

CastAlert Monitor

Cast Pressure Sensing System

CLIENT: Walgen, Inc.

OBJECTIVE:

Pressure caused by swelling beneath a cast can cause serious nerve damage and, if not detected at an early stage, loss of the affected limb.

Common non-invasive methods for detecting excessive swelling and/or high compartment pressure, such as visually obvious swelling, extreme pain and warm skin, often do not allow for detection until damage has already occurred.



If properly implemented, invasive methods can detect elevated compartment pressure accurately, but they require the insertion of a needle and pressure sensor into the compartment.

A non-invasive, accurate, early warning system was needed to allow for detection of rising pressure early on, so that simple procedures, such as elevating or icing the limb, could correct the problem before further damage occurs.

SOLUTION:

Based on the client's understanding of the market, device specifications were established, and DCI developed a non-invasive, compact, low-cost, pressure sensing system to be applied to the limb as part of the casting process.

The device has several warning levels that allow the patient or healthcare provider to take corrective action as soon as pressure begins to rise, long before sensory observation would indicate a possible problem.

RESULTS:

As a result of DCI's laboratory tests and prototype demonstrations, Walgen was able to obtain significant investor capital to continue the DCI development program through to the production stage. DCI and Walgen contracted with another Syracuse company to manufacture the device. With DCI's participation, the 510(k) application to FDA was approved in 30 days.