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Improved Care for Chronic Conditions in Rural Maine: The Blue Hill Chronic Disease Project

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Background

Improved Care for Patients with Multiple Chronic Health Conditions (BHMH)

- **A two-year project funded by the Physicians' Foundation for Health Systems Excellence (PFHSE).**
- **Project to address: barriers to PCP practice change; patient access barriers and effective self-mgmt; linking community resources and PCP's**
- **Interventions at both the practice and community levels**
- **Consensus Driven Change Process**

Project Objectives

- **To enhance the use of evidence-based medicine and patient self-management skills among patient with one or more chronic health conditions**
- **To determine the efficacy of a consensus model in practice change improves patient health status**
- **To establish permanent and easily accessible linkages between community resources, chronic disease patients and providers.**

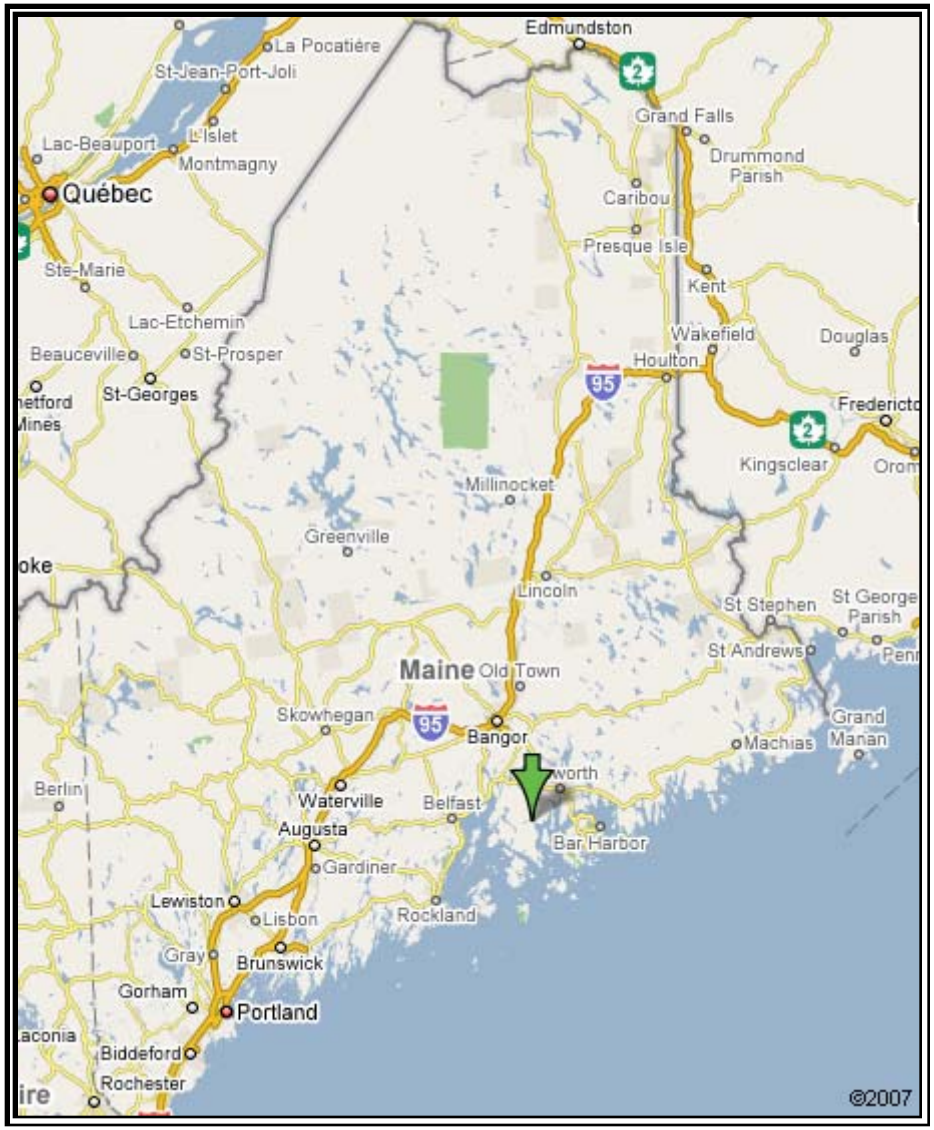
Project Intervention

- **Practice provider and staff consensus on key disease targets for change and how to implement**
- **Decision support resource using a patient visit flow sheet and a health maintenance record**
- **Project implementation at four rural primary care practice sites**
- **Practice change supported by project staff**

