

Robert W. Beardall, M.D., M.P.H.

SUMMARY OF QUALIFICATIONS

- **Broad background in development, implementation, management and governance of performance improvement programs and enabling software systems in provider, payor and government sectors with particular emphasis on decision support, change management, cultural transformation, leadership development, clinical epidemiology and related analytic methodologies**
Fifteen years of experience in the development and implementation of clinical systems to support clinician workflow, evidence-based decision making and data-driven clinical and business performance improvement. Reorganized and developed new capabilities and services within departments in multi-hospital Integrated Delivery Systems, government health care and large corporations.
- **Senior executive experience in internal “management consulting”, strategic planning and reorganizations for established and early stage companies**
President, Vice President and Director level positions responsible for strategic planning, funding, development and implementation of clinical automation projects. Consultant to several national corporations and early stage companies on strategic planning and development. Served as strategic advisor to four early-stage and two national IT and insurance companies. Successfully negotiated multi-million dollar strategic alliances and contracts.
- **Extensive internal, national and international consulting experience**
Currently serves as Senior Medical Advisor to the NHS North West Strategic Health Authority on quality improvement and health informatics. Served as strategic advisor to the Department of Health, South Australia in concert with EDS Australia. Served on the board of directors for SmartHealth Canada (during development of a Province-wide health information network). Extensive experience presenting in the clinical and business communities.
- **Experienced clinician with over eight years in clinical practice (Family Medicine, Aerospace Medicine, Preventive Medicine and Public Health)** including serving as the personal physician to two successive Chairmen, Joint Chiefs of Staff in the Pentagon, implementation of evidence-based medicine and clinical process improvement.

PROFESSIONAL EXPERIENCE

Health Synectics LTD, Manchester, UK

2007-present

Managing Director

Health Synectics provides consulting services in the areas of clinical informatics, clinical performance optimization, management and leadership development, performance improvement methodologies and related analytic and performance measurement methods and disease management. Dr. Beardall was recruited by the NHS North West Strategic Health Authority to advise in the planning and roll out the Advancing Quality Programme with particular focus on enabling the success of the Clinical Leads for the first 5 months of the programme. Continuing involvement in the Advancing Quality (AQ) programme will focus on the Independent Evaluation as well as providing guidance on public reporting and transparency, work at Salford Royal acute trust on a pilot to prospectively capture performance measures. Following the successful launch of the AQ programme, attention has shifted to the Clinical Leaders Network which holds tremendous potential to positively impact the NHS on a broad scale. Additional current work includes working with both SHA and DH personnel on establishing a continuous assessment approach for the Clinical Leaders Network.

Exempla Healthcare, Denver, CO

2003-2007

Vice President and Chief Medical Information Officer

Reporting to the CFO and CEO, responsibilities included development and delivery of corporate infrastructure to support Exempla's "Best in the Nation" initiative including decision support strategies, operational plans and leadership of implementations for a 3 hospital, integrated delivery system in the Denver region. These responsibilities involved managing a group of approximately 35 personnel in Quality Decision Support, physician credentialing and peer review functions evolving these into an integrated performance management infrastructure aligned with Exempla's strategic goals, internal performance metrics and external reporting requirements. Primary responsibilities also include coordination of Exempla's partnership with Kaiser Permanente (KP), the Colorado Permanente Medical Group and related improvement initiatives.

Additional responsibilities include leadership of medical informatics initiatives including the Epic implementation team and coordination with the KP Decision Support entities and their multi-billion dollar Health Connect project. This effort included the first deployment of Health Connect, KP's deployment of EpicCare, in the in-patient environment at Exempla's new hospital near Boulder Colorado. As of the fall of 2007, the hospital was essentially 'paperless' with physician documentation and physician order entry completed and additionally enabling full-interoperability with KP's ambulatory clinics in the Denver area.

