The Digitalization of Health Care
A Glimpse into the Future

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About Kaiser Permanente

- “Group Model” HMO – Nearly 60 Years Old
  - Non-profit
  - Fully Integrated Delivery System

- Serves 8.4 million members in 9 states and D.C.
  - 150,000 employees, 15,000 physicians, 3000+ pharmacists, 430 medical office buildings and pharmacies, 30 hospitals

- Core Program Elements
  - Prepaid
  - Multi-specialty Medical Group
  - Comprehensive, integrated care
  - Cradle-to-grave care

- Annual revenue – approaching $30 billion
When Wayne Gretzky was asked why he was such a prolific scorer, he replied that he always tried to skate to where the puck was going to be.
Assembling the Blue Sky

- Convened good thinkers from inside and outside of health care, inside and outside of Kaiser Permanente
  - Practitioners, clinical leaders, health care executives, public health leaders
  - Public policy experts, technology industry experts, political leaders, consumer representatives

- Asked them a single question
  - What will health care in the United States be like in 2015?
  - 2015 was not so close as to be familiar, not so distant as to be an inaccurate guess

- The response was scenario-based
  - Participants actually created and acted out skits

- The lessons were distilled for operational leaders to act on
What Does the Future Look Like?

• **A U.S.-centric view:**
  - An aging population (although, thanks to immigration, not as skewed as Europe)
  - An increasingly obese population
  - An increasing burden of a variety of chronic illnesses (5% of all adults in the U.S. will be survivors of childhood cancer)
  - Declining number of nurses
  - Declining number of **primary care** physicians
  - Falling payments to primary care physicians
  - Rising health care costs
2015: care delivery model is consumer-centric

**Home as the Hub**
- The home, and other settings, will grow significantly as a locale of choice for some care delivery (diagnostics).
- An individual’s care delivery support system has expanded to explicitly include other community and family resources.

**Integration and Leveraging**
- Medical services are integrated with wellness activities; care delivery processes are integrated with health plan operations.
- IT functionality enables us to leverage scarce or specialized clinical resources - MDs, RNs and other clinical staff.

**Secure and seamless transitions**
- ‘Warm Handoffs’ - The human skill sets and operational processes to deliver care and service effectively, efficiently, and compassionately.

**Customization**
- Occurs at any level of the members’ journey with KP (choosing health plans, cost sharing, individual care pathways, and communication modalities.)
- The member drives customization and KP responds.
The Blue Sky Vision and Changing Adult Primary Care

- Home as the Hub
- Secure and Seamless Transitions
- Customization
- Integration and Leveraging
- The Locus of Control Shifts the patients, and that will be okay
● **Self-monitoring with patient-based decision support**
  - They are already on their own most of the time

● **The care team**
  - is notified of patient decisions
  - receives all data, but attention is only drawn to data requiring a decision from the team

● **The office visit no longer defines the core activity of the primary care physician, true panel management does**

● **Systems will**
  - deliver and maintain the decision support tools for patients
  - sort through and prioritize incoming data
  - provide horizontal views of an individual patient and aggregate views of populations and subpopulations
  - allow for easy intervention at the population level
Secure and Seamless Transitions

- The patient will not bear the responsibility for system navigation
  - Some transitions will be automated based on evidence
    - Example: a patient drops below an LVEF threshold for the first time, automatically triggering
      - a cardiology referral
      - any indicated further tests before the referral, and
      - an email to the patient helping them to make the appointment unless the APC doc chooses to redirect

- The care team will not have to remember the navigation rules
  - This “business intelligence” will be built into the system
Customization

- Patients will choose how they want to communicate with the care team and the system will know.
- Information delivered to patients can be tailored to their problems, social history and circumstances:
  - An Enterprise Data Warehouse will help us craft a Life Care Plan for every member, based on everything we know (and some things other organizations know).
  - The Life Care Plan will be actionable by the patient as well as the healthcare team.
- Mass communications to populations can be customized to each individual within the population:
  - Example: “.lastlab” within a letter.
- Pre-visit questionnaires can result in better focus during a visit.
Integration and Leveraging

- **Scarcer adult primary care physicians will be more leveraged**
  - More support staff doing more things for physician review
  - NB: regulatory changes may be crucial here—the licensing world has to catch up with the capabilities of the new information world
  - Manage the panel, not results and messages layered on to a day filled with visits
Panel Members are in Control

- Don’t devote resources to being at war with members in “trenches”
- **The system will let them control simple transactions**
  - Making appointments (just like the airlines)
  - Reviewing lab and imaging results
  - Managing their illness according to guidelines
  - Communicating with the team asynchronously—a huge potential time saver and satisfier for them and for the clinician
- **Take those resources not devoted to these functions and use them for communication management, panel management, and “outlier management”**
Using an EHR to Reach for the Blue Sky

- **Given competing uses for scarce health care investment money**
  - What is the economic case for an EHR?
  - What is the likely improvement in the quality of care?
  - Are there savings that would result from enhancing patient safety?
  - How can one measure positive effects in all of these areas?
    - How can one reliably measure the performance of the pre-EHR system?
    - How can one measure the separate impact of the EHR versus other, simultaneous operational process changes?
The Economic Case

- Regardless of location, money to invest in health care is sought by competing projects or priorities.
- Develop a case for the EHR that includes all costs (total cost of ownership) over a 5-10 year horizon:
  - Software and hardware acquisition
  - Training
  - Change management
  - Maintenance of all of the above
  - Optimizing use
- Equally important, estimate cost savings realized by efficiencies created by the system:
  - Do not double count
- Assign accountability for all of the above, preferably to an individual in charge of operations.
What are the Likely Efficiencies?

