Dr. Buffy J. Lloyd-Krejci, DrPH, MS, BS, CIC

Professional Information

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Links

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Qualification Highlights

20+ years of healthcare experience with expertise in quality improvement (QI) and Healthcare-Associated Infections (HAI) surveillance, statistical analysis, education, and training. Board Certified in Infection Prevention and Control and 2019 President for the Arizona Association for Professionals in Infection Control and Epidemiology (APIC) state chapter, collaborates with the CDC Long-term Care team, state and national Nursing Home Association, local and state public health departments, and is an advisor on the Cintas EVS Optimization Playbook. Expertise with the Centers for Disease Control and Prevention (CDC) infection prevention and control practices including the National Healthcare Safety Network (NHSN).

Dedicated mission to mitigate the risk of harms and deaths associated with healthcare associated infections such as urinary tract infections and multi-drug resistant organisms (MDROs) such as the *Clostridioides difficile* infection (CDI) through data-driven, targeted training and education.

Relevant Experience

IPCWell, LLC, Epidemiologist/CEO:

Provide infection prevention and control (IPC) subject matter expertise during the 2019 *novel coronavirus (COVID-19) global pandemic*. Offered IPC expertise on a qualitive study evaluating early experiences of off-site COIVD-19 drive through testing centers. Actively participate as a key contributor to OPERATION T.R.A.C.E, a comprehensive end-to-end contact tracing solution aimed to mitigate the spread of COVID-19. Provide weekly national IPC webinar training to the most vulnerable healthcare populations such as long-term care and critical access hospitals. Work with national vendors to ensure healthcare settings have the appropriate personal protective equipment required to provide safeguards for all healthcare workers, patients, and communities. Work with Medecins Sans Frontieres (Doctors Without Borders) in hard hit Detroit, Michigan and Houston, Texas supporting Long-term Care Facilities with IPC practices.

Epidemiologist/ Infection Prevention and Control Expert for a vulnerable Native American Tribe in Arizona that require extraordinary processes for modern conveniences and services. We have successfully kept COVID-19 out of the tribe by painstakingly reviewing every process that requires entry and exit into the community. This includes bringing home displaced residents, contractors, and accommodating medical needs outside of the tribe.

Infection Prevention and Control Subject Mater Expert for the Arizona Disaster Ready EPIC (Emergency Preparedness Infection Control) grant through Arizona Department of Health Services (ADHS), Health Services Advisory Group (HSAG), and the Arizona Healthcare Association (AHCA). Analysis of infection control trends identified in DHS surveys and a deep dive into facility assessments and how they properly reflect infection control practices. Provide targeted evaluation of the value of Nursing Home Incidence Command System (NHICS) and other tools as implemented during the COVID-19 pandemic. Developing a portfolio of online resources for nursing homes related to infection prevention and control.

Infection Prevention and control subject matter expert for the Arizona Center for Rural Health Flex program serving the 14 rural and underserved critical access hospitals prior to and during the COVID-19 pandemic offering weekly support through webinar training and education. Offer ongoing technical support for data reporting into the CDC's NHSN.

Infection Prevention Consultant supporting nursing homes across the country with their CMS Directed Plan of Correction (DPOC) remediation plan. Offer on-site and remote support for nursing homes that have been cited for infection control deficiencies. Provide support with the root-cause analysis, QAPI and PIP. Provide directed on-site Inservice training and support to all of the nursing home staff.

Infection Prevention and Control Subject Matter expert offering on-site, boots on the ground support to nursing homes across the country as part of the QIN-QIO COVID-19 response plan. Offer support in the hardest hit, COVID-19 "hot spot" regions by identifying gaps in evidence-based IPC practices and immediate solutions that reduce the risk of COVID-19 transmission to the healthcare workers, residents, and the community.

Epidemiology Subject Matter Expert for the AHRQ ECHO National Nursing Home COVID-19 Action Network. Provide weekly education, training, and mentorship to over 100 nursing homes in 5 US states aimed to increase the implementation of evidence-based infection prevention and control practices.

Provide subject matter expertise to federal, state, and local public health entities and healthcare professional's nationwide. Offer data-driven, targeted, quality improvement solutions aimed to mitigate healthcare-acquired and community-acquired infectious diseases in all healthcare settings including but not limited to Acute Care Hospitals, Long-term

Acute Care Hospitals (LTACH), Long-term Care Facilities (LTCF), Acute Surgical Centers (ASC), and Outpatient healthcare settings.

