Registries……

Simon Jones
Willink Unit, genetic medicine
Manchester, UK

What are they?

Security?

- Is important
- Access to information
  - Where is information held?
  - Who controls information?
  - Who can get it?

Not clinical trials....

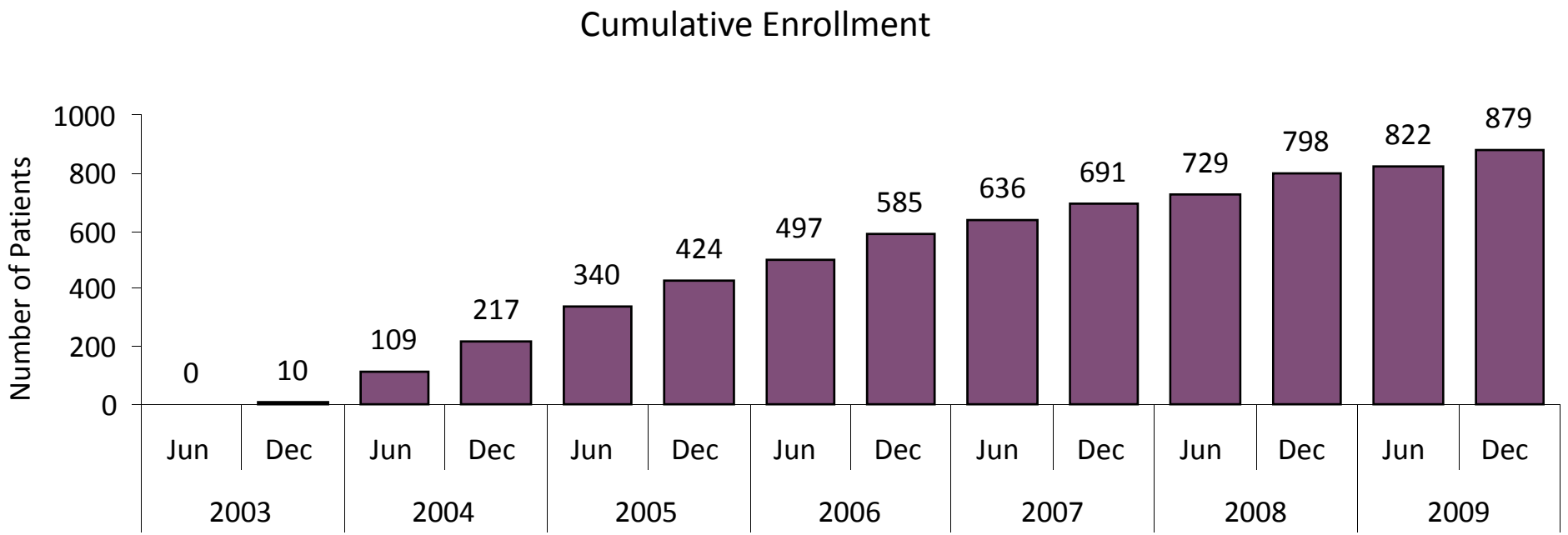
- ‘real world’ data
- Larger and longer
- More data, but not as ‘pure’
- Not as monitored as trials
- Not setting out questions beforehand....

