The Role Of A Data Consultant At Kaiser Permanente

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ABSTRACT
The purpose of this presentation is to provide an insider’s perspective on my role as a data consultant for Kaiser Permanente (KP). I will start with the scope of SAS® use within KP. I will discuss the integral role that SQL plays in accessing KP’s electronic medical record known as: HealthConnect. Finally, I will provide some strategy tips in building consensus for your data.

INTRODUCTION

KP STRUCTURE:
The purpose of this paper is to provide the reader with an insight into how, Kaiser Permanente, the national leader in health maintenance organizations, utilizes data consultants.

The Kaiser Permanente (KP) organization is organized around three interlocking entities: the Health Plan, the medical group and the hospitals. The Permanente medical group for Southern California is known as SCPMG: Southern California Permanente Medical Group which is the largest multispecialty medical group (in Southern California) consisting of over 6,000 physicians. SCPMG has an exclusive contract to provide medical services for members of the Kaiser Health Plan in Southern California.

At the top this interlocking entity, is the national governing body known as Program Office (located in Oakland, CA) which oversees the operations of the regional Kaiser Permanente health plans and associated medical groups: located in Southern California, Northern California, Hawaii, Washington State, Colorado and the mid-Atlantic region.

The Southern California Region headquartered in Pasadena, CA operates 14 medical centers from Ventura County to San Diego County.

DATA CONSULTANTS DEPLOYMENTS:
Given the structure reference above, data consultants can be employed within any of the aforementioned entities. Kaiser Permanente has instituted an electronic medical record system known as HealthConnect. Data consultants and programmers are used to extract information using Teradata’s SQL assistant. In the near future, Kaiser will be moving to an Oracle platform. SAS is the primary language used for most other non-HealthConnect related large-scale data analysis, management and manipulation. Kaiser Permanente is the second largest user of SAS with the U.S. federal government being the first.

Each of the 13 medical centers has a dedicated Clarity Report Writing Team tasked with the job of providing clinical, productivity and management reports. SAP Business Intelligence’s Crystal Report System is used by non-programmers to create ad-hoc reports or run pre-programmed reports written in SQL Assistant.

Data consultants are employed at the regional offices and the national Program Office to support medical center and the Kaiser Health Plan insurance operations. For example, all HEDIS reporting are managed by specific departments. In addition, there are business units such as my unit: National Delivery Systems, Strategy, Planning and Design Unit that supports the capital and strategic planning operations. Similarly, there are units that support national pharmacy operations, regional reference labs, master planning the radiology innovation and equipment etc.

All clinical research is conducted by our Research and Evaluation Unit. This unit is responsible for all of the clinical research published by Kaiser Permanente. The Research and Evaluation unit employees the majority of the SAS programmers (beginning to advanced). The programmers work closely with the academic researchers in providing the data for the clinical trials or other research. This unit provides an exceptional opportunity to work in academically rich research environment.

Other data consultant positions require some operational knowledge of the specific unit that the consultant supports. I served as a project manager for the National Delivery Systems, Strategy, Planning and Design Unit prior to becoming its data consultant. The career progression for an entry-level applicant would be: analyst, consultant, senior consultant, group consultant department or senior-level manager. Consultant positions require a Bachelor’s Degree, Master’s (preferred) with some knowledge/experience in the health care industry.
THE KAISER PERMANENTE HEALTH SYSTEM
Kaiser Permanente is the national’s leading non-profit integrated health care delivery system. Founded in 1945, Kaiser currently serves approximately 12 million members in eight states and the District of Columbia.

In Southern California, KP has 4.3 million members being served by a highly-diverse workforce of 67,000 employees which includes over 6,000 physicians and 23,000 nurses. KP’s Southern California operations includes 14 major medical centers and 221 medical offices. The first KP Medical School will open in the fall of 2019 in Pasadena, CA.

KP received the highest ranking for customer satisfaction for California in the 2016 J.D. Power Member Health Plan Study. For the fourth consecutive year, KP’s California Health Plan received the top 5-star overall rating for quality and service by Covered California. 15 KP hospitals nationwide were named “Top Hospitals” by the annual Leapfrog Hospital Survey.

For the fourth consecutive year, the Centers for Medicare and Medicaid Services announced that KP’s Medicare plan in California earned 5 stars for quality and service for 2017. This is the highest overall rating in the state.

THE SCOPE OF SAS AT KAISER PERMANENTE:
§ Users:
  • Mainframe: 2,500-3,000
  • PC SAS: 1,500 to 1,800
  • SAS Enterprise Guide: 1,100+
  • SAS BI Services: 800 to 1,000

§ SAS Versions:
  • SAS 9.4 M1, M2, M3 and M4 (in deployment planning)

§ SAS Platforms:
  • Mainframe z/OS
  • Windows 7 and 10
  • AIX UNIX
  • Linux OS
  • Virtual Cloud Services
  • Citrix Virtual Desktop

§ SAS BI Server Components
  • SAS Metadata Services
  • SAS Workspace Servers
  • SAS Mid-Tier Servers
  • SAS BI Grid Architecture

§ Miscellaneous Facts
  • Mainframe SAS development is over 30 years old at KP.
  • The Mainframe SAS framework incurs more than 70,000 batch executions each month.
  • The SAS BI Platform Supports nearly 70 business and clinical analysis groups.
  • A large-scale migration to SAS virtualized services and desktops using the Grid and Linux Cloud-based services is being planned.
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NATIONAL DELIVERY SYSTEMS, STRATEGY, PLANNING AND DESIGN DEPARTMENT

This business group in which I serve as primary data consultant works closely with the medical centers' leadership in developing medium to long-range capital strategic plans. Upon completion, the plans are submitted to executive leadership teams for approval and distribution of capital funds.

