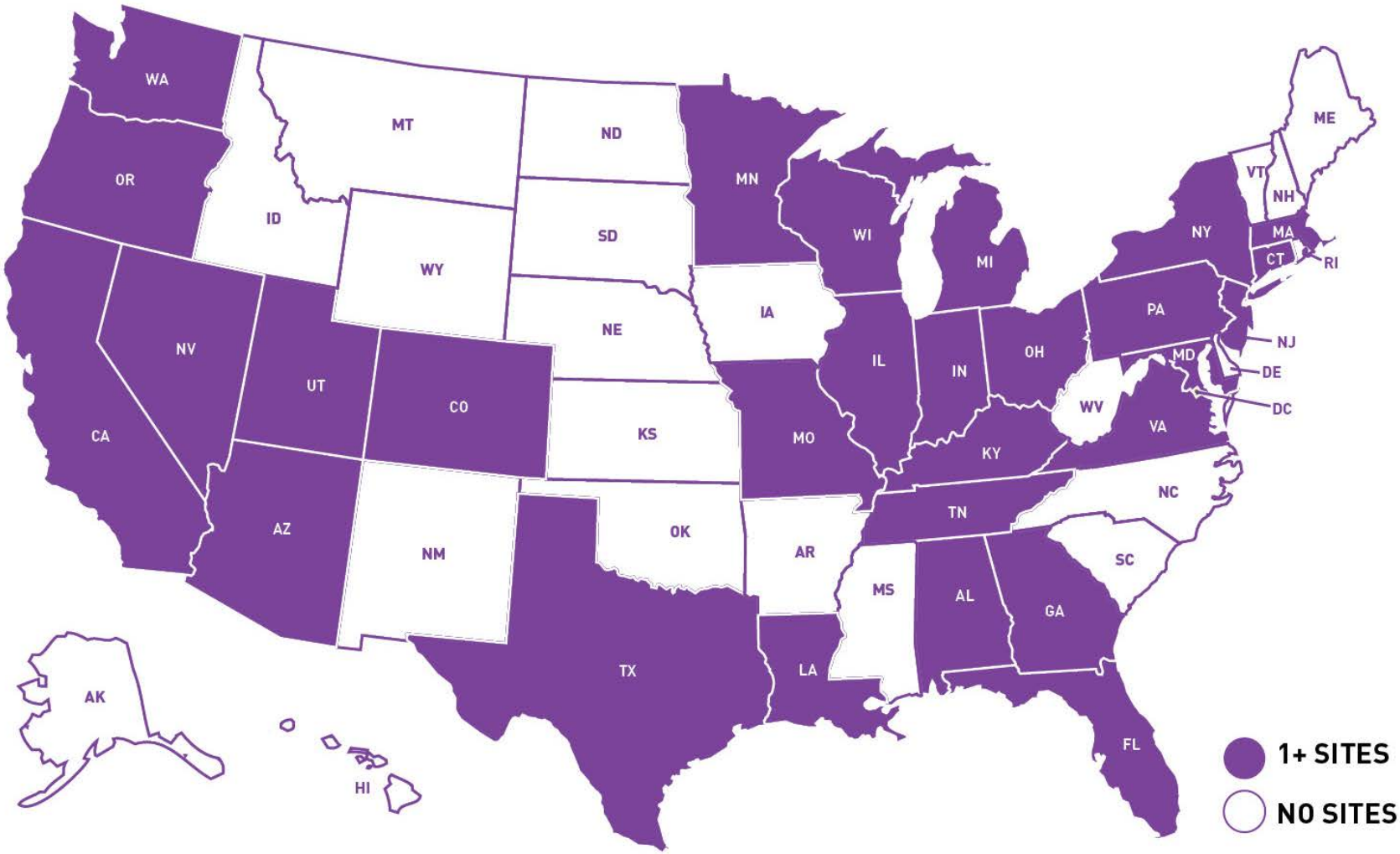
Confirmed Dosing States - 33



Cure SMA Site List

- Progress since start of year:
  - 308 total sites contacted
  - 161 sites now being communicated with
  - 55 sites on list confirmed
  - 32 states plus DC with at least one site
- Some sites are dosing but not ready to publicly announce yet
- Expectation: 250-300 sites to meet the needs of our community long term:
  - Need to educate and advocate to new and pending sites

Sites - 55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HI
1+ SITES
NO SITES

Site List Goals – Congressional Model

-Initial Target of One Site per state

-Then at least One Adult Site and One Pediatric Site per state.

-Finally Multiple Sites per state based on population.

