

LABORATORY SERVICES AND THE IMPORTANCE OF ASSET INTEGRITY

Maintaining the efficacy of laboratory supplies and patient specimens under varying environmental conditions

Overview

Excellent patient care relies in part on the accuracy of laboratory analysis. Storing and maintaining specimens and reagents at proper temperatures is critical for precise laboratory testing. Maintaining proper temperatures is a challenge in a hospital environment where these products are stored on patient care floors, clinics and main laboratory areas. Human behavior and inadequate storage chambers make maintaining a compliance standard and sustaining it in all areas 24/7 extremely difficult.

Challenges

Some of the key challenges in laboratory services are:

Patient Safety



Most medications and vaccines must be stored within a manufacturer's recommended temperature range. For the first quarter of 1998, 64.4% of the errors and accidents were reportable by the FDA. Nearly 10% concerned products that contained blood clots or were not maintained at the correct temperature.¹

Asset Integrity



Losses due to temperature fluctuations is estimated at 35 billion dollars per year.²

Expensive and inconvenient re-draws or re-sampling or minor errors that occur prior to sample analysis and don't harm the patient can be costly. The average cost associated with a single irretrievably lost specimen was estimated to be \$584, and cumulative errors over 3 months cost more than \$20,000.³

Compliance



Relying on decentralized monitoring leaves the hospital at risk for documentation errors, product mishandling and improper storage can cause accreditation loss affecting thirdparty payments and funding.⁴

Staff Utilization



Laboratory staff, who are employed for patient care support, are underutilized if they are required to perform manual logging or struggling to learn a new platform.

Manual logging also increases the chances for errors and gaps in documentation putting the laboratory at risk for an audit finding. Research shows that visual checking can result in 2958% more data entry errors.⁵

¹<https://www.archivesofpathology.org/doi/full/10.1043/0003-9985%281999%29123%3C0563%3AEITM%3E2.0.CO%3B2>

²<http://www.sofrigam.com/secure-manage-logistical-risks-pharmaceutical-cold-chain-logiphaf>

³<https://www.medscape.com/viewarticle/868957>

⁴<https://www.drugtopics.com/pharmacy-news/two-hospitals-run-jcaho-offers-warning-all/>

⁵<https://www.sciencedirect.com/science/article/pii/S0747563211000707>

Solutions

By leveraging Copeland and their partners' expertise, health systems combine innovative engineering and technology to develop robust solutions that, protect valuable assets, support compliance and allow staff to focus more on patient care.

A scalable, automated monitoring solution improves consistency in compliance across the health system.



Results

Implementing and maintaining a robust temperature monitoring system across all nutrition services can result in:



Continuous environmental monitoring protects sample/specimen efficacy and provides the Patient patient with safe, effective treatments.



Positive cost control. Minimizing financial losses associated with compromised specimens and reagents saves money. A bad refrigerator at Stanford's medical office compromised vaccines and meant 1551 kids needed revaccinations.⁶



Better laboratory practices provide streamlined regulatory compliance. This helps maintain accreditation status and promotes a strong brand.



Automated process/alarm notification, frees staff to divert resources to patient focused tasks. An freezer malfunction went unnoticed and damaged one-third of the world's largest collection of autism brain samples setting back research on the disorder.⁷



Actionable data from an integrated system drives rapid changes via report generation and evaluation. Proper analysis gives your laboratory a competitive edge by allowing you to spot and prepare for trends early.⁸

