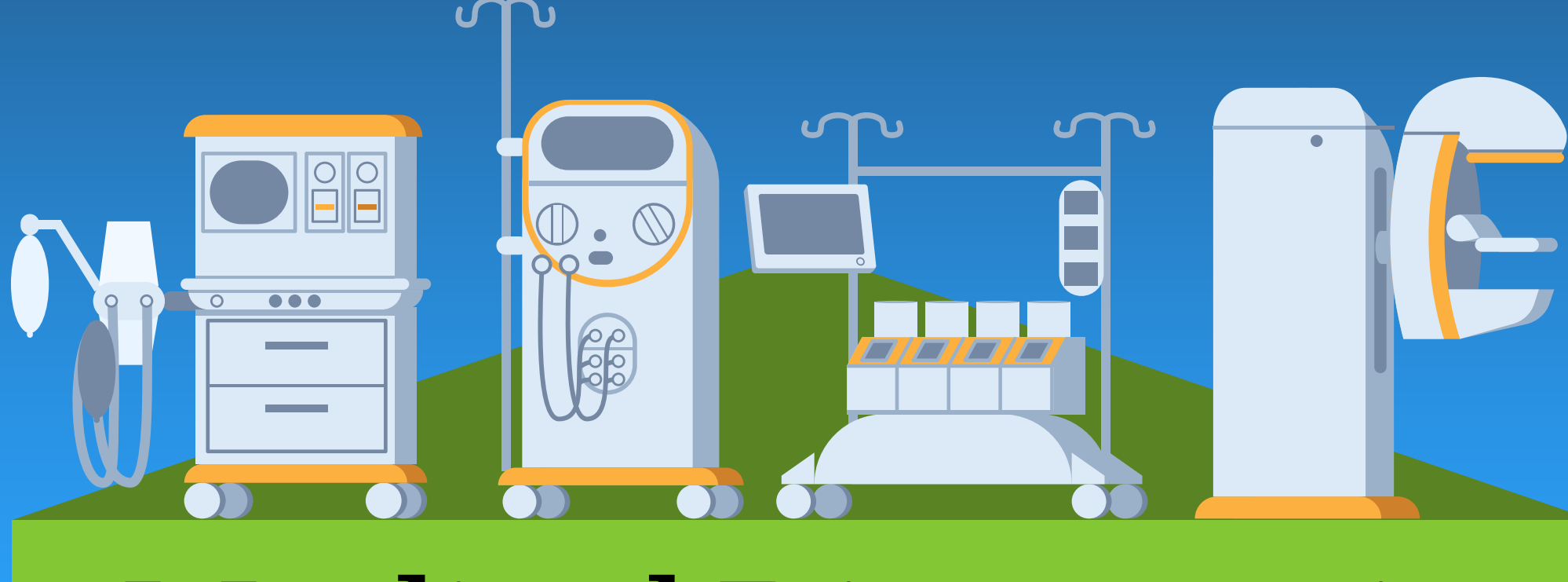


Risky Business

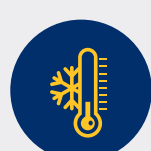
What You Need To Know About...



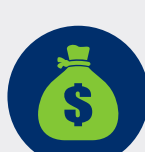
Medical Diagnostic Equipment

MRI Machines

Using a strong **magnetic field** and **radio waves**, MRI machines create detailed images of the organs and tissues within the body for medical and research analysis.



The magnets used in MRI machines have to be **cooled around -450°F using liquid helium** to prevent them from overheating and exploding.



MRI machines can range in price from **\$250,000 to \$4 million**.



MRI magnets are **always on**.

CT Scanners

CAT scan machines produce cross-sectional images of the body **using x-rays and computer technology**.



They require regular **calibration and adjustment** for optimal operation.

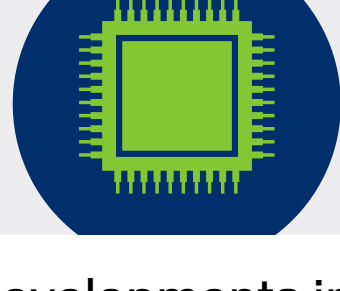


CT scanners can cost as much as **\$5 million**.



The largest MRI machine in the world used for the human body is in France. It weighs 150 tons, and has a cost of \$91 million.

Main Contributing Factors in Growth



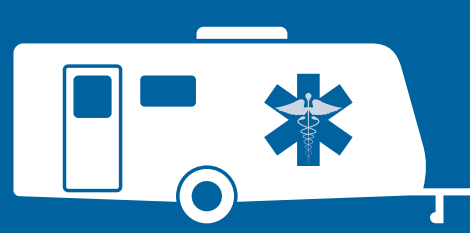
Developments in computer-aided detection



Increased applications for imaging diagnostic applications



Advancements in 3D imaging



Diagnostic equipment can be mounted on a **mobile trailer** to mobilize patient care.

Hazards

Medical imaging systems are especially susceptible to power quality issues. There are three main reasons for equipment breakdown:



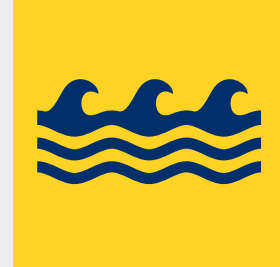
Power Surges



Arcing



Phasing/Undervoltage



Storing medical imaging systems **below grade level** leaves equipment exposed to potential flood and surface water damage.



Objects, such as cell phones, keys or coins, can become **deadly projectiles** reaching speeds of up to 40 mph when attracted to the magnets inside MRI machines.

Causes of Failure

Lack of proper technician training can result in significant machine damage and extended periods of downtime



A single voltage dip **lasting 100 milliseconds** can prove **extremely damaging** to sensitive medical equipment.



The consequences of radiology system downtime on lost revenue are between **\$282,197 and \$376,260 per year**.



The majority of radiology equipment downtime is caused by **poor power quality or power outage**.

Maintenance Tips



To prevent damage caused by electrical power surges, medical imaging equipment and its corresponding electrical brand circuits should be fitted with surge protection devices (SPDs).



Educating radiology professionals in running daily diagnostics on medical imaging systems, including calibration checks and machine adjustments, can reduce the risk of human error.



An annual service agreement with a medical equipment manufacturer often guarantees at least 98% machine uptime, resulting in significant cost savings.