Information is power!
Contributing to the Registry of Central Disorders of Hypersomnolence at CoRDS

Lynn Marie Trotti, MD, MSc
Associate Professor of Neurology
Emory Sleep Center, Emory University School of Medicine
Chair, Hypersomnia Foundation Medical Advisory Board
What is a patient registry and why do they exist?
Rare diseases are hard to study

- < 200,000 people or < 1 in 1600
- Their cumulative burden is not small!
  - ~7000 rare diseases
  - Affect 25 million Americans
  - One in 17 people will have a rare disease
Patients enter information online (or by mail)

Healthcare providers enter information

The Registry

Researchers request de-identified data to analyze

Researchers request contact with potential subjects
"Creating a registry of patients is the single most valuable action a rare disease community can take.

The registry provides critical disease knowledge which makes that disease easier to study, increasing the probability a treatment can be developed."

- David Meeker, CEO, Genzyme
What can a registry accomplish?
Rare disease registries help researchers

- Based on registry info alone
  - Evaluate clinical treatments in a real-life setting
  - Look at trends in healthcare for rare diseases to improve care quality
  - Understand the real-life impact and long-term course of rare diseases
- Based on opt-in for future studies
  - Find people who are interested in being in research studies of rare diseases
  - Show potential funders that research is feasible

WE NEED YOUR HELP
Disease registries are increasingly important for scientific progress
Registry success story #1: Multiple sclerosis and drug treatments

- Chronic neurologic disease
- Multiple FDA-approved treatments
- Problems in MS drug treatment:
  - Few head to head trials
  - Unclear what order to use medications
  - Some people may respond better to one than another
  - Disease progresses over decades; clinical trials over months
  - Not all symptoms have been tested in clinical trials
  - Rare side effects aren’t seen in clinical trials

Real-world problems need real-world evidence (in addition to clinical trials)

<table>
<thead>
<tr>
<th>Randomized controlled trials</th>
<th>Real-world evidence studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental/interventional trial</td>
<td>Observational/non-interventional trial</td>
</tr>
<tr>
<td>Protocol-driven, compliance with Good Clinical Practice (GCP) mandatory</td>
<td>Usually care-driven, results derived from clinical practice</td>
</tr>
<tr>
<td>Efficacy and safety primary outcomes</td>
<td>Primary outcomes are long-term efficacy and safety, effectiveness and economic assessments</td>
</tr>
<tr>
<td>Narrow and restricted patient population with extensive inclusion and exclusion criteria</td>
<td>Wide and unrestricted patient population with few exclusions including co-morbidities</td>
</tr>
<tr>
<td>Gold standard or placebo comparators used</td>
<td>No comparators used or compared to standard clinical practice</td>
</tr>
<tr>
<td>Patients are randomized and blinded to treatment</td>
<td>No randomization or blinding</td>
</tr>
</tbody>
</table>

Real-world problems need real-world evidence (in addition to clinical trials)

Disability Progression in Patients Switching from Tysabri to Gilenya or Injectable Therapy

What medication works best for MS-associated tremor?

Number of people reporting benefit from medication class on tremor

Registry success story 2: Cystic fibrosis

The Cystic Fibrosis Foundation registry has enabled countless studies of CF

41 registry based studies published from 2012-early 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Registry</th>
<th>Main results</th>
<th>Patients</th>
<th>First author</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>CFF</td>
<td>Lung function and height in 6-year-old CF children are improving in more recent cohorts.</td>
<td>11,670</td>
<td>VanDevanter D.R.</td>
<td>17</td>
</tr>
<tr>
<td>2013</td>
<td>CFF</td>
<td>Transition to adult care is linked to better outcomes</td>
<td>22,331</td>
<td>Tuchman L.</td>
<td>19</td>
</tr>
</tbody>
</table>

Beyond Sleepy In The Mile High City

2016 HYPERSOMNIA REGIONAL CONFERENCE

Provided by

The CF Foundation registry enabled NINETEEN published studies in three years.

Cystic Fibrosis Lung Disease in Patient Registries

TABLE 1—Studies Included in the Review

<table>
<thead>
<tr>
<th>Year</th>
<th>Registry</th>
<th>Main results</th>
<th>Patients</th>
<th>First author</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>CFF</td>
<td>Inhaled tobramycin in patients with chronic PA infection reduces FEV1 decline.</td>
<td>13,686</td>
<td>VanDyke R.D.</td>
<td>62</td>
</tr>
<tr>
<td>2014</td>
<td>CFF</td>
<td>Women have worse survival, higher rate of PEx, and earlier acquisition of respiratory pathogens, compared with males.</td>
<td>32,766</td>
<td>Harness-Brumley C.L.</td>
<td>39</td>
</tr>
</tbody>
</table>

