Measuring the Quality of Health Across a Population: The Indian Health Experience

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Indian Health Service
Chief Information Officer
Population Health in the IHS

- IHS Health Care
- What Works
- What Doesn’t
- The Future
INDIAN HEALTH SERVICE
USER POPULATION BY AREA

Alaska
130,682

Portland
100,395

California
74,248

Phoenix
150,886

Billings
70,384

Navajo
236,893

Aberdeen
118,347

Albuquerque
86,504

Oklahoma
309,542

Tucson
24,164

Bemidji
98,825

Nashville
47,379

IHS Headquarters
Rockville, MD

TOTAL IHS USER POPULATION
FOR FY 2006: 1,448,249
The Indian Population We Serve

**IHS Service Population Growth**

- Average population growth since 2000 is 1.8% per year
- 71% high school graduates (80% U.S.) and 10% college graduates (24% U.S.)
- 29% of AI/AN fall below poverty standards
- Unemployment is 4.0 times the U.S. rate for males and females
- Less than 22% with self reported access to the internet
Partnership with Tribal Governments

- The Indian Self-Determination Act of 1975 includes an opportunity for Tribes to assume the responsibility of providing health care for their members, without lessening any Federal treaty obligation.

- IHS:
  - 33 Hospitals
  - 49 Health Centers
  - 46 Health Stations

- Tribal:
  - 15 Hospitals
  - 198 Health Centers
  - 121 Health Stations
  - 180 Alaska Village Clinics

- Urban:
  - 34 Urban Indian Health Programs
Indian Health Service: Facilitates a Broader Picture of Health

- Personal Health
- Family Health
- Community Health
- Public Health
- Population Health
- Transparency of Data
  - New Quality of Care website
  - Patient needs based on demographics, environment and community, population data, and conditions
IHS HIT Solution (Resource and Patient Management System- RPMS)

• A decentralized automated information system comprised of over 60 integrated software applications
• Over 25 years old with a GUI placed ‘on the top’ in 2003
• 4 major categories of software:
  Infrastructure applications
  Practice Management applications
  Clinical applications
  - electronic recognition of ‘candidates for disease DX’
  Population and Public Health
  - reminders at POC
  - electronic clinical quality reporting
    - using structured data retrieval
    - allows for refusals and exceptions
  - population data delivered at the POC
  - early sentinel event recognition at POC
  - integrated case management application
    - diabetes, asthma, CVD, HIV, etc
RPMS Integrates Multiple Clinical Systems

- EHR
- Case Management
- RCIS
- Surgery
- Elder Care
- PCC Data Entry
- Behavioral Health System
- Patient Registration
- Dental
- Laboratory
- Women’s Health
- Emergency Room
- Immunization
- Public Health Nursing
- Radiology
- Appointment System
- Pharmacy
- CHR
Improvement Tools

• Standardized reports (include..)
  • Management/clinical reports
  • Population health reports
• Clinical system
  • iCARE
  • Clinical quality (HEDIS, Elder, Patient Education, GPRA)
  • Bundled measures/ exceptions monitored/denominator only reduced by MOGE criteria
• Audit Data
  • Immunization, diabetes, HIV, CVD, etc
• On the fly audit with on the fly denominator and numerator defined by end user
• Patient Wellness Handout
• Quality of Care Web Site
  • Includes site specific information
  • Includes patient screening tools and ‘questions to ask’- not just information
  • Consistent with patient wellness handout
iCARE

• Functionality
  • Comprehensive knowledge management couplers
  • Community health data
    • Fluoride levels in wells
    • Early suicide alerts based on community and other demographic factors
    • CDC reportable cases (limited definitions)
  • Population health data
    • Comparative health status
    • Access to care
    • Clinical quality for any denominator, as well as defined denominator
    • Expanded structured ‘candidate’ list for sentinel events
Disease Diagnostic Tags

- Asthma
- COPD
- CVD At Risk
- CVD Significant Risk
- CVD Highest Risk
- CVD Known
- Diabetes
- HIV/AIDS
- Hypertension
- Obese
- Pre-DM Metabolic Syndrome
- Tobacco Users
Create Patient Panels

