



Episode 783 | July 24th, 2026, | 12:00 PM EST

Gene Cole, DrPH

The Life and Times of a Public Health and Infection Control Titan Part 1

Good Day and welcome to IAQ Radio+ episode 783 this week welcome Dr. Gene Cole for a show we are calling The Life and Times of a Public Health and Infection Control Titan. Dr. Eugene “Gene” Cole, DrPH, bridges the gap between deep, academic public health research and the boots-on-the-ground cleaning and restoration industries. From coining terms like “Home Environment Specialists” during his time at DynCorp, working on development of industry standards, to his foundational work on the ISSA/CIRI Clean Standard (validating ATP meters to give the cleaning industry hard metrics), Dr. Cole has spent over 35 years showing why cleaning is an essential branch of public health. Learn more this week on IAQ Radio+.

Dr. Gene Cole is Director of Research for LRC Indoor Testing & Research, Cary, NC, and former Professor of Environmental Health Sciences at Brigham Young University, Provo, UT. He has 35 years of research experience, with a primary focus on the ecology of indoor and work environments, with special emphasis on identification and reduction of pollutant reservoirs and sources, bioaerosols, human exposure assessment and control, product evaluation, cleaning and restoration, mold and sewage remediation, and biocides.

Since 2000, he has continued to conduct research on the relationship between the use of antibacterial cleaning and hygiene products in the home, and antibiotic resistance; as well as on the effectiveness of cleaning to reduce the transmission of disease agents in schools. He has also worked with national and international organizations to address environmental health and infectious disease concerns such as medical waste management in Central Europe and Southeast Asia, hygiene promotion in Africa, and healthy homes and buildings in the U.S. and Asia.

Dr. Cole is a member of the Scientific Advisory Council of the Cleaning Industry Research Institute (CIRI), and a Fellow of the American Industrial Hygiene Association. He holds a Master of Science in Public Health Microbiology and a Doctor of Public Health in Biohazard Science and Occupational Health, both from the University of North Carolina at Chapel Hill.

Part 1 Executive Summary

This episode of IAQ Radio+ featured Dr. Gene Cole discussing his career in public health, infection control, and indoor air quality. Pete Consigli, filling in for Cliff Zlotnick, led the interview, which covered Dr. Cole's early influences, such as the 1976 Legionnaires' disease outbreak, and his work with the EPA and in developing industry standards like the IICRC S500 and S520. Dr. Cole emphasized the importance of cleaning as a core public health intervention, highlighting studies on enhanced cleaning in schools to reduce absenteeism. The conversation also touched on the challenges of translating scientific research into practical cleaning protocols and the ongoing relevance of issues like Legionella. Dr. Cole shared anecdotes from his career, including the development of cleaning protocols for various industries during the COVID-19 pandemic. The show concluded with plans for a part two episode to continue the discussion.

Pete hosted IAQ Radio episode 783 in place of Cliff, who will handle part two of the show. The discussion focused on Dr. Gene Cole's extensive career in public health and infection control, with Pete providing historical context about their 40-year relationship dating back to the late 1980s and early 1990s when they worked together on various industry standards and initiatives. The show's format with Pete's career overview was adjusted to skip the trivia segment.

Legionnaires' Disease Outbreak Investigation

Gene discussed his early work investigating the 1976 Legionnaires' disease outbreak at the Bellevue Stratford Hotel in Pennsylvania, which involved over 200 cases and 34 deaths. He explained how the environmental factor was the presence of Legionella pneumophila in the HVAC system, combined with a susceptible human population of older attendees at the American Legion conference. Gene noted that this incident led to his subsequent work investigating Legionella in commercial buildings, initially while at Research Triangle Institute in North Carolina rather than with the EPA. The discussion then shifted to examining how cleaning as a profession has been undervalued in America compared to Europe, where building maintenance is considered a respected profession rather than a part-time job subject to budget cuts.

Public Health Cleaning Research Study

Gene discussed his transition into the cleaning and restoration field, emphasizing the importance of risk reduction in public health. He shared insights from a study in North Carolina that focused on reducing illness and lowering absentee rates in schools through enhanced cleaning, particularly addressing high-contact touchpoints like student desks and door handles. The study, funded by a consumer product company, showed dramatic results before COVID-19, and Gene planned to present more details at an upcoming CIRI symposium in September in Las Vegas.

Cleaning Protocols and Methodologies

Gene discussed the importance of proper cleaning methods for schools, medical facilities, and public buildings, highlighting that building design and maintenance practices have evolved over time to facilitate better cleaning. He emphasized the need to develop specific methodologies and protocols for evaluating cleaning effectiveness, including determining sample collection methods and data types to be measured. Gene explained that he often collaborates with product companies to develop testing methods for new cleaning products and equipment, starting with establishing a draft protocol before conducting any evaluations.

Flooring Contamination Prevention Strategies

Gene discussed the importance of building a strong scientific foundation through multiple studies rather than relying on single studies, comparing this approach to medical research. He explained that both carpet and hard surface flooring can be problematic if not properly maintained, noting that carpet can act as a reservoir for particulates while hard surfaces can scatter particles when cleaned. Gene emphasized that frequency of cleaning is crucial, recommending high-efficiency vacuuming three times weekly for carpet to prevent it from becoming a source of contamination rather than just a reservoir. Gene stated in his own home, he has hardwood flooring and area rugs.

Cleaning Standards and Health Factors

Gene discussed how academia research is bridged to field experience through developing consensus voluntary standards within the industry, citing his involvement with IICRC since 1990 and work on S500 and S520 standards. He explained that the core challenge in cleaning has been defining and measuring clean, particularly for situations like water damage, mold, and sewage. Gene outlined three factors that define human exposure and resultant adverse health effects: infective dose, virulence of the organism, and immune status of the host, using examples like the 2001 anthrax attacks to illustrate how these factors interplay in disease transmission.

Cleaning and Disinfection Practices

The discussion focused on cleaning and disinfection practices, with Gene confirming that the fundamental approach remains the same as described by Dr. Minor in the 1990s: clean surfaces first, dry them, then apply disinfectant. Gene emphasized the importance of extraction to remove as much contamination as possible before disinfection, particularly for high-contact surfaces in schools. The conversation concluded with a discussion about establishing causation in Legionnaires' outbreaks, where Gene outlined the standard CDC approach including pathway verification, air testing, and detailed epidemiology.

Indoor Air Quality Standards Development

Gene discussed his work developing voluntary industry standards for indoor air quality and environmental quality, including protocols created during the COVID-19 pandemic for fitness centers, shopping malls, amusement parks, hotels, and rental car companies. He shared insights from studies conducted with Richard, including findings about the most contaminated surfaces in hotel rooms, which led to Hilton Hotels implementing enhanced cleaning protocols with visible seals.

The ROUNDUP: Final Question

The discussion concluded with Gene sharing memorable quotes from Dr. Mike Berry about building management and cleaning practices, highlighting Berry's philosophy that "there are no sick buildings, there are only mismanaged ones."

Footnote: Gene recalled a flat roof inspection he did with Mike Berry, and there were several puddles of standing water (known as ponding), unable to drain which infiltrated the Air Handling units mounted on the roof, This condition apparently exacerbated microbial growth into the airstream circulated in the building's condition space. Gene recalled his friend Mike saying, "Whoever designed Air Handlers to be mounted on flat roofs, should be castrated!"