

## THE CONSTRUCTION SITE RENAISSANCE

24/7/365 construction site air toxin monitoring has arrived. Knowing the true timing of generation is a real plus to implementing control. Real-time and continuous measurement of toxic dust (lead & silica) and gases (CO, CO<sub>2</sub>, VOC) protect building assets, occupants, patients and construction workers. See the information printout below for multiple day assessments performed in critical care areas next to construction. This enhancement to automated HVAC building controls is JACHO friendly.



The future of micro images is real time confirmation of hazardous materials. Shown is toxic mold *S. Chartarum*.

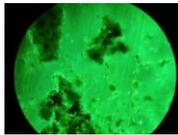


Photo Credit: Ecostratum

## Hospital Business Challenged Again

Under the Affordable Care Act (known as Obama Care), hospital revenues soared as newly insured patients sought out caregivers. Prepare for change? Currently, 70% of hospital revenue is through government sources. If ACA coverages lapse, less patients equal less revenue putting upward pressure on fees for those who can afford care. The studies on healthcare job losses that may result are dim as often a hospital is the largest employer in a community. Healthcare is certainly an economic engine. Regulation of services which are highly needed, but unaffordable and unwanted expense, creates the opportunity for increased emphasis on preventative care. Enter genome intervention to manage hereditary predisposition. Preemptive by design, these will become the next new line item on hospital income statements. The focus will be both life-style and life-cycle beginning with childhood inoculation and carried thru to geriatric mental health. All delivered locally in community-style care centers. This revolution will only be exceeded by surgery robotics and nano-implant drug delivery.



The term "smart dust" arose in 1990 to describe the miniature wireless transistors shown. Key point. Tests microscopic implants will become necessary.

## Methods to Gauge Hospital Micro-Cleanliness

Cleanliness tends to be thought of as an important indicator of healthcare quality. Ecostratum suggests that results of HCAHPS surveys confirm this perception, particularly for patients. The first step is realizing that surfaces are not as clean as they look, or you think! Objective markers of microscopic cleanliness are needed and they must yield quick results. Table 1 below offers a summary of assessment methods. ATP luminescence is relatively new and offers an excellent quantitative tool, borrowed from the food service industry, to monitor cleaning and disinfection. Applicable to hospital areas with patients at risk (eg. ICU, OR, GU & Cath), this technique measures both physical removal and bio deactivation. It is estimated that 20%-40% of all HAIs are from unclean surfaces or hands.

Table 1: Methods to Gauge Micro-Cleanliness

Method	Pros	Cons	Results Time
Visual Inspection	Fast, Cheap	Not Objective	15 sec.
Fluorescent Gels	Fast, Objective	Measures removal, not disinfection	5 min.
Culture Swab	Pathogen Specific	Slow, Costly, Sample Bias	3 days
ATP Monitoring	Fast, Measures All Organics & Bacteria	Cost, Non-Pathogen Specific	1 min.

## Ask the Expert?

Q: What is the status of USP 800 & USP 797 Revisions anticipated on December 1, 2019?

A: The release of revised guidelines is on schedule. Both 800 & 797 will require more frequent environmental monitoring. Monthly intervals will replace semi-annual tests.

## Joint Commission Standards Tighten for 2018

Elements of Performance (EP) Ratings can now be based upon single observations. In the top 10 are:

1. Medical equipment infection risk (particularly endoscopes) (59%)
2. Ventilation system, pressure, air exchanges (58%)
3. Hazardous materials handling & storage (39%)

<http://www.ormanager.com/joint-commission-survey-standards->

Table 1: Location of Fomites

Fomite	Found
Fiber (F <sub>1</sub> )	Cotton from scrubs and bedding
Fiber (F <sub>2</sub> )	Fiberglass from optical lens wipes & insulation
Fiber (F <sub>3</sub> )	Synthetic lint from sterile covers-gauze
Dust (D <sub>1</sub> )	Surfaces of electronics - carpets
Droplet (D <sub>2</sub> )	Aerosols-Cleaning Solutions-Sneezing
Skin (S <sub>1</sub> )	Human shedding-Animal dander
Soot (S <sub>2</sub> )	Bovie cautery – Air Filters

"A Higher Level of Thinking". Technical developments are presented with a business case underpinning. Contact Steve Rucker at [srucker@ecostratum.com](mailto:srucker@ecostratum.com)

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