By provider
By appointment
By register
By search
By visit date
By diagnosis
By community
By age or gender
See How Your Panel Meets Outcomes

<table>
<thead>
<tr>
<th>Category</th>
<th>Clinical Group</th>
<th>Measure Name</th>
<th># Patients in Denominator</th>
<th>% Met</th>
<th>2007 Goal</th>
<th>2010 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIABETES</strong></td>
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<tr>
<td><strong>CANCER-RELATED</strong></td>
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<td><strong>CVD-RELATED</strong></td>
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<td><strong>DENTAL</strong></td>
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<td><strong>OTHER CLINICAL</strong></td>
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<tr>
<td><strong>IMMUNIZATIONS</strong></td>
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<tr>
<td><strong>Other National</strong></td>
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<tr>
<td><strong>CVD-RELATED</strong></td>
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</table>
See How Well Individual Patients Meet Outcomes
Clinical Reporting System

- Clinical Reporting System (CRS) - since 2000
  - Automated tracking of clinical performance
  - Eliminates the need for manual chart audits
  - Used at over 95% of I/T/U facilities (data on 1.5 M)
  - All patients served by IHS direct sites and over 80% of tribally operated health facility users report data into the national data set
Clinical Reporting System

- Reporting tool used by:
  - Local site and local community
  - Reports to tribal health departments/ facility boards/etc
  - Department of Health and Human Services (DHHS)
  - Congress
- Used to improve clinical performance
- Supports IHS’ commitment to a culture of quality
Types of Reports

- National GFRA Reports
  - National GFRA Report
  - Comprehensive National GFRA Patient List
  - National GFRA Report Patient List
  - Create Search Template for National Patient List

- Reports for Local Use: IHS Clinical Measures
  - Selected Measures w/Community Specified
  - Selected Measures w/Patient Panel Population
  - Selected Measures w/All Communities
  - CMS Performance Report

- Other National Reports
  - GPRA Performance Report
  - Elder Care Report
  - HEDIS Performance Report

- Taxonomy Reports
  - Lab Taxonomy Report
  - Medication Taxonomy Report

- Setup
  - Taxonomy Check
  - Taxonomy Setup
  - Site Parameters

- Area Options
  - View Existing Visual CRS Report in Excel
### Summary Reports

**IHS 2006 National GPRA Clinical Performance Measure Report***

**DEMO HOSPITAL**

- **Report Period:** Jul 01, 2005 to Jun 30, 2006
- **Previous Year Period:** Jul 01, 2004 to Jun 30, 2005
- **Baseline Period:** Jul 01, 1999 to Jun 30, 2000

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#### CLINICAL PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>Site</th>
<th>Current</th>
<th>Previous</th>
<th>Baseline</th>
<th>GPRA06</th>
<th>Nat’l</th>
<th>2010</th>
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<td>Goal</td>
<td>Goal</td>
<td>Goal</td>
<td>Goal</td>
<td>Goal</td>
<td>Goal</td>
</tr>
</tbody>
</table>

#### DIABETES

- *Diabetes DX Ever
  - SK: 10.1% 9.6% 8.5% N/A 11.0% N/A
- *Documented A1c
  - SK: 83.2% 73.2% 84.2% N/A 78.0% 50.0%
- Poor Glycemic Control >9.5
  - SK: 23.9% 14.8% 25.4% Maintain 15.0% TBD
- Ideal Glycemic Control <7
  - SK: 27.7% 12.8% 23.7% 32.0% 30.0% 40.0%
- *BP Assessed
  - SK: 98.1% 91.3% 93.9% N/A 89.0% N/A
- Controlled BP <130/80
  - SK: 37.4% 32.2% 35.1% Maintain 37.0% 50.0%
- LDL Assessed
  - SK: 39.4% 0.7% 10.5% 56.0% 53.0% 70.0%
- Nephropathy Assessed
  - SK: 58.1% 14.1% 0.9% 50.0% 47.0% 70.0%
- Retinopathy Exam
  - SK: 57.4% 61.7% 53.5% # BASELINE #50.0% 70.0%

