

Mohammad Saad Khan

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PROFILE

Accomplished senior health informatics innovation leader with extensive experience at the international, national and enterprise level. Dynamic and varied work to improve health systems for over 20 years. A gamut of experiences associated with the field, be it hands on advanced technology program leadership at large integrated health care systems and federal agencies or high level public health technology policy, evaluations and guidance for national and international policy.

- Systems Development & Architecture
- Strategic analysis and planning
- Novel disease surveillance
- Infrastructure Management
- Business Intelligence & Data Analytics
- Systems/Devices/HIE integration

SELECTED ACCOMPLISHMENTS

- Working with 30 plus US Missions in Sub-Saharan Africa and Asia to deploy a novel electronic survey tool for facility level health services delivery and quality data analytics. In addition, deploying a complimentary global data warehouse with analytic platform to provide the analysis, intelligence and visualization platform for data collection and aggregation. This effort has resulted in empowering bureau and agency-wide use of better data and cross-cutting data analyses to make strategic and technical choices with greater impact and improved efficiency.
- Led an effort across the 30 member countries to explore the use of clinical informatics at the point of care for use in population health management. Developed a proposal that was presented to the member countries in June 2009 to begin initial work in this area. The effort began to outline and assist countries in incorporating the requisite public health policy building blocks necessary in their respective national e-health strategies to ensure that the rapidly developing clinical informatics environment is synchronized with the broader public health issues and data requirements. This work required substantial broad scale coordination and partnering across numerous countries as well as the WHO, and EC with a range of political agendas and priorities to harmonize health policies. As a result, we received preliminary support for the proposal with several countries as well as the WHO and EC indicating a deep interest.
- Led a broad review of the current status of major federal initiatives aimed at strengthening the ability of government at all levels to respond to public health emergencies, natural or intentional. Specifically, our objectives were to assess the progress of major initiatives designed to strengthen the effectiveness of the public health infrastructure and describe the key technical challenges facing federal agencies responsible for improving the public health infrastructure for surveillance, communications, and monitoring and evaluation. Made major recommendations, calling for better alignment with national public health strategy, federal health architecture, and better coordination with state and local public health initiatives that have been implemented by HHS.

EXPERIENCE

Chief of Activation & Optimization for Health Information Systems **July 2016 to Present** US Department of Defense, Defense Health Agency (DHA), Falls Church, VA

Leading and coordinating technology optimization plans as well as EHR (Cerner), biomedical engineering and enterprise-wide health care and clinical research innovation planning for nearly 700 clinics and hospitals worldwide serving 9.6 million beneficiaries. Serving as senior expert for tri-service leadership teams to ensure that productivity levels and patient care data standards remain consistently high during EHR activation while proactively identifying and addressing issues in real time to navigate around emerging deployment challenges.

- Establishing the office as a nexus for change, bridging clinical, IT operations, administrative and research users, EHR program management team, EHR vendor and hundreds of consultants, organizational current/future state workflows and expected strategic and tactical outcomes for respective organizational domains as well as the overall program.
- Serving as the Military Health System-wide biomedical devices EHR integration task force leader for over 50 hospitals and 700 clinics and a myriad of medical devices including POC, PACS, lab, anesthesia, pharmacy, physiological monitoring.
- Providing key strategic implementation optimization data, measurement and management vision and leadership to ensure DHA achieves the tri-service population health goals.
- Building collaborative relationships and coalitions at all levels within the DHA organization, services and federal partners with clinical and administrative leadership, technologists, clinical research, quality managers and analysts.
- Established the tri-service EHR optimization work group to build consensus around key areas of both clinical and technical optimization and develop strategic and tactical plans for military health system level and facility level population health outcomes target improvements.
- Serve as an agency expert on population health informatics including electronic surveillance and analytics, performance measurement, evaluation and transition to patient-centered medical home model utilizing data warehousing and analytic approaches.
- Designing and evaluating collection of data for clinical and research purposes, including tracking and interpretation of individual patient outcomes needed to provide personalized, more predictive and better targeted health care services.
- Facilitating data approaches and metrics for aggregation of both quantitative and qualitative data from multiple sources into a unified outlook on health information systems maturity correlated to improved health outcomes.
- Supporting and providing business intelligence expertise on clinical and administrative data aggregation, analysis and improvement across health services, performance assessments, scorecards and LEAN processes.
- Ensuring information systems not only comply with federal IT regulations but also meet FDA, Joint Commission and other health regulatory process requirements.

