

2015 Annual ALS Surveillance Meeting Executive Summary

Due to the limited information on the unknown cause(s) of Amyotrophic Lateral Sclerosis (ALS), the Agency for Toxic Substances and Disease Registry (ATSDR) established the National ALS Registry in 2010. The primary purpose of the ALS Registry is to describe the incidence and prevalence of ALS, to describe the demographics of ALS patients, and to examine the risk factors for the disease. In 2014, the ALS Registry published their first report on the prevalence of ALS in the United States in CDC's *Morbidity and Mortality Weekly Report (MMWR)*. In addition, ATSDR has published/supported publication of over two dozen journal articles relating to a number of ALS topics including, but not limited to, incidence and prevalence findings in three states and eight metropolitan areas, demographics of those living with the disease, selected potential risk factors for ALS, and recruitment for ALS research through the National ALS Registry.

ATSDR organizes the Annual ALS Surveillance Meeting to update stakeholders on the progress of the National ALS Registry, the Registry data and its implication, and to discuss strategies to further enhance the Registry for all of the stakeholders. In 2016, the National ALS Biorepository will be initiated with the primary goal of providing the largest bank of ALS blood and tissue samples in the US.

[Overview of the National ALS Registry](#)

The US ALS Registry Act, passed in October 2008, directs CDC/ATSDR to establish and maintain the National ALS Registry. The purposes of the Registry, launched in October 2010, are to describe the incidence and prevalence of ALS, describe the demographics of ALS patients and examine the risk factors for the disease. The Registry ALS data is derived from national databases (e., Medicare, Medicaid, VA Health Administration, and the VA Benefits Administration) in addition to the information about persons with ALS retrieved from the web portal.

The web-based portal allows person with ALS to enroll in the Registry and answer questions regarding their disease and possible risk factors for the disease. During 2014, approximately 150 patients enrolled in the web portal per month. With the advent of the Ice Bucket Challenge, Registry enrollment spiked in August 2014. In addition to registering, ALS patients can also complete any or all of 17 risk factor surveys available on the Registry web site. With approximately 46,000 surveys complete, these surveys will help to answer questions about the potential risk factors for ALS. ATSDR is currently in the process of analyzing the risk factor data collected so far.

ATSDR has also implemented several initiatives to strengthen the Registry including:

- The State and Metropolitan-Based Surveillance Project
- The Research Notification System
- The Biorepository Pilot Study
- Outreach to PALS attending non-referral clinics, and
- ATSDR supported ALS research

These initiatives will help strengthen the work of the National ALS Registry by providing information about PALS, their health status and risk factors. ATSDR also works closely with its partners and collaborators, which provide invaluable insight into how the Registry can facilitate the efforts to defeat

ALS. Being the first and only population-based ALS Registry in the United States, the research being done provides data on incidence, prevalence, demographics, and risk factors for ALS and is serving as a recruitment tool for research.

[National ALS Biorepository Update](#)

The National ALS Biorepository Pilot Project began in 2013. The primary goals of the pilot study were to assess the feasibility of gathering biological specimens from a sample of participants enrolled in the National ALS Registry and to use the information from the study to determine whether a biorepository could be integrated into the National ALS Registry. The objectives of the pilot study were to:

- Maximize the scientific potential of the specimens,
- Maximize cost-efficiency,
- Make recommendations for long-term sustainability, and
- Recommend a process for providing access to the specimens to researchers.

An expert panel meeting was held in March 2012 meeting, to obtain input on the draft protocol for the project. This discussion yielded recommendations for the pilot project, which resulted in decision to collect specimens such as blood, urine and cerebrospinal fluid from 300 participants. Those enrollees of the National ALS Registry who agreed to be contacted about research projects would be primary participants for the biorepository. Primary recruitment began in April 2013 and a total of 330 participants were drawn for biological specimens. The national sampling methodology used included participation of PALS from all 50 states. Some recommendations from the pilot study include educating participants about the biorepository during the enrollment process in the Registry and collecting additional information such as phone number and mailing address.

[Research Notification Mechanism: Update and Future Challenges](#)

During enrollment in the National ALS Registry, PALS, have the option to consent to be notified about opportunities to participate in research studies. The Research Notification Mechanism connects researchers to PALS, facilitating their interactions and advancing the process of recruitment. The process involves researchers submitting research proposals to ATSDR, with prior approval from their institution's IRB, which are reviewed by ATSDR. If the research proposal is approved, eligible PALS are notified about the research project. Interested PALS can contact the researchers to be part of their research project. On average, over 95% of PALS who enroll in the web portal of the Registry elect to receive notifications. The Research Notification Mechanism has been extremely successful, with considerable increases in the number of notifications sent to PALS each year since its inception. Additionally, a large pharmaceutical company recently approached the Registry for clinical trial recruitment, which would provide benefits such as being an established ALS Registry with available national recruitment.