MAJOR ACCOMPLISHMENTS:

- Led successful completion of the clinical informatics implementation activities for the opening of a new 183 bed hospital, Exempla Good Samaritan Hospital, between Denver and Boulder including deployment of EpicCare clinical modules, Fuji PACs, PDM document imaging and Pyxis Connect. The second phase included completion of clinical documentation, Computerized Physician Order Entry (CPOE) with related evidence-based order sets, protocols, Clinical Decision Support (rules and alerts) and performance metrics.
- Working with the executive team and Exempla Board, restructured the governance charter, annual oversight calendar and performance reports for quality and clinical cost-effectiveness presented to the Board Quality Committee.
- Assumed responsibility for and restructured Exempla's internal performance monitoring capabilities and created "cascading" Report Cards to create line-of-sight linkage between front-line improvement efforts and corporate goals.
- Implemented system-wide capabilities for performance measurement into an electronic Report Card utilizing data from disparate systems including Epic Clarity and Reporting Workbench, Premier's Clinical Advisor, Health Management Council and McKesson's TrendStar databases. Prototype system developed with local vendor in 2006. Secured funding and led selection and implementation of Active Strategy's automated dashboard in late 2006 and 2007. Our work at Exempla was mentioned by Don Berwick in his opening plenary session at the national IHI meeting in December 2006.
- Developed and delivered a Leadership Development curriculum with Brent James from Intermountain Health Care to increase the capacity of Exempla's clinical leadership to sponsor, manage and actively participate in data-driven decision making and process management from the front line staff up to the Exempla Board.
- Established a new clinical informatics governance structure, revised IT Principles, Concept of Operations, IT performance metrics and related, functioning governance councils at the Enterprise, Hospital and Project levels as well as Physician Advisory Councils at each hospital.
- Provided on-going management consulting service to Exempla senior leadership in quality improvement methods and initiated enterprise adoption of methods developed by Brent James at Intermountain Healthcare as well as IHI, Lean and Six Sigma methodologies.

FLETCHER ALLEN HEALTHCARE AND UNIVERSITY OF VERMONT, Burlington, VT

2000-2003

Vice President, Clinical Informatics, Director, Clinical Knowledge Management and Adjunct Assistant Professor, Outcomes Research, Department of Medicine

Responsibilities include development of clinical informatics strategies and systems implementation including selection, design, programming, and piloting of new clinical applications and analytic capabilities to create an integrated infrastructure to support evidence-based decision making, medical management and research. Additional responsibilities include leadership and coordination of informatics and data management activities with clinical leadership and management of related budgets and personal.

MAJOR ACCOMPLISHMENTS:

- Created a five year Clinical IT Strategic Plan and initiated the cultural transformation process for establishing evidence-based practice standards, orders and protocols as well as related process and outcome variables as a pre-requisite for clinical automation.
- EHR implementation preparation including planning and physician interactions related to lexicon, clinical documentation mechanisms to capture key variables to support care delivery, quality improvement and research. Additional planning for Blaze Advisor Inference Engine and organizational structure for adoption of rules logic and alerts.
- Creation of a Data Management Steering Committee to refine and endorse an analytic strategy and ensure migration toward a robust infrastructure and methodologies for both operations management and research. Identified \$13 million clinical performance improvement opportunity. Initiated standardized, evidence-based protocols and deployment within Cardio-Thoracic Surgery.
- Led analytic efforts to identify and prioritize medical management initiatives leveraging existing analytic platforms including Avega's ADS, Red Brick data warehouse, Crystal Reports, SAS and web-based content management system. Analysis identified \$13 million clinical performance improvement opportunity. Target reporting methodology utilizes a blend of Quality Compass, Balanced Scorecard and SPC Charts.
- Health Services Research efforts focusing on errors in diabetes management including root cause analysis enabled through a statewide diabetes registry as well as cardiovascular disease performance improvement through the Northern New England Cardiovascular Disease Study Group.