#### DENTAL

- Dental Access General
  - SK: 16.9% 19.6% 20.1% Maintain 24.0% 40.0%
- Sealants
  - SK: 145 469 420 Maintain 249,682 TBD
- Topical Fluoride
  - SK: # Applications 158 157 64 N/A 113,324 N/A
  - SK: # Patients 120 135 61 Maintain 85,310 TBD

#### IMMUNIZATIONS

- Influenza 65+
  - SK: 77.4% 67.5% 60.4% Maintain 59.0% 90.0%
### 2007 National Dashboard (IHS/Tribal)

<table>
<thead>
<tr>
<th>Category</th>
<th>2007 Final</th>
<th>2006 Final</th>
<th>2005 Final</th>
<th>2007 Target</th>
<th>Final Results</th>
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<tbody>
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<td>Diabetes Dx Ever</td>
<td>11%</td>
<td>11%</td>
<td>11%</td>
<td>N/A</td>
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<tr>
<td>Documented HbA1c</td>
<td>79%</td>
<td>79%</td>
<td>78%</td>
<td>N/A</td>
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<td>Poor Glycemic Control</td>
<td>16%</td>
<td>16%</td>
<td>15%</td>
<td>15%</td>
<td>NOT MET</td>
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<tr>
<td>Ideal Glycemic Control</td>
<td>31%</td>
<td>31%</td>
<td>30%</td>
<td>32%</td>
<td>NOT MET</td>
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<tr>
<td>Controlled BP &lt;130/80</td>
<td>39%</td>
<td>37%</td>
<td>37%</td>
<td>37%</td>
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<tr>
<td>LDL Assessed</td>
<td>61%</td>
<td>60%</td>
<td>53%</td>
<td>60%</td>
<td>MET</td>
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<tr>
<td>Nephropathy Assessed</td>
<td>40%</td>
<td>55%</td>
<td>47%</td>
<td>baseline</td>
<td>MET</td>
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<tr>
<td>Retinopathy Exam</td>
<td>49%</td>
<td>49%</td>
<td>50%</td>
<td>49%</td>
<td>MET</td>
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<td><strong>DENTAL</strong></td>
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<tr>
<td>Access to Services</td>
<td>25%</td>
<td>23%</td>
<td>24%</td>
<td>24%</td>
<td>MET</td>
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<tr>
<td>Sealants</td>
<td>245,449</td>
<td>246,645</td>
<td>249,882</td>
<td>246,645</td>
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<tr>
<td>Topical Fluoride - Patients</td>
<td>107,934</td>
<td>95,439</td>
<td>85,315</td>
<td>95,439</td>
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<tr>
<td><strong>IMMUNIZATIONS</strong></td>
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<tr>
<td>Influenza 65+</td>
<td>59%</td>
<td>58%</td>
<td>59%</td>
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<tr>
<td>Pneumovax 65+</td>
<td>79%</td>
<td>74%</td>
<td>69%</td>
<td>76%</td>
<td>MET</td>
</tr>
<tr>
<td>Childhood Izs</td>
<td>78%</td>
<td>78/80%</td>
<td>75%</td>
<td>78%</td>
<td>MET</td>
</tr>
<tr>
<td><strong>PREVENTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pap Smear Rates</td>
<td>59%</td>
<td>59%</td>
<td>60%</td>
<td>60%</td>
<td>NOT MET</td>
</tr>
<tr>
<td>Mammogram Rates</td>
<td>43%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
<td>MET</td>
</tr>
<tr>
<td>Colorectal Cancer Screening</td>
<td>26%</td>
<td>22%</td>
<td>NA</td>
<td>22%</td>
<td>MET</td>
</tr>
<tr>
<td>Tobacco Cessation</td>
<td>16%</td>
<td>12%</td>
<td>34%</td>
<td>12%</td>
<td>MET</td>
</tr>
<tr>
<td>FAS Prevention</td>
<td>41%</td>
<td>28%</td>
<td>11%</td>
<td>28%</td>
<td>MET</td>
</tr>
<tr>
<td>IPV/DV Screening</td>
<td>36%</td>
<td>28%</td>
<td>13%</td>
<td>28%</td>
<td>MET</td>
</tr>
<tr>
<td>Depression Screening</td>
<td>24%</td>
<td>15%</td>
<td>NA</td>
<td>15%</td>
<td>MET</td>
</tr>
<tr>
<td>Comp. CVD-related Assessment</td>
<td>30%</td>
<td>48%</td>
<td>43%</td>
<td>baseline</td>
<td>MET</td>
</tr>
<tr>
<td>Prenatal HIV Screening</td>
<td>74%</td>
<td>65%</td>
<td>54%</td>
<td>65%</td>
<td>MET</td>
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<tr>
<td>Childhood Weight Control</td>
<td>24%</td>
<td>24%</td>
<td>64%</td>
<td>24%</td>
<td>MET</td>
</tr>
</tbody>
</table>

