

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





"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?

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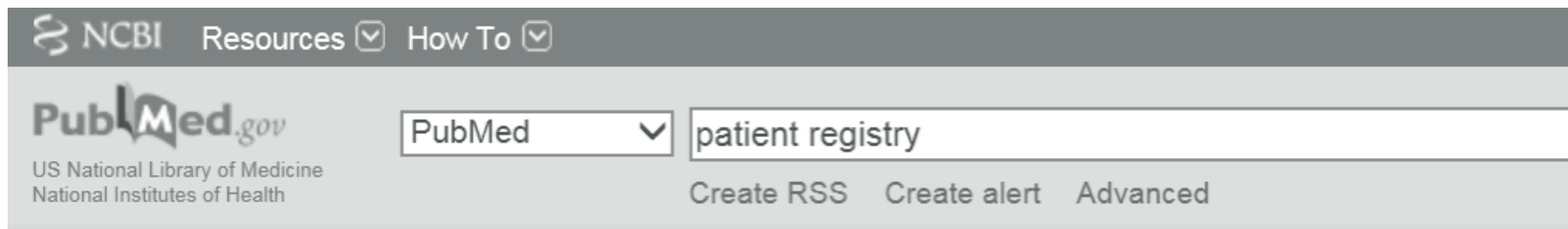
Rare disease registries help researchers

- 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

250



100

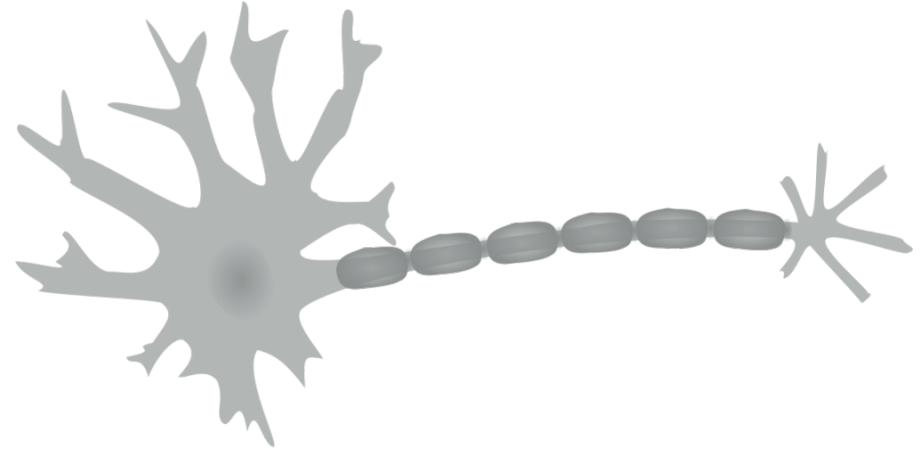
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1965 1976 1979 1980 1981 1983 1984 1985 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

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



Ziemssen T. The importance of collecting structured clinical information on multiple sclerosis.
BMC Med 2016.

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

Randomized controlled trials

Experimental/ interventional trial
Protocol-driven, compliance with Good Clinical Practice (GCP) mandatory
Efficacy and safety primary outcomes
Narrow and restricted patient population with extensive inclusion and exclusion criteria 
Gold standard or placebo comparators used
Patients are randomized and blinded to treatment

Real-world evidence studies

Observational/ non-interventional trial
Usually care-driven, results derived from clinical practice
Primary outcomes are long-term efficacy and safety, effectiveness and economic assessments
 Wide and unrestricted patient population with few exclusions including co-morbidities
No comparators used or compared to standard clinical practice
No randomization or blinding

Ziemssen T. The importance of collecting structured clinical
information on multiple sclerosis.
BMC Med 2016.