SYNECTICS HEALTH GROUP, McKinney, TX

1999 - 2000

President and Founder

Responsibilities included advising clients on the development of integrated health management strategies and solutions using clinical information systems as enablers of performance improvement and business transformation. Clients included the spectrum from early stage through Fortune 500 companies. Engagements significantly refocused client strategic plans, service offerings and business strategies based upon market analyses and trends. Internet-related clients included Alliance Health Technologies, Axios Data Analysis,

Health IT, MD IntelliNet, HealthConvergence, MedEvolve, Medical Internet Technologies and Technology Assisted Healthcare. Other clients include Cigna Integrated Care Division, SmartHealth Canada and ACS Healthcare Solutions.

MAJOR ACCOMPLISHMENTS:

- A wireless internet Medical Software Company, Dallas TX; Phase I of consulting engagement produced a market assessment and determined suitability for acquisition of the company's assets and software application by a private equity group.
- Alliance Health Technologies, Seattle WA; Led the development of the business plan. Identified the potential benefits to be derived from the acquisition of assets from Advance Research Systems. Assets acquired 3rd quarter. Served as interim medical director and Executive VP of Product Development. Developed marketing strategy for tier I market segment.
- ACS Health Care Solutions, Dallas TX; Consulting engagements to evaluate potential investment opportunities in the eHealth arena. Originated discussions among competing care management product vendor for merger with an ACS subsidiary company.

ELECTRONIC DATA SYSTEMS (EDS), Plano, TX and Falls Church, VA

1994 - 1999

Director, Medical Affairs, Health Care Strategic Business Unit (1996-1999)

Responsible for development of clinically relevant strategic initiatives and related projects for the Health Care Business Unit including international sectors, operational divisions (provider, payor, decision support, pharmaceutical, employer and government) and business unit support groups (product development, business development marketing and sales). Industry Group revenue for 1998 exceeded \$1.1 billion.

Responsibilities included defining integrated solution direction, product functional design, alliance selection and negotiations, acquisition strategies, new client development, major customer account support and consultant to internal EDS health benefits administration.

MAJOR ACCOMPLISHMENTS:

- Developed the Integrated Care Management strategic vision and related E-solution framework for the MetaVance Payor Portfolio including solution and alliance priorities. The clinical components of this enterprise solution include case management, medical/disease management, and telehealth related demand improvement components linking payor, provider and patient.
- Directed a market analysis for the provider segment including SWOT analysis for the EDS Inter Practice System CPR and other product offerings. Results seriously questioned the existing value proposition of CPRs for the physician community in 1996 and pointed to alternative, web-based platforms.
- Responsibilities for alliances with Advanced Research Systems (case management), Codman Research Group (analytics), Health Hero Network (home monitoring) and Health Decisions (telehealth). Developed consultative and services capabilities to enhance the value of administrative, clinical and survey data in the areas of data analysis, interpretation, operations effectiveness and care management.
- Principal in establishing SmartHealth (Manitoba-based health information network) joint venture between EDS Canada and Royal Bank of Canada to establish a health information network and related clinical functions for the province. Appointed to SmartHealth Board of Directors in 1997.
- Consultant to EDS Australia to Department of Human Services, South Australia, assessing the status of their pilot with the Oasis Clinical Data Repository and related options for continued deployment.
- Published and presented extensively in the uses of information technology in population-based health management, disease management and inter-disciplinary clinical informatics. Significant papers include "Knowledge Management and Business Transformation: Key Value Propositions for the Computerized Patient Record" in Journal of the Healthcare Information and Management Systems Society, winter 1997.

Director, Clinical Applications and Analysis, EDS Government Services Division (1994-1996)

Defined and develop a "clinically oriented functional requirements team" for health information systems design, development and implementation in the Department of Defense's integrated delivery system of 8.5 million worldwide beneficiaries. Directed project development efforts for several systems including: (Special Needs Program-Management Information System (disease management programs for overseas dependents), Military Health Care Management Information System (analytical data warehouse) and Comprehensive Clinical Evaluation Program (evaluation of Persian Gulf illness). Also led a successful initiative to win the Corporate Executive Information System program from the initial vendor. Established EDS as a thought leader in military health care including implementation of disease management pilots in 1995. Initiatives significantly contributed to EDS account revenue growth from \$36M to \$65M.

