Almost 1 year ago, a BBC film about a teenager called Louisa Ball briefly captured the imagination of the British public. Called The Real Sleeping Beauty, the film told the story of Louisa and her family as they dealt with the consequences of Louisa’s Kleine-Levin syndrome: a vanishingly rare neurological disorder that causes prolonged episodes of sleep, lasting, in most cases, between 1 and 3 weeks.

By focusing on the effect that the disorder had on one family, the film makers were able to capture the sense of frustration and isolation caused by a disease about which so little is known that it is impossible to estimate just how rare it is, and, for a short time at least, raise its profile. But equally, the understandable temptation to focus on the extraordinary stories of individual patients with specific rare diseases can obscure a wider truth: that although individuals with any particular rare neurological diseases are—to state the obvious—rare, patients with rare neurological diseases are in fact numerous if they are taken together. And there can be strength in numbers.

The European Union defines a rare disease as one that affects no more than five people in 10,000, although most rare diseases have a prevalence closer to the one in 10,000 mark. However, put all of the estimated 5000–8000 distinct rare diseases together, and between 6% and 8% of the population will experience a rare disease during their lifetime. “If you look in terms of the impact on the public health of Europe, it’s big”, says Paola Testori Coggi, Director General of Health and Consumer Policy at the European Commission. Somewhere between 27 million and 36 million people are affected by rare diseases in the European Union alone...neurological diseases account for a substantial proportion of the total.”

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Tsveta Schyns is a member of the European Network on Rare Paediatric Neurological Diseases (nEUroped), a consortium that focuses on alternating hemiplegia of childhood, narcolepsy in children, and rare surgically treatable epileptic syndromes. Although all three disorders place different burdens on patients and families, they also share a lot of common ground, Schyns explains. Like in many rare diseases, their onset begins in early childhood but their effects are chronic and last throughout life. And, as with all rare diseases, patients suffer because of the scarcity of expertise on their disorder. Diagnosis can be delayed by decades in many cases, with the negative effects of frequent misdiagnoses exacerbated by a paucity of knowledge and expertise about the natural history of the disease when a correct diagnosis is eventually made.

It is a situation that Schyns and her colleagues are working hard to address and, with the aid of funding as part of the European Union Public Health Program framework, they have made some concrete inroads. Building upon work done by the European Network for Research on Alternating Hemiplegia (ENRAH), of which Schyns is also a member, since 2008 nEUroped have worked closely with Rare Disease Europe (EURORDIS) to identify patient networks, set up patient registries, and collaborate with the few clinicians who have expertise in rare paediatric neurological disease to draft guidelines. As well as “giving a sense of community” to patients and their families through the platform of networks, says Schyns, the development of patient registries provides researchers with a crucial approach for developing therapies in the future.

nEUroped is one of a cluster of similar organisations in Europe that have benefited from European Commission Health Programme funding since the Commission adopted a Communication on rare diseases in 2008, with a subsequent Recommendation of action on rare diseases in 2009. Care-NMD, which works towards the dissemination and implementation of standards of care for Duchenne muscular dystrophy (DMD) in Europe, scored a breakthrough in the past year when guidelines directed at diagnosis and management were agreed and...
reported. Kathrin Gramsch, of the University of Freiburg in Germany, says that efforts will now focus more on finding out “what the hurdles are for not using the guidelines”, and working with clinicians to overcome them. By giving patients a stronger voice, Care-NMD has been able to raise awareness about issues that would otherwise have been ignored. For example, says Gramsch, “the transition from paediatric care to adult care is really difficult. We try to raise awareness to get more interdisciplinary teams to work in the adult phase too”. And, she says, “we want to try to lobby; in Poland, for instance, physiotherapy is not even paid for by insurance”.

Improving access to the few treatments that are available for rare neurological diseases is a key goal for patient groups, but squeezing more money out of contracting health-care budgets can be an uphill struggle. Although the health ministers of all 27 European Union member states signed up to the 2009 Recommendation on a European action in the area of rare diseases, there is no legal obligation for the recommendations to be adopted, explains Stefan Schreck, of the European Executive Agency for Health and Consumers (EAHC). “Member states are free to choose whether they want to follow it or not.”

As part of the Recommendation, member states signed up to adopting national plans or strategies for rare diseases before the end of 2013, and pledged their support for several specific European objectives for tackling rare diseases (panel). One of the most important objectives, in view of the Directive on Cross Border Healthcare on patients’ rights when travelling to other European countries, adopted in March this year, will be the establishment of a comprehensive system of European reference networks. “The idea is to have, in each member state, some of these reference centres which know how to identify a disease, how to treat a disease, and how the patient can be followed”, says Testori Coggi.

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“Building on the experience gathered under the pilot networks funded in recent years” will be crucial to achieving this goal, she affirms. Equally crucial will be the European policy on orphan drugs for rare diseases. Introduced in 1999, the policy on orphan drugs is governed by the European Commission and the European Medicines Agency, and sets the criteria for orphan designation in the European Union. “If a drug company develops a drug for a rare disease it will have a much more favourable environment because it will have market exclusivity for a number of years”, explains Testori Coggi. So far there have been 1342 applications for orphan drug designation, with 61 receiving market authorisation and a further 895 candidates for which there are ongoing clinical trials. Kate Bushby, who is the acting research chair for neuromuscular genetics at Newcastle University in the UK, says the legislation is “doing as well as it can do to give incentives to companies. But in the end they have to be good drugs”. There are limits to where the incentives can take research, she explains, and it is important to guard against the “repositioning of drugs by companies to take advantage of the legislation to price the drug at a very high level”.

For Bushby, building on the patient and clinical networks and increasing the coverage of patient registries will be essential to improve the “trial readiness” of patients with rare diseases, and spur increased interest from drug companies in researching new therapies. Sustaining the progress made so far with the help of European Union funding will be the next big challenge, and Bushby argues that “future emphasis should be put on sharing resources and expertise”, and developing economies of scale to avoid the duplication of effort in the many projects that run in parallel. And it is clear that the European Commission has no intention of letting the past decades’ hard-fought progress slide. “The fact that the number of patients affected by each rare disease is limited, plus the fragmentation of knowledge across the European Union, makes rare diseases a model example of where working at European level is both necessary and beneficial”, says Testori Coggi.

David Holmes