  But seeking the right questions after you have collected the answers

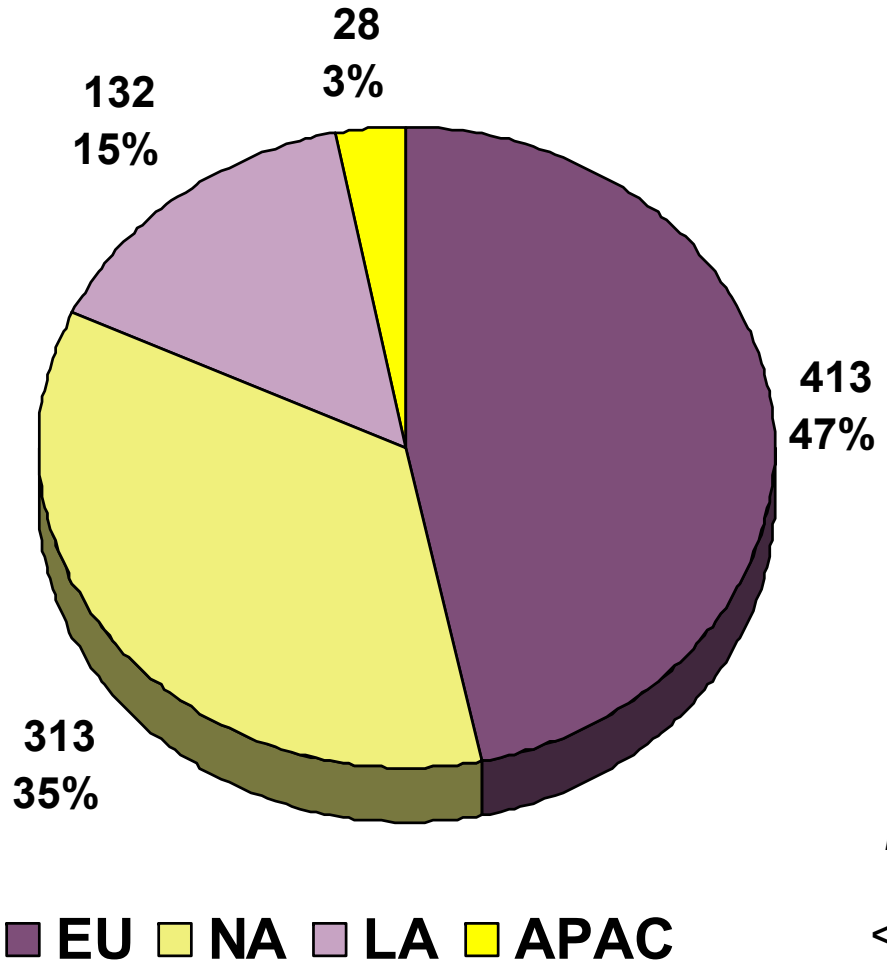
Status of MPS I Registry

Data as of February 2010

Enrollment in the MPS I Registry



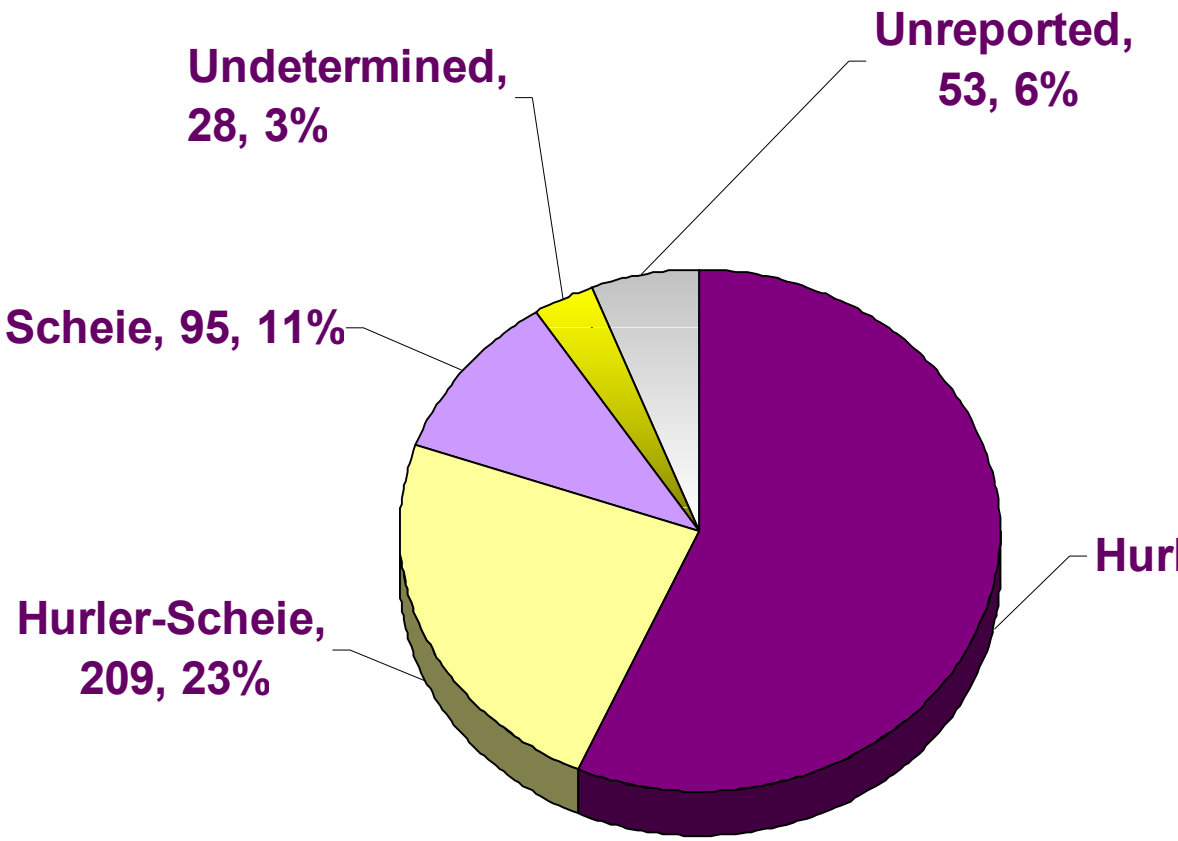
Patient Enrollment:
N=888 patients from 33 countries



Males:	439	49%
Females:	449	51%
< 5 years:	101	11%

Overall MPS I Phenotype Distribution

Data as of February 2010



MPS I Registry Publications

- *The MPS I registry: Design, methodology, and early findings of a global disease registry for monitoring patients with Mucopolysaccharidosis Type I*