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

Randomized controlled trials

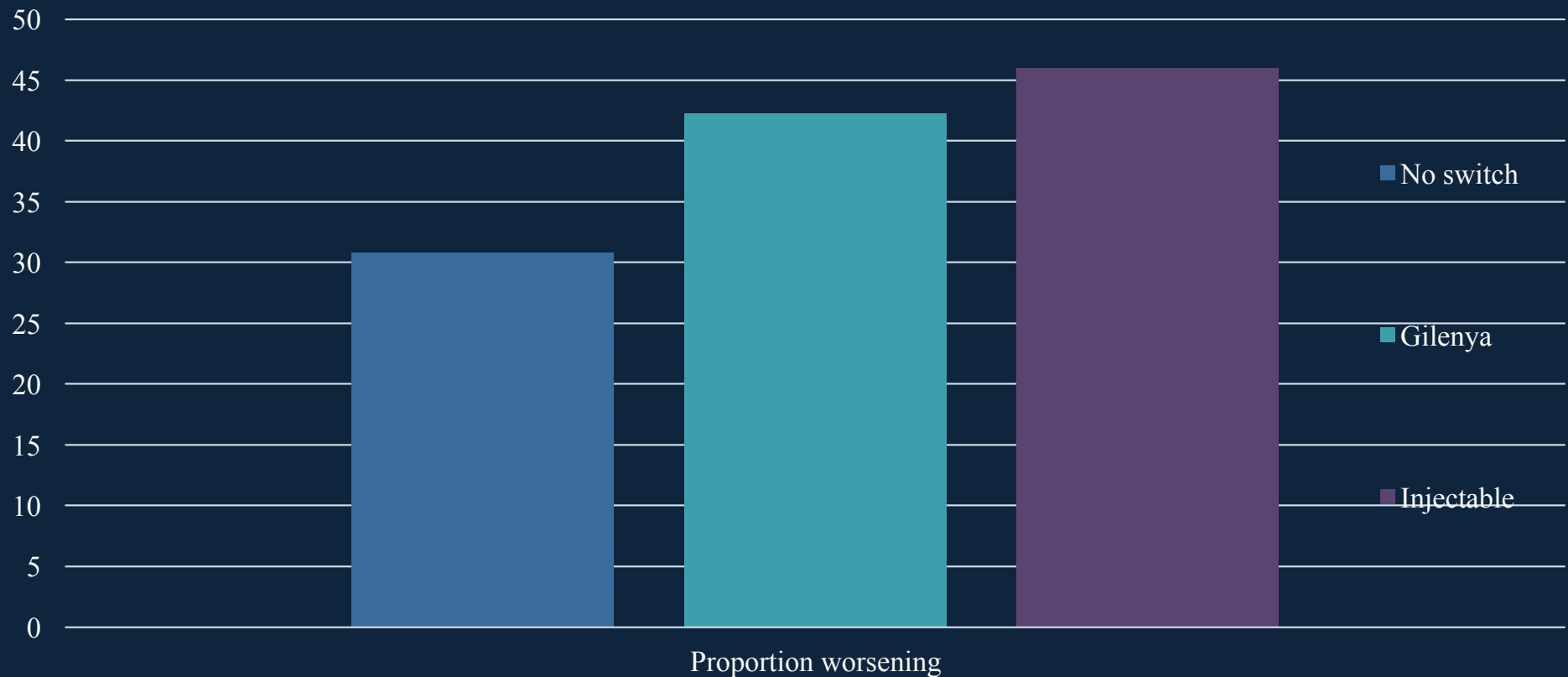
\$\$\$\$ \$\$\$\$ High cost per patient \$\$\$\$
Internal validity
Valuable to regulators 
Key advantages are the randomized and controlled design and the use of gold-standard comparisons
Key limitations are the restricted patient population resulting in limited generalizability of the data, high cost and short timeframe

Real-world evidence studies

\$\$ Low cost per patient (due to large number of patients)
Relevant to clinical practice
Valuable to payers 
Key advantages are the broad patient population producing more generalizable data and collection of a wide variety of real-world outcomes
Key limitations are the non-randomized design leading to bias

Ziemssen T. The importance of collecting structured clinical information on multiple sclerosis.
BMC Med 2016.

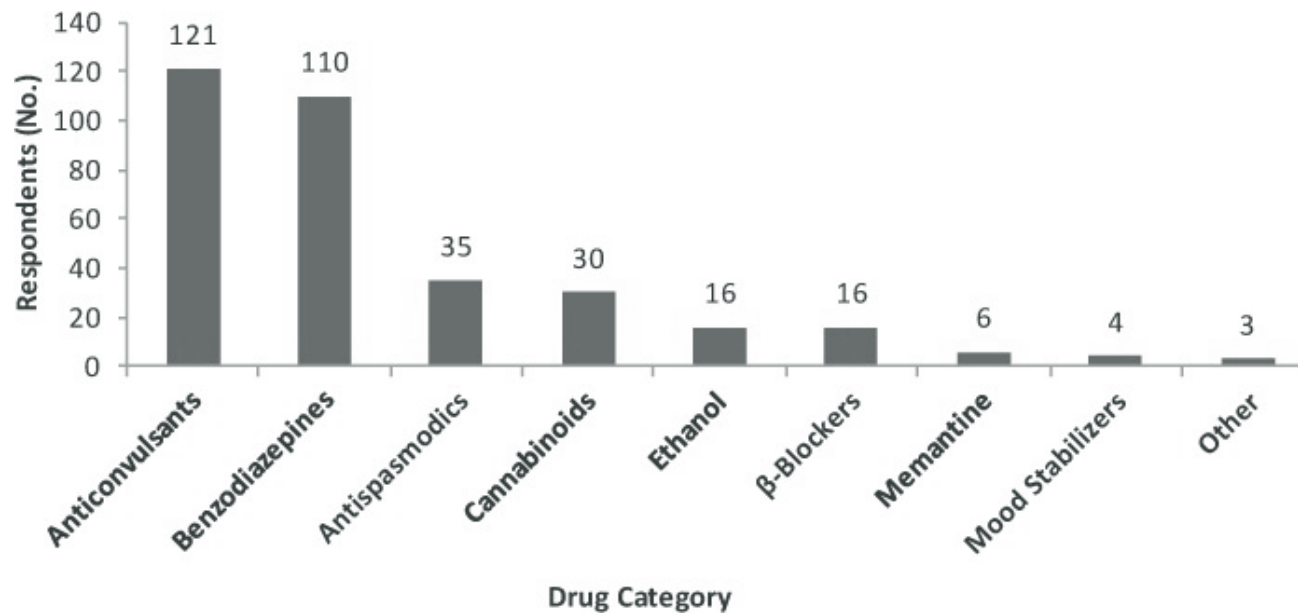
Disability Progression in Patients Switching from Tysabri to Gilenya or Injectable Therapy



<https://multiplesclerosis.net/news/disability-progression-patients-switching-tysabri-gilenya-injectable-therapies>.