Sr. Health Information Systems Advisor **August 2013 to July 2016** US Agency for International Development (USAID), Washington, DC

Served as the Senior Advisor for HIS, leading public health innovations, eHealth, mHealth, health data analytics and GIS initiatives for the Office of HIV and AIDS. Working in close collaboration with the Office of the US Global AIDS Coordinator, implementing agencies, WHO, World Bank, UNAIDS, other large donors and over two dozen developing countries' Ministries of Health (MOH) in Sub-Saharan Africa and Asia.

- Providing analysis of existing health management information systems and guidance to leadership for priority strengthening initiatives.
- Serving as the Co-Chair for the HIS inter-agency technical working group and assisting with the coordination of strategic partners involved in HIS initiatives including the larger USG team,

implementing partners, and host country MOHs for health systems strengthening and capacity development.

- Liaising and providing technical consultations to multilateral donors for the coordination and deployment of interoperable health information infrastructures to cut across multiple public health program areas.
- Providing technical assistance to in-country USG teams, partners, and Ministries of Health related to performance monitoring, M&E plan development, data gathering, data quality improvement, trend analysis and reporting, development of tools including mobile apps, databases and data management protocols.
- Assisting Ministries of Health in planning and restructuring facility and community-based health information exchanges (HIE), supporting the transition to more granular and targeted data analytics and BI plans, as well as data collection and processing tools including patient/client forms and registers, data entry forms, data warehousing, Enterprise Resource Planning (ERP), supply chain and EMRs.
- Developed and implemented plans for better integration of information from multiple vertical programs, including family planning and reproductive health, maternal nutrition and child health, Malaria, immunization/treatment and HIV/AIDS, into a more integrated health information infrastructure.
- Providing USAID and other USG team, Ministries of Health, implementing partners, and multilateral donors with technical recommendations and expertise in the design, development, improvement, maintenance, and coordination of information systems that strengthen health service effectiveness and efficiency.
- Leading the development of a globally deployed facility level disease surveillance system for data collection, aggregation, and data analytics platform.
- Coordinating and contributing to the design and development of novel information systems strategies to improve data use and flow from patient-level/facility-based systems to integrated regional and national/international health information systems.

Sr. Health Systems Engineer

January 2013 to August 2013

US Department of Veterans Affairs, Rosslyn, VA

Working jointly with the Department of Defense in the Interagency Program Office (IPO) to establish interoperability of a global electronic health records system and enable the continuity of health care services between Departments for hundreds of thousands of service members, veterans, and eligible beneficiaries. Providing technical guidance to leadership and clinical specialists on the analysis, design and construction of the next generation of health IT data standards, architectures, systems and processes.

- Work with customers and integrated project teams in determining the best approaches for using data standards and health IT operations to address interoperability and while maintaining data quality and integrity.
- Provide analysis, advice and oversight of complex business systems architectures and solutions to major engineering challenges for health care applications.
- Conducting the analysis of health standards into data management and transformation solutions that follow best practices and formal methodologies.
- Performing evaluations of products and solutions; for making rational design decisions from both business and technical perspectives; and providing recommendations to joint working groups.
- Providing clinical informatics expertise on health systems interoperability and HIE into data management solutions that follow best practices and formal methodologies including HL7 CCD, HL7 v2.x Messages, HL7 v3.x RIM, HL7 CDA, ASTM CCR, and others.
- Utilizing experience with software technologies such as ails, Java, J2EE, LINUX/UNIX-based operating systems, HTML, SQL, and others for designing, building, and integrating metadata repositories and advanced clinical analytics capabilities spanning across Departments that meet IT and health system user needs.
- Working with clinical domain experts to incorporate requirements while ensuring the use of

robust methodologies and processes for developing and testing clinical quality and population health measures, including electronic measures, for use in clinical and health system performance assessment.

- Providing tactical and strategic advice and counsel to project teams on the complex technical, clinical, financial and administrative implications of various decisions and ultimate advancement of health outcomes via health information technology.

Chief Health Informatics Officer

March 2010 to December 2012

US Department of Veterans Affairs, Bronx, New York

Serving as the leader and resident expert for public health informatics across the New York/New Jersey Veterans Integrated Service Network (VISN) made up of eight medical centers and 27 primary care centers supporting nearly 3 million annual patient visits. Providing guidance and advice to the network director and chief medical officer on maximizing the effective use of information and biotechnologies in the gamut of clinical care to improve the long-term and continuing well-being of hundreds of thousands of patients.