Speaker in-person training: Present at local, state, and national meetings and conferences on topics related to infection prevention and control with a focus on data-driven solutions. Design, develop, and present subject matter expertise related to infection prevention and control best-practices.

Virtual and on-site infection prevention and control training: Topics include defining the role of the infection preventionist, implementing and managing the infection prevention program, early sepsis recognition, infectious diseases, isolation precautions, cleaning, disinfection and sterilization, microbiology, construction and renovation, water management, outbreak investigation, and surveillance.

Antibiotic Stewardship: Implement the CDC's Core Elements of Antibiotic Stewardship including Leadership Commitment, Accountability, Drug Expertise, Action, Tracking, Reporting, and Education. Implement robust data tracking to include documentation of dose, duration and indication. Utilize data to improve clinical outcomes, reduce adverse events from unnecessary antibiotics, and decrease antibiotic resistance and healthcare spending.

Infection Control and Antibiotic Stewardship "Deep-Dive Assessment and Tracer": This six-hour deep dive assessment identifies gaps in infection control practices, policies, and procedures. In-depth interviews are conducted with frontline staff members, pharmacy, laboratory, dietary, and environmental services staffs. A final report and implementation toolkit are provided upon assessment completion.

CMS committee member for the Development and Maintenance of Quality Measures for Skilled Nursing Facility Quality Reporting Program (SNF QRP) Technical Expert Panel.

National Health Care Safety Network (NHSN): Provide training and education related to enrollment, set-up, and data reporting. NHSN reporting includes outcome measures for healthcare associated infections, multi-drug resistant organisms (MDROs), surgical site infections, and process measures including hand hygiene, gown and glove use, and healthcare personnel vaccination and exposure. Core to this training is how to utilize NHSN data reports to drive an infection prevention and control program.

Write and review infection control policies and procedures aligned with CMS, Local, State, and Federal Regulations.

Prepare quarterly and Annual CMS reports.

Request for Proposal (RFP) writing.

Health Services Advisory Group, Inc. **(HSAG) Quality Improvement Network-Quality Improvement Organization (QIN-QIO), Senior NHSN Specialist-HAI, Federal:**
Participated in the National Centers for Medicare and Medicaid (CMS) initiative along with the Centers for Disease Control and Prevention (CDC) to track and ultimately reduce the incidence of CDI in LTCFs. Collaboratively assisted in the development and usage of resources to assist LTCFs on a national scale to enroll into the CDC's NHSN with the development of a dynamic data tracking tool, development of a YouTube training video series, www.youtube.com/watch?v=C5Su47ZmZTc&t, training through national webinars, and one-on-one coaching calls with healthcare providers.

Provided weekly data-driven updates to Executive Management regarding project status, barriers, and suggested strategies for success.

Provided CMS and CDC with barriers that LTCFs faced nationally with completing NHSN enrollment and the "Top 10 Tips" for successful implementation.

Coordinated and facilitated virtual and in-person Learning and Action Networks (LAN) demonstrating how to utilize NHSN data to drive infection prevention and control practices within LTCFs.

Participated with the CDC's long-term care (LTC) team in providing national education and training for all QIN-QIOs. Participated on national QIN-QIO calls offering strategies and data-driven solutions that supported the successful completion of targeted milestones and goals.

Provided consultation, education, and mitigation strategies to acute care hospitals in Arizona and California that participated in the CMS and Partnership for Patients (PfP) Health Improvement Innovation Network (HIIN) initiative to reduce overall patient harms by 20% and readmissions by 12%. Special focus on reducing healthcare-acquired infections such as: Central Line Associated Blood Stream Infections (CLABS), Catheter Associated Urinary Tract Infections (CAUTI), CDI, Surgical Site Infections (SSI), Multi-Drug Resistant Organisms (MDRO), Ventilator Associated Events (VAE) and Sepsis.

Worked directly with hospital clinical informaticists and analytic teams, quality improvement teams, and pharmacists to support electronic health record (EHR) data extraction for three measurements unattainable by CMS claims data: Opioid usage, Falls, and Pressure Injuries.

Prepared quarterly and annual CMS reports.

HSAG, Informatics Analyst, Analytics & Informatics:
Performed acquisition, validation, warehousing, and statistical analysis

of healthcare data including, but not limited to: Survey, case review, medical and claims, disease management, vital statistics, and electronic health record (EHR) data. Assisted in designing statistical analysis plans, case selection criteria, and reporting parameters. Worked in a team environment with team members including project managers, project support staff, informatics leadership, and other analytics staff. Assigned to a number of data projects, many of which involved working directly with policy makers at the state and federal level.