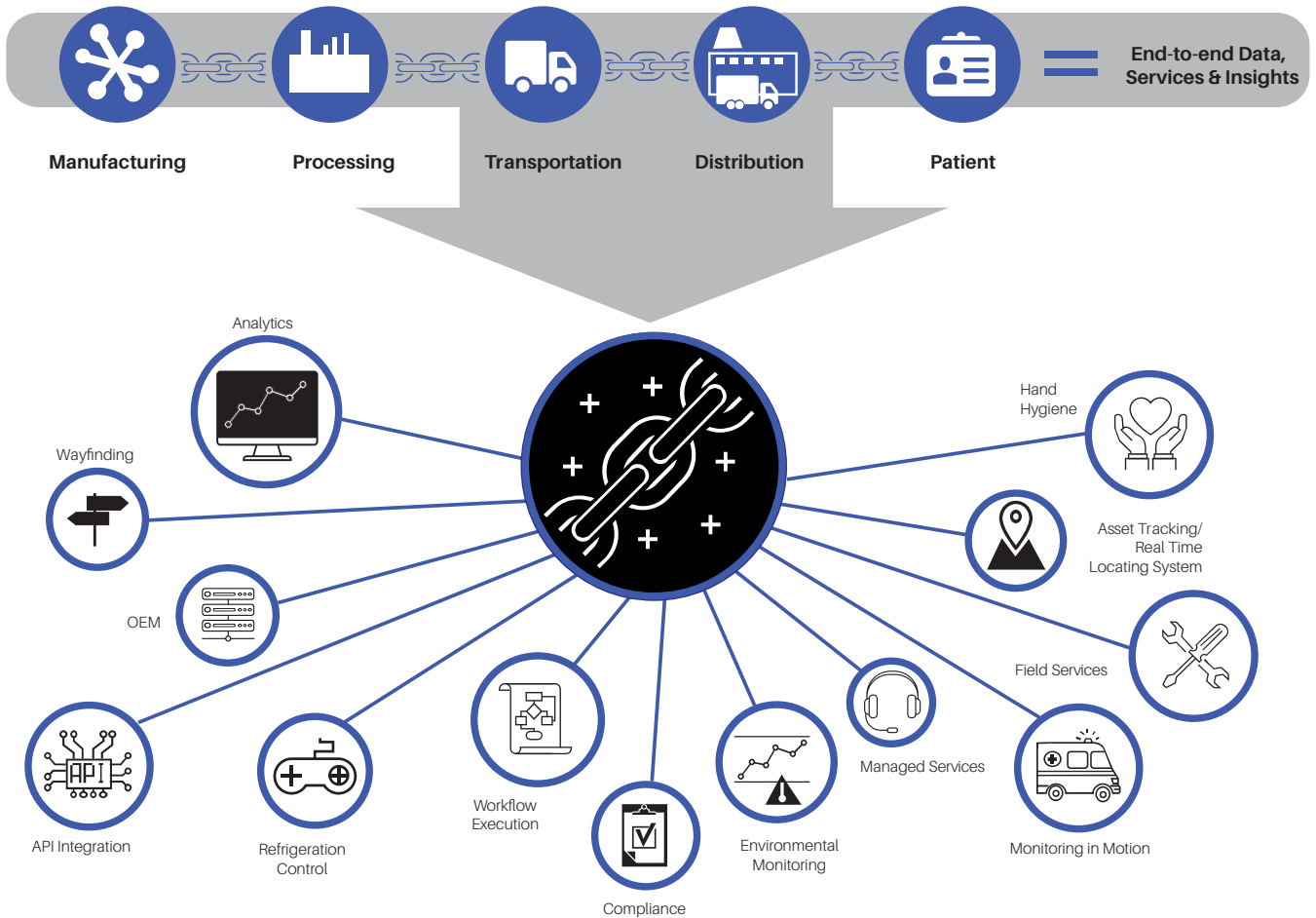
⁶<https://www.mercurynews.com/2015/10/02/bad-refrigerator-at-stanford-childrens-health-medical-office-means-1551-kids-need-re-vaccination/>

⁷<https://www.bostonglobe.com/metro/2012/06/11/freezer-failure-brain-bank-hampers-autism-research/SpaUPQP5T3BnJpMvFEIrlO/story.html>

⁸<https://www.elitecme.com/resource-center/laboratory/data-analytics-in-the-laboratory/>

How is Copeland delivering practical, flexible approaches?

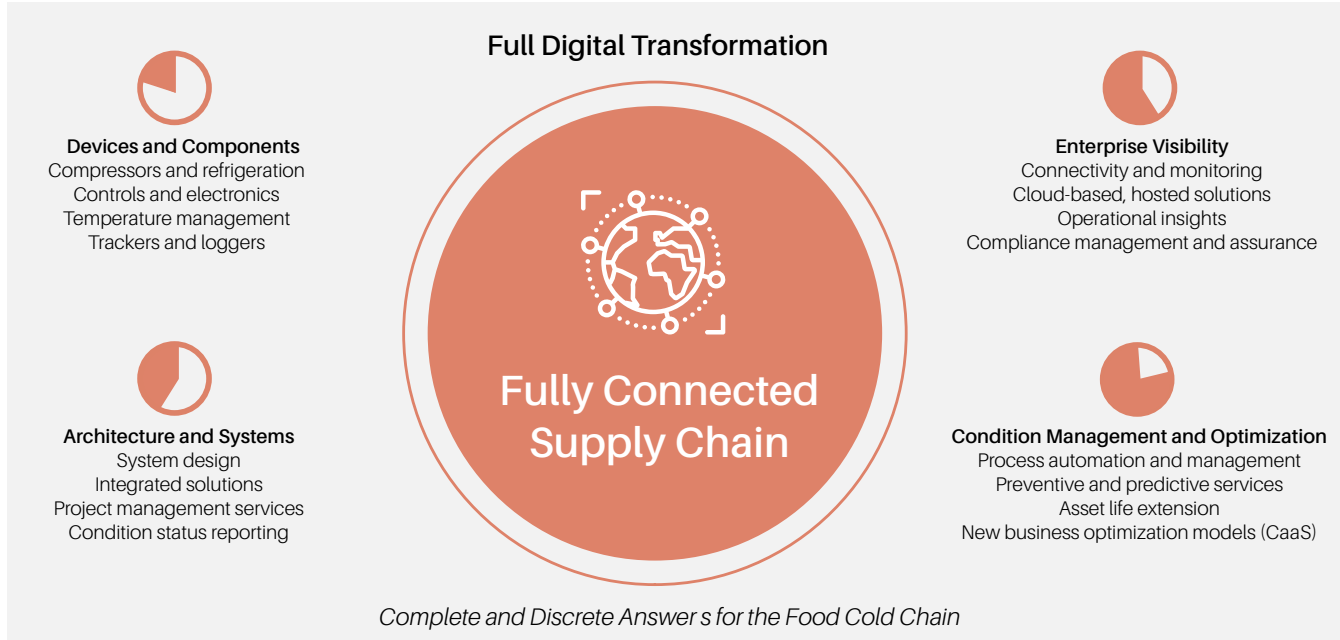
It starts with the devices and components for which Copeland is well-known and includes controls, electronics, compressors, software and newer areas of temperature management, trackers and loggers. We've become industry leaders at designing system architectures and integrating systems and solutions within businesses. Through ProAct and other tracking capabilities, our connectivity-enabled support and services allow us to help provide operators enterprise-wide visibility to temperature, systems and infrastructure throughout the healthcare cold chain. We're providing operators with the data and insights about how they're managing environmental conditions in pharmacies, laboratories, kitchens, and patient care areas. This helps optimize their assets, assuring them that the systems and components essential to maintaining quality are operating properly, saving energy, and keeping patients safe.