- Serving as chief advisor to local facilities and VHA management on all informatics, health IT, clinical informatics research, and biotechnology issues.
- Providing executive leadership for the acquisition and deployment of over \$15 million of clinical information systems including, Knowledge Management (KM) infrastructure, Business Intelligence (BI), data warehousing, clinical research, biomedical devices, EMRs for anesthesia, ICU, and other high acuity areas.
- Headed the development of a network level data infrastructure as well as guiding the development and deployment of a regional and national analytics strategy targeting clinical performance, translational research and quality improvement.
- Led the biomedical and medical device interoperability team to interface new EHRs being deployed in critical care and med/surg units.
- Chairing the Clinical Informatics council and other groups as necessary.
- Acted as liaison between the VISN and VA's Office of Information and Technology (OI&T), and as such, identifying and articulating the needs of the VISN and monitoring how well those needs are being met.
- Raising and articulating the health information issues that are affecting the delivery of care, and offering solutions that will significantly change important veteran's health care public policy.
- Implemented informatics-related policies and procedures, including nationally approved HIE and Biomedical System configurations as well as local implementation and configuration of nationally developed software.
- Defined performance, reliability and availability requirements of Health Information Systems.

Health Economist

August 2008 to December 2009

Organisation for Economic Co-operation and Development (OECD), Paris, France

As a public health policy specialist studying, evaluating, and advising on a range of policy issues related to the 30 member countries. Routinely working with other international organizations such as the, UN, World Bank, WHO, European Commission, and others to identify areas of coordination and collaboration points to build consensus and move forward on a variety of public health care policy issues assisting member countries to leverage improvements in health conditions to drive economic growth and improve the welfare of citizens.

- Led a case study effort in multiple countries to identify the use and diffusion of information technologies in health care services to improve quality, efficacy, and economics of services.
- Provided input and expertise on the development of actionable indicators to for measuring technology diffusion for use by policy makers in OECD indicators.
- Led an initiative to integrate the use of clinical data from the point of care for population health management, monitoring and evaluation, in the construct of strategic national health care

performance knowledge management.

- Assisted and provided expertise in the development of a Model Survey approach for technology assessment.
- Solicited, gathered, and organized input from OECD countries on work products to synthesize and develop consensus around common public health care goals and objectives.
- Regularly liaised with high level government officials in member countries as well as with other international organizations, the business community and academia.
- Represented the Division at meetings inside and outside the organization.
- Delivered speeches, presentations and briefings at international conferences for Ministerial officials.
- Regularly drafted reports, both of a technical nature but also those designed for policymakers and other readers of general interest to understand the key findings of projects and recommendations for policy action.

Sr. Analyst

May 2001 to July 2008

US Government Accountability Office (GAO), Washington, DC

Working for the United States Congress, designed, managed, and conducted program evaluations and reviews of multibillion-dollar health care, public health, and biotechnology programs for federal agencies. In addition, worked with international, national, and private sector officials to gain broad perspectives from all relevant stakeholders to provide a fair and balanced assessment of political, technical, legal, and financial implications on national health policy. Utilizing GAO, OMB, UN, OECD, and legislative mandates such as ITIL, COBIT, FISMA, Information Technology Investment Management (ITIM), and HIPAA to review agency processes, design and perform sophisticated analysis of organizational policies, capital planning, knowledge management/propagation, business processes, management controls, quality control, enterprise architecture (FEAF/Zachman), organizational planning, and strategic planning.

- Conducted detailed management interviews and collaborations with senior federal managers both military and civilian (directors, military commanders, branch chiefs, CEOs, CIOs, etc).
- Performed in depth analysis of technical project management controls for systems development efforts, custom applications development, COTS/GOTS products, fiscal incentives, systems integration, e-government efforts, resource utilization, return on investment (ROI), procurement guidance, telecommunications, cost-performance-schedule, quality assurance, security, and feasibility.
- Provided comprehensive organizational reviews that lead to detailed tactical and strategic outlines for restructuring of management processes, personnel, programmatic controls and operational controls.
- Made detailed recommendations based on investigations to improve organizational performance, industrial outlook, and leveraging of purchasing power.
- Developed best practices and lessons learned guidance for use by agencies in knowledge management and enterprise architecture.
- Provided technical expertise and advice to Congressional representatives and committees related to health technology policy.
- Created published GAO reports to be given to Congressional requestors.
- Briefed Congressional staff on findings from review work.
- Performed assessments on agency work to establish an enterprise architecture, including development of guidance and implementation approaches.