  G.M. Pastores et al. / Molecular Genetics and Metabolism 91 (2007) 37-47

- *Characterization of Surgical Procedures in Patients with Mucopolysaccharidosis Type 1: Findings from the MPS I Registry*

  P. Arn, J. E Wraith, L. Underhill. The Journal of Pediatrics (2009)

- *Childhood onset of Scheie syndrome, the attenuated form of Mucopolysaccharidosis I*

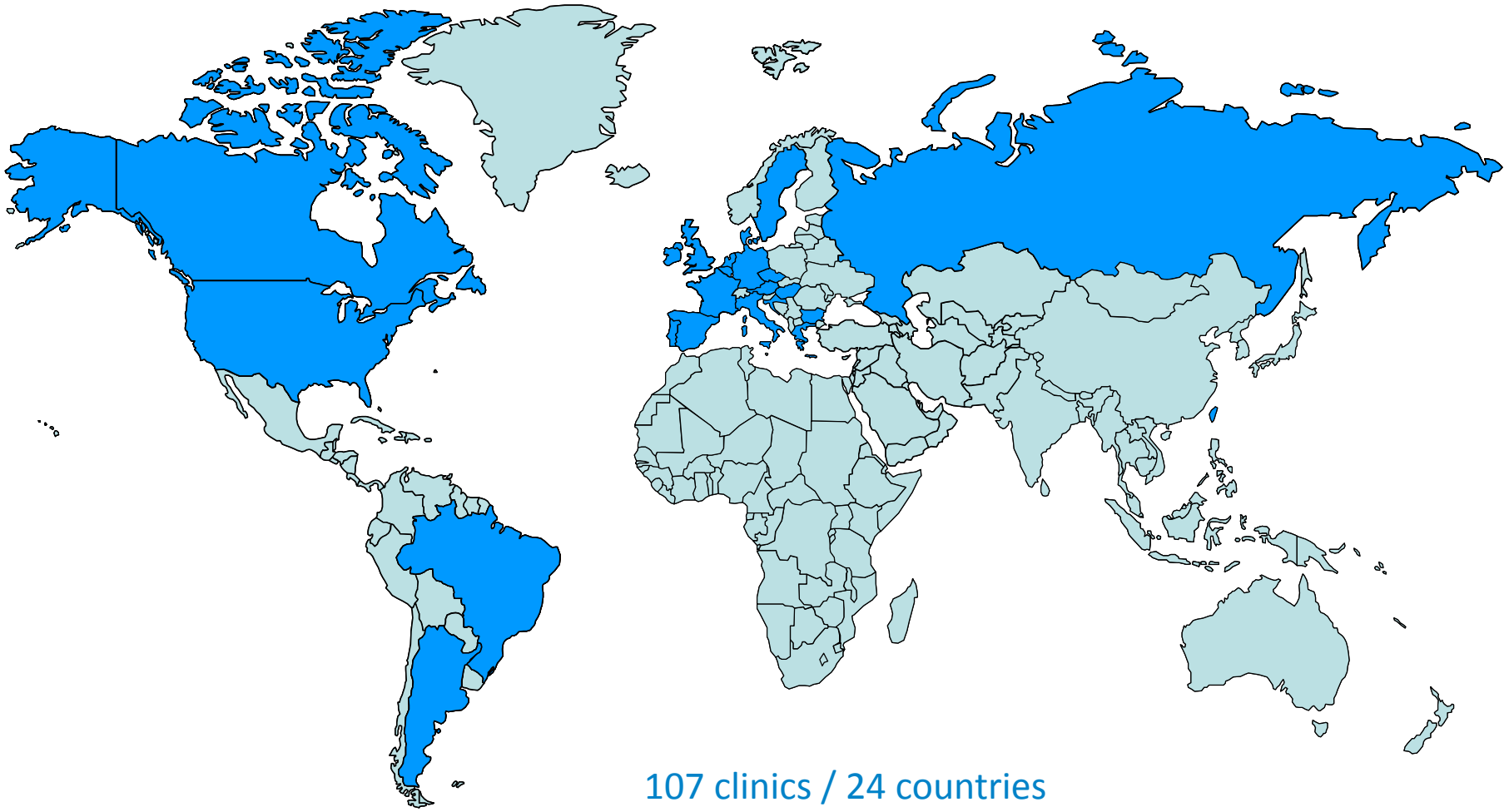
  J. Thomas, M. Beck, J. Clarke, G. Cox. Journal of Inherited Metabolic *Disease* (accepted)