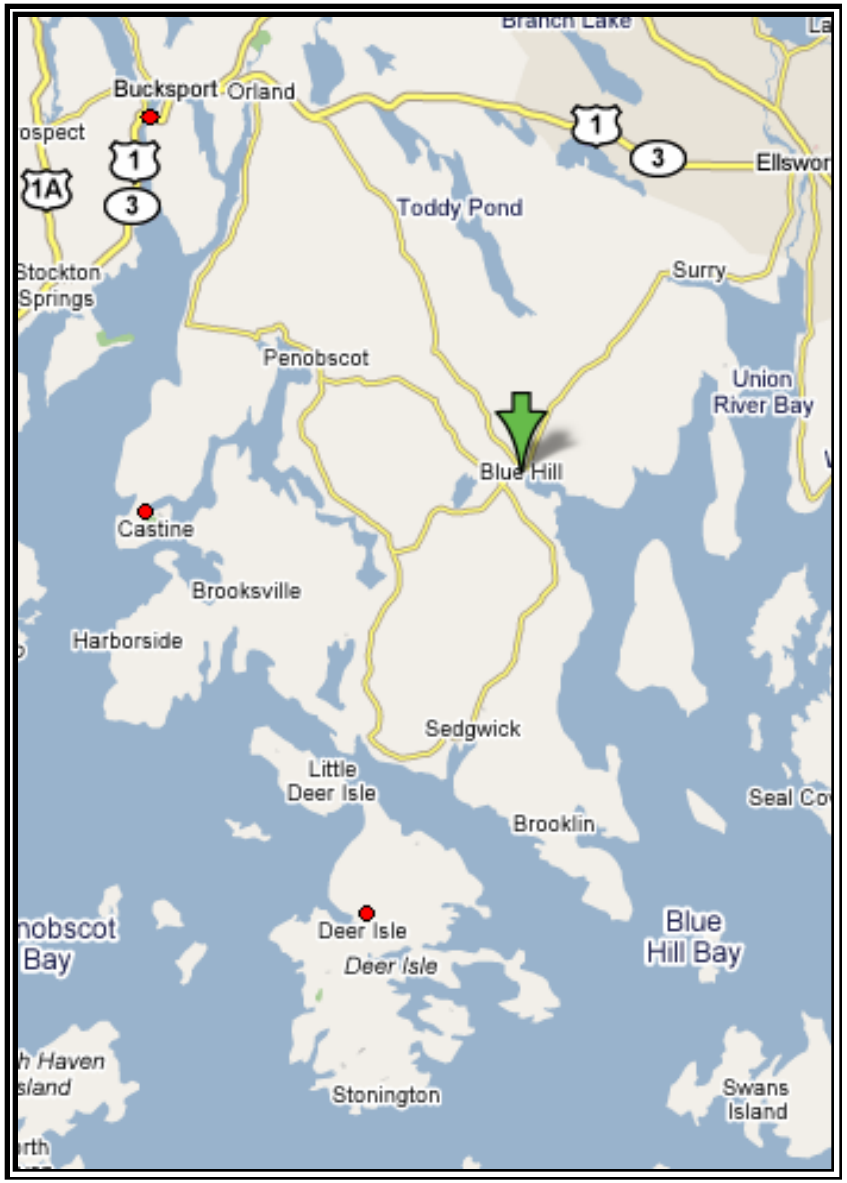
Project

- **Community Linkages to primary care providers**
  - **Community resource website**
- **Pre-post Evaluation**
  - **Quasi experimental design**
  - **Process Evaluation**
    - **Baseline and interim assessment of practice changes focused on project implementation**
    - **Measure changes in practice process/infrastructure to support quality improvement**
  - **Outcomes Evaluation**
    - **Pre-post intervention evaluation of behavior change and patient outcomes**
    - **Assess patient health changes from project implementation – improvements in health and clinical measures, increased use of community resources**

Maine



Blue Hill Peninsula



Implementation Approach

- **Based on evidence-based/ best practice care**
- **Influenced by current practice resources and culture and experience with IHI "Breakthrough Series Model"**
- **Consensus driven**
  - **Initial input from providers through email**
  - **Group meetings with providers and staff**
  - **Staff retreat held to convey project details**

Evidence Based Targets

- **Health Maintenance**
  - **Screenings**
    - **Cholesterol, Fecal Occult Blood, Pap Smear, Mammogram**
  - **Vaccinations**
    - **Pneumococcal, Influenza**
  - **Smoking History**
  - **Depression Screening**
  - **Living Will**
- **Disease Specific**

Chronic Diseases and Conditions Monitored

Hyperlipidemia

Hypertension

Congestive Heart Failure

Diabetes

Chronic Obstructive Pulmonary Disease

Obesity

Major Depression

Health Maintenance Sheet

Health Maintenance Record

NAME:	DOB:

	Visit Date	(Base Line)									
* **Cholesterol #**	Age 20+ x1, post age 35 q 5 yr										
***Fecal OB** +/-	Annual age 50+ q 5 yrs post nl. Colo.										
Pap Smear +/-	Start- sexually active Q 3yrs (post 3 nl) & new partner to age 65										
* **Mammo** +/-	Annual Age 50+										
***PneumoVax**	65+ x1 unless given <5yrs. More freq. ^ risk										
***Influenza**	Annual age 65+ (earlier with pulm./ cardiac condition)										
***Td Booster**	Q 10 yrs.										
Living Will	Discussed 30+										
***BMI #**	Baseline										
Depression	Annual "Have you been feeling down (or depressed) most days over the past 2 weeks or more?										
Smoking	If >10 pack years Sx COPD q yr +/-										
• Smoking	Pack yr. Baseline #										
• Smoking	Counseling/ Referral. Once										

2/24/2006

Chronic Care Flow Sheet

PATIENT NAME: DOB:

	Visit Date:	Base Line														
HYPERTENSION (Defined by Dx in record)	**Goal**: <140/90, <130/80 CHF, renal insuff, or DM															
* **BP**	Q visit															
Goal Setting	Annual															
HYPERLIPIDEMIA	LDL ^130, ^100 with DM or stable CAD															
* **FLP** (enter LDL #)	Q yr., Q6 mo. if ^ or on Rx															
* **Refer**: Score	**Once**															
* **Refer:** Dietitian	**Once**															
CHF	Dx in record															
ACE +/-	If (-) chart why															
B blocker +/-	If (-) chart why															
LVED %	At diagnosis															
* **Weight #**	Each visit.															
* **FLP** (enter LDL #)	**Annual**															
* **Refer: SCORE**	**Once**															
COPD/ASTHMA	Dx in chart COPD/Asthma															
Smoking Cessation	Discussed q visit															
Goal Setting	**Annual**															
Refer: Pulm. Rehab	X1 hosp/FEV1 <80% of pred.															
Resp. Education	**Once**															

Community Website Mission Statement

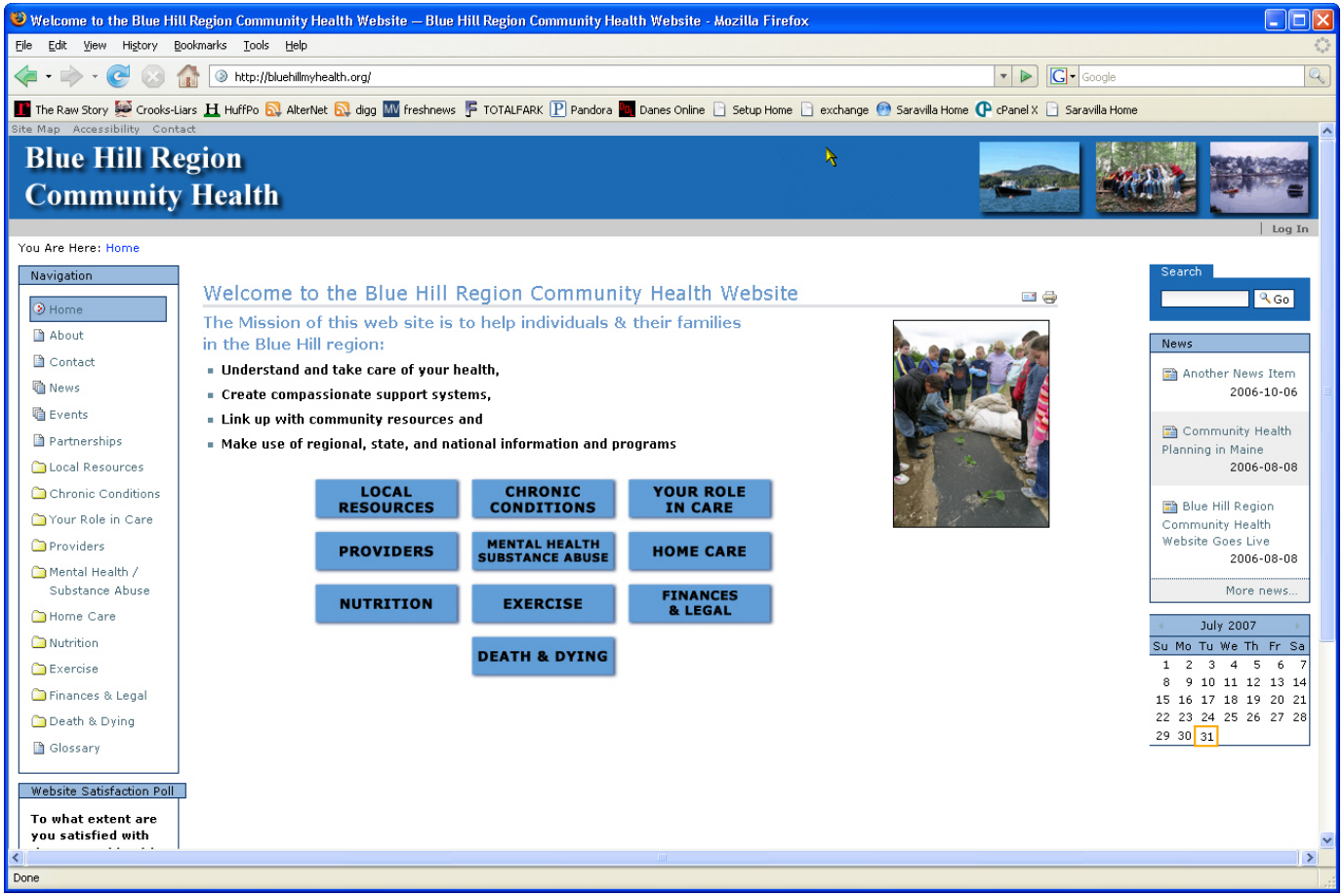
The mission of the Blue Hill Community Website is to assist the population in the Blue Hill Region to:

- Understand and take to care of their health
- Create compassionate support systems
- Link up with the available community resources
- Make use of regional, state and national information and programs

Community Website Collaboration

- Designed for patients and providers
- Includes health information and links to health management resources
  - Patient self-management
- Co-managed by representatives of major health organizations in the region:
  - Blue Hill Memorial Hospital
  - Eastern Maine Healthcare Systems
  - Healthy Peninsula

Community Website Screenshot



URL: http://bluehillmyhealth.org

Community Website Functions

Web-Based Information System

- Local/regional resource directory for the care of chronic conditions
- External information resource links
- Community event calendar - screenings, health fairs, etc.
- Self-administered risk profiling program

Community Health Services Links

- Providers
- Community organization/employers
- Community members/patients and families

Project Evaluation

- **Process Evaluation (practice process and infrastructure)**
  - **Provider and staff surveys**
  - **Pre and post-implementation**
    - **Initial survey - May 2006**
    - **Interim evaluation survey - January 2007**
    - **Follow up survey - October 2007**
- **Outcome Evaluation**
  - **Patient chart reviews**

Interim Practice Survey Topics

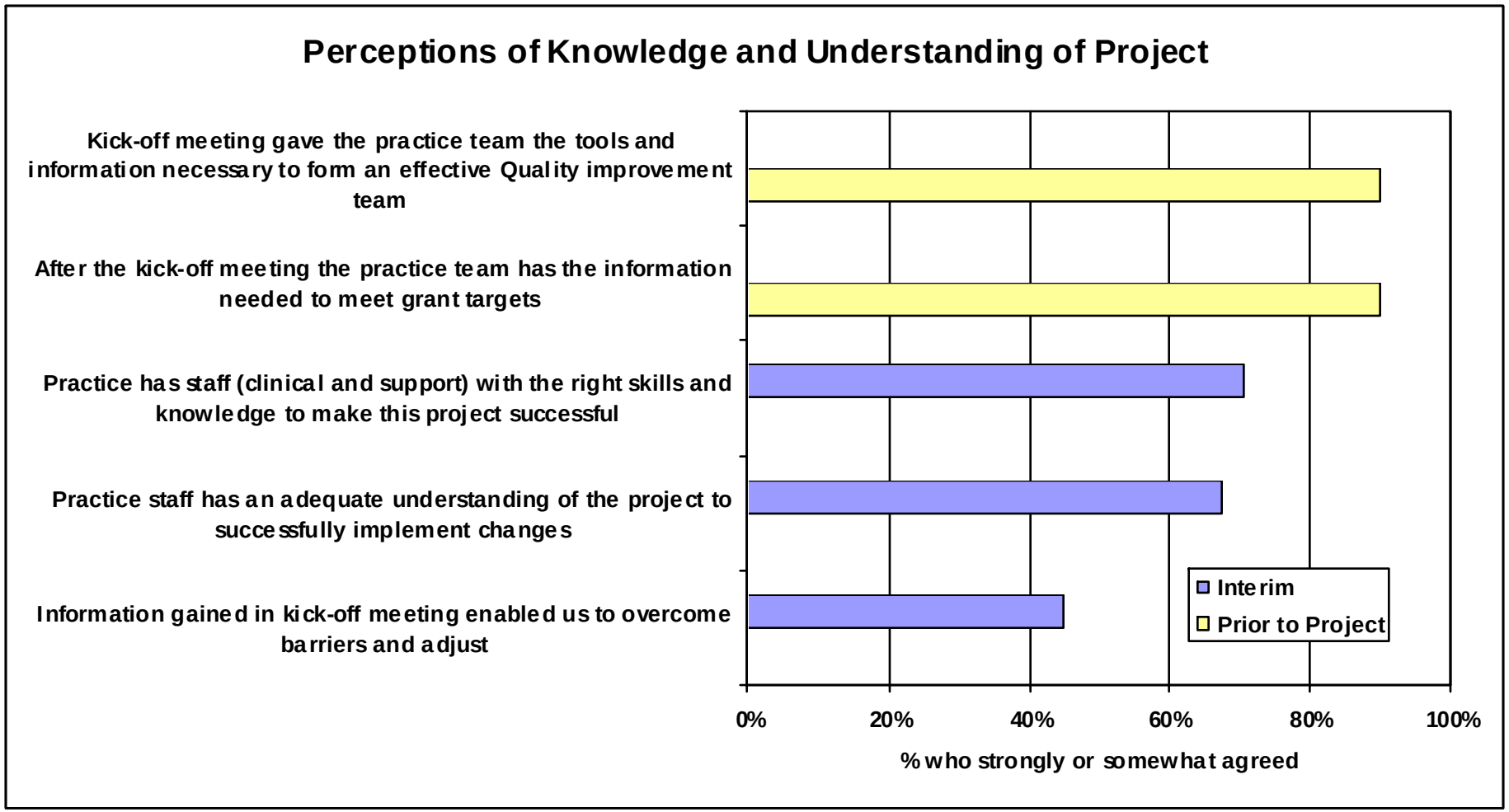
- Project logistics and support
- Knowledge and understanding of project
- Perceived support of project leadership
- Barriers to implementation
- Expected impact of project
- Potential for sustaining changes