Early Career

Prior to May 2001

Worked in several technical and clinical roles at Inova Health System and MedStar Health assisting in the development and management of multiple clinical information systems programs.

EDUCATION

DrPH, *Public Health*, University of North Carolina, Chapel Hill, NC

MS, *Health Systems Administration (conc. Economics/Primary Care)*, George Washington University, Washington, DC

MPH (*conc. Global Health/Informatics*), George Washington University, Washington, DC

BS, *Medical Technology minor Electrical Engineering*, George Mason University, Fairfax, VA

Certifications, CMMI, Carnegie Mellon Software Engineering Institute, 2004; **Current Board Certification: American Society of Clinical Pathologists**

COMPUTER SKILLS

Relational Databases: MS Access, MS-SQL, NoSQL, Erwin CASE Tools, Oracle

Operating Systems/Integration: Windows, UNIX/LINUX, CORBA, .NET, WebSphere

Applications: MS Project, MS Office, MS Visio, MS

SharePoint/PerformancePoint, Tableau, MicroStrategy

Analytics, ArcGIS, GRASS GIS, ZenDesk, IBM Control Desk

Health/Public Health Systems: Cerner, DHIS1&2, OpenHIE, ODK, OpenMRS, RapidSMS,

CommCare, GIS, CHCS/AHLTA, VistA, RPMS, Epi-X,

GPHIN, NEDSS; caBIG; VA QUERI; VA VINCI; caBIG;

REDCap Standards: HL7, FHIR, CDISC; IHE, SNOMED,

LOINC, HEDIS, NCQA, HIPAA, FISMA, COBIT, ICD-9/10,

DICOM

SELECTED REPORTS, PRESENTATIONS & CONSULTS

Article: Khan, S. (2018) Military Health System Transformation Implications on Health Information Technology Modernization. *Military Medicine*.

Article: Khan, S; Shea, CM; Qudsi, HK. (2017) Barriers to Local Public Health Chronic Disease Surveillance through Health Information Exchange: A Capacity Assessment of Health Departments in HINSTX. *Journal of Public Health Management & Practice*.

Consult: Better Measurement of Results: A technical consultation on strengthening routine monitoring using health facility data. (WHO, June 2014)

Consult: Joint Inter-Ministerial Policy Dialogue on eHealth Standardization and WHO Forum on eHealth Standardization and Interoperability. (WHO, February 2014)

Report: Improving Health Sector Efficiency: The Role of Information and Communication Technologies. (OECD, January 2010)

Report: Streamlining the collection of health care quality and population health indicators. (OECD, May 2009)

Report: Information Technology for Performance Reporting. (OECD, May 2009)

Report: Information Technology to Improve Access to Life-Saving Treatments. (OECD, May 2009)

Report: Health Information Technology: More Detailed Plans Needed for the Centers for Disease Control and Prevention's Redesigned BioSense Program. GAO-09-100, 2008

Report: Health Information Technology: HHS Has Taken Important Steps to Address Privacy Principles and Challenges, Although More Work Remains. GAO-08-1138, 2008

Report: Health Information Technology: HHS Is Pursuing Efforts to Advance Nationwide Implementation, but Has Not Yet Completed a National Strategy. GAO-08-499T, 2008

Report: Health Information Technology: Efforts Continue but Comprehensive Privacy Approach Needed for National Strategy. GAO-07-988T, 2007

Report: Health Information Technology: Early Efforts Initiated but Comprehensive Privacy Approach Needed for National Strategy. GAO-07-400T, 2007

Report: Hospital Quality Data: HHS Should Specify Steps and Time Frame for Using Information Technology to Collect and Submit Data. GAO-07-320, 2007

Report: Health Information Technology: Early Efforts Initiated but Comprehensive Privacy Approach Needed for National Strategy. GAO-07-238, 2007

Presentation: eHealth for health system reform and transformation presented as committee chairman at the Czech Republic's eHealth 2009 conference held in Prague 2009

PROFESSIONAL MEMBERSHIPS

Member, American Society of Clinical Pathologists 1996 – Present