

# Y. Joshua Chang

Biostatistician at Telligen

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## Summary

Skilled health services researcher and informatics analyst with 20 years of experience in the healthcare industry. Knowledgeable in manipulating and analyzing very large data sets. Proficient in converting and visualizing raw data into information and insight for decision support and business solution. Trained in quality system, continuous improvement, quantitative methods, etc. Objective: Seek opportunities to utilize my data analytics, performance improvement, and project management skills to convert raw data into business insight for sound decision making and enhanced productivity. Specialties: \* AHIMA Certified Health Data Analyst (CHDA; 2014-) \* ASQ Certified Quality Engineer (CQE; 2009-) \* SAS Certified Base/Advanced Programmer for SAS 9 (2008 - ) \* Certified Professional in Healthcare Quality (CPHQ; 1996-2013) \* Performance monitoring and trending \* Quality improvement in a multidisciplinary and confidential environment \* Data analytics \* MS Office

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## Experience

### **Biostatistician (full time, remote, home office) at Telligen**

October 2014 - Present (1 year 3 months)

Design optimal methodologies for statistical analyses and reporting including sampling, data collection tool design, validation and reliability methods, experimental design, statistical modeling, data communication and pattern analysis; provides recommendations to company management. Interpret and draw conclusions on analysis results; integrate analysis results into activities and/or projects; provide statistical/data analysis education and consultation to project team members; draft various types of documentation describing analysis techniques. Create analysis tools for retrieving information including programming of statistical software programs; maximize tools for efficiency in data collection by staying abreast of new technologies. Research and archive internal and external data sources for use in analysis activities; manage and monitor the integrity of data ensuring quality and accuracy; serve as a technical resource to physicians and company management regarding the availability and reliability of data sources.

### **Analytics Consultant (contract, remote, home office) at Trajectory HealthCare, LLC**

January 2001 - Present (15 years)

\* Advise cleansing, conversion, standardization, and analysis of raw administrative data sets – including medical, professional, pharmacy, and dental claims - of various insurance companies, data vendor, format, and size stored on a remote computer using GoToMyPC. \* Provide on-demand analytic consultation to the epidemiologist/principal investigator.

### **Research Associate (full time, remote, home office) at Primaris**

February 2000 - October 2014 (14 years 9 months)

\* Provide analytic services to multidisciplinary teams across various settings/topics/projects, including healthcare-associated infections (HAIs), healthcare acquired conditions (HACs), Nursing Home Quality Initiative (NHQI), Home Health Quality Initiative (HHQI), drug safety, utilization review, and Hospital Payment Monitoring Program (HPMP). \* Collaborate with other clinical professionals (physicians, nurses, therapists, pharmacists) in a confidential and continuous quality improvement environment as directed by CMS. \* Apply QI techniques in project management and performance improvement \* Use SAS (Base, Stat, SQL) to integrate and analyze very large claims, membership, review, and/or surveillance data sets stored in the data warehouses; use SAS macro for automated data processing. \* Create SAS-Excel applications for large-volume report production. \* Participate in business development, project management, and proposal preparation. \* Generate hospital and clinician feedback reports based on administrative data. \* Convey information using visual presentations, including MS Excel charts and geographic information system (GIS), to assist problem solving, support decisions, and prompt actions. \* Develop and/or adopt data analytics to set and monitor performance measures. \* Produce and review reports and technical papers, and make presentations at professional meetings. \* Make strategic recommendations to teams and management to increase operational success. \* Collaborate with fellow analysts at other organizations to enhance analytic capabilities. \* Facilitate impact and surveillance analyses for trends and patterns at state/provider level. \* Provide technical assistance in data collection, analyses, and reports to external customers.

### **Director / Analyst at Primaris**

April 1995 - February 2000 (4 years 11 months)

Director, Analytic & Evaluative Services, Feb. 1999 - Feb.2000 Acting Associate Director, Analytic & Evaluative Services, Nov. 1998 - Jan.1999 Senior Research Analyst, Analytic & Evaluative Services, Aug. 1997 - Oct. 1998 Research Support Analyst, Information Systems, Dec. 1995 - July 1997 Research Analyst, Information Systems, April 1995 - Nov.1995 \* Perform data mining of claims and special-project data using SPSS Clementine. \* Support network and database administrators in a backup role (1995-1997). \* Additional responsibilities continued as a Research Associate at Primaris (2000-2014).

### **Research Analyst I/II at Mid-Missouri Mental Health Center**

March 1993 - March 1995 (2 years 1 month)

\* Conduct special projects and research involving collection, analysis, and reporting of data. \* Prepare periodic and special reports including tables, graphics, charts and explanatory text. \* Assist the Quality Assurance Officer in the implementation of continuous quality improvement.

