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Hotels and Hospitality: Case Studies in Environmental Health & Safety

Presented by:

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12/6/2019 (CIHC PDC)

Right People. **Right** Perspective. **Right** Now.

Outline

- Ergonomics
- Legionella
- Methamphetamines & Synthetic Opioids
- Other EHS Issues
- Questions?

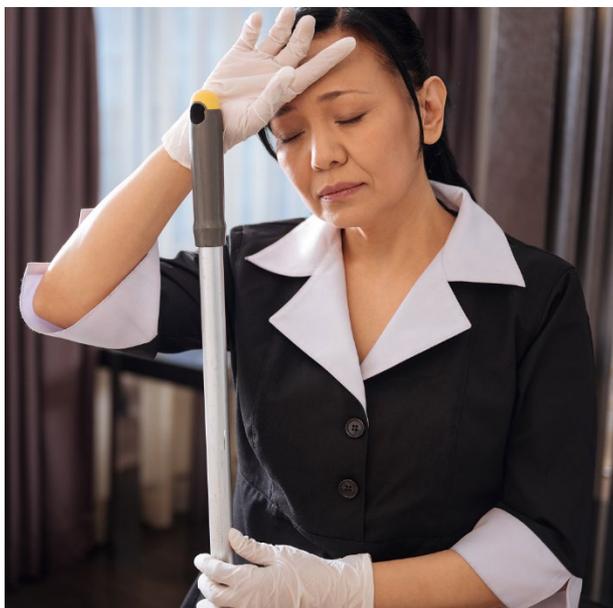
Case Study - Ergonomics

Work-Related Pain and Injury and Barriers to Workers' Compensation Among Las Vegas Hotel Room Cleaners, Scherzer et al (2005)

- prevalence of work-related pain and injury
- barriers to and experiences of reporting among workers
- 941 unionized hotel room cleaners about work-related pain, injury, disability, and reporting over a 12 month period



Results



- 75% of workers experienced work-related pain
- 31% reported it to management
- 20% filed claims for workers compensation as a result of work-related injury
- 35% of their claims were denied
- Barriers to reporting injury included “It would be too much trouble” (43%), “I was afraid” (26%), and “I didn’t know how” (18%)
- An estimated 69% of medical costs were shifted from employers to workers

Conclusions

- “The reasons for underreporting and the extent of claim denial warrant further investigation. Implications for worker health and the precise quantification of shifting costs to workers also should be addressed.”
- CITATION:
 - Teresa Scherzer, Reiner Rugulies, and Niklas Krause, 2005: **Work-Related Pain and Injury and Barriers to Workers’ Compensation Among Las Vegas Hotel Room Cleaners**, American Journal of Public Health 95, 483_488, <https://doi.org/10.2105/AJPH.2003.033266>

Regulatory Update - MIPP

- January 2018 Cal/OSHA unanimously voted to adopt the new standard, California Code of Regulations (CCR), Title 8, [§3345: Hotel Housekeeping Musculoskeletal Injury Prevention](#),
- went into effect July 1, 2018, (3 months to comply or within three months of the opening of a new establishment)
- standard outlines the requirement that these employers **“establish, implement, and maintain an effective, written, musculoskeletal injury prevention program (MIPP) that addresses hazards specific to housekeeping.”**
- includes associated training and recordkeeping components

