

epiXact: Hospital-acquired infection (HAI) outbreak detection for health systems


- In Fall 2020, became technical and product lead for epiXact*, the company's first commercial offering
- Process:
 - Requested by email or on our website
 - Samples collected from patients suspected of HAI outbreak infection and sent to DZD
 - Sequencing => Analysis => Report



*in addition to
MicrohmDB

epiXact: Key results

- Co-led Clinical Laboratory Improvement Amendments (CLIA) certification with Lab Director, which enabled epiXact to be ordered as a lab test
- Automated analysis and reporting to shorten turnaround time from ~1 week to less than 48 hours, which became an SLA we promised customers
 - Speed was critical for our customers because each day increased likelihood that more patients would be infected by an outbreak
- Updated design of our report for CLIA certification and also to improve CX/ UX
- Projects/ deals grew from ~1 per quarter to ~3-4 per quarter

The image shows two overlapping epiXact reports. The left report is titled "epiXact Pathogen Identification Report" and includes a table with columns for "Sample ID", "Organism", "MLST", "SNP", and "Q-score". The right report is titled "eXactPath Report" and includes a table with columns for "Sample ID", "Organism", "MLST", "SNP", and "Q-score". Below the reports is a blue and white seal that reads "HIPAA SEAL OF CONFIDENCE" and "HIPAA VERIFIED".

Report Details

- Determination of outbreak cluster inclusion / exclusion for each sample
- Confirmation of organism ID and Multi-locus Sequence Typing (MLST) typing
- SNP based sequence analysis and distance matrix visualization of relatedness
- Sequencing quality metrics including genome coverage and Q-score

epiXome: New product development

- Worked with our BD team, Marketing and CEO to develop new commercial offerings built on top of epiXact technology
- Part of the business challenge with epiXact is that it was “spiky”, and we often struggled for customers to do regular/ repeat deals with us
- epiXome would be a continuous surveillance service for health systems to proactively detect and control for outbreaks
- I led the new product development process from concept/ design to launch

epiXome®

Unlocking the power of whole-genome sequencing (WGS) for proactive infection monitoring and control

- **Continuous, Scalable Surveillance** – Expansion of epiXact service from episodic investigations to automated, prospective sequencing for real-time monitoring of HAI transmission events.
- **Actionable Genomic Insights** – Leverage the precision of WGS to gain comprehensive, hospital-wide insights into the genomic epidemiology of bacterial infections.
- **Early Detection & Rapid Response** – Enable faster outbreak identification, data-driven infection control strategies, and sequencing-informed feedback to support microbiology lab quality management.
- **Cost-Efficient Infection Control** – Reduce the financial and clinical burden of HAIs through faster response to suspected transmission and prevention of large-scale outbreaks.

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