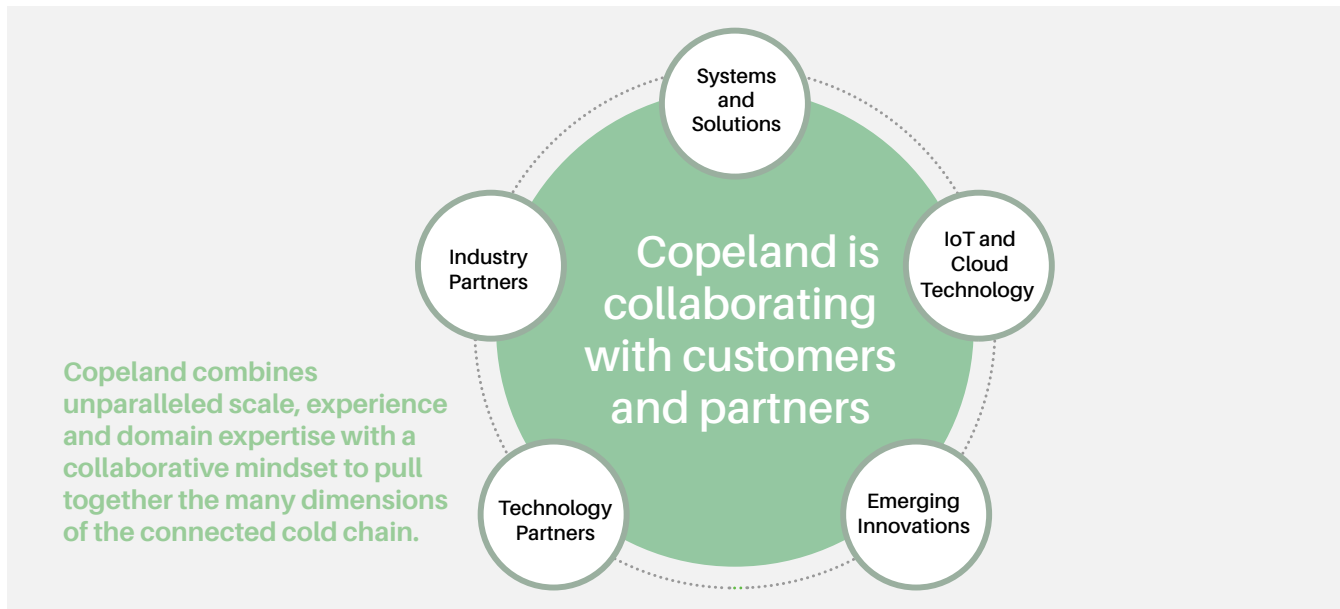
Copeland is a leader in this space today, and we have a vision of where it's going. We're committed to working with customers and partners to make that a reality. If you are one of those organizations interested in pursuing a fully connected, efficient and sustainable cold chain, Copeland should be one of your first points of contact.

We're delivering practical, flexible approaches

Digital Transformation: accelerating the use of data through incremental, expanded adoption of technology



Complete, connected condition management across the cold chain



To learn more, visit copeland.com

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