US NAVY, SURGEON GENERAL'S OFFICE, BUREAU OF MEDICINE AND SURGERY, Washington D.C. (1992 - 1994)

Assistant Director, Preventive Medicine and Occupational Health, and Head, Clinical Preventive Services Division

Responsible for development of disease prevention and health promotion policy and programs (\$800,000 budget) for the US Navy and integration of programs with managed care and quality assurance divisions. Initiated and led a multi-disciplinary group to develop

evidence-based practice guidelines and devised implementation strategies utilizing existing information systems employing continuous quality improvement methods. Initiated and developed pilot programs to use the Composite Health Care System to support the Navy's first disease management program (pediatric asthma).

THE WYATT COMPANY, Washington D.C. (1992 – 1994)

Consultant (part-time)

Provided consulting services to several major employer accounts in the areas of health benefits design, disease prevention, and health promotion. Reviewed managed care sites and networks for quality of care.

MEDICAL ADVISORY SYSTEMS, Owings, Maryland (1990 – 1992)

Staff Physician (part-time)

Provided world wide medical advice via satellite communication to merchant marine vessels, offshore drilling platforms and other remote sites. Developed diagnostic decision support templates to facilitate data capture from client sites. Provided utilization review for foreign patients hospitalized in the U.S.

PENTAGON FLIGHT MEDICINE CLINIC, US AIR FORCE, Washington D.C. (1987 – 1990)

Chief of Clinical Services

Selected to serve as the personal physician to two successive Chairman, Joint Chiefs of Staff (Admiral William Crowe Jr., and General Colin Powell), providing medical care to the Chairman, his family and staff locally and during all trips abroad. Implemented a robust quality improvement program and managed clinic's 10 professional and ancillary support staff. Provided medical, aeromedical, and occupational health consultation to Pentagon personnel.

MALCOLM GROW MEDICAL CENTER, ANDREWS AIR FORCE BASE, Washington D.C. (1986 – 1987)

Flight Surgeon and Consultant to the 10th Aeromedical Evacuation Staging Facility

Provided primary care and aeromedical guidance to a broad spectrum of patients including supervising transit of wounded from Afghanistan. Provided sole medical support to U.S. Congressional delegations around the globe. Provided occupational medical consultation to the environmental health program and approximately 8,000 base personnel.

48th TACTICAL HOSPITAL, ROYAL AIR FORCE BASE LAKENHEATH, Suffolk, United Kingdom (1984 – 1986)

Squadron Flight Surgeon, 493rd Tactical Fighter Squadron

Primary consultant in aerospace medicine, occupational and environmental health for Royal Air Force bases Lakenheath and Mildenhall, requiring design, implementation and supervision of all related activities for combined work force population of 7,200. Provided primary medical care to military personnel and families. This experience provided operational exposure to and development of expertise in human factors, aviation safety and man-machine interface issues.

EDUCATION

Masters in Public Health (M.P.H. in Epidemiology), Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD, 1991

Residency, General Preventive Medicine and Public Health, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD, 1990-1992

Residency, Family Practice, Spartanburg General Hospital, South Carolina, 1983-1984

Medical Doctor (M.D.), College of Medicine, Medical University of South Carolina, 1983

Bachelor of Science (B.S.), College of Charleston, Charleston S.C., 1979

CERTIFICATION AND LICENSURE

Feb 2, 1993	American Board of Preventive Medicine in General Preventive Medicine and Public Health
Oct 1, 1990	State of Maryland License: Medicine and Surgery
Jul 1, 1988	Commonwealth of Virginia License: Medicine and Surgery