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## **Publications**

### **Accommodating Bariatric Residents - This Population Requires Tailor-made Care Delivery Systems**

Long-Term Living Magazine June 21, 2011

Authors: Y. Joshua C., Betty Markway (lead author), Donna Mehrle

### **Measuring Healthcare Disparities and Racial Segregation in Missouri Nursing Homes**

Journal for Healthcare Quality March 1, 2011

Authors: Y. Joshua C., Bruce Siegel, Gail Wilkerson

Measuring and, ultimately, addressing disparities in long-term care quality continue to be a challenge. Although literature suggests that disparities in healthcare quality exist and nursing homes remain relatively segregated, healthcare professionals and policymakers stand to benefit from improvements in measuring both racial segregation and healthcare disparities. This paper quantifies the relationships between healthcare disparities and racial segregation using the disparities quality index and dissimilarity index. Results suggested that the more segregated the nursing homes, the greater the observed disparities. Multivariate regression analysis indicated that the proportion of Black residents in nursing homes is the variable that best predicts disparities.

**The \$6 Million Question: Can Process Improvement Ensure Appropriate Hospitalizations?**

Journal for Healthcare Quality March 1, 2008

Authors: Y. Joshua C., Ketterlin, R., Laiben, G.R.

Short, unnecessary hospitalizations are the largest contributor to erroneous Medicare payment. A team of medical, nursing, case management, and coding and billing professionals used process improvement techniques to reduce inappropriate 1-day admissions among 20 hospitals with high 1-day-stay utilization. Interventions included performance feedback, root cause analyses, process redesign, monthly progress monitoring, and quarterly pattern analyses. Over a 6-month period, the unweighted average admission error rate was reduced from 39% to 21% ( $p < .01$ ). An estimated 1,396 1-day stays were prevented or denied payment, resulting in an annual savings of \$6 million for Medicare's Hospital Insurance Trust Fund.

**Perioperative Antibiotics in Non-Emergency Bowel Surgery: A Quality Improvement Project**

Southern Medical Journal October 1, 1998

Authors: Y. Joshua C., Schell, J.A. (lead author), Bynum, C.G., Laiben, G.R., Pirner, J.A.

**BACKGROUND:** Guideline development has received considerable attention recently; guideline implementation less. For various reasons, reports of guideline implementations are not common in the published literature. In this paper, we report the results of a multisite quality improvement project undertaken as part of Health Care Financing Administration's Health Care Quality Improvement Program. **METHODS:** Six acute care hospitals were selected for participation according to the number of procedures during the calendar year 1993. Baseline and postintervention data were abstracted from the medical records of patients having bowel surgery. Performance feedback, education, and process improvement facilitation were the principal interventions used by the investigators; quality improvement plans varied by participant. Baseline and postintervention indicators were calculated. **RESULTS:** Statistically significant and practically meaningful improvement was observed in the primary indicator and in 4 of 11 subindicators. Conservative estimates indicated modest cost savings. **CONCLUSIONS:** Administration of perioperative antibiotics in bowel surgery can be improved by guideline implementations based on a continuous quality improvement model.

**The Reliability of the Leisure Diagnostic Battery Short Form Version B in Assessing Healthy, Older Individuals: A Preliminary Study**

Therapeutic Recreation Journal 1994

Authors: Y. Joshua C., Card, J.A.

The purpose of this preliminary study was to test the reliability of the Leisure Diagnostic Battery (LDB) Short Form Version B. Thirty-two healthy, older individuals residing in public housing were surveyed using the LDB Short Form Version B. The individuals completed the LDB twice at a three week interval. Intraclass correlation coefficient was used to estimate reliability and alpha coefficient was used to aid in interpreting reliability. The results were inconclusive. Alpha coefficient was acceptable; however, reliability was only moderate. The LDB Short Form Version B for use with healthy, older individuals may require further investigation.

### **The Impact of Ancient Chinese Philosophy on Contemporary Leisure in China**

The Journal of Recreation and Leisure 1993

Authors: Y. Joshua C., Card, J.A.

Little has been written on the impact of Far East civilization's thought and influence on leisure in China today. A discussion of Chinese history, outlined in three stages, clarifies the development of Chinese philosophy over the past 5,000 years. Chinese civilization and culture rest upon a philosophical basis shaped primarily by the principles of Confucianism, Taoism, and Neo-Confucianism. Confucianism stresses ideal human relationships. Taoism emphasizes the need to look beyond the promises and treaties of human beings for a source of peace and contentment. Neo-Confucianism joined certain metaphysical ideas of Buddhism and Taoism to Confucianism, resulting in an acceptance of the human cycle from birth to death as normal and good and a concentration on society and political reform in this life. A variety of recreation activities are embedded in Chinese culture and the people's daily living. Contemporary Chinese leisure can be discussed in three broad categories: tourism, sports, and general leisure activities. The most significant impact of Chinese thought on people's leisure life is based on three specific features of traditional Chinese society: agriculture as the base of living; family as the core of life; and Confucianism as the root of thought. Several historical and contemporary aspects of Chinese people's lives have influenced their leisure patterns, including limited free time because of having to engage in hard work; urbanization; a passive attitude toward leisure; the role of women in society; and reverence for nature. Chinese attitudes and values also account for differences between Chinese and Western leisure patterns.