Interim Practice Survey Sample

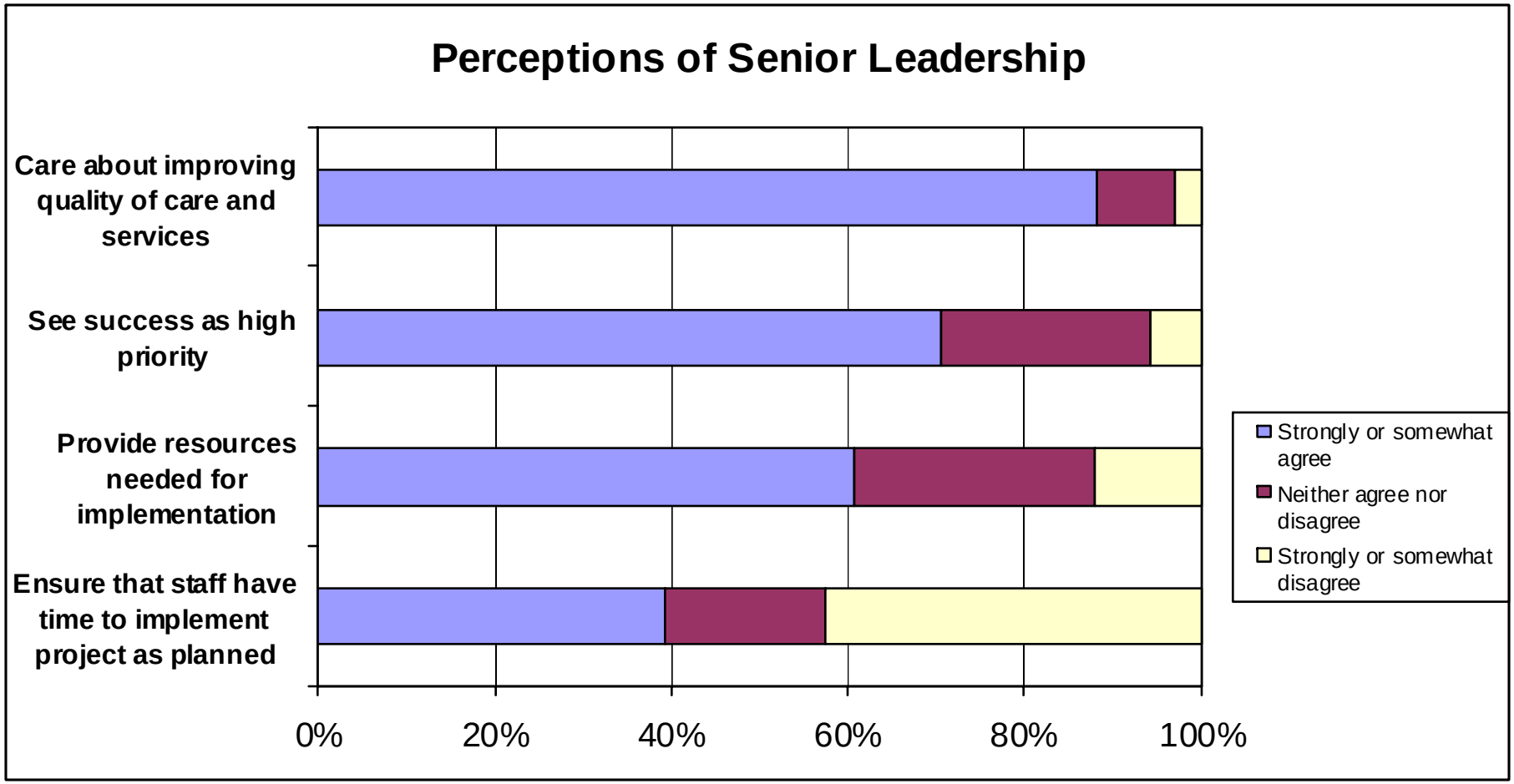
- **39 staff from 4 healthcare practices**
  - **36% Physicians, FNPs, and PAs**
  - **33% Medical Assistants, LPNs, RNs**
  - **31% Office managers, front desk staff, lab staff**
- **Response rate by practice**
  - **Practice 1 : 46%**
  - **Practice 2 : 31%**
  - **Practice 3 : 8%**
  - **Practice 4 : 15%**

