

# Genomic surveillance in routine infection prevention and control practice is a priority

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Envisaging the future of pathogen genomics

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# The problem: healthcare-associated infection

Around 1 in 31 patients contract  $\geq 1$  infection during healthcare

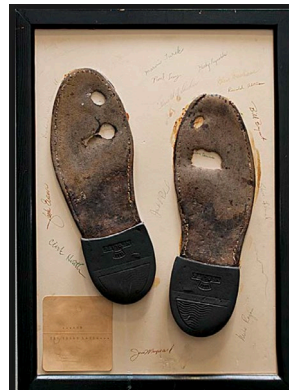
Often caused by multidrug-resistant pathogens

Involve patient-patient spread (often via an intermediary) or direct from environment

Can result in outbreaks, detected by infection prevention & control (IPC)

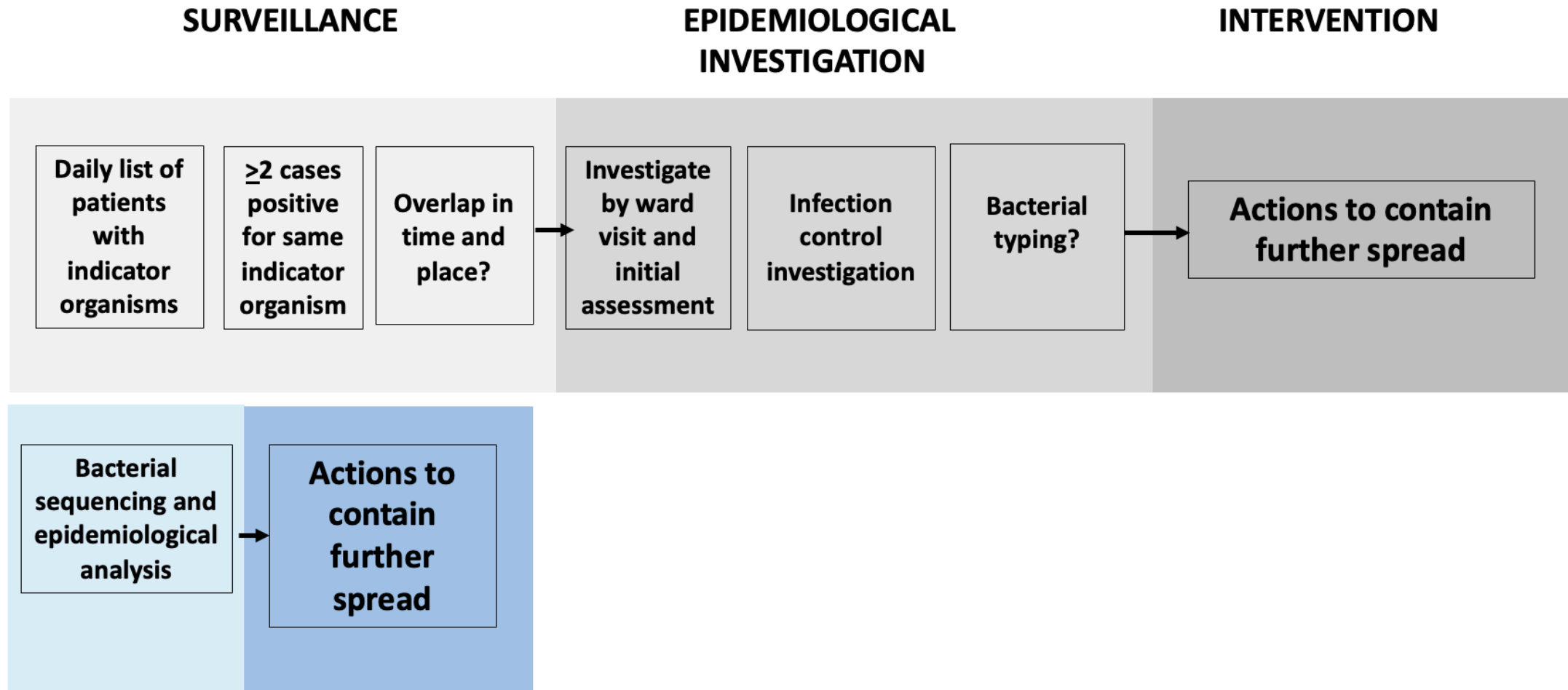
# The current way to detect hospital outbreaks

Standard practice is 'shoe leather epidemiology'  
(same species of pathogen, same time, same place)



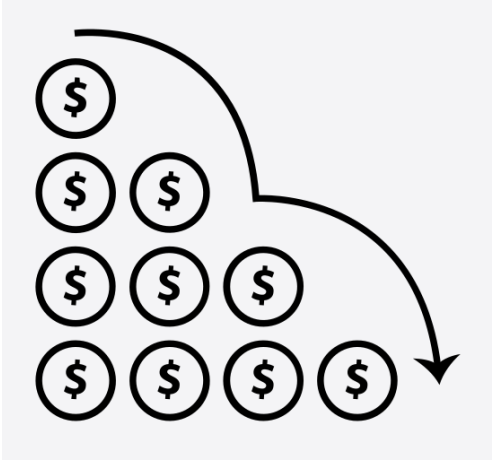


David J. Sencer CDC Museum

# A different future for IPC practice



# What difference can it make?

Improves accuracy of outbreak investigation	Improves decision-making	Saves money
 <ul style="list-style-type: none"><li>• Detects more outbreaks</li><li>• Refutes pseudo-outbreaks</li></ul> <p><i>Coll et al. Science Transl Med. 2017;9(413)</i></p>	 <ul style="list-style-type: none"><li>• Targets IPC interventions</li><li>• Reduces wasted effort</li></ul> <p><i>Blane et al., Microbial Genomics 2024;10:001235</i></p>	 <ul style="list-style-type: none"><li>• Proactive genomic surveillance of MRSA is likely to be cost-effective</li></ul> <p><i>Dymond et al. Clin Infect Dis. 2020; 70(8):1613-1619.</i></p>