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## Certifications

### **Certified Health Data Analyst (CHDA)**

American Health Information Management Association (AHIMA) License DA28059 February 2014 to January 2016

### **Certified Quality Engineer (CQE)**

American Society for Quality (ASQ) License 55017 January 2009 to December 2015

### **Certified Base/Advanced Programmer for SAS 9**

Prometric Testing Center July 2008

### **Certified Professional in Healthcare Quality (CPHQ)**

Healthcare Quality Certification Board of the National Association for Healthcare Quality License 5972 January 1996 to December 2013

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## Volunteer Experience

### **Senior Examiner at AHCA/NCAL National Quality Award Program**

January 2010 - December 2013 (4 years)

The AHCA/NCAL National Quality Award program began in 1996. Its mission is to support quality improvement in AHCA/NCAL member long term care organizations by promoting quality awareness and best practices, and by recognizing significant achievements in quality improvement. The AHCA/NCAL National Quality Award is a distinction given to AHCA/NCAL member organizations that are able to meet criteria of systematic quality improvement. By following the series of developmental steps that make up the award process, organizations gain knowledge and skills to help them better serve their customers and, in doing so, better position themselves in an increasingly demanding and competitive environment. This systematic foundation for quality improvement moves the profession toward higher rates of customer satisfaction, continued improvement in compliance with regulations, higher financial integrity, improvement in clinical outcomes, and a more stable staff. Senior Examiners work on a three to four person Examiner team. Each team reviews up to eleven 18-page Silver applications, complete comprehensive feedback reports for each application, and recommend applicants for the Silver award. Source: [http://www.ahcancal.org/quality\\_improvement/quality\\_award/Pages/ExaminerApp.aspx](http://www.ahcancal.org/quality_improvement/quality_award/Pages/ExaminerApp.aspx)

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## Languages

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|------------------|-----------------------------------|
| <b>English</b>   | (Full professional proficiency)   |
| <b>Chinese</b>   | (Native or bilingual proficiency) |
| <b>Taiwanese</b> | (Native or bilingual proficiency) |

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## Skills & Expertise

**Data Management**  
**Health Services Research**  
**Informatics**  
**Healthcare**  
**Analytics**  
**Performance Improvement**  
**SAS programming**  
**Patient safety**  
**Medicare**  
**Healthcare Information Technology**  
**Data Analysis**  
**Public Health**  
**Patient Safety**  
**Process Improvement**  
**Epidemiology**  
**Quality Auditing**  
**Quality Improvement**

**Clinical Research**  
**SAS Programming**

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**Education**

**University of Missouri-Columbia**

MS, Industrial Engineering, 1988 - 1993

Activities and Societies: Taiwanese Student Association

**University of Missouri-Columbia**

MS, Therapeutic Recreation, 1990 - 1992

**National Tsing Hua University**

BS, Industrial Engineering, 1980 - 1984

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**Honors and Awards**

Primaris, Columbia, MO Recipient, Values Award for Teamwork Jun & Dec 2011 Recipient, Values Award for Innovation Jun & Dec 2009; Dec 2011 Recipient, Values Award for Excellence June 2008 Mid-Missouri Mental Health Center, Columbia, MO Nominee, Employee of the Year 1994 Employee of the Month September 1994 University of Missouri-Columbia, Columbia, MO Superior Graduate Achievement Award 1991-1992 Curator's Grant-In-Aid Out-of-State Tuition Waiver Winter 1990 Industrial Engineering Departmental Fellowship Fall 1998; Winter 1989 Missouri Park and Recreation Association Lee Fine Scholarship Fall 1991 Taichung Army Training Base, Taichung, Taiwan Excellent Officer Award 1985, 1986 Army Artillery School, Tainan, Taiwan Valedictorian Class of 1985

**Interests**

Information technology, travel, table tennis, movies

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## 1 person has recommended Y. Joshua

"Joshua and I have worked together for 11 years. During this time he has provided quality improvement professionals with information generated from Medicare data that helped them identify opportunities for improvement in health care providers. He has also developed methods that the professionals can use to track improvements in systems and adjust their actions to gain higher levels of improvement. His methodologies have been copied nationally. He has brought invaluable expertise to our company."

— **Deborah F.**, managed Y. Joshua indirectly at Primaris

[Contact Y. Joshua on LinkedIn](#)