-High density areas with Hub and Spoke Model

-Resources to sites

-Advocate to sites

Send sites and contacts to
patientcare@curesma.org

Insurance Coverage Status

- Variable rules and decisions:
  - Many groups involved
  - Commercial and Medicaid
- More data needed:
  - From current trials, interim, publication:
    - Just Released!
  - Other untested areas:
    - Spinal fusion (rods). Expert Working Group - Protocol
- Ongoing proof:
  - 6 months to annually
  - Collect data. Individual vs Comparison
- Drug cost and procedure cost
- Don’t get discouraged:
  - Policies are not fixed:
    - Updated and individually implemented
  - Denials:
    - Appeals
    - Precedents. Advocate on data and need
    - Let us and Biogen know

Insurance Coverage

	Anthem	United Health	Humana	Aetna	Cigna	Medicaid (By state)
Type 0	Yes	No	Yes	No		CA: No
Type I	Yes	Yes	Yes	Yes		CA: Yes
Type II	Uncertain	Yes	Uncertain	Yes		CA: Yes
Type III	No	Yes	No	Yes		CA: Yes
Type IV	No	Uncertain	No	No		CA: No
1 SMN2	Yes	No	Yes	Yes		CA: Yes
2 SMN2	Yes	Yes	Yes	Yes		CA: Yes
3 SMN2	No	Yes	No	Yes		CA: Yes
4 SMN2	No	Yes	No	Yes		CA: Yes
Pediatric	Yes	Yes	Yes	Yes		CA: Yes
Adult	Uncertain	Yes	Uncertain	No		CA: Yes
Trach	Yes	No	Yes	Yes		CA: Yes
Non-invasive 6	Yes	No	Yes	Yes		CA: Yes

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Cure SMA Coverage & Payment Activities

- **Letters to CEOs and CMOs** of all major insurance plans and companies
- **Letters to all of the state Medicaid directors and governors**:
  - Urging coverage of Spinraza for all ages and types
  - State specific SMA fact sheets
  - Evidence against specific restrictions
- **Meetings with various national organizations and government agencies** involved in recommending, influencing, and otherwise determining coverage and payment policy.
  - Individual companies
  - State Medicaid programs – Testimony Opportunities
- Part of a working group on orphan drug access through the Institute for Clinical and Economic Review

Insurance Coverage Resources

- Current policies:
  - Visit: **www.cureSMA.org/Spinraza**
  - Find: Resources → Insurance Policies
  - All data
- *Choice and Connection to Care: A Health Insurance Roadmap for People Living with Spinal Muscular Atrophy (SMA) and Their Caregivers*
  - A new Cure SMA care series booklet on navigating commercial and government health insurance options.
  - Visit: **www.cureSMA.org/news/cure-sma-releases-care-series.html**
- Know Your Resources: How Congressional Caseworkers Can Help You Obtain Insurance Coverage for New Therapies
  - Visit: **http://www.curesma.org/news/congressional-caseworkers-help.html**
- Annual Conference Sessions and Networking

New CHERISH Data

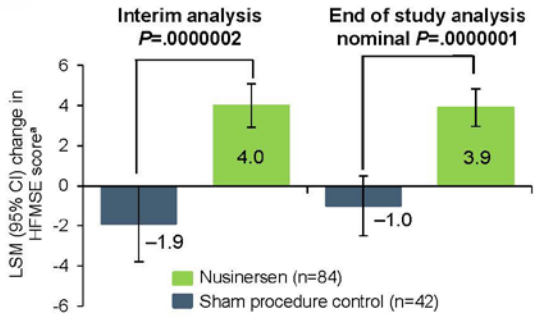
FOR USE BY INVESTOR COMMUNITY ONLY. NOT FOR PROMOTIONAL USE.

Date of presentation: April 25, 2017

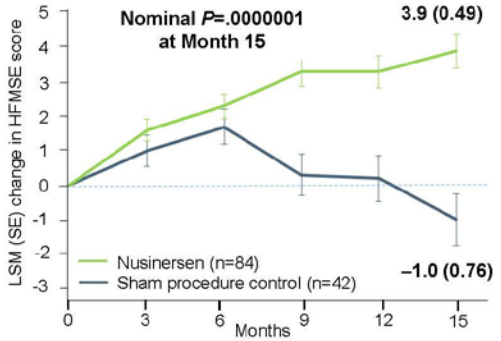
CHERISH: Background and Primary Endpoint