[Capture/Recapture: Methodology for Estimating True Prevalence of ALS in the United States](#)

The first report of the National ALS Registry was used to calculate the prevalence rate of 3.9 ALS cases per 100,000 people in the population. However, in an effort to better estimate the prevalence of ALS cases in the US, the capture/recapture method was introduced. The purpose of the capture/recapture method is to help estimate a corrected count of PALS in the US and to address the number of PALS who are missing from the capture approaches. The capture/recapture approach is not regularly used in

epidemiological research, but the concept aims to capture, mark and recapture the data. By using an algebraic formula, the capture-recapture methodology estimates the cases of ALS that are missed by the independent sources of data. Some additional goals of the capture-recapture method are to determine whether the degree of undercount differs based on age, sex, race or geographic distribution and whether additional case-finding methods are needed.

The capture-recapture method concludes that those under the age of 65 are undercounted in ALS cases, while approximately 23% of both male and female cases are missing from each data source. Additionally, capture-recapture established that when only federal databases are used, 22% to 23% of ALS cases are missed. However, the undercounting does not differ based on gender, but differs according to age, where the younger population will be missed if only federal databases are used. Thus, the Web portal of the National ALS Registry is crucial to include cases of ALS amongst the younger population. The next step is implementing the capture-recapture method with the 2010-2011 data to better understand possible missing cases and provide prevalence rates that best match the ALS population in the US.

[Registry Promotion and Outreach](#)

[ATSDR](#)

ATSDR presented the marketing strategies being used to increase awareness of the National ALS Registry to gather data and encourage PALS to participate in the Registry. The marketing strategy includes traditional and online, digital media, with digital media being the primary focus. While working with partners, ATSDR focuses the marketing initiatives toward PALS, family members and caregivers, health care providers, researchers, and ALS support organizations and entities. Advertisements and articles about the National ALS Registry are posted on media such as MDA's *Quest* Magazine, along with CDC's website and blogs on ATSDR's website. During ALS Awareness Month in 2015, a feature article was posted on CDC's website, which describes the Registry and encourages PALS to enroll in the Registry and take the risk factors surveys. Another key marketing strategy focuses on using social media, with ATSDR having approximately 13,400 followers and CDC's Facebook page having 472,000 followers. With these marketing initiatives, the views of the Registry have been steadily increasing annually since 2011.

[Brunet-Garcia](#)

One of the recent partnerships of ATSDR has been with Brunet-Garcia, an agency focusing on 100% social impact. The agency was contracted to increase awareness and engagement with the National ALS Registry through developing a communication outreach plan. The primary objectives of the plan include raising awareness of the National ALS Registry with PALS, targeting and informing PALS about the latest updates from the National ALS Registry and increasing completion of the risk factor surveys among self-registered PALS.

The outreach plan identifies communication goals including:

- Developing champions of the ALS Registry to carry the message of the Registry through word of mouth,
- Using technology to engage stakeholders,
- Creating and distributing digital and print content, and
- Increase the online visibility of the ALS Registry.

[Les Turner ALS Foundation](#)

The Les Turner ALS Foundation was founded in 1977, when the family and friends of Les Turner, an ALS patient, aimed to provide resources for ALS research and share the findings of this research. With the first ALS Research Laboratory opened in 1977, the foundation currently has three dedicated ALS research laboratories. In addition to the laboratories, Les Turner supports other patient service programs such as in-home consulting, support groups, and community educational programs to over 90% of the ALS population in the Chicago region.

The Les Turner ALS Foundation described how in addition to being a champion of community outreach, their efforts also focus on promoting the National ALS Registry. Les Turner promotes the Registry through a dedicated Registry page on their website, monthly features on the foundation homepage, social media announcements and inclusion of links in e-newsletters. Additionally, because PALS may have challenges with enrolling in the Registry, Les Turner hired a summer associate to promote the Registry. By visiting the patients in their homes, this helps to overcome access and mobility challenges and motivates patients and their caregivers to dedicate time to joining the Registry and completing the risk factor surveys, which provides valuable information to the National ALS Registry.

[The Muscular Dystrophy Association](#)

For the past 50 years, the Muscular Dystrophy Association (MDA) has been working to save and improve the lives of people fighting muscle disease through research and treatments. MDA includes over 40 diseases, including ALS, the Muscular Dystrophies and Spinal Muscular Atrophy (SMA). In the past five years, MDA has contributed \$46 million for ALS research through grants and awards. MDA also promotes the National ALS Registry through MDA clinics and MDA/ALS centers, legislation and healthcare policy, support groups and educational seminars, home visits, fundraising events, and outreach and emotional support.

Additionally, out of the 180 MDA nationwide clinics, 44 are ALS Centers which provide support to PALS and promote the National ALS Registry. In addition, MDA has created the MDA National ALS Registry toolkit, which is distributed throughout all MDA clinics and provides educational materials about ALS and the importance of the registries. MDA also collaborates with the ALS Association to educate the community on the importance of participating in the Registry and the advantages to those who participate.

[The ALS Association](#)

With 39 chapters across the United States, the Amyotrophic Lateral Sclerosis (ALS) Association organizes listening tours twice each year. One of these tours focuses just on the National ALS Registry and enrollment. The ALS Association discussed an important issue of PALS not being connected to the internet and how this issue impacts Registry enrollment and communication. The ALS Association also mentioned the top performing states and described the outreach practices used by these chapters to reach the high rates of enrollment. Some key factors mentioned were volunteers being part of the outreach, neurologists being advocates, direct outreach by PALS, and even promotion of the Registry through Minor League Baseball teams, which particularly target rural areas and smaller cities. The challenges for

underperforming states include difficulty in identifying ALS cases, enrollment issues and lack of access to the Internet.

Furthermore, with the establishment of the Continuous Improvement Program, the chapters can improve their programs over time by using a Chapter Scorecard to communicate information. A section of this program focuses on the Registry. The ALS Association's new partnership with MDA will include outreach efforts which focus on the National ALS Registry. Through the new Public Policy Association Program, there will be increased "boots on the ground" to enroll more PALS in the Registry and expand their services. Increased use of infographics will provide a better way of telling the National ALS Registry story, including enhancements such as the Research Notification System, updates on Registry-funded research, and other information from the Registry.

[Promotion of the National ALS Registry in Non-Referral Centers](#)

In conducting the ALS Surveillance Projects it was discovered that most neurologists were not practicing in ALS referral centers. In addition, the race, gender, and age at diagnosis were slightly different for case reports from non-referral centers. These demographics indicate an enrollment gap in the National ALS Registry. Therefore, there is a need to reach out to non-referral centers to encourage enrollment. An education outreach program was created using a four-group approach. The initial component of the program was phone outreach to neurologists (in Groups 1 and 2) to identify neurologists who care for PALS. The calls would also confirm contact information, size and providers of the practice. Following the phone calls, neurologists in Group 3 would receive mailings, circulated ATSDR materials and information on the National ALS Registry. Follow-up calls would be made one week and three months after the mailings to determine use of the materials.

The second component of the program would include train-the-trainer presentations. Additionally, neurologists from Group 1 would be trained to help their patients and conduct qualitative interviews to assess their knowledge, beliefs and attitudes about the Registry. The program will be evaluated based on the frequency of communication, Registry self-enrollment and common themes through the qualitative interviews. The data will be analyzed and a manuscript will be prepared in 2016.

[Georgia Registry Enrollment Pilot Project](#)

The Georgia Registry Enrollment Pilot Project was established to improve target outreach activities for the National ALS Registry. The primary goals of the Georgia Pilot Project are to: 1) Identify an area smaller than a state that is reproducible in other states and meets the restrictions imposed by OMB; 2) Provide qualitative assessment of Registry enrollment; and 3) Test the methods using Georgia data. Some limitations of this program include cities not directly coding to a county or the time periods of the available data do not match. The results of the Pilot Project indicate that the highest enrollment in the Registry is in Health District 3, metropolitan Atlanta. Additionally, the lowest rates of enrollment were in Health District 1, 6, 7 and 9. Because Georgia is a state with enrollment in the Registry below the national average of expected enrollment, this Georgia Pilot Project will be used as a test case to utilize more targeted information from ATSDR regarding under-enrolled regions in Georgia and to develop best practices for improvement.

One approach includes targeting ALS Clinics to distribute information on the National ALS Registry, by distributing flyers and having tablets available to enroll patients. An additional approach includes establishing support groups to increase buy-in from ALS patients and increase individual follow-up. By

focusing on existing patients in under-enrolled areas that were identified by ATSDR, the Georgia ALS Association chapter enrolled 20 patients in the first quarter of 2015 and was removed from the under-enrolled states. However, due to staff turnover at the Georgia ALS Association chapter, there was a decline in patient enrollment and Georgia was back in the under-enrolled category, indicating the importance of reminders and follow-up. The Georgia Pilot Project provides several takeaway lessons, which are included in the final report. The outreach approach used in Georgia can be adjusted and used in other states to increase individualized follow-up and enrollment in the Registry.

[ATSDR Funded Studies](#)

Research is a critical component in learning more about the etiology of ALS and its risk factors. ATSDR provides funding to support ALS research studies to help the ALS community learn more about the disease and to also help prioritize new risk factor modules for the Registry. ATSDR has funded 10 ALS studies. The ATSDR-funded studies listed below are in progress and were presented by their principle investigators during the 2015 Annual ALS Surveillance Meeting. More detailed information about each study can be found on the National ALS Registry website.

A Prospective Study of Biomarkers and Risk Factors for ALS Incidence and Progression

Identification and Validation of ALS Environmental Risk Factors

Cognition, Behavior, and Caregiver Burden in Amyotrophic Lateral Sclerosis

Ecologic Study to Evaluate Spatial Relationships between ALS & Potential Environmental Risk Factors

A Prospective Comprehensive Epidemiologic Study in a Large Cohort in the National ALS Registry: Identifying ALS Risk Factors

[End of the Day Questions](#)

During this session, the floor was open for meeting attendees to ask questions and to provide expert advice and guidance to Registry staff pertaining to challenges encountered by the Registry, strategies and recommendations to maintain and further enhance the Registry.