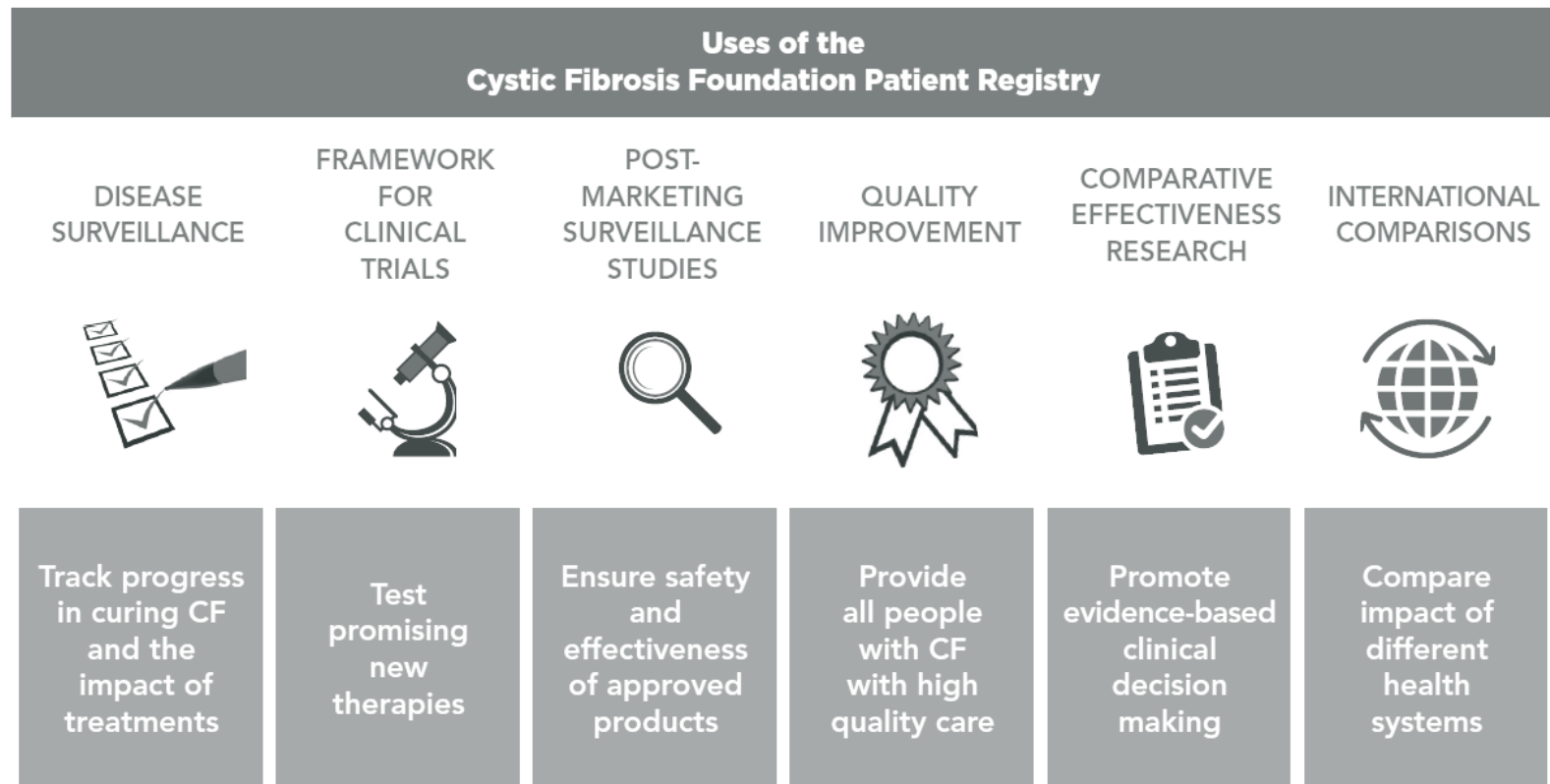
What medication works best for MS-associated tremor?

Number of people reporting benefit from medication class on tremor



Meador W. Symptomatic management of multiple sclerosis-associated tremor among participants in the NARCOMS Registry.
Int J MS Care 2016.

Registry success story 2: Cystic fibrosis



<https://www.cff.org/Our-Research/CF-Patient-Registry/Highlights-of-the-2014-Patient-Registry-Data/>. Accessed 6/3/16.

The Cystic Fibrosis Foundation registry has enabled countless studies of CF

41 registry based studies published from 2012-early 2015

Cystic Fibrosis Lung Disease in Patient Registries 3

TABLE 1— Studies Included in the Review

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

Salvatore D. An overview of international literature from CF registries. *Pediatr Pulmonol* 2016.