Interim Practice Survey Findings

Interim Practice Survey Findings



Interim Practice Survey Findings



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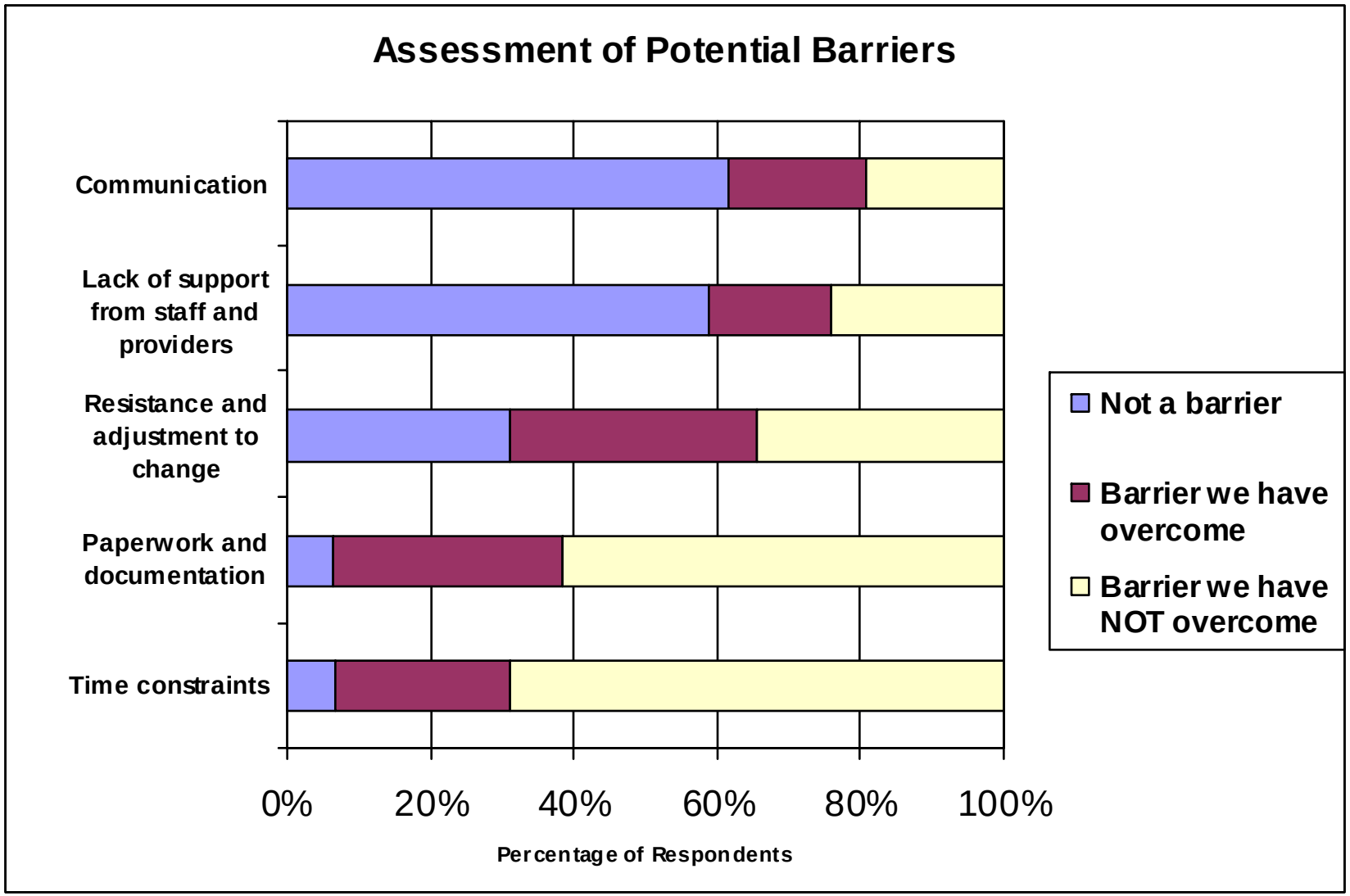
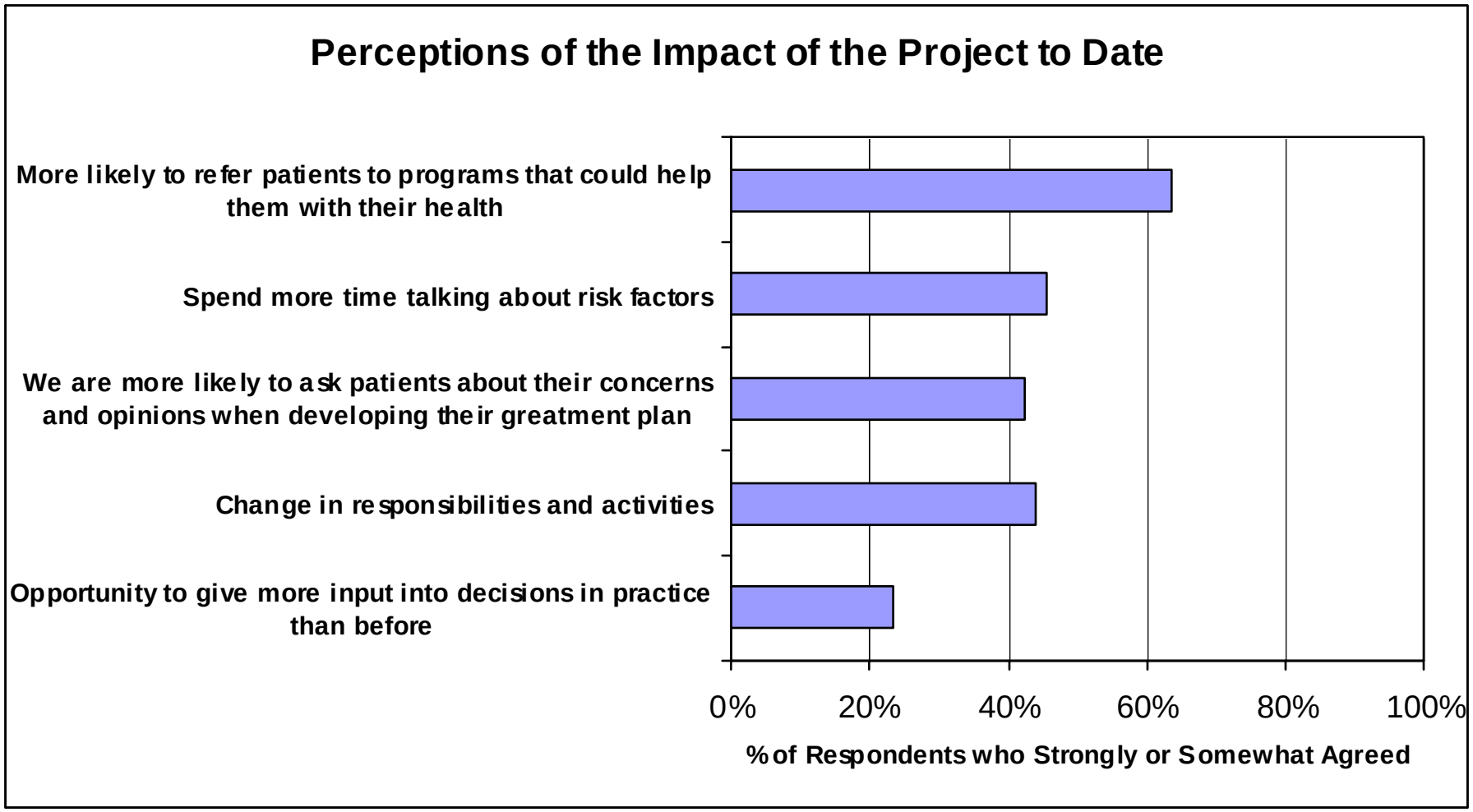
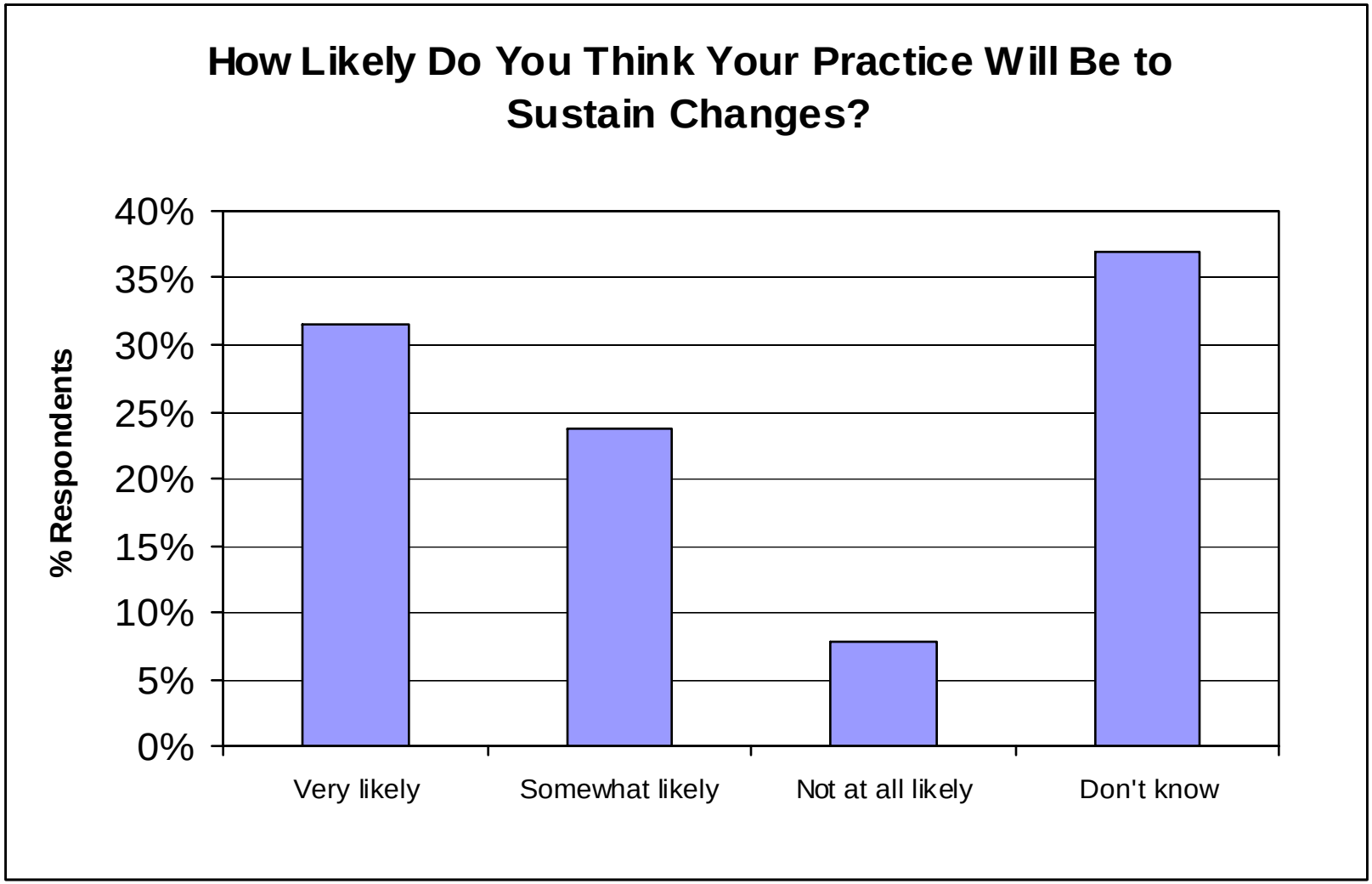


Interim Practice Survey Findings



Interim Practice Survey Findings



Interim Practice Survey Feedback

- **Favorable**
  - **Medical assistants and nurses were more positive about experience overall**
    - **Provided greater role in patient care**
    - **Increased interaction with patients**

- **Unfavorable**
  - **Common dissatisfactions**
    - **logistical**
    - **time constraints**
    - **difficulties implementing practice changes**
    - **lack of resources and support**

Patient Chart Review Objectives