Arizona State University/Mathematical Epidemiology/Biomedical Informatics/Mayo Clinic Research Affiliate:
Statistical analysis identifying the adherence to Gastrointestinal Bleeding quality indicators compared with Medicare reimbursements for all Arizona hospitals. Completed IRB process for Arizona State University and Arizona Department of Health Services for the data set containing 100 variables and 85k+ observations.

Utilized SQL to query the data set for specific variables of interest, create tables, and conducted Descriptive/Statistical analysis utilizing Excel, SAS, and SQL.

Generated reports and described analysis to Mayo Clinic Stakeholder, Center for Health Information and Research, and Arizona State University Biomedical Informatics director.

Project Manager, "Patient Like Mine" Software Engineer Project:
Co-created a novel software application that compared all outcomes for Mayo Clinic post colorectal surgery patients. Assisted in the development of the GANTT Requirement and Design documents including: Use-case, activity and sequence diagrams, functional, non-functional, technical requirements, constraints, assumptions and dependencies and generated reports and presented to colleagues.

Research Assistant, "iDECIDE" Clinical Decision Support/Mayo Clinic Research Affiliate:
Assisted in the development of a novel insulin dosing equation for diabetic patients accounting for personal preferences including exercise and alcohol consumption.

Developed and deployed a mobile application prototype, *iDECIDE*, using the new insulin dosing equation.

Created a relational database using *SQLite* to store the output from iDECIDE into large tables for future reports and data summaries. Assisted in the development of an Ontology Web Language with *Protégé*, a semantic based language, to further tailor treatment recommendations for patient preferences and goals.

Generated Scientific Poster and presented to Mayo Clinic and The American Medical Informatics Association (AMIA).
Generated Scientific paper and published in *MEDINFO.*

Healthcare Improvement Case Study:
Observed several Arizona medical center clinical environments including current work-flow conditions.

Utilized the Toyota Production System for Health Care Improvement, identified a target condition that needed improvement along with developing counter measures to improve working conditions including an implementation plan, cost-benefit analysis and necessary follow-up plan. Generated report and presented to colleagues.

French Health Care Analysis/Study Abroad:
Researched the current health care environment in France. Analysis included an in-depth interview with Dr. Sophia Barrois, a practicing pediatrician at the Centre Hospitalier St. Joseph et St. Luc, Lyon, France. Data analyzed from the World Health Organization and the Centers for Disease Control comparing the overall health of American citizens compared with French citizens. Generated and submitted report.

Research Assistant/Mathematical Epidemiological Research Group (MERG):
Extensive literature search regarding the causation, transmission, and health consequences of cervical cancer.

Developed a stochastic, Susceptible- Infected –Recovered *(SIR)* model from ordinary differential equations describing the transmission of cervical cancer in both men and women.
Ran computer simulations with *Matlab* to evaluate the effectiveness of the model compared with other epidemiological models.
Generated Scientific Reports utilizing Latex.

Generated Scientific Poster and presented at Nationwide: Infinite Possibilities Conference (Baltimore, MD), 2013 Eleventh Annual MGE@MSA/WAESO Student Research Conference (Honorable Mention Award), Advancing Hispanics/Chicanos & Native American in Science (SACNAS) National Conference (San Francisco, CA), and ASU New College Student Research (Glendale, AZ), Arizona-Nevada of Science Annual Meeting (Glendale Community College).

Arrowhead Hospital, ICU Hospital Unit Coordinator/Cardiac Monitor Technician:
Responsible for the high-level, efficient operations of the 25-bed General/Cardiovascular Intensive Care Unit. Instructed colleagues as an

expert user during the implementation of McKesson portal electronic health record software. Worked with multiple computer programs including Microsoft Word, MS4 Physicians Portal, and the Abrazo Health Care intranet. Trained new employees, volunteers, and RN students regarding the daily operations of the unit. Assisted hospital management in developing and implementing the operations of the Cardiovascular Intensive Care Unit (CVICU) and assisted in the development of physician order sets for all open-heart post-operative patients. Monitored and interpreted cardiac rhythm patterns including the reporting of any irregularities or variations.

