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Children's Hospital Colorado

Case Study | Prioritizing Patient Safety in the MRI Suite

# The Impact of FMD Systems on Patient Safety in Children's Hospital of Colorado

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metrasens.com | info@metrasens.com

# Children's Hospital of Colorado

**AURORA, COLORADO**

FACILITY STATS

Top Ten Children Hospital in the USA, 486 beds.

APPLICATION

MRI suite, entry-control and patient screening

## CASE STUDY AT A GLANCE

During a patient screening process at the Children's Hospital of Colorado, an unknown ferrous object with the potential to cause patient injury was identified. A 14-year-old pediatric patient needed an abdominal MRI scan completing the standard screening form and verbal evaluation. While the patient completed the standard screening form and verbal evaluation, and despite being initially cleared by an FMD handheld detector, the patient failed to be cleared by both the Metrasens FMD systems, Ferroguard Screener (patient screening FMD) and Ferroguard Assure (Zone IV entry FMD). A subsequent X-ray revealed the presence of small magnets on both sides of the nasal septum. The hospital's commitment to MRI Safety and implementation of Metrasens FMD entry-control system and patient screener demonstrates their dedication to preventing projectile hazards and potential patient injuries, highlighting the ineffectiveness of using effective FMD systems in the MRI room.

## A COMMITMENT TO MRI SAFETY

To ensure MRI safety, effective patient screening is essential, and it must be reliable, reproducible, and trustworthy. Children's Hospital Colorado has developed excellent processes and procedures for patient screening, which includes utilizing whole-body ferromagnetic detection systems (FMDS). Recently, their thoroughness proved beneficial in a complex and unexpected screening case.

In 2016, the MRI department of Children's Hospital of Colorado pledged to establish itself as one of the world's safest MRI facilities. Since then, they have executed a comprehensive set of security and safety protocols that surpass accreditation standards to represent best-in-class MRI safety standards. These measures include installing Metrasens entry-control systems and patient screeners in all eight MRI suites across their five hospitals and implementing new safety procedures that conform to ferromagnetic detection (FMD) detection practices.

The MRI department has fostered a culture of safety that all team members embrace, preventing several incidents before they could happen.

## METRASENS FMDS PROVE TO BE THE DIFFERENCE IN AVOIDING AN INCIDENT

A 14-year-old patient arrived for an abdominal MRI appointment and was screened with the standard form. She denied having any surgeries, metallic implants, or foreign bodies. After changing into a gown, the patient was screened in Zone II using the Ferroguard® Screener, which produced a red alert for ferrous metal. As a result of this alert the patient was next screened with a handheld ferrous detection wand which revealed no ferrous metal. The patient was cleared and escorted into Zone III.

A crucial aspect of MRI safety is the implementation of ferromagnetic detection systems, which, when executed properly as part of a process, increase the reliability of the standard patient screening process. As staff at Children's Hospital of Colorado learned, a seemingly routine day can change quickly. It is your people, process, and technology that keep everyone safe when a situation presents itself.

"Without Metrasens FMD systems, we would have never identified the presence of a magnet on our patient," said Katherine Bushur, RT(R)(MR), BSRS, CRA, Radiology Manager at Children's Hospital Colorado.

The results reinforce for the Children's Hospital Colorado team the value of their best-in-class processes and procedures and the value of utilizing the Ferroguard Screener and Assure ferromagnetic detection systems.

The patient and her family appreciated the exceptional care given to ensure safe MRI scans and thanked the staff for adhering to safety policies. This case also revealed the disparity between whole-body ferromagnetic detection systems and handheld systems, as demonstrated by the Ferroguard Screener and Assure's superior detection abilities compared to the hand-held wand.

In conclusion, the discovery of the magnets on the patient's nose prior to the MRI procedure was crucial in preventing potential injury during the procedure and avoiding further damage to the patient's health. This highlights the importance of thorough pre-procedure assessments and diligent patient care to ensure their safety and well-being.

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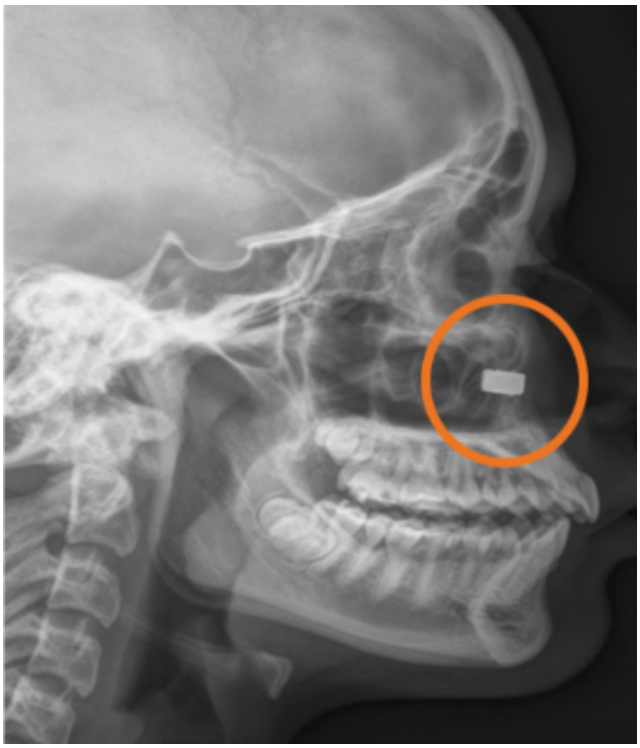
Katherine Bushur, RT(R)(MR), BSRS, CRA, Radiology Manager at Children's Hospital Colorado.



## GOING BEYOND MRI SAFETY ACCREDITATIONS FOR MRI SAFETY BEST-PRACTICES

Although the ACR and The Joint Commission suggest using Ferromagnetic Detection Systems (FMDSs) for MRI safety, it is not mandatory to have them, so obtaining accreditations from these organizations alone may not guarantee a secure MRI operation. Providers must take responsibility to ensure patient and staff safety, going beyond the minimum requirements. To enhance MRI safety, it is recommended to use both an FMD entry control system and a patient screener, as this approach ensures reliable and efficient screening, leading to improved patient care. Bushur trusts Metrasens' entry control system and patient screeners in all their locations to maintain a safe environment for both staff and patients.

About Children's Hospital of Colorado

Children's Hospital of Colorado's mission is to improve the health of children through the provision of high-quality, coordinated programs of patient care, education, research, and advocacy. With more than 10,000 healthcare professionals representing the full spectrum of pediatric specialties, the system of care for Children's Colorado includes four pediatric hospitals, 11 specialty care centers, and 1,300+ outreach clinics.

About Metrasens

Metrasens is a world-leading provider of advanced detection technologies that, combined with tailored solutions, address the deficiencies in conventional screening methods. Metrasens takes science from the laboratory and uses it to create revolutionary products that are effective, flexible, easy to use, and exceed the needs of our customers.

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