- Nusinersen has demonstrated:
  - Significant and clinically meaningful efficacy on measures of motor function[1-3]
  - Favorable safety across multiple SMA populations[1-3]
  - Greater event-free survival in infants with infantile-onset SMA (vs. sham procedure control)[1]
- CHERISH was a Phase 3, global, randomized, double-blind, sham procedure–controlled study to assess the clinical efficacy and safety of intrathecal nusinersen in children with later-onset SMA
  - Baseline characteristics of children in CHERISH were consistent with the general population of children with later-onset SMA[4]
  - For study design details, see poster P3.184 (presentation on April 25, 5:30–7:00 PM)

Primary endpoint: change from baseline to Month 15 in HFMSE score



End of study analysis
Mean change over time at end of study



HFMSE = Hammersmith Functional Motor Scale Expanded; LSM = least-squares mean; SMA = spinal muscular atrophy. Descriptions of statistical analyses in notes sections of slide. [a]From baseline to Month 15. Interim analysis: observed: sham procedure control, n=19; nusinersen, n=35; imputed: sham procedure control, n=23; nusinersen n=49. End of study analysis: observed: sham procedure control, n=34; nusinersen, n=66; imputed: sham procedure control n=8, nusinersen n=18. 1. Finkel RS, *et al.* Primary efficacy and safety results from the phase 3 ENDEAR study of nusinersen in infants diagnosed with spinal muscular atrophy (SMA). Presented at: 43rd Annual Congress of the British Paediatric Neurology Association; January 11-13, 2017; Cambridge, UK. 2. Finkel RS, *et al. Lancet.* 2016;388(10063):3017-3026. 3. Bertini E, *et al.* Nusinersen in pre-symptomatic infants with spinal muscular atrophy (SMA): interim efficacy and safety results from the phase 2 NURTURE study. Presented at: 21st International Congress of the World Muscle Society; October 4–8, 2016; Granada, Spain. 4. Wang CH *et al.*; Participants of the International Conference on SMA Standard of Care. *J Child Neurol.* 2007;22(8):1027-1049.

4

Supports expanded insurance coverage for types 2 and 3.

What Results Can Be Expected

- ENDEAR: 51% of treated infants gained motor milestones vs. 0% of untreated group
  - An example of a motor milestone gain would be moving from unable to roll to rolling onto side, or moving from unable to sit to sitting with support.
- ENDEAR: 61% of treated infants were alive and did not require permanent ventilation vs. 32% of untreated infants.
- CHERISH: Gain of 4 HFMSE points in treatment group vs. loss of 1 HFMSE point in untreated group
- No data yet in older teens and adults
- Quick vs Build up

Key Advocacy Items

- SMA is one disease (not types):
  - Same genetic cause and target SMN1 and SMN2
  - All have genetic target of Spinraza
- Clinical Significant Impact:
  - Trial data, broad and positive and significant
- Urgent and critical and unmet need
- Patient Meaningful Impact:
  - Same as to the FDA
  - Slow or stop progression or incremental changes

Random Considerations Regarding Spinraza

Access

Administration

Incorporation into Comprehensive SMA Care

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Professor, Departments of Neurology and Pediatrics
Director, Division of Neuromuscular Medicine
Stanford University School of Medicine

Disclosures

In addition to NIH/NINDS, MDA, SMA Foundation, and Myotonic Dystrophy Foundation funding, in the past 12 months I have had the following financial relationships with commercial manufacturers or providers of services possibly related to this presentation:

Consultant or Advisory Board: AveXis, Biogen, Cytokinetics, Sarepta, Santhera Pharmaceuticals

Grants/Research Support: AveXis, Biogen, Cytokinetics, Sanofi Genzyme, Ionis, Sarepta Therapeutics

Royalties for Licensed Technology: Athena Diagnostics

Access

- Variable Insurer Policies
- Variable Institutional Policies, Priorities and Capabilities
- Variable Clinic Team Treatment Capabilities
- Variable Clinic Team Care and Assessment Capabilities

Treatment

- Whether or not to use anesthesia
- Whether or not to use X-ray guidance
- How to administer to those with scoliosis
- How to administer to those with spinal rods
- How to administer to those with spinal fusion

Non-uniform Response to Treatment

- Timing of response
  - Early response
  - Measurable response
- Distribution of Response
- Degree of Response
  - Improvement
  - Slowed progression

Incorporation into Ongoing Care

- Spinraza is not a magic wand
- Assessment of response – what do insurers need to see?
- Management of SMA – importance of ongoing care
- Unintended consequences
  - Unexpected strength
  - Unexpected stamina

Next Steps

- Improvements in Spinraza use – changes in dose? frequency?
- Next generation of Spinraza – Spinraza 2.0?
- Supplemental treatments (Cytokinetics, others)
- New genetic treatments
  - AveXis
  - Roche/Genentech

Q & A

Thank you!