Straub Clinic and Hospital, Hospital Ward Clerk:
Assisted in the organization and opening of the pre-operative surgical clinic. Participated in weekly hospital and medical clinic management meetings and obtained all pre-operative clearance paperwork from every medical department for 100+ surgical patients per week. Created a training manual for future employees that included detailed clinical operations.

Professional History

ICPWell, LLC, Scottsdale, Arizona: CEO, 11/2017-Present

HSAG, Phoenix, Arizona: Senior NHSN Specialist-HAI, Federal; Informatics Analyst 6/15–06/18

Mayo Clinic, Scottsdale, Arizona: Research Affiliate, Gastroenterology; 8/13–08/15

Arizona State University, Tempe, Arizona: Biomedical Informatics Research Assistant; 8/13–8/15

Arizona State University, Tempe, Arizona: Mathematical Epidemiological Research Assistant; 8/10–8/13

Arrowhead Hospital, Glendale, Arizona: ICU/CVICU Hospital Unit Coordinator/Cardiac Monitor Technician; 3/06–8/10

Straub Clinic & Hospital, Honolulu, Hawaii: Hospital Ward Clerk; 7/05–1/06

Education

DrPH, Public Health/Epidemiology, Capella University,

Minneapolis, MN, 2020

Master of Science, Biomedical Informatics, Arizona State University, Tempe, Arizona, 2015

Bachelor of Science, Applied Mathematics, Arizona State University, Tempe, Arizona, 2013

Technical Experience

Microsoft Word, Excel, Access, SAS, SPSS, Java, Quality Net, NHSN

Licenses, Certifications, Professional Organizations, Languages and Publications

Certifications:
Hospital Unit Coordinator, 1994
Monitor/EKG Technician, 2008
Certification in Infection Prevention and Control (CIC®), Board of Infection Control and Epidemiology, 2017

Professional Organizations:

Association for Professionals in Infection Control and Epidemiology (APIC)
Society for Healthcare Epidemiology of America (SHEA)
International Foundation for *Clostridium difficile* infection

Languages:

English, French

Publications:

C Brammer, S Donohue, T Ellis, E Fishbein, D Forshino, D Horne, B Lloyd-Krejci, et al., "Qualitative review of early experiences of off-site COVID-19 testing centers and associated consideration". ELSEVIER Healthcare. 8 (2020) 100449. 2020

B. Lloyd-Krejci, K. Ellingson, E.Coury. "Assessing Policies Versus Practices Utilizing the CDC's ICAR Tool". Poster accepted and published SHEA Decennial 2020 Conference Proceeding; March 2020, Atlanta, GA

B. Lloyd, D. Groat, J. Mirkovic, C. B. Cook, A. Grando. "iDECIDE: A Mobile Application for Pre-Meal Insulin Dosing Using an Evidence Based Equation to Account for Patient Preferences" Accepted and published MEDINFO 2015: eHealth-enabled Health.

B. Lloyd, D. Groat, J. Mirkovic, C. B. Cook, A. Grando. "iDECIDE: A Mobile Application for Pre-Meal Insulin Dosing Using an Evidence Based Equation to Account for Patient Preferences" Accepted and published at the 2014 AMIA Conference Proceeding.

Presentations:

Lloyd-Krejci, B., "Healthcare-Acquired Infections: Shifting from Reactive to Proactive Practices"; Association of Healthcare Quality of Arizona (AzAHQ) 2019 Fall Conference; November 15, 2019; Phoenix, AZ

Lloyd-Krejci, B., "The IP Role in Long-term Care"; Association for Professionals in Infection Control and Epidemiology (APIC); Arizona Fall Chapter Conference; October 25, 2019; Phoenix, AZ

Lloyd-Krejci, B., "Infection Prevention in Food Services…What You Need to Know"; Idaho Healthcare Association Winter Workshop; February 2019; Phoenix, AZ

Lloyd-Krejci, B., "CDIFF Testing Practices"; Arizona 6th Annual HAI/HAC Prevention Summit; July 2019; Phoenix, AZ

Lloyd-Krejci, B., "LTCF Infection Control Compliance"; Arizona 6th Annual HAI/HAC Prevention Summit; July 2019; Phoenix, AZ

Lloyd-Krejci, B., "Don't Let Infection Control Bug You"; 2019 Arizona Healthcare Association Annual Convention; July 2019; Phoenix, AZ

Lloyd-Krejci, B., "Clostridium *difficile* infection: NHSN Data-Driven Prevention and Control; 5th Annual HAI/HAC Prevention Summit; May 2018; Phoenix, AZ