APPOINTMENTS

Independent Evaluation Panel. NHS North West Advancing Quality Programme, Manchester, UK. (2008)
Clinical Advisory Board, CareScience, a division of Quovadx Inc. Philadelphia, PA (2005 – 2006)
VHA Mountain States Clinical Leadership Council, Superior Performance Initiative. Denver, CO (2005 – 2007)
Medical Advisory Board, Axios Data Analysis, Monterey CA, (1999 - 2000)
Medical Advisory Board, MD IntelliNet.com, Brookline MA, (1999 - 2000)
Medical Advisory Board, HealthIT, Dallas TX, (2000)
Preceptor: General Preventive Medicine Residency Program, Johns Hopkins University, School of Hygiene and Public Health, October (1995 – 2000)
Board of Directors, *SmartHealth*, Winnipeg, Manitoba, Canada, (1997 - 1999)
Health Care Financing Administration, Health Care Quality Improvement Program, Diabetes Resource Group, June 1996 - 1999
Planning Committee for Prevention 99. The annual conference of the American College of Preventive Medicine, (1998 – 1999)
Planning Committee for Prevention 98 and Chair of the Medical Management plenary session and tract. The annual conference of the American College of Preventive Medicine, (1997 – 1998)
American College of Preventive Medicine Work Group on Medical Management Competencies, October (1996 – 1999)
Technical Review Group for Public Health Branch, Division of Associated, Dental, and Public Health Professions (Grants for Residency Training in Preventive Medicine program), Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, March 1995
American College of Preventive Medicine, Practice Guidelines Committee, (July 1992 – 1999)
American Cancer Society, Division Services Advisory Group on the Department of Defense, November (1992 – 1994)
National Cancer Institute \ National Institute of Dental Research Initiative on Tobacco, National Institutes of Health, (1993 – 1994)
National Coordinating Committee on Clinical Preventive Services. Department of Defense representative. (1993 – 1994)
Fellow of the American College of Preventive Medicine, 1993

HONORS AND AWARDS

Department of Defense, Health Professions Scholarship Program
College of Charleston, Highly Distinguished Faculty Honors List
(Highly decorated officer with numerous Air Force, Navy and Joint Service awards not included here)

PROFESSIONAL ORGANIZATIONS

American Medical Informatics Association (AMIA)
American Medical Directors of Information Systems (AMDIS)
Health Information Management and Systems Society (HIMSS)
Center for Healthcare Information Management (CHIM), Advisory Board
Association for Health Services Research (AHSR)
American College of Preventive Medicine (ACPM)

PUBLICATIONS

Book Chapters:

- (Contributor) Guide to Clinical Preventive Services, 2nd Edition. U.S. Preventive Services Task Force. Williams and Wilkins, 1996.
- Mayer WJ, Beardall RW. Translating Science into Practice: Cancer Prevention in Primary Care Medicine. In: Greenwald P, Kramer BS, Weed DL eds. Cancer Prevention and Control. National Cancer Institute. New York: Marcel Dekker Inc, 1995.
- (Contributor) Clinician's Handbook of Preventive Services 1994. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Government Printing Office, June 1994.

Journal Articles and other publications:

- Krall M, Papasomas M, Churgin P, Beardall R, Chan W, Melles R, Okawa G, Siegel J. Decision Support Implementation Guidebook: Best Practice Alerts and Health Maintenance Reminders. Kaiser Permanente. 2006.
- Goel A, MacLean CD, Walrath D, Rubin A, Huston D, Jones MC, Niquette T, Kennedy AG, Beardall RW, Littenberg B. Adapting Root Cause Analysis to Chronic Medical Conditions. Joint Commission J. Qual and Safety 30 (4): 175-186, 2004.
- Ricci MA, Beardall RW. Documentation of Competency: Maintaining an Outcomes Database. Sem Vasc Surg 15 (3): 191-197, 2002.
- Beardall RW, Wadle N. Knowledge Management and Business Transformation: Key Value Propositions for the Computerized Patient Record. J Healthcare Info and Man Sys Soc. Winter 1997.
- (Contributor) The Future of Preventive Medicine (Future of Clinical Preventive Services section). J Prev Med. April 1996.
- (Contributor) Put Prevention Into Practice. Education and Action Kit. Office of Disease Prevention and Health Promotion, U.S. Public Health Service, Department of Health and Human Services. 1994.