TABLE 1—Studies Included in the Review

Year	Registry	Main results	Patients	First author	Ref.
2013	CFF	Risk of exacerbation and recommended care	36,000	Sawicki G.S.	34
2014	CFF	Higher rate of PEx is associated with the female gender in post-puberty age.	5,137	Sutton S.	38
2014	CFF	Persistent wheezing in early life is associated with lower lung function in later childhood.	1,302	Ren C.L.	21
2013	CFF	Probability of treatment of PEx with IV antibiotics is lower when lung function at baseline is higher.	10,888	Morgan W.J.	25
Comparison Between Registries					
2012	CFF, AUS	Comparison of US and Australian registries	14,214	Martin B.	52
2015	CFF, UK	Comparison of US and UK registries	32,768	Goss C.H.	53
Socio-Economic Status and Quality of Life					
2012	CFF	Lower socioeconomic status is associated with lower likelihood of access to lung transplantation	2,167	Quon B.S.	55

Salvatore D. An overview of international literature from CF registries. *Pediatr Pulmonol* 2016.

The CF Foundation registry enabled NINETEEN published studies in three years

Cystic Fibrosis Lung Disease in Patient Registries 3

TABLE 1— Studies Included in the Review

Year	Registry	Main results	Patients	First author	Ref.
2013	CFF	Inhaled tobramycin in patients with chronic PA infection reduces FEV1 decline.	13,686	VanDyke R.D.	62
2014	CFF	Women have worse survival, higher rate of PEx, and earlier acquisition of respiratory pathogens, compared with males.	32,766	Harness-Brumley C.L.	39
Microbiology					
2014	CFF	Non-tuberculous mycobacteria prevalence is highly variable in different states in US.	18,003	Adjemian J.	40
2013	CFF	Non-tuberculous mycobacteria is rarer in patients treated with macrolide.	27,112	Binder A.M.	41
2012	CFF	Risk factors for initial PA acquisition are severe genotype, PI, colonization by other germs, and worse growth and lung function.	3,601	Rosenfeld M.	44
2013	CFF	PA acquisition and seasonality are associated in the temperate and continental climate zones but not in dry climate zone.	4,123	Psoter K.J.	45
2014	CFF	PA acquisition is associated with a geographical risk.	3,608	Psoter K.J.	46
2015	CFF	PA acquisition is associated with pollution.	3,575	Psoter K.J.	47

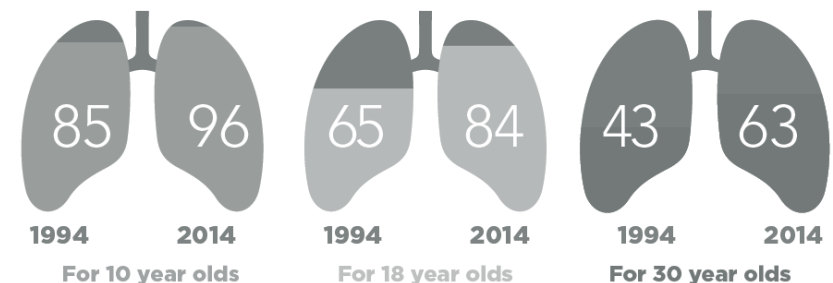
Salvatore D. An overview of international literature from CF registries. *Pediatr Pulmonol* 2016.

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

Salvatore D, et al, An overview of international literature from CF registries, *Pediatr Pulmonol*, 2016; <https://www.cff.org/Our-Research/CF-Patient-Registry/Highlights-of-the-2014-Patient-Registry-Data/>

Median FEV₁ Percent Predicted in 1994 and 2014



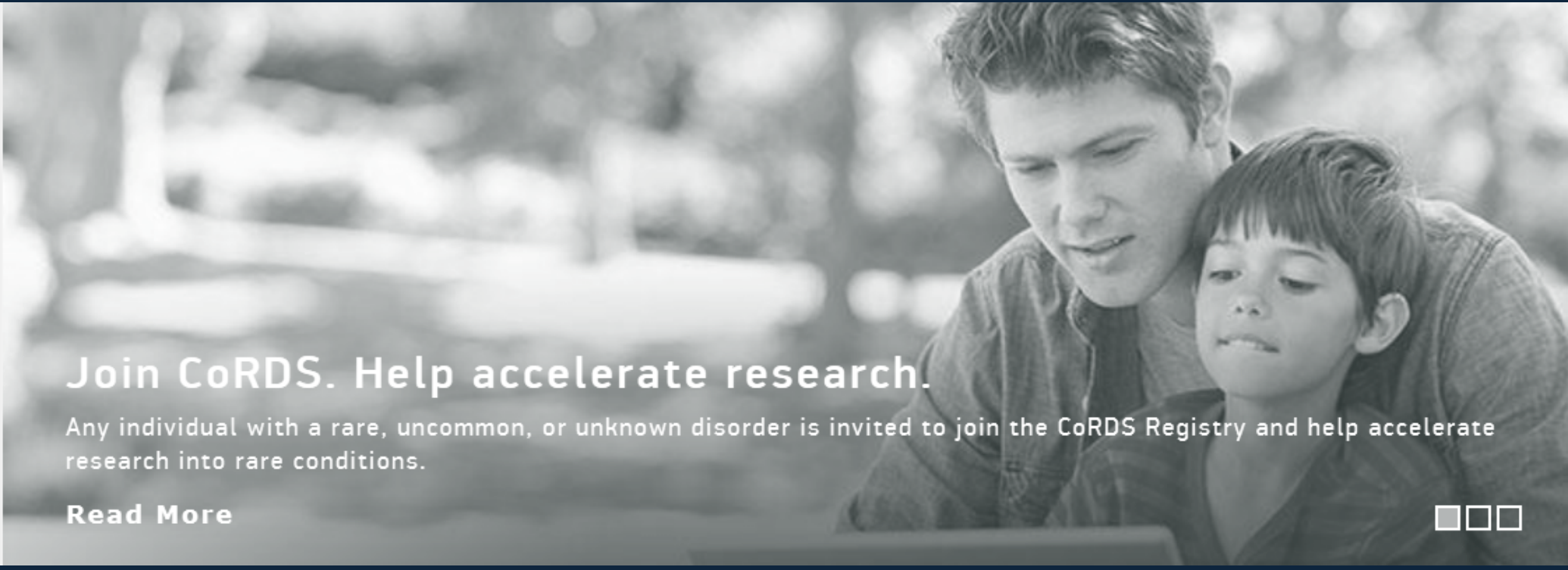
What does all this have to do with hypersomnia and what is CoRDS?