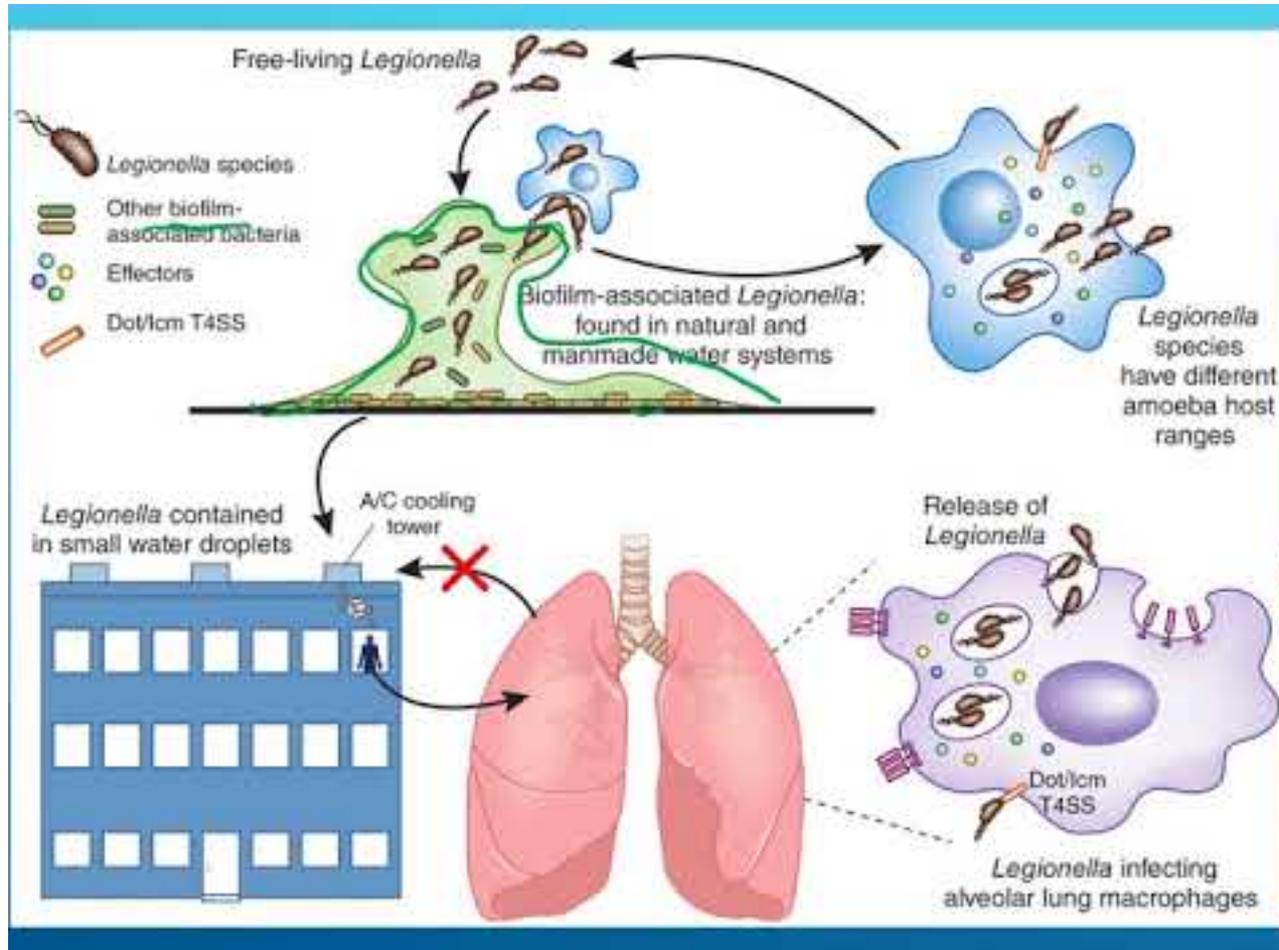


<https://www.nesglobal.net/preventing-musculoskeletal-hotel-housekeeping-injuries/>