Microbiology

<table>
<thead>
<tr>
<th>Year</th>
<th>Registry</th>
<th>Main results</th>
<th>Patients</th>
<th>First author</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>CFF</td>
<td>Non-tuberculous mycobacteria prevalence is highly variable in different states in US.</td>
<td>18,003</td>
<td>Adjemian J.</td>
<td>40</td>
</tr>
<tr>
<td>2013</td>
<td>CFF</td>
<td>Non-tuberculous mycobacteria is rarer in patients treated with macrolide.</td>
<td>27,112</td>
<td>Binder A.M.</td>
<td>41</td>
</tr>
<tr>
<td>2012</td>
<td>CFF</td>
<td>Risk factors for initial PA acquisition are severe genotype, PI, colonization by other germs, and worse growth and lung function.</td>
<td>3,601</td>
<td>Rosenfeld M.</td>
<td>44</td>
</tr>
<tr>
<td>2013</td>
<td>CFF</td>
<td>PA acquisition and seasonality are associated in the temperate and continental climate zones but not in dry climate zone.</td>
<td>4,123</td>
<td>Psoter K.J.</td>
<td>45</td>
</tr>
<tr>
<td>2014</td>
<td>CFF</td>
<td>PA acquisition is associated with a geographical risk.</td>
<td>3,608</td>
<td>Psoter K.J.</td>
<td>46</td>
</tr>
<tr>
<td>2015</td>
<td>CFF</td>
<td>PA acquisition is associated with pollution.</td>
<td>3,575</td>
<td>Psoter K.J.</td>
<td>47</td>
</tr>
</tbody>
</table>

Successes of the CF Foundation registry

- Allows comparison of care models across countries
- Generates questions and hypotheses for future controlled studies
- Captured the trends in improved survival

What does all this have to do with hypersomnia and what is CoRDS?
Is hypersomnia a rare disease?

- The registry (and Foundation) is for everyone with hypersomnolence
- Narcolepsy is considered a rare disease (1/2000)
- Kleine-Levin syndrome is rare
- Idiopathic hypersomnia is…?
Join CoRDS. Help accelerate research.

Any individual with a rare, uncommon, or unknown disorder is invited to join the CoRDS Registry and help accelerate research into rare conditions.

Read More
Coordination of Rare Diseases at Sanford

- Multiple rare diseases
- International
- Partners with foundations and patient advocacy groups
- Funded by philanthropy
Am I eligible to enroll in CoRDS?

- The CoRDS registry is open to any individual, of any age, with:
  - a rare disease
  - a disease of unknown prevalence
  - a diagnosis pending but rare disease suspected

If you are attending this conference as a patient, the answer is

YES!!
Who has my information and is it secure?

<table>
<thead>
<tr>
<th>Info</th>
<th>Who Has Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name, identifiers, contact information</td>
<td>CoRDS personnel</td>
</tr>
<tr>
<td>De-identified information, if you agree</td>
<td>IRB-approved researchers</td>
</tr>
<tr>
<td></td>
<td>Hypersomnia Foundation</td>
</tr>
<tr>
<td></td>
<td>Other disease registries</td>
</tr>
</tbody>
</table>

- All electronic information is stored in the secure Velos eResearch Clinical Research Management System.
- All hard copy information is stored in a locked fireproof cabinet.

Patients enter information online (or by mail)

The CoRDS Hypersomnia Registry

- Hypersomnia Foundation requests de-identified data (for Foundation use)
- Researchers obtain IRB approval for a research study and request de-identified data
- Researchers request CoRDS to contact potential subjects
- Other rare disease organizations request de-identified data
How big is CoRDS (so far)?

**Coordination of Rare Diseases at Sanford Enrollment**

<table>
<thead>
<tr>
<th>Diagnosis*</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>2381</td>
</tr>
<tr>
<td>Idiopathic hypersomnia</td>
<td>23</td>
</tr>
<tr>
<td>Idiopathic hypersomnia with long sleep time</td>
<td>7</td>
</tr>
<tr>
<td>Idiopathic hypersomnia without long sleep time</td>
<td>1</td>
</tr>
<tr>
<td>Narcolepsy</td>
<td>6</td>
</tr>
</tbody>
</table>

*Diagnosis names are based on Orphanet nomenclature*
Participants by Age and Gender

http://www.sanfordresearch.org/cords/aboutcords/cordsmetrics/, accessed 5/6/16
CoRDS Participants by Country

http://www.sanfordresearch.org/cords/aboutcords/cordsmetrics/, accessed 5/6/16
How do I help?
How do I enroll in CoRDS?

CoRDS Registry
Coordination of Rare Diseases at Sanford

CoRDS Screening Form

- Introduction
  If you are interested in enrolling in the CoRDS Registry, please complete the brief screening form below and click submit. Please note CoRDS is a patient reported registry. If you are a Healthcare provider and wish to refer your patients, please refer them to this form.

  Please answer a few questions to help us create your participant account.

- Participant Type
  - I am enrolling myself (You must be over the age of 18 to provide information for the registry)
CoRDS Enrollment process

- Participant fills out CoRDS screening form
- CoRDS immediately sends 2 separate emails containing username and password
- Participant completes CoRDS questionnaire and receives thank-you email from CoRDS
- Participant does not complete CoRDS questionnaire within 14 days; CoRDS sends a reminder email
- Participant is offered the option to complete the Hypersomnia Foundation questionnaire
- Participant does not complete the CoRDS questionnaire within 28 days of completing screening form; CoRDS sends a reminder email
- CoRDS sends email to the participant on the anniversary date of completing the screening form to update information, including any additional questionnaires
- Participant does not complete the CoRDS questionnaire within 90 days after the last reminder email is sent; CoRDS removes the participant’s information from the database

Beyond Sleepy In The Mile High City
2016 HYPERSONMIA REGIONAL CONFERENCE

provided by
Then complete the Hypersomnia Foundation questionnaire!!
And wait to be contacted for additional studies*

*knowing how invaluable your help has been even if you are not contacted for another study
Can I enroll today?

www.sanfordresearch.org/CoRDS
Thank you!
Thank you for watching. We will return shortly.