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](#)



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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!!

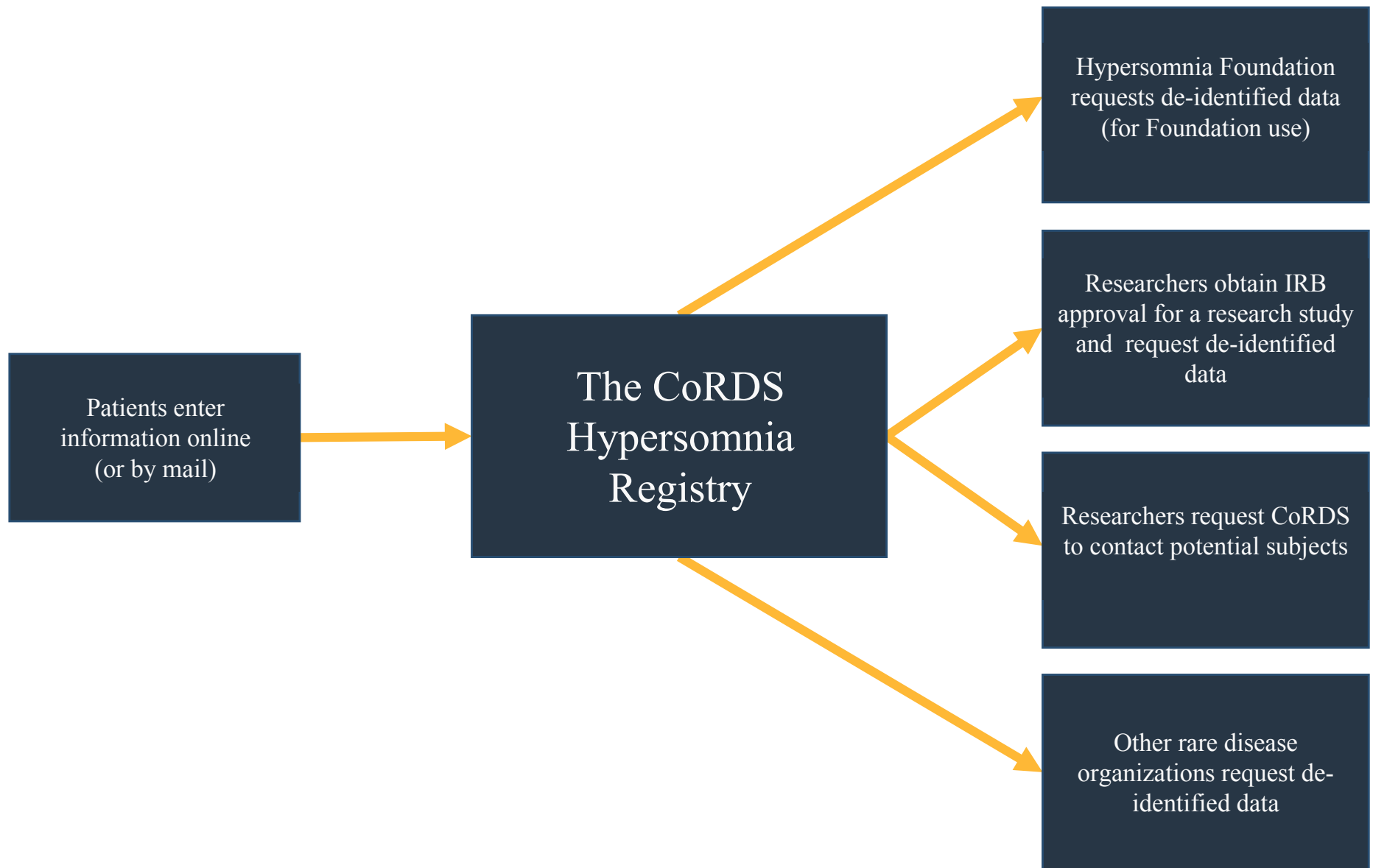


Who has my information and is it secure?