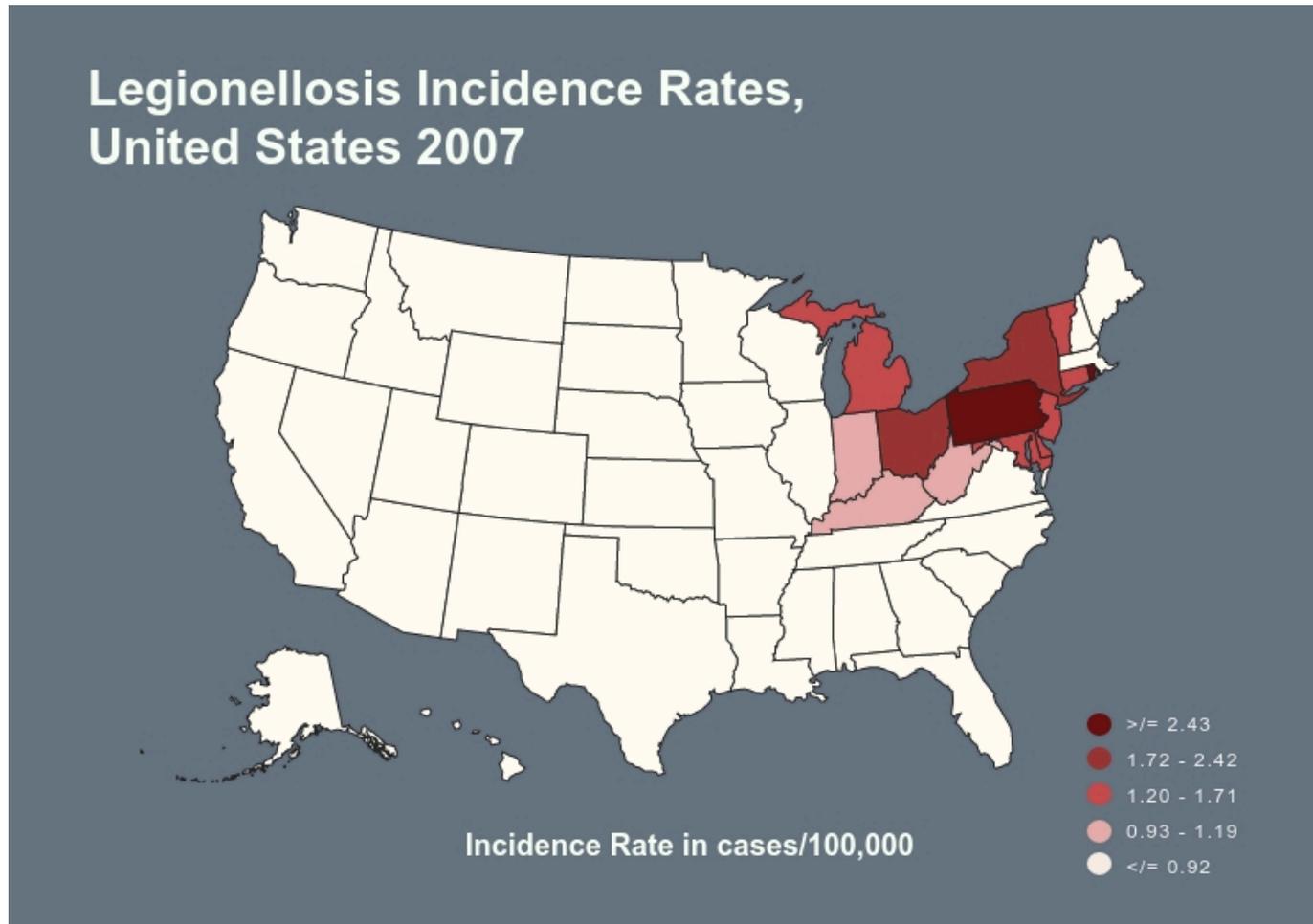
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Case Study - Legionella