In April 2017, our new San Diego Medical Center opened with 253 beds, 10 operating rooms and 39 Emergency Department treatment bays. The Viewridge Medical Offices was opened adjacent on the same campus.

In June 2017, the Chino Grand Medical Offices opened containing 42 medical provider offices. Scheduled to opened in 2017:

- La Habra Medical Offices
- Baldwin Hills Crenshaw Medical Offices
- Murrieta Medical Offices
- Market Street Medical Offices

In 2016, approximately $1.5 billion in capital expenditures were approved for Southern California projects:

- Openings of medical offices in Downtown Los Angeles, Santa Monica, Signal Hill, Temecula and Tehachapi
- Regional reference laboratory in Chino Hills
- Behavioral Health Offices in Laguna Hills
- Solar Power Programs (La Mesa and Lancaster Medical offices)

MY PRIMARY ROLE AS DATA CONSULTANT

My primary objective is to provide actionable data from client-defined information requests. In response to these requests, Clarity data queries are created and executed on the HealthConnect Electronic Medical Records System. The data is then used to support the information requirements for business case submissions to justify capital expenditures.

Examples include outpatient visits data, inpatient hospitalization or HOV data, ancillary services (lab and radiology), procedural data, referrals to outside entities and OR data. The fundamental purpose of these data collection efforts is to aid in determining the magnitude and scope of the facilities being planned. Appropriate sizing for the planned facilities is crucial as once the facilities are built it can be difficult and costly to augment the sizing.

TERADATA’S PROC SQL

Terdata’s SQL is the primary programming language used to access the Clarity database (populated from a nightly etl) from the KP’s HealthConnect electronic medical record system. Terdata’s SQL can be used in creating efficient queries to access and join any of the multitude of Clarity tables.

SAS can be employed in cases where external tables need to be combined with internal Clarity tables.

There are two options:
1) The Proc SQL can be executed internally from within SAS via a Teradata connection.
2) SAS can be used to create “Ushare” tables (external files created specifically to be read by Teradata) and executed within the standard Teradata environment. Except for some unique date formatting exceptions, code written in Teradata SQL can be executed unaltered within SAS’s PROC SQL routine.

In addition, SAS is used throughout the organization for data manipulation, analysis and reporting for other systems and platforms.
CONCLUSION

Data Project Tips

In conclusion, I would like to offer some tips that might be useful to an analyst/consultant beginning their career. I have found Kaiser Permanente to be a very nurturing and enriching environment. The consulting community maintains an excellent comradery and is very supportive.

- Know who your key data sponsors are.
- Make sure to understand their specific needs and levels of technical expertise.
- Have a high-level (30 second) summary of your data ready (use the KISS rule).
- Find key allies early in the process that support the project and understands the data requirements.
- Do not over commit. It is better to be late and accurate than early and wrong.
- Be careful in releasing “draft” numbers via emails.
- Be careful in changing assumptions and conclusions on-the-spot in meetings. If additional analysis is warranted, inform meeting participants that the suggested changes will be taken under consideration and the results will be presented after they have been properly vetted and validated.
- Separate personal feelings from the data. Challenges to the data, should not be construed as direct challenges to your integrity and knowledge.
- Assume the data will be challenged and be prepared to step the users carefully through the processes of how the data was assembled.
- For large scale projects, it is advisable to break the data deliverables into manageable segments and build broad consensus for each portion.

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Appendix A: What is KP HealthConnect

What is KP HealthConnect?

Core KPHC
- Cache - ALTP
- Cache – OLTP / ECP
- Cache – RS1 / RS2
- Cache – SROC
- Citrix – including helper apps
- Downtime Reporting
- EMFI
- Epic App Modules – ASAP, Cadence, EpicCare, Tapestry, OPTIME, Willow, etc
- Epic Print Services
- ETL / Clarity
- Haiku / Canto
- Home Health
- Hyperspace – RWB / Radar
- Hyperspace Web
- InterConnect – CDA / ChartSync / ChargeHoming / HIE / Web Services
- Kiosk – Welcome
- Web Blob
- Web – AffiliateLink / EpicLink
- Web – MyChart

Integration
- KP.org
- Laboratory
- Imaging
- Pharmacy
- Scanning
- Business Infrastructure
- Contact Center
- Membership Systems
- Common Provider Master
- Health Exchange
- Other …

IMG - Service Design & Integration
Appendix B: Some Key Tables For Clarity Reporting