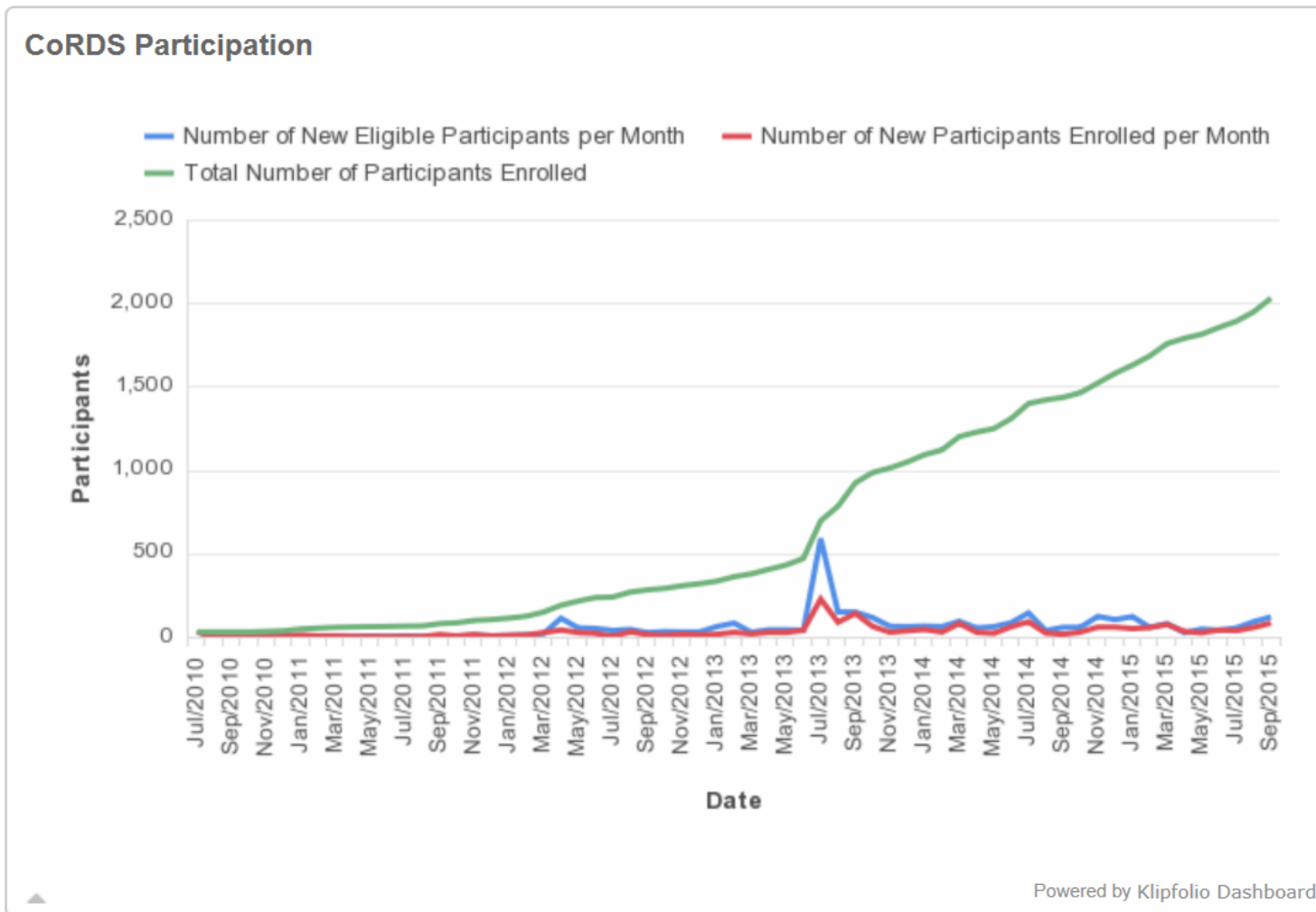
Info	Who Has Access
Name, identifiers, contact information	CoRDS personnel
De-identified information, if you agree	IRB-approved researchers Hypersomnia Foundation Other disease registries

- 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.

<http://www.sanfordresearch.org/cords/>. Accessed 6/3/16



How big is CoRDS (so far)?