Legionella Overview

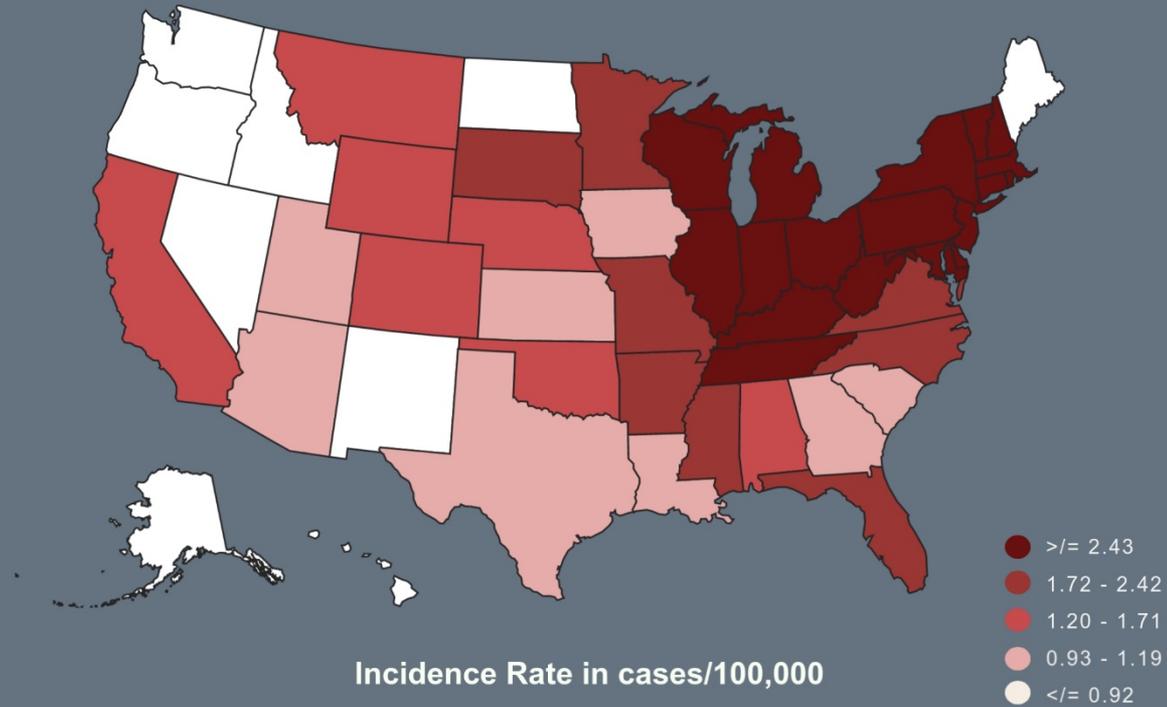


Legionella Cases on the Rise



2017

Legionellosis Incidence Rates, United States 2017



Case Study - Legionella

- Standard mid-range hotel, centrally located with conference center
- Roof-mounted air handling units
- In-room cooling units with closed loop cooling
- Single evaporative cooler provides cooling for closed loop