*New baseline in FY 2007 due to change in Standards of Care (IHS Division of Diabetes Treatment and Prevention)*

*Data collected from pilot sites only in FY 2005*

*FY 2007 data from CRS IZ IMM package only; FY 2006/2005 data from IZ program report, 76% CRS IZ IMM baseline set in 2006*

*Tobacco Assessment (changed to Tobacco Cessation - FY 2006)*

*Cholesterol Screening (changed to Comprehensive CVD-related Assessment - FY 2007)*

*BMI Assessed (changed to Childhood Weight Control - FY 2006)*

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In 2007, IHS direct and tribal facilities met 82% of the 22 clinical GPRA measures. This exceeds the 73 percent met in 2006. Two measures that were not met are Poor and Ideal Glycemic control. These measures are difficult to improve because they rely on funding for medications as well as patient compliance in Diabetes management. The Dental Sealants measure was missed by less than 1% and the Cervical Cancer screening measure was missed by 1%. Performance in 2007 is a true indication of the improvement in quality of care across the Indian Health Service.

These results are representative of 191 IHS Direct and Tribal programs.
Facility #1 - Assessment

![Graph showing blood pressure and LDL assessment trends from 2004 to 2007. The graph includes bars for blood pressure assessed and LDL assessed, with linear trend lines. The values for each year are as follows:

- 2004: Blood Pressure Assessed: 71, LDL Assessed: 54
- 2005: Blood Pressure Assessed: 81.2, LDL Assessed: 60.4
- 2006: Blood Pressure Assessed: 85.5, LDL Assessed: 65
Facility #1 - Control

- Blood Pressure Controlled (<140/90)
- LDL Controlled (<130)

Year 2004: Blood Pressure 73.1, LDL 70.6
Year 2005: Blood Pressure 76.2, LDL 73
Year 2006: Blood Pressure 77.9, LDL 75
Year 2007: Blood Pressure 78.7, LDL 74.5
Facility #1- Immunizations

- **2004**: Pneumovax 70.2, Flu Shot 47.7
- **2005**: Pneumovax 76.4, Flu Shot 50.2
- **2006**: Pneumovax 81.8, Flu Shot 55.5
- **2007**: Pneumovax 83.1, Flu Shot 47.9

Lines indicate linear projections for Pneumovax and Flu Shot.
Facility #1 - Women’s Health

Year | PAP Smear Rate | Mammogram Rate
--- | --- | ---
2004 | 53.5 | 38.5
2005 | 55.8 | 42.2
2006 | 57.7 | 43.4
2007 | 58.4 | 48.6
Chronic Care Initiative:
Colorectal Cancer Screening

Weighted Average Colorectal Cancer Screening: IPC

- Weighted Avg
- Goal
- Average Denominator

Percent Screened

Number of Patients
Chronic Care Initiative: Breast Cancer Screening

Weighted Average Breast_Cancer Screening: IPC

- Weighted Avg
- Goal
- Average Denominator

Percent

Number of Patients

F-07 M-07 A-07 M-07 J-07 J-07 A-07 S-07 O-07 N-07 D-07 J-08 F-08 M-08 A-08 M-08 J-08 J-08 A-08 S-08 O-08 N-08 D-08 J-09
Patient Wellness Handout

• Information provided to the patient
  – Pre-screening information
  – Promotes Healthcare communications
  – Tool for medical record reconciliation

• Immunizations Due
• Weight, Height, BMI
• Blood Pressure
• Allergies
• Medications
Hello Mr. Gump,

Thank you for choosing Indian Health Medical Center.