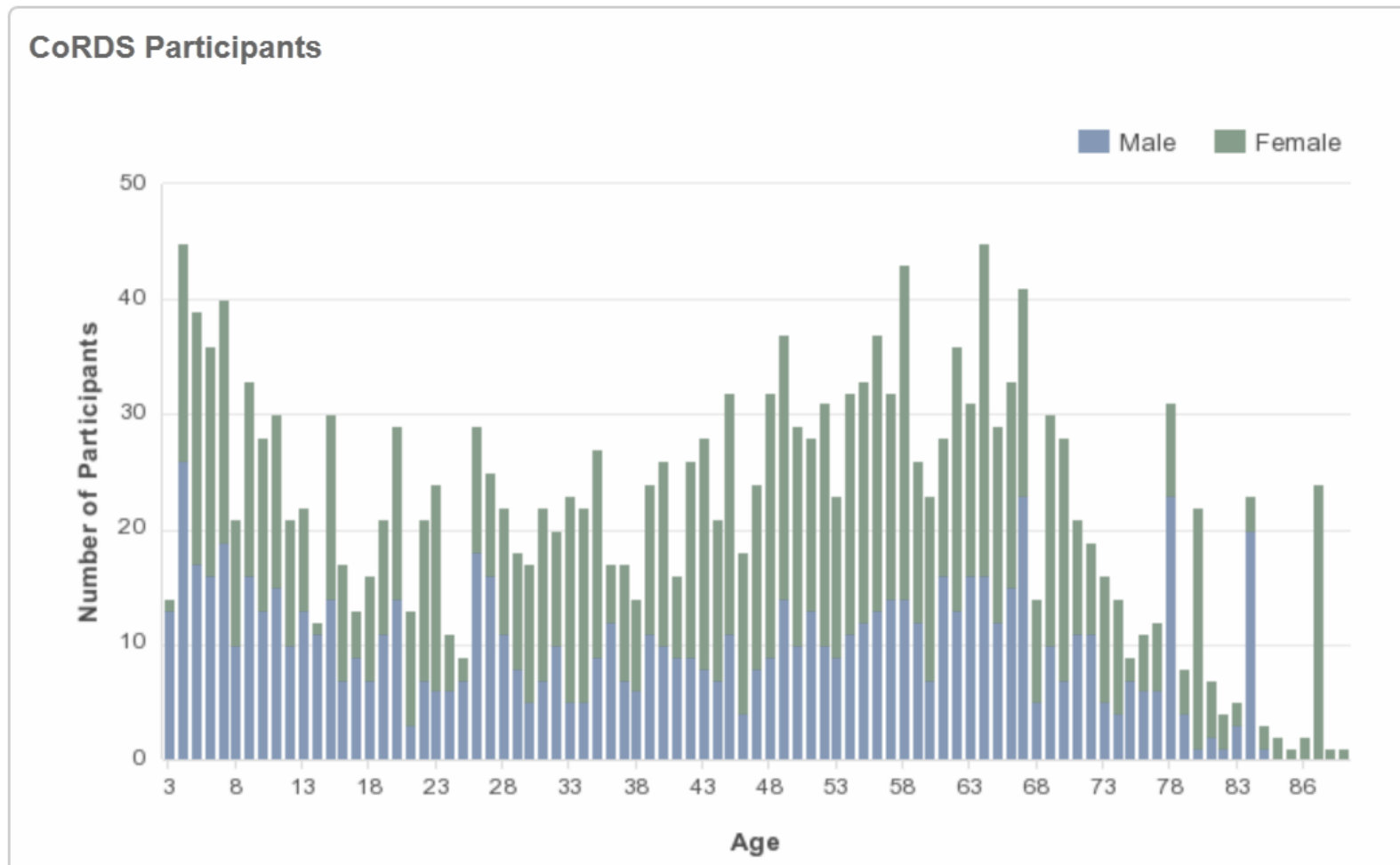
<http://www.sanfordresearch.org/cords/aboutcords/cordsmetrics/>. Accessed 5/6/16

Coordination of Rare Diseases at Sanford Enrollment

Diagnosis*	Number
All	2381
Idiopathic hypersomnia	23
Idiopathic hypersomnia with long sleep time	7
Idiopathic hypersomnia without long sleep time	1
Narcolepsy	6

*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

A world map illustrating the geographical distribution of CoRDS participants. The United States and Canada are highlighted in dark blue, indicating a higher concentration of participants. Other countries with participants are shown in light blue, including Mexico, Brazil, Argentina, Chile, Colombia, Peru, Ecuador, Venezuela, Cuba, Haiti, Dominican Republic, Puerto Rico, Mexico, Central American countries (Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama), Caribbean islands (Cuba, Haiti, Dominican Republic, Puerto Rico, Mexico, Central American countries), European countries (United Kingdom, Ireland, France, Germany, Italy, Spain, Portugal, Greece, Turkey, Russia, Poland, Czech Republic, Slovakia, Hungary, Austria, Switzerland, Netherlands, Belgium, Luxembourg, Denmark, Sweden, Norway, Finland, Iceland, Latvia, Lithuania, Estonia, Latvia, Lithuania, Estonia), Middle Eastern countries (Israel, Jordan, Iraq, Iran, Saudi Arabia, Kuwait, Oman, United Arab Emirates, Qatar, Bahrain, Brunei, Malaysia, Singapore, Indonesia, Philippines, Thailand, Vietnam, Laos, Cambodia, Myanmar, Bangladesh, India, Pakistan, Afghanistan, Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Taiwan, South Korea, Japan, North Korea, Vietnam, Laos, Cambodia, Myanmar, Bangladesh, India, Pakistan, Afghanistan, Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Taiwan, South Korea, Japan, North Korea), and Australia. Countries not participating are shown in grey, including Russia, China, India, Pakistan, Afghanistan, Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Mongolia, North Korea, South Korea, Japan, Taiwan, China, Mongolia, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Afghanistan, Pakistan, India, Bangladesh, Myanmar, Laos, Cambodia, Vietnam, Thailand, Malaysia, Singapore, Indonesia, Philippines, Brunei, Oman, United Arab Emirates, Qatar, Bahrain, Kuwait, Iraq, Iran, Saudi Arabia, Jordan, Israel, Turkey, Greece, Italy, Spain, Portugal, France, Germany, Poland, Czech Republic, Slovakia, Hungary, Austria, Switzerland, Netherlands, Belgium, Luxembourg, Denmark, Sweden, Norway, Finland, Iceland, Latvia, Lithuania, Estonia, Latvia, Lithuania, Estonia, Russia, and others.

