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ESA LeadCare® System Used to Identify Salvadoran Children with Lead Poisoning

Study Results by Children's Health International Medicine Project of Seattle (CHIMPS) Presented at Academic Pediatric Association Conference in Los Angeles

CHELMSFORD, Massachusetts (April 22, 2008) – El Salvador, like many emerging markets, must contend with lead toxicity from industrial sources as an issue of major public concern. This past fall, the El Salvadoran government threatened to shut down a large car-battery factory (“La Record”), which was known to be creating lead contamination in the surrounding community through improper waste-disposal practices. To help assess the problem of lead poisoning among Salvadoran children, ESA Biosciences, a Magellan Biosciences company and leader in dedicated systems to test for lead poisoning in children, donated LeadCare system test kits to the University of Washington for use in its Children's Health International Medicine Project of Seattle (CHIMPS). Last September, a CHIMPS team spent five days in Regala de Dios, a small, urban community of 240 families within the city of Soyapango, El Salvador – a 25 minute car ride from the capital city of San Salvador – testing children for lead poisoning and anemia, and providing educational outreach to families. CHIMPS presented project results at the Academic Pediatric Association Conference held last month in Los Angeles.

According to Dr. Erica Freeman, a pediatric resident at the University of Washington and one of the project leaders, “The CHIMPS team tested 55 children, ages one to five years, for blood-lead levels, hemoglobin, and ZPPH (a sensitive diagnostic indicator for iron deficiency anemia). In most cases, we were able to perform all three tests using capillary blood samples drawn from a single lancet puncture. Six children, or 11 percent of those tested, had elevated lead levels greater than 10 µg/dl (ranging from 10.5 to 20.2 µg/dl). Boys were 2.3 times more likely than girls to have elevated lead levels, and the most significantly elevated lead levels were in children whose households included adults with occupational lead exposure. LeadCare's immediate results became an integral part of our education process: for families of children with elevated lead levels, we provided additional counseling around decreasing environmental lead exposure, and in one case, we also made a home visit.”

The CHIMPS team worked closely with a local non-governmental organization and the community leadership council, which was key to the project's success, helping increase the group's sensitivity to local needs. Most important, the community leaders helped the team carry out health education and mobilize the community. More than 100 community members attended the health education events held in the community center at the end of the week of testing. ESA has donated additional LeadCare reagent kits for use at the Benjamin Bloom Children's Hospital in San Salvador, one of only two tertiary care centers for children in Central America.

Dr. Freeman continued, “A team member returned to Regala de Dios in January to perform follow-up testing on the children identified with elevated blood-lead levels the previous September. All of their levels had dropped to less than 10 µg/dl, below the toxic threshold according to World Health Organization guidelines. Although the sample size was small, we believe that these results demonstrate that screening and education may be an effective way to reduce the prevalence of lead toxicity in communities with a high risk of lead poisoning.”

Why regular blood-lead screening tests are important for young children

Elevated lead levels are connected to a host of learning and social problems – from reading difficulties and ADHD to increased risk of violence and drop-outs. Recent studies even suggest that some of the mental decline associated with aging – for example, losses in verbal and visual memory and language ability – may relate to lead exposure earlier in life. Early identification of elevated blood-lead levels is key to mitigating lead's potentially devastating effects. Regular blood-lead screening tests for children under

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age six, when children are most at risk for lead poisoning, are vital to ensure their health and safety. At that age, they are more likely than older children to be exposed to lead through hand-to-mouth activity, and it is also a critical time in brain development – when lead can do significant damage. Recent reports have highlighted the prevalence of lead-tainted toys, trinkets, and other products. However, most children are still exposed to lead from older housing stock with deteriorating lead paint, contaminated soil, and old lead pipes. Children can also be exposed to lead through their parents' hands and clothing. Construction workers and others who work with lead, police, military, and firing-range personnel are often exposed to high lead levels, putting their young children at risk.

The LeadCare II system makes lead testing easy, delivering quantitative blood-lead results with only two drops of blood in just three minutes. Far simpler to administer than traditional blood-lead tests, the device can be used with capillary or venous sample, can be combined with other routine waived blood tests, and saves administrative time spent on paper work, tracking, and follow-up. Most important, it improves health outcomes – children with elevated blood-lead levels can receive immediate intervention, rather than waiting days or weeks for results. In the US, LeadCare tests are reimbursable (CPT code 83655) and cost-effective – allowing health systems to focus resources on those truly at risk. Parents concerned that their children may have been exposed to lead should ask their pediatrician for this simple test. The system is also being used successfully in industrial-hygiene programs, to test adults who might be exposed to lead as part of their work.

For more information, visit www.waivedleadcare.com, call 1 (800) 305-0197, or e-mail LeadCareinfo@esainc.com. For important toy recall information and links to lead-poisoning resources, visit www.esainc.com/leadcare1/.

About ESA

ESA Biosciences, Inc. enables answers to pressing applications challenges by applying its expertise in specialty detection and electrochemistry, combined with components, kits, and reagents, for analytical laboratories, commercial diagnostics laboratories, and the clinical point-of-care setting. ESA is a wholly owned subsidiary of Magellan Biosciences, Inc.

About Magellan Biosciences

Magellan serves the worldwide clinical-diagnostics market with rapid point-of-care analyzers and automated systems for hospital-based labs and near-patient testing. Scientists use the company's discovery systems and sensors for cutting-edge research to develop a new understanding of health and illness – from disease pathology to biomarker identification. Magellan designs all its systems, sensors, and consumables to deliver better, more-reliable results. And better results help drive improved health outcomes: earlier, more-accurate diagnoses; breakthroughs that can lead to novel treatments, new cures – innovations to enhance life. A privately held company, Magellan serves customers through wholly owned subsidiaries: ESA Biosciences, Dynex Technologies, and TREK Diagnostic Systems. For more information, visit www.magellanbio.com.