This sheet is a new way for you and your doctor to look at your health.

Immunizations (shots). Getting shots protects you from some diseases and illnesses.

1. Immunization Due
   INFLUENZA

Weight is a good measure of health – and it depends on how tall you are.
You are 5 feet and 7 inches tall.
Your last weight was 204 pounds on Sep 01, 2004.
You should have your weight rechecked at your next visit.
Your Body Mass Index on Sep 01, 2004 was 32.0.
You are above a healthy weight. Too much weight can lead to lots of health problems – diabetes, heart disease, back pain, leg pains, and more. Ask your provider about things you can do to fix your weight.

Blood pressure is a good measure of health.
Your last blood pressure was 120 over 82 on Oct 07, 2005.
Your blood pressure is too high. Easy ways to make it better are eating healthy foods and walking or getting more physical activity. If you take medicine to lower your blood pressure, be sure to take it every day.

Allergies, reactions that you’ve had to medicines or other things are very important. Below are the allergies that we know. If anything is wrong or missing, please let your provider know.

  HX OF SULFA ALLERGY-RASH
  HX OF ALLERGIES TO KEFLEX
  HX OF FLU VACCINE ALLERGY

Here is a list of the medicines you are taking:

  HYDOXYZINE 25MG TAB
    Directions: TAKE 1 TABLET EVERY 4 HOURS IF NEEDED FOR ITCHING
  TRIAMTERENE 50MG CAP
    Directions: TAKE 1 CAPSULE DAILY
Clinical Information System Optimization

Day-to-day Function

• Proactive Planned Care

• Optimization of the care team
  • Decision Support
    • Use an HER
    • Reminders: Align and use HER and Health Maintenance Reminders and quality reports.
    • iCare/CRS/traditional registry applications

• Self Management
  • Use self-management goal setting
  • Maximize use of patient wellness handout
  • Access for patient and family to their own data
  • Handouts and other educational materials readily available

• Care Plan
  • Maximize use of problems lists
  • Collaboratively develop a plan of care for each individual that summarizes all pertinent patient info in one place
  • Optimize care team data utilization and management
  • Use patient specific goals and standards (e.g. frequency of colonoscopy)

• System Redesign
  • Utilize RPMS to plan for visits (iCare and reminders)
  • Manage the population proactively – finding groups I need of specific types of care and then delivering that care to them
  • Designated provider function to manage panels of patients and organize care teams.
  • Develop a multidisciplinary team that optimizes the role of each team member
  • Response to reminders
  • Integration of the care team – enhance sharing of info
  • Case management by nurses

• Clinical Information System
  • Flow of information to and from systems outside of IHS
  • Improved documentation and input EHR
Facilitate Improvement
Create an ongoing Learning community

• Reporting
  • Website for reporting on measures for improvement on monthly basis

• Sharing/interconnectivity
  • WebEx infrastructure – maximize use of WebEx
  • Enhance training strategies (recorded sessions, user manuals)
  • Sharing of lessons learned

• Knowledge Management
  • A system where knowledge is continuously organized and utilized to increase knowledge levels throughout the organization
  • User manual for functions for planned care
  • A central location/system for knowledge sharing and accumulation

• Measurements for implement
  • Define quality goals
  • Align improvement measures with quality goals
  • Instruction manuals for measures and measure reporting
The IHS HIT VISION

• A health care IT system that INCORPORATES family, population, public and community health as a cornerstone of personal health care delivery (not just an afterthought) at the point of care
• Data standards that address the non traditional determinants of health status
• Inclusion of non traditional data information into the traditional patient, provider, family and community perspective
• The elimination of health inequities, using HIT as a major enabler
In beauty may I walk.
All day long may I walk.
Through the returning seasons may I walk.
On the trial marked with pollen may I walk.
With grasshoppers about my feet may I walk.
With beauty may I walk.
With beauty before me may I walk.
With beauty behind me may I walk.
With beauty above me may I walk.
With beauty all around me may I walk.
In old age wandering on a trail of beauty, lively, may I walk.
In old age wandering on a trail of beauty, living again, may I walk.
If it finished in beauty,
It is finished in beauty.

DINE’ PRAYER