- Reduced rework
- “Write once, read many”
- Pooling of nursing work (message handling)
- Virtual consultation
- E-visits
- Pre-visit questionnaires’
- More effective population management, reducing exacerbations/ED visits/hospitalizations in chronically ill
How will Quality and Safety Improve?

- Reduction in adverse drug events
- Improvement in primary and secondary prevention
- Nothing “falls through the cracks”
  - Closed loop for test ordering/results reporting/patient follow-up
  - Handoffs between practitioners are assured
  - Both of the above
- Improvement in the capacity to measure clinical performance and the quality of clinical performance measures will improve the ability to improve quality
  - “I don’t care if you get it right, as long as you get it the same.”

-Brent James, MD, Intermountain Health Care
Some Early Data

- Within 18 months, outpatient visits rates fall by 5-7% in both primary care and specialty departments.
- Laboratory and imaging utilization fell and then slowly began to rise again (same slope as before the EHR).
- If the patient perceives that the physician is happy with the EHR, then the patient is 13% more satisfied with that visit than before.
- Hospitalization rates and ED usage rates decrease.
- Malpractice losses may decrease by as much as 50%.
- Very early data indicates that secure emails between patients and physicians result in a reduction in phone calls, possibly in excess of the number of emails, and email traffic averages about 4/day.
“What EHR do I choose?”

- The possibilities:
  - Build your own
  - Adopt/adapt from the public domain—VistA
  - Buy the best of breed within each category and then integrate
    - Core documentation and order entry
    - Work flow engine
    - “Big Three” ancillaries: lab, radiology, pharmacy
    - Business systems: scheduling, ADT, financial/cost accounting, billing/claims
    - Enterprise data warehouse and reporting tools
  - Buy a suite that accommodates all or most of the above
    - Is the suite built on a single data model or a series of data models that are “integrated”
More than just an electronic medical record

The development and deployment of a highly sophisticated information management and delivery system

A program-wide system that will integrate the clinical record with appointments, registration and billing

A complete healthcare business system that will enhance the quality of patient care and support the KP Promise
Kaiser Permanente Health Connect supports realization of the KP Promise

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<thead>
<tr>
<th>Quality of Care</th>
<th>Service</th>
<th>Affordability</th>
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<tbody>
<tr>
<td><strong>Quality You Can Trust:</strong></td>
<td><strong>Caring with a Personal Touch:</strong></td>
<td><strong>Affordable:</strong></td>
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<tr>
<td>• Clinical information is always available</td>
<td>• Staff has and uses up to date clinical, social and patient preference information</td>
<td>• We improve visit and total cost of care</td>
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<tr>
<td>• KP’s clinical outcomes are unsurpassed</td>
<td>• Patients have information for shared decision making</td>
<td>• We decrease cost of paper medical records</td>
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<td>• KP clinicians know in real time what is the recommended practice</td>
<td>• Supports more personal team care</td>
<td>• We maximize appropriate revenue capture</td>
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<td>• KP is the national leader in patient safety</td>
<td><strong>Convenient and Easy to Use:</strong></td>
<td>• Benefits and new products can be administered correctly and efficiently</td>
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<td>• KP’s clinical research to support evidenced based care is enhanced</td>
<td>• Patients make the most of care/advice/information via telephone, web, e-mail</td>
<td>• We continually improve operations</td>
</tr>
<tr>
<td>• We know and deliver only what adds value in clinical care</td>
<td>• Patients are supported in actively participating in their care</td>
<td>• We minimize wasted member time and out-of-pocket costs with efficient access to care</td>
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<tr>
<td></td>
<td>• We minimize wasted member time and out-of-pocket costs with efficient access to care</td>
<td>• KP has superior integration and continuity of care</td>
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Our Entire Organization is Effected

Web Access Portal

Care Delivery Core

Scope of KP HealthConnect Suite

Outpatient
- Scheduling
- Registration
- Clinicals
- Billing

Inpatient
- Scheduling
- Registration
- Clinicals
- Billing
- Pharmacy
- Emergency Department

Ancillaries

Outpatient Pharmacy
Lab
Radiology/Imaging
Others (immunizations, EKG, dictation)

Health Plan

Membership/Benefits
Claims Processing
Benefits Accumulation
Pricing System

Data Warehouse / EDR Enterprise Data Repository
The Role of the Leader

- **Articulate the vision**
  - Where is health care going in your country or health care system?
  - How are you going to use technology to meet those new requirements?
  - How are you going to support all health care workers as they learn how to use the technology to meet the new requirements?

- **Articulate the vision over and over and over again**

- **Understand a theory of the principles and practice of change management and execute to that theory**
  - Become a sponsor—allocate resources as needed over time, monitor progress against plan, remove barriers to progress, resolve conflicts
Epilogue

- Where is the puck going to be in your country or health care system?
- Where do you want it to be? Decide together, and skate there.