Lloyd-Krejci, B., "Improving the Quality of NHSN Data: Experience from the Field"; Long-term Care CDC National Healthcare Safety Network training; July 2018; Atlanta, GA; https://www.youtube.com/watch?v=yWaFPJt8PQQ

Lloyd-Krejci, B., "Infectious Disease Monitoring and Surveillance: Using NHSN to Drive Action"; Association for Professionals in Infection Control and Epidemiology (APIC); October 2018; Phoenix; AZ

Lloyd-Krejci, B., "National Healthcare Safety Network for Long-term Care Facilities"; Association for Professionals in Infection Control and Epidemiology (APIC) October 2017; Phoenix, AZ

Farhadi, B. Lloyd, D. Groat, J. Mirkovic, C. B. Cook, A. Grando. Poster Presentation, "iDECIDE: A Mobile Application for Pre-Meal Insulin Dosing Using an Evidence Based Equation to Account for Patient Preferences" Mayo Academic Excellence; April 2014; Scottsdale, AZ

B. Lloyd, J. Ortiz, O. Ortega. Poster Presentation, "A Stochastic Model of the Human Papillomavirus infection" 2013 Eleventh Annual MGE@MSA/WAESO Student Research Conference; March 2013; Tempe, AZ

B. Lloyd, J. Ortiz, O. Ortega. Poster Presentation, "A Stochastic Model of the Human Papillomavirus infection" Infinite Possibilities Conference; November 2012; Baltimore, MD

B. Lloyd, J. Ortiz, O. Ortega. Poster Presentation, "A Stochastic Model of the Human Papillomavirus infection" Advancing Hispanics/Chicanos &

Native Americans in Science (SACNAS) Conference; October 2012; San Francisco, CA

B. Lloyd, J. Ortiz, O. Ortega. Poster Presentation, "A Stochastic Model of the Human Papillomavirus infection" New College Student Research, Arizona State University; April 2012; Glendale, AZ

B. Lloyd, J. Ortiz, O. Ortega. Poster Presentation, "Exploring Mathematical Models of Rotavirus" 2012 Tenth Annual MGE@MSA/WAESO Student Research Conference; March 2012; Tempe, AZ

B. Lloyd, O. Ortega. Poster Presentation, "Exploring Mathematical Models of Rotavirus" 2011 Advancement of Chicanos and Native Americans in Science Annual Meeting (SACNAS); October 2011; Dallas, TX

B. Lloyd, O. Ortega. Poster Presentation, "Exploring Mathematical Models of Rotavirus" Arizona-Nevada Academy of Science Annual Meeting (ANAS); April 2011; Glendale, AZ

Media:

Lloyd-Krejci, B., "Defining the New IP Role in Long-term Care" Lloyd-Krejci Consulting, LLC Infection Prevention and Control Webinar Series; October 22, 2019; Scottsdale, AZ
https://www.youtube.com/watch?v=lXautWpPhfE&t

Lloyd-Krejci, B., "Infection Preventionist" Guest Speaker, The Clean Life Health & Wellness Podcast; October 16, 2019; Scottsdale, AZ
https://www.youtube.com/watch?v=CJHnM6zy5jo&

Lloyd-Krejci, B., "NHSN Data Analysis: 3 Part Video Series", Health Services Advisory Group; December 2017; Phoenix, AZ
https://www.youtube.com/watch?v=g6I1w0GjD7o&list=PLfm1t1zOVVINYTQn79CFGOQxyyqZXyPQz

Lloyd-Krejci, B., "NHSN Data Validation" Guest Speaker National QIN-QIO Webinar, Centers for Disease Control and Prevention & National Coordinating Center (NCC); July 2017, 2019; Scottsdale, AZ
Lloyd-Krejci, B., "NHSN Set-Up: 3 Part Video Series", Health Services Advisory Group; April 2017; Phoenix, AZ
https://www.youtube.com/playlist?list=PLfm1t1zOVVIPzuLD0hUuvhgzJ8WOLgvjA

Lloyd-Krejci, B., "NHSN Enrollment: 7 Part Video Series", Health Services Advisory Group; July 2016 – December 2016; Phoenix, AZ
https://www.youtube.com/watch?v=qBAP5BJbZ9g&list=PLfm1t1zOVVIOcHopWAaBE6FRnQ952SCSX

Lloyd-Krejci, B., "NHSN Enrollment Training Series", Health Services Advisory Group, National Webinar; June 2016 – August 2016; Phoenix, AZ