<http://www.sanfordresearch.org/cords/aboutcords/cordsmetrics/>, accessed 5/6/1

How do I help?



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How do I enroll in CoRDS?

CoRDS Registry

Coordination of Rare Diseases
at Sanford



CoRDS Screening Form

▼ Introduction

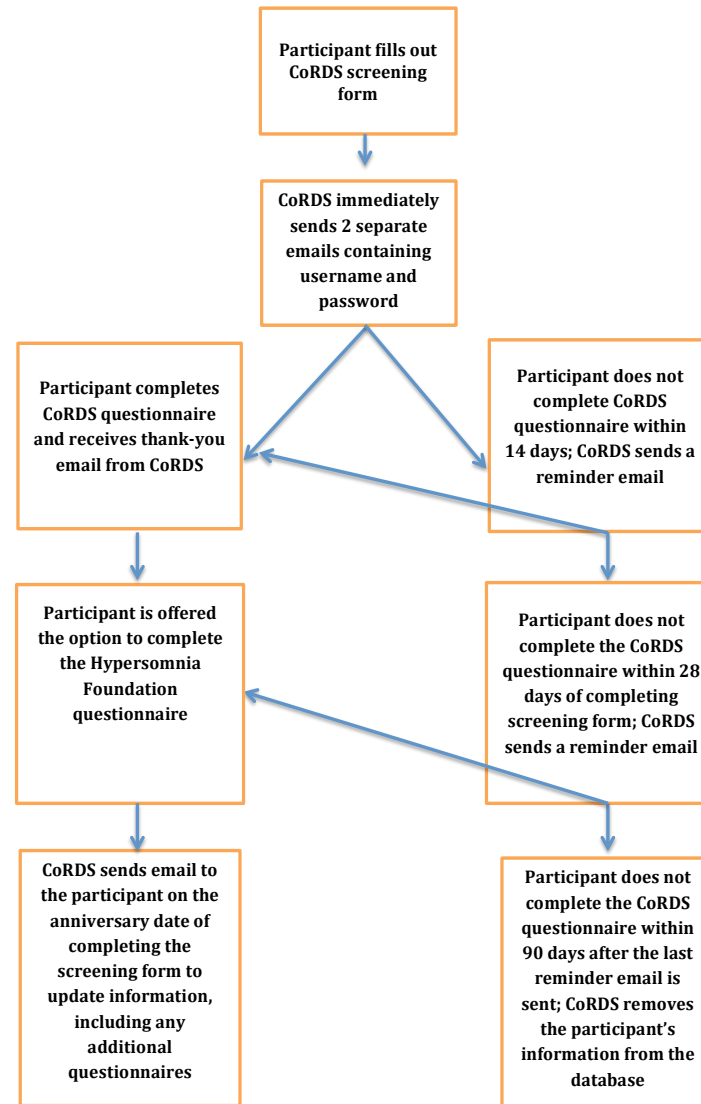
If you are interested in enrolling in the CoRDS Registry, please complete the brief screening form below and click submit. Please note CoRDS is a patient reported registry. If you are a Healthcare provider and wish to refer your patients, please refer them to this form.

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

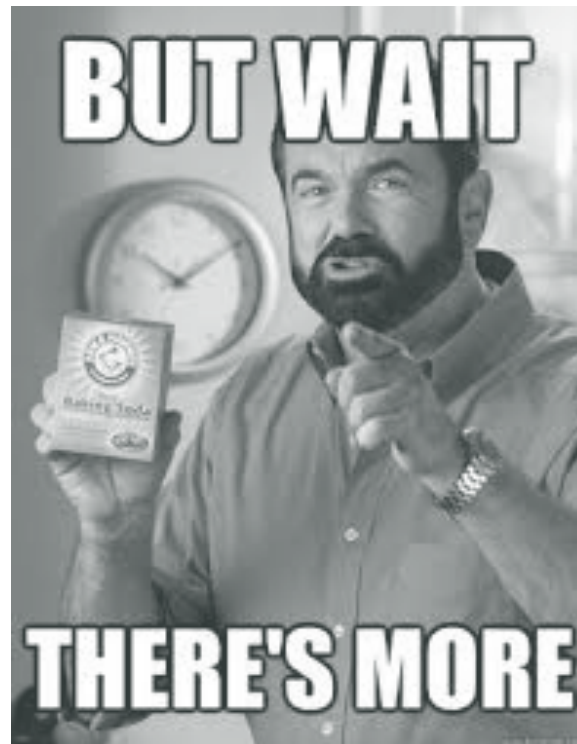
▼ Participant Type

☒ I am enrolling myself (You must be over the age of 18 to provide information for the registry)

CoRDS Enrollment process



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.

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Balance
Therapeutics



FLAMEL
technologies