PRESENTATIONS AND SCIENTIFIC ABSTRACTS

- Invited Panelist: National Council of Physician Executives, Blue Cross and Blue Shield Association. Data Driven Performance Improvement. Panel members: Don Berwick CEO IHI, Rick Norling CEO Premier Inc, Rob Beardall, CMIO Exempla Healthcare. May 22, 2007.
- CareScience National Conference. Moving the Improvement Process to a Higher Level. Orlando, Florida; October 18, 2006.
- Invited Panelist: Healthcare Public Reporting. Healthcare Financial Management Association Annual Meeting, Denver West, Colorado; April 6, 2006
- Invited Panelist: Physician Adoption Challenges and Approaches. Colorado HIMSS Spring 2004 Program, Denver Colorado; April 23, 2004.
- Poster Presentation: Fletcher Allen Specialized Telemedicine for Supporting Transfer and Rescue. Rural Health Conference, Anchorage, Alaska, March 4, 2004.
- Moderator and Invited Speaker: The Emerging Medical Informatics Role – Survey Results. Medical Informatics Group and the Scottsdale Institute. Minneapolis, Minnesota, April 10, 2002.
- Keynote Speaker: Knowledge Management and Business Transformation. A New Value Proposition for Health Informatics, South Australia Health Informatics Association Annual Meeting, Adelaide, South Australia, November 25, 1998.

Invited Speaker: The Importance of Knowledge Management Principals in Healthcare IT Strategic Planning. 41st Annual Conference, American Academy of Medical Administrators, Dallas, Texas, November 7, 1998.

Moderator and Invited Speaker: Plenary Session: Tertiary Prevention, the Role and Initiatives of Health Care Purchasers. Prevention 98: Translating Science into Action, San Francisco, California, April 4, 1998.

Invited Panelist: Hot Topics Session: Computerized Patient Records Implementation, The 1998 Annual HIMSS Conference, Orlando, Florida, February 23, 1998.

Invited Speaker: Health Information Systems: The Key to Successful Disease Management Programs. 1996 Information Management Conference, Developing Information-Driven Systems for Tomorrow's Health Care Environment, American Association of Health Plans, San Diego, California, November 1996.

Invited Speaker: Information Technology: A Strategic Tool for Integrated Delivery Systems. 4th Annual Healthcare Partnership Conference. Partnering with Physicians: Strategies and Systems. The Williamson Institute, Hot Springs, Virginia, October 1996.

Abstract: Tertiary Prevention for Pediatric Asthma: The Convergence of Minds, Methods and Technology. Presented at session: Translating Science into Reasonable Policy and Effective Implementation, Tenth National Conference on Chronic Disease Prevention and Control, Atlanta, Georgia, December 6, 1995.

Invited Speaker: Clinical Protocols and Performance Measures. Department of Defense, Clinical Integration Working Group Conference, McLean, Virginia, August 1994.

Invited Speaker: Managed Care in the Direct Care System: Implementing Clinical Practice Guidelines to Improve Cost-Effectiveness and Quality. Surgeon General's Commanding Officers' Conference, Leesburg, Virginia, April 1994.

Invited Speaker: The Future of Clinical Preventive Services in a Managed Care Environment. 35th Navy Occupational Health and Preventive Medicine Workshop, Virginia Beach, Virginia, March 1994.

Invited Guest: Women's Health and Primary Care. A Workshop to Build a Research Agenda. The George Washington University, Center for Health Policy Research, Leesburg, Virginia, June 1993.

Invited Speaker: Developing Clinical Practice Guidelines. Navy Epidemiology Board, Bethesda, Maryland, April 1993.

Invited Speaker: Implementing Preventive Services. 34th Navy Occupational Health and Preventive Medicine Workshop, Norfolk, Virginia, March 1993.

Invited Speaker: Clinical Practice Guidelines. The Annual U.S. Navy Medical Specialty Advisors Conference, Rockville, Maryland, February 1993.

Invited Speaker: Clinical Preventive Services. Armed Forces Epidemiology Board, Parson's Island, Maryland, November 1992.

Moderator: Support for Worksite Health Promotion Research. Prevention 92, Baltimore, Maryland, March 1992.

REFERENCES

References available on request.

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