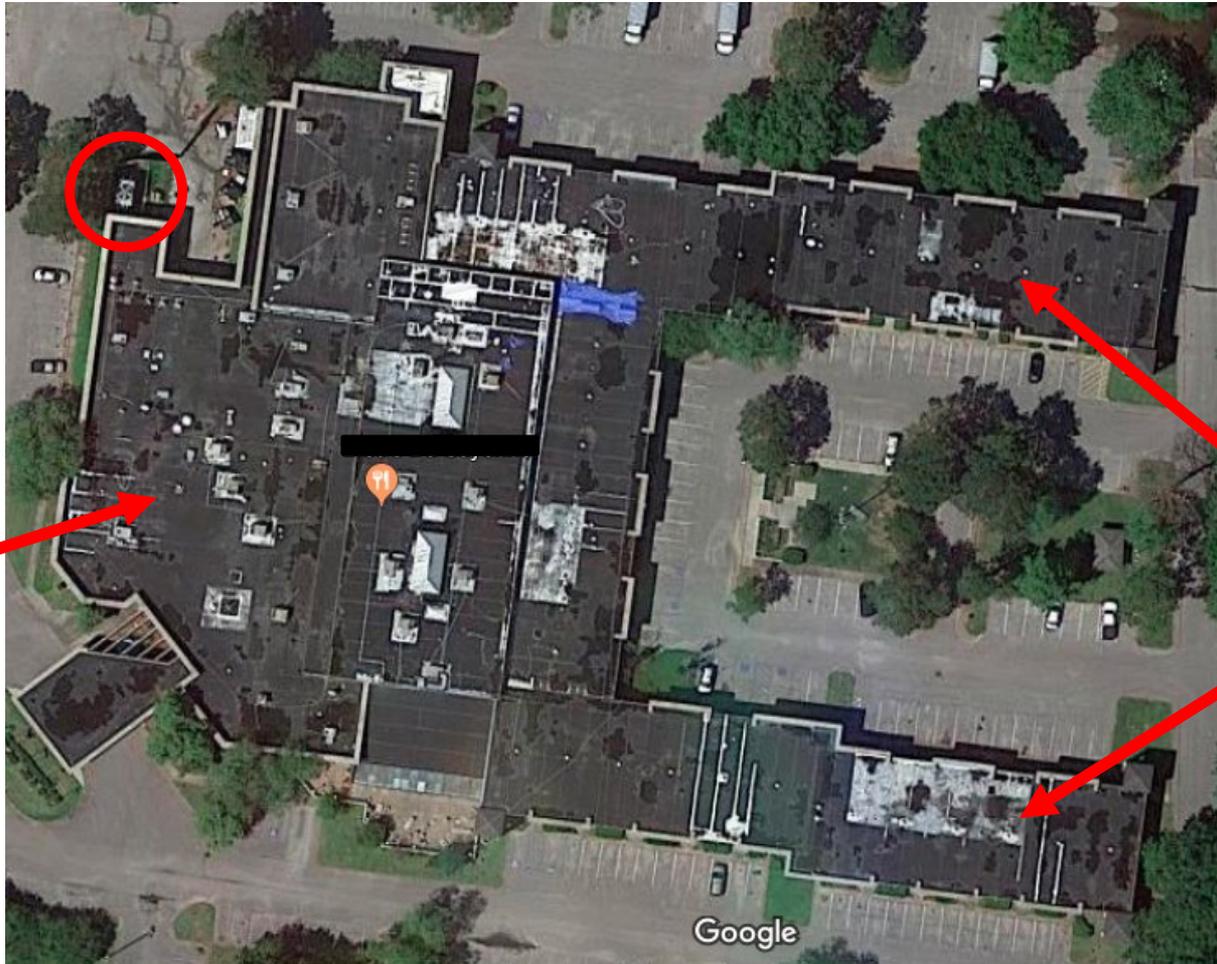
Case Study - Legionella

- One hotel guest case (62 y.o. male) of Legionnaires' disease
 - Long-term effects: breathing problems, extreme fatigue
- Onset of symptoms within 2-3 days of stay
- Spent 10 hours/day in the conference rooms F-Su
- Several sporadic cases reported with exposure to the same area within 2-3 months of hotel case