Current manuscripts in development

- Post-surgical deaths among MPS I patients
  - P. Arn, H.W. Webb, G. Cox
  - Objective: Determine postoperative mortality rates among patients enrolled in the Registry with reported surgical procedures
- Genotype-phenotype correlations
  - G. Cox, J.E. Wraith, C. Whitley, F. Wijburg, N. Guffon, J. Muenzer, G. Pastores
  - Objective: Characterize genotype-phenotype correlations
- Cause-of-death analyses
  - C. Whitley, G. Cox, J.E. Wraith, P. Fernhoff, others TBD
  - Objective: Identify causes of death and assess if there are differences between phenotypes and treatment groups
- Cardiac
  - G. Cox, R. Parini, E. Braunlin, J.E. Wraith, S. Jones, Y. Chyung, others TBD
  - Objective: Characterize cardiac manifestations, including prevalence and chronology
- Phenotype distribution among patients in Latin America
  - M.V. Muñoz-Rojas, L. Bay, L. Sanchez, M.A. van Kuijck, S. Ospina, J.F. Cabello, A.M. Martins
  - Objective: Describe phenotype distribution and treatment options in patients with MPS I in Brazil, Latin America, and rest of world
- Neurology
  - M. Scarpa, A. Lund, others TBD
  - Objective: Describe neurological signs and symptoms and chronology of onset across the phenotypes; discuss neurological management guidelines regarding diagnostic procedures and therapeutic interventions

Status of MPS II Registry – the Hunter Outcome survey (HOS)

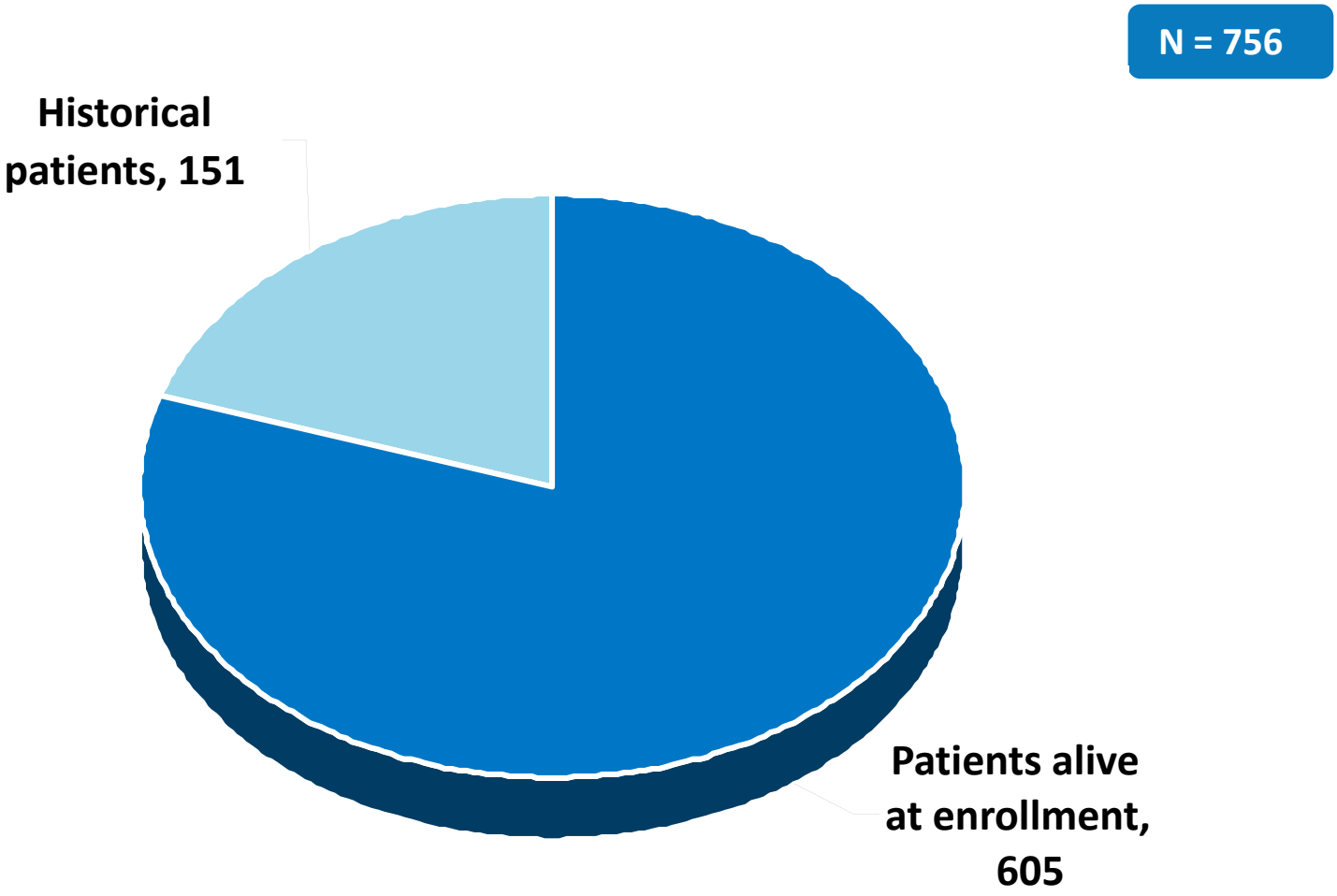
756 Patients Globally



107 clinics / 24 countries

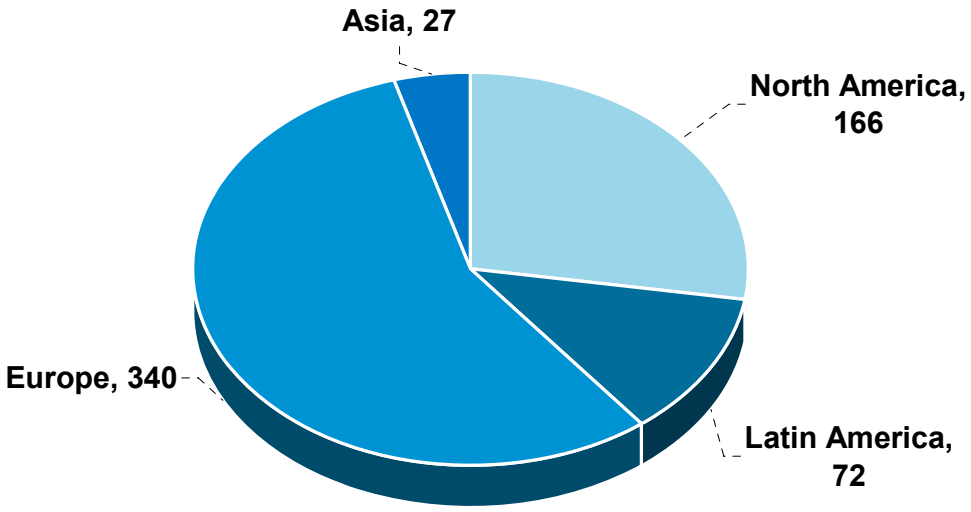
HOS Data as of January 22nd 2010

Breakdown of HOS
Prospective/Historical Patients

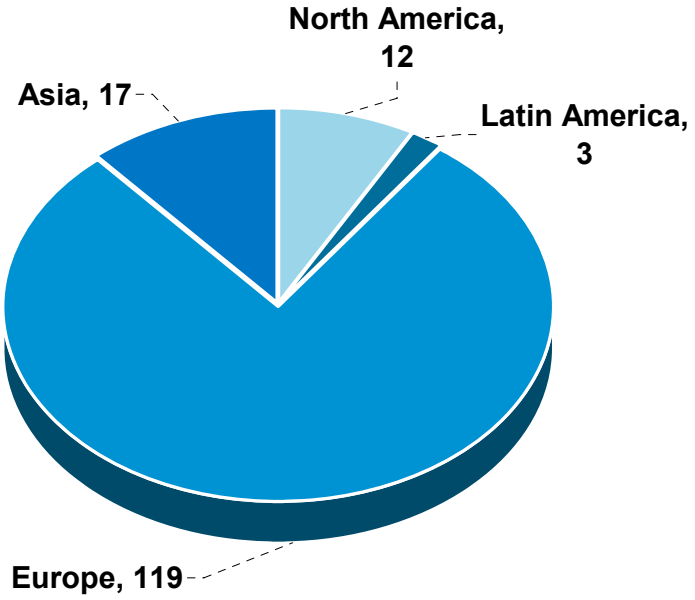


Regional Breakdown of HOS
Prospective vs Historical

Prospective Patients, N = 605

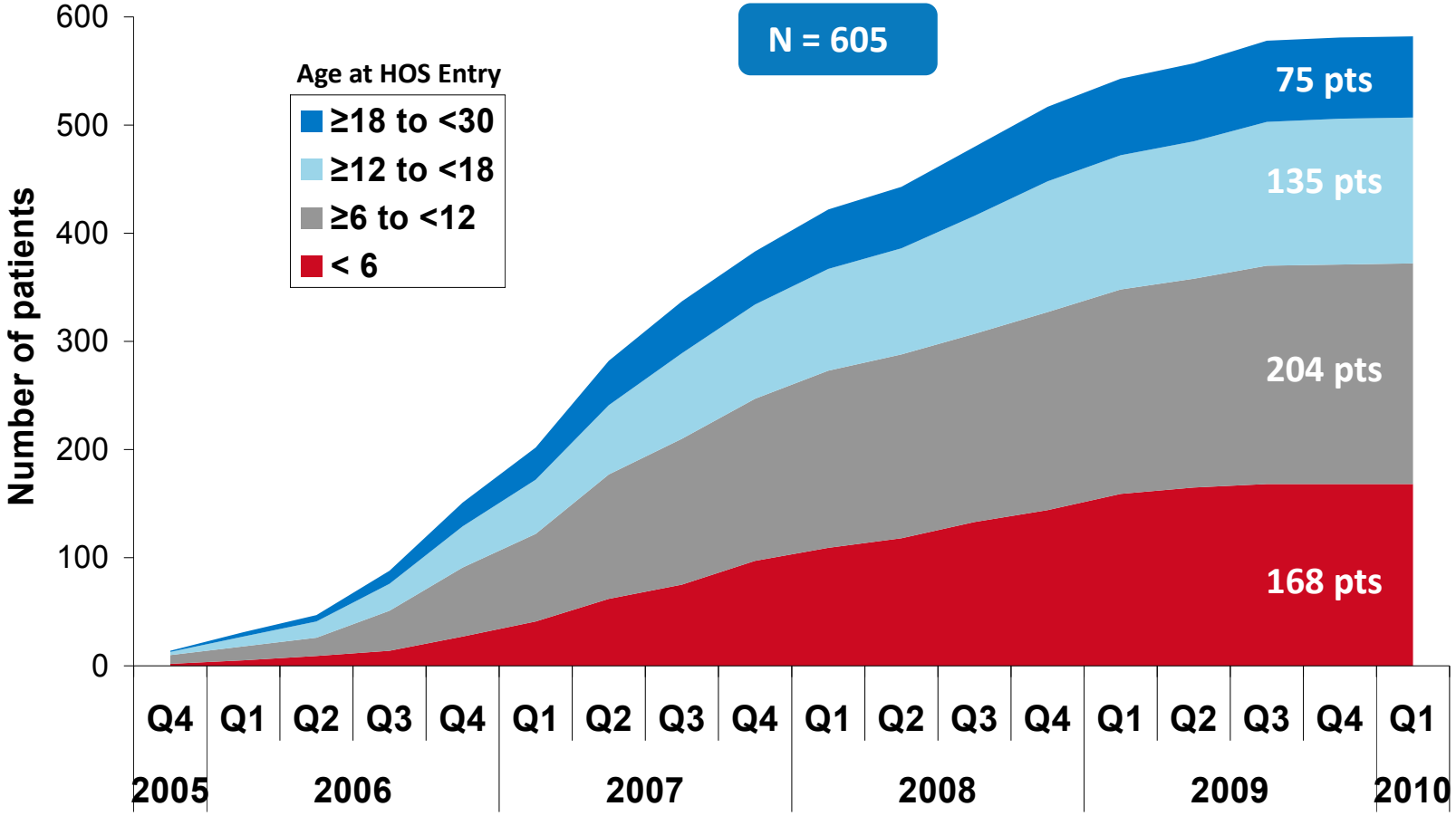


Historical Patients, N = 151



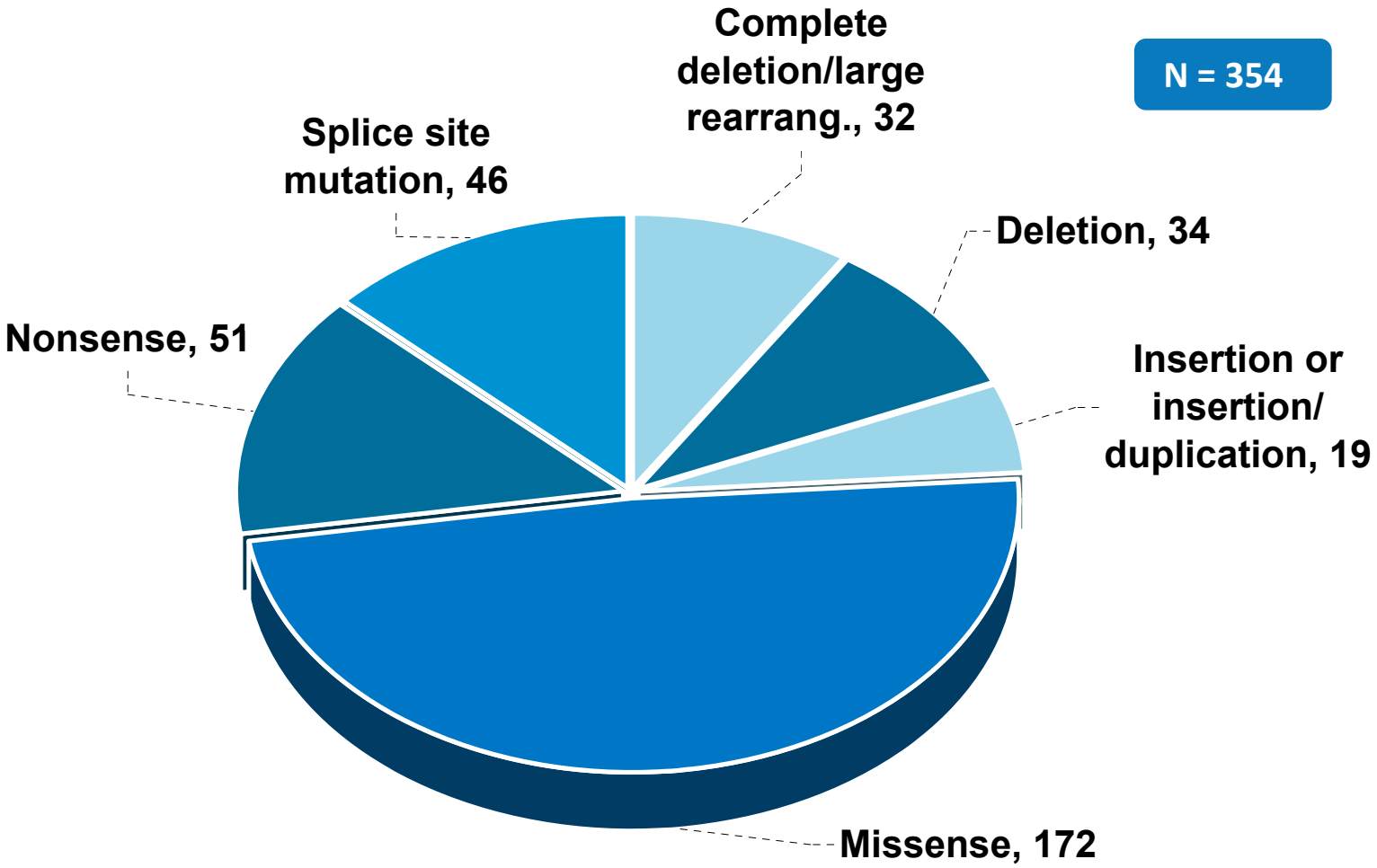
HOS Data as of January 22nd 2010

Enrollment over Time
Prospective Patients



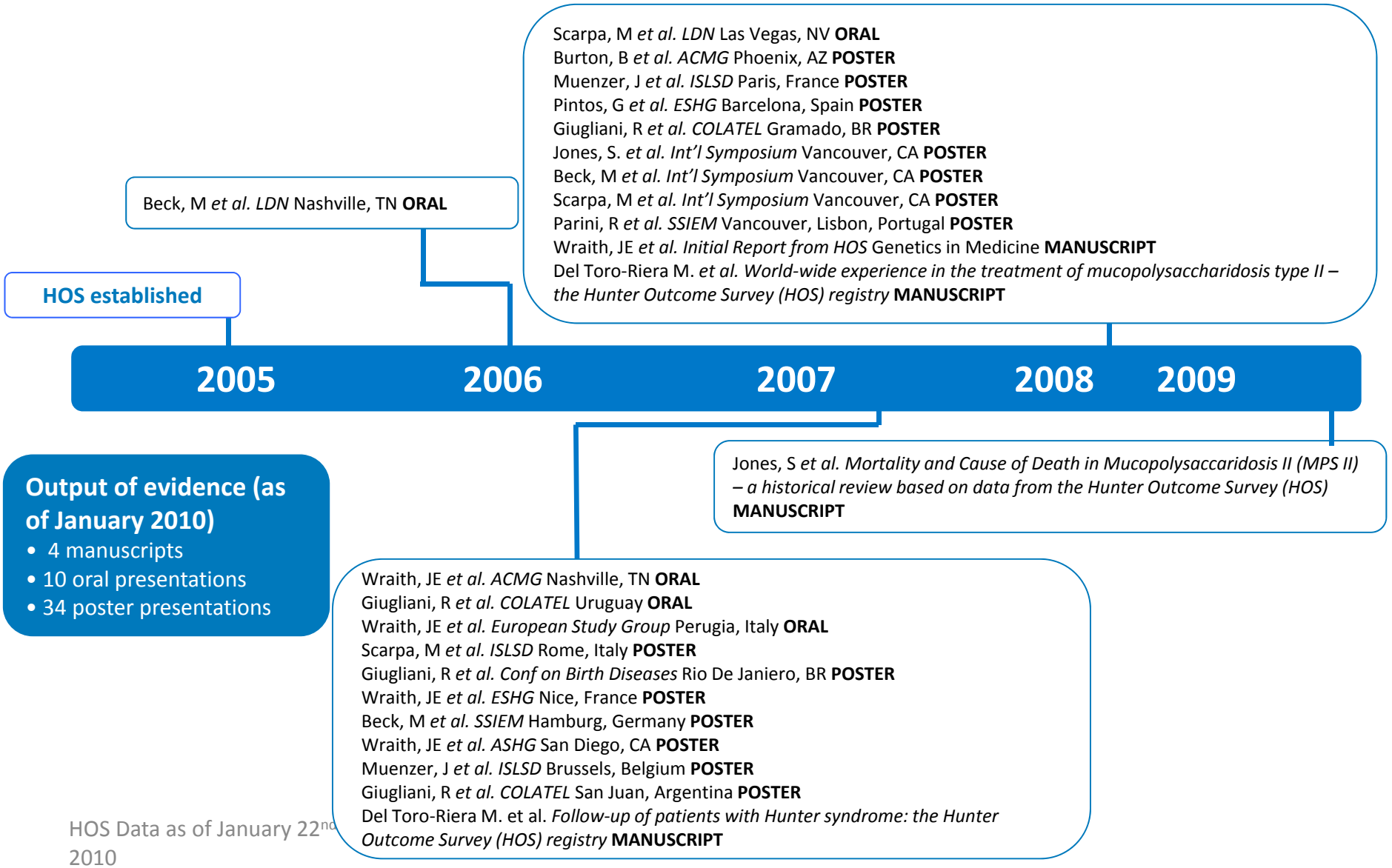
HOS Data as of January 22nd 2010

Mutation Classification
Prospective Patients



HOS Data as of January 22nd 2010

HOS Publications/Presentations



HOS Data as of January 22nd 2010

HOS Published Manuscripts

Follow-up of patients with Hunter syndrome: the Hunter Outcome Survey (HOS) registry M del Toro-Riera on behalf of the HOS Investigators	Revista de Neurologia (Article in Spanish) 2007; 44 Suppl 1: S13-7
Initial Report From the Hunter Outcome Survey (HOS) JE Wraith, M Beck, R Giugliani, J Clarke, R Martin and J Muenzer on behalf of the HOS Investigators	Genetics in Medicine Genetics in Medicine 2008; 10:508-16
World-wide experience in treatment of Mucopoly-saccaridosis II: The Hunter Outcome Survey (HOS) M del Toro-Riera on behalf of the HOS Investigators	Revista de Neurologica (Article in Spanish) 2008; 47 Suppl 2: S3-7
Mortality and Cause of Death in Mucopolysaccaridosis II (MPS II) – a historical review based on data from the Hunter Outcome Survey (HOS) SA Jones, Z Almassy, M Beck, K Burt, JT Clarke, R Giugliani, C Hendriksz, T Kroepfl, L Lavery, S-P Lin, G Malm, U Ramaswami, R Tincheva, JE Wraith on behalf of the HOS Investigators	Journal of Inherited Metabolic Diseases 2009; 32:534-543

HOS Abstracts at Int MPS Symposium

11th International MPS Symposium **3 Poster presentations**	June 23-27 Adelaide, Australia	Surgical Interventions performed before 3 Years of Age in Patients with Mucopolysaccaridosis Type II in the Hunter Outcome Survey S Jones, O Bodamer, B Burton, R Giugliani, P Harmatz, C Lampe, G Malm, R Parini, R Steiner, N Mendelsohn on behalf of the HOS Investigators Hunter Outcome Survey (HOS): Characterization of Hunter Syndrome Patients from Taiwan S-P Lin The Hunter Outcome Survey; Advancing the understanding of Mucopolysaccaridosis Type II M Beck, R Giugliani, A Tylki-Szymańska, Y Suzuki and J Muenzeer on behalf of the HOS Investigators

Ongoing Manuscripts 2010

Infusions at home: data from HOS – the Hunter Outcome Survey – on patients receiving therapy with idursulfase B.K Burton, N. Guffon, J. Roberts, A. van der Ploeg and S. A. Jones on behalf of the HOS Investigators	Accepted for publication in Molecular Genetics and Metabolism (June 15 2010)

The Maroteaux Lamy Syndrome (MPS VI) Clinical Surveillance Programme (CSP)

Update

Site Status & Enrollment

As of May 31, 2010	US	EU	Worldwide Totals
Enrolled Active Sites	21	18	39
Total Patients Enrolled	51	87	138
Patients Currently Active	43	86	129

Participating Countries:
United States, Germany, Italy, England, France, Ireland, Belgium, Austria, Holland, Greece, Portugal, and Lithuania

*Brazil pending regulatory approval of the protocol

Planning for CSP Publications

- CSP Publication Advisory Board implemented to support the CSP BioMarin study team with advice on publications
  - Includes investigators from EU, US and Brazil that are participating in CSP
  - Meets periodically to review aggregate data
  - Provide feedback on proposed publication plans for CSP
  - Identify new publication opportunities based on review of data

CSP Publications

- Completed
  - First aggregate data presented from the CSP
    - Podium presentation at ACMG 2009 – San Diego, CA
    - Podium presentation ICIEM 2009 – Honolulu, HI
- Planned
  - Preliminary analysis of cervical cord compression in mucopolysaccharidosis VI patients aged <6 years old before an after enzyme replacement therapy with Naglazyme® (galsulfase)
    - Podium presentation at 11th Intl Symposium on MPS and Related Diseases on Saturday, June 26th
- Board meets this fall to discuss future publication opportunities

Summary

- Registries are here to stay
- They may be very helpful to us all
- They will continue to evolve