Statement Submitted for Oral Presentation by:

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Consumer Public Safety Commission
Public Hearing on Notice of Proposed Rulemaking
October 22, 2013
Safety Standards for High-Powered Magnet Sets

Thank you for the opportunity to speak here today. My name is Dr. Bryan Rudolph. I am an Assistant Professor of Pediatrics at the Children's Hospital at Montefiore, Albert Einstein College of Medicine. I am a pediatric gastroenterologist and member of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN). The focus of my comments is on the demographics of magnet ingestions.

I'd like to start by echoing the statements of my colleagues and by offering my own strong support for the Commission's proposed safety standard for high-powered magnet sets. I firmly believe that these products are fundamentally unsafe and pose an unnecessary risk to children.

For the past several years, pediatric gastroenterologists have been on the front lines of this national epidemic. Increasingly, there is a growing body of medical literature documenting what we have known anecdotally: high-powered magnet ingestions are common, dangerous, and occur across all pediatric age groups, including frequently in older children and adolescents.

Much of this literature followed a NASPGHAN member survey conducted from July to October of 2012 [1]. The survey included responses from 201 pediatric gastroenterologists from 44 states. NASPGHAN researchers identified 481 cases of documented magnet ingestions in children over a 10-year period, with 320 occurring over the previous 3 years. The high frequency of magnet ingestions in the latter time period corresponds to the introduction of rare earth magnet sets to the market. It is likely the NASPGHAN survey underestimates magnet ingestions because pediatric gastroenterologists were the only group surveyed. Pediatric surgeons, general pediatricians, family practice and emergency room physicians are also responsible for the care of children with magnet ingestions.

NASPGHAN researchers were able to obtain detailed clinical data on 123 of these cases. Similar to other foreign bodies, children between the ages of 13 months and 6 years appear to be at the highest risk for ingestion. This age range accounted for slightly greater than 50 percent of ingestions. What is perhaps most striking, however, is the number of ingestions occurring in those least amenable to supervision: older children and adolescents. Magnet ingestions were identified in 15 children between the ages of 6 and 9 years; 24 children between the ages of 9 and 12; 15 children between the ages of 12 and 15; and in 4 adolescents between the ages of 15 and 18.

Most of the older children who ingested high-powered magnets did so accidentally while mimicking facial piercings. Twelve percent of the ingestions occurred in developmentally delayed children and five percent had a diagnosed psychiatric condition.

Within the past year alone, there have been at least seven additional published reports on high-powered magnet ingestions affecting children in the United States. An article published three months ago and drawn from National Electronic Injury Surveillance System data estimates that 16,386 children visited an emergency department in the United States over the past 10 years (from 2002-2011) for possible magnet ingestions [2]. Of those, 45.3 percent occurred in children over the age of five. The other six studies were all case series of varying size from pediatric centers throughout the country: Boston, Atlanta, Honolulu, Southern California, Buffalo and Seattle [3-8]. All detail ingestions by adolescents and older children.

Ingestions involving toddlers are somewhat easier to understand. These toys are small, usually brightly colored, and often come with hundreds of individual magnets to a pack—it is easy for a caregiver to lose individual magnets and even easier to see why a toddler might be attracted to them.

The consequences of accidental magnet ingestions, however, are serious and potentially fatal. Approximately six months ago, a 19-month-old girl who swallowed six of these magnets required a colonoscopy at my institution. The mother was well-educated, loving, and—by all measures—a good parent. The toddler found and swallowed the toy magnets after they were accidentally dropped by an older sibling. Our patient was lucky; we were able to remove the magnets endoscopically and she was discharged home the following day.

One toddler in Mississippi, Braylon Jordan, was not as fortunate. His parents accidentally dropped several magnets on a carpeted floor prior to putting a magnet set away. After finding the magnets and ingesting them, Braylon required multiple abdominal surgeries and has lost the majority of his intestine. He currently requires a central intravenous catheter for nutritional support and will likely need an intestinal transplant in the coming years.

This is not just an issue of poor parenting. These magnet ingestions are accidents involving an irreparably unsafe product; there is no amount of warning or parental vigilance sufficient to completely prevent accidental injuries in children. We have seen a dramatic increase in high-

powered magnet ingestions despite multiple product label warnings, widespread press, and exhaustive advocacy efforts. And remember, ingestions occur in older children as well as toddlers. Ultimately, removing high-powered magnets from the market constitutes the only course of action that will adequately reduce ingestions and their associated injuries.

Unfortunately, high-powered neodymium magnets are no longer just found just in "desk toys" and a variety of new novelties are quickly appearing on the market. A quick internet search, for example, allows one to buy small, individual neodymium magnets in a variety of shapes, sizes and colors. Last week, I came across a product called the "Polar Pen" on Kickstarter, which is a ball point pen comprised entirely of small interchangeable neodymium magnets [9]. In fact, the magnet components are similar in size to the very product the proposed safety standard intends to address. The Polar Pen is being manufactured and will soon be shipped all over the world—including to customers in the United States.

I urge the Commission to quickly finalize its proposed safety standards for high-powered magnet sets and ensure that the proposed definition of magnet sets captures new high-powered magnet novelties, such as the Polar Pen. The consequence of small, rare earth magnet ingestions in children can be catastrophic and are completely preventable. The longer these products remain commercially available, the longer our children are needlessly exposed to danger.

Thank you.

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