Cooling tower

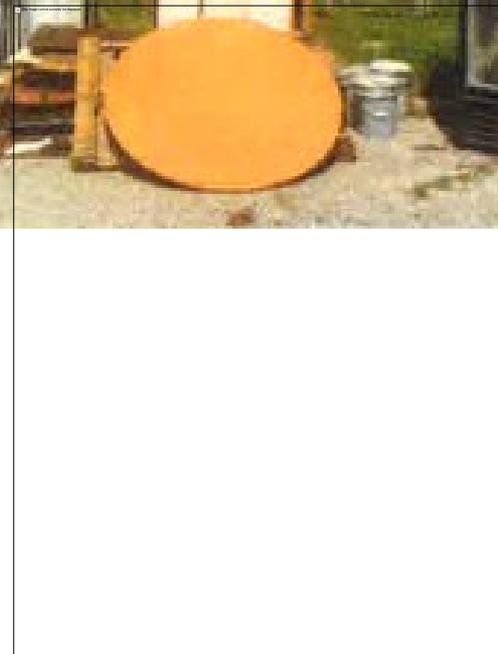
Conference center

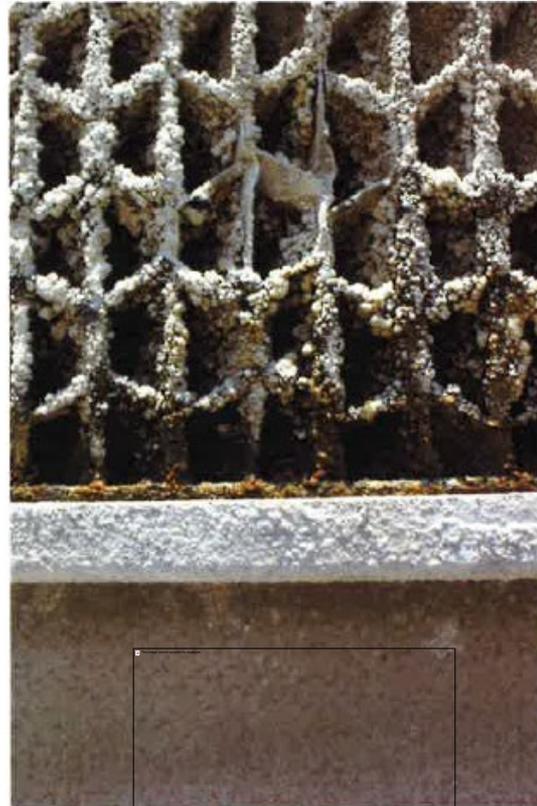
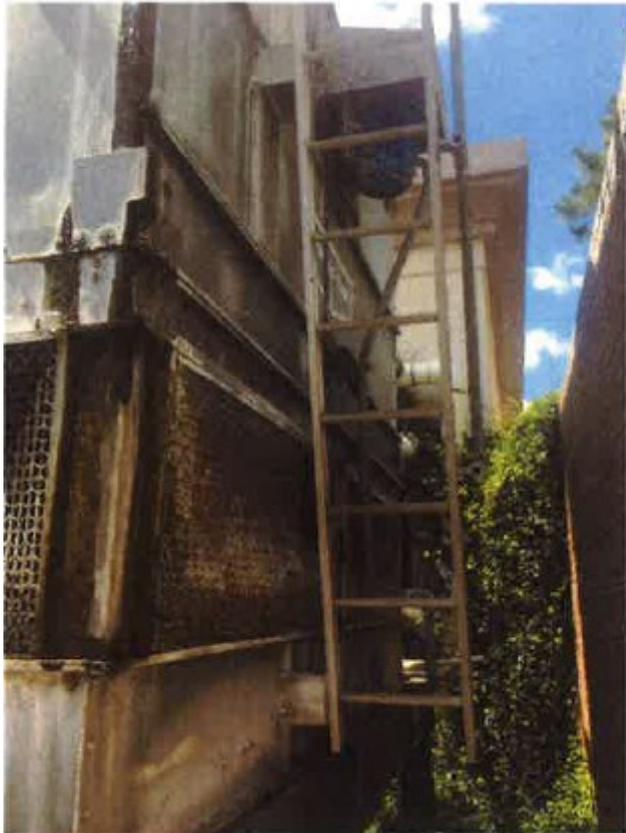
Guest rooms



Case Study - Legionella

- Evaporative cooler provided cooling for served in-room units
- Closed loop, induce draught cross-flow
 - Recirculation of cooling water only within tower
- Treatment contractor provided treatment for closed loop system
- No treatment system for evaporative cooler cooling water





Culture – LP Serogroup 1

Reported Area	Location in Area	Type	Media	Units	Results Summary			Identification
					vol (ml)	LoD (CFU/m L)	results CFU	
ISO 11731:1998 Culture Method								
Cooling Tower	Fan Grate	non-potable	swab	1	0.1	50.00	1,600	<i>Legionella pneumophila</i> (sero 1)
Cooling Tower	SW Corner	non-potable	swab	1	0.1	50.00	ND	NA
Cooling Tower	SE Corner Fins	non-potable	swab	1	0.1	50.00	400.0	<i>Legionella pneumophila</i> (sero 1)
ISO 11731:1998 Culture Method								
Cooling Tower	Supply	non-potable	bottle	1	250	36.6K	146.4	<i>Legionella pneumophila</i> (sero 1)

PCR – LP absent

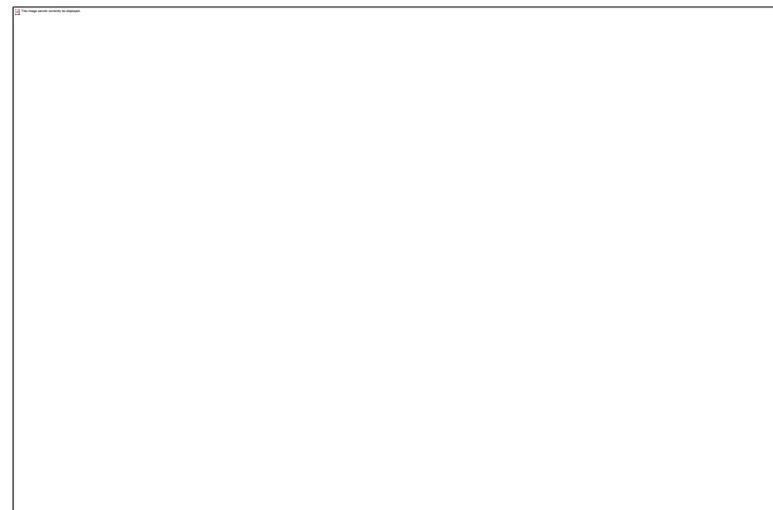
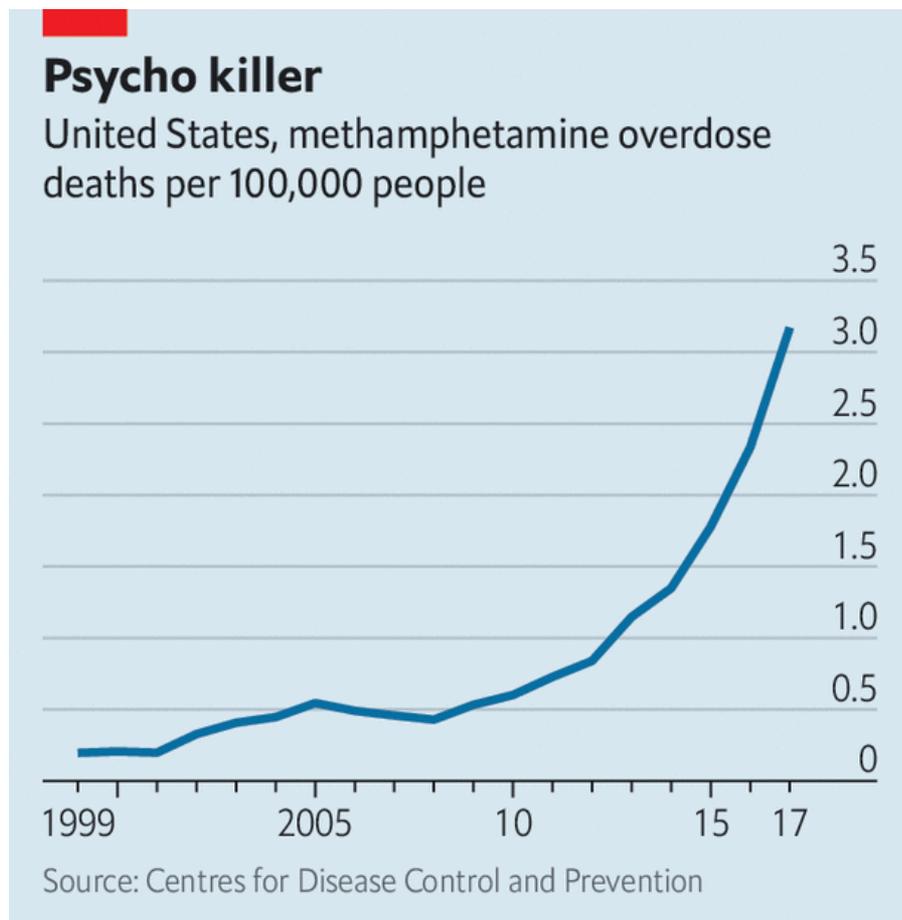
Reported Area	Location in Area	Type	Media	Units	Results Summary	Identification
Real-Time PCR Broad Screen for Legionella spp. and L. pneumophila (EMSL Test M163)						
Cooling Tower	Fan Grate	non-potable	swab	1	Present Absent	Legionella spp. <i>Legionella pneumophila</i>
Cooling Tower	SW Corner	non-potable	swab	1	Present Absent	Legionella spp. <i>Legionella pneumophila</i>
Cooling Tower	SE Corner Fins	non-potable	swab	1	Present Absent	Legionella spp. <i>Legionella pneumophila</i>

Case Study - Legionella

- FACS Expert Opinion:
 - CT is at high-risk for legionella amplification
 - Plaintiff high-risk of exposure to CT mists/aerosols
 - Standard of Care violated by Hotel Owner/Operators and water treatment contractor
 - **Absence of building-wide water system risk management**

Case Study – Methamphetamine and Synthetic Opioids

Methamphetamine and Synthetic Opioids



[https://www.economist.com/uni-
 ted-states/2019/03/09/amid-
 the-opioid-crisis-a-different-
 drug-comes-roaring-back](https://www.economist.com/uni-

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The Economist

Methamphetamine and Synthetic Opioids



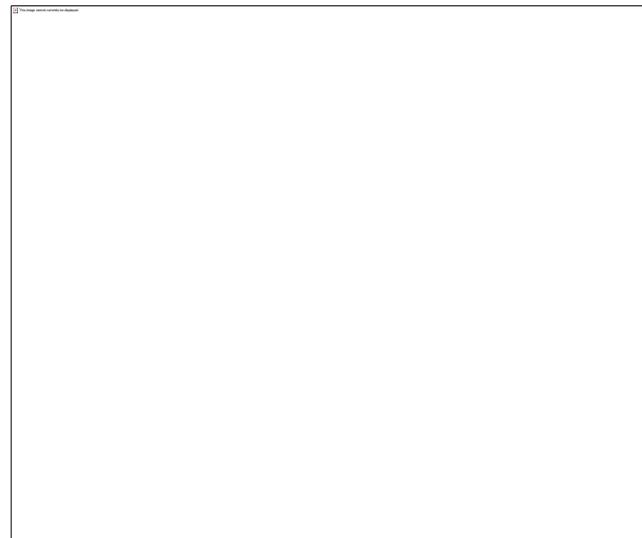
<https://www.economist.com/graphic-detail/2019/04/24/the-opioid-epidemic-continues-to-ravage-america>

Meth & Fentanyl – Case Study

- CLIENT is nation chain of long-term occupancy hotels.
- FACS contracted to manage all EHS issues, including assessment and sampling for methamphetamines and synthetic opioids.

Meth & Fentanyl – Case Study

- CLIENT reports suspected drug use:
 - Fatality
 - Assault (police report)
 - Guest complaints of odor (“cooking”)
 - Paraphernalia found after guest leaves



Meth & Fentanyl – Case Study

- FACS responds and conducts Initial Assessment – sampling for both Meth & Fentanyl
- Cleaning recommendations based on sample results, State of CO Guidelines
- FACS conducts post-remediation sampling
 - 100 sq cm template, ETOH wipe
 - Composite & discreet sampling

Methamphetamine – Clearance Levels

- US EPA reports various guidelines ranging from **0.5-1.5 $\mu\text{g}/100 \text{ cm}^2$**
- Only Colorado and California have published supported health-based guidelines.
- California Office of Environmental Health Hazard Assessment (OEHHA) and the Department of Toxic Substances Control (DTSC) - **1.5 $\mu\text{g}/100 \text{ cm}^2$** (post-remediation)
- Colorado Department of Public Health and Environment - **0.5 $\mu\text{g}/100 \text{ cm}^2$** , with regulations allowing up to **4.0 $\mu\text{g}/100 \text{ cm}^2$** for “limited exposure” areas.
- CLIENT has decided with guidance of FACS to use a level of **0.5 $\mu\text{g}/100 \text{ cm}^2$** as an acceptable level for re-occupancy.



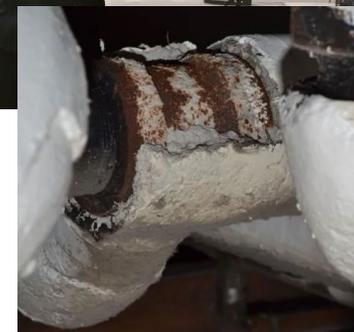
COLORADO
Department of Public
Health & Environment

Fentanyl – Clearance Levels

- **US EPA has not established regulations or clean up guidelines** for surfaces contaminated with fentanyl.
- The State of California recently adopted fentanyl contamination cleanup standards on October 9, 2019 (Assembly Bill 1596), which go into effect in 2020.
- **There are no currently enforced occupational exposure limits, acceptable levels of exposure, or clearance criteria for fentanyl and fentanyl analogs.**
- Medically prescribed minimal dosages = 2 µg/mL-0.9%, 4 µg/mL-D5%, and 12 µg/hr
- FACS recommends the maximum level for re-occupancy of 0.1 µg/100 cm² on indoor surfaces, which is commensurate with the soon to be enforced California standard.

Other EH&S Issues

- Mold & Moisture
- Asbestos, Lead, PCBs
- Wildfire Smoke
- Education & Training



Questions?

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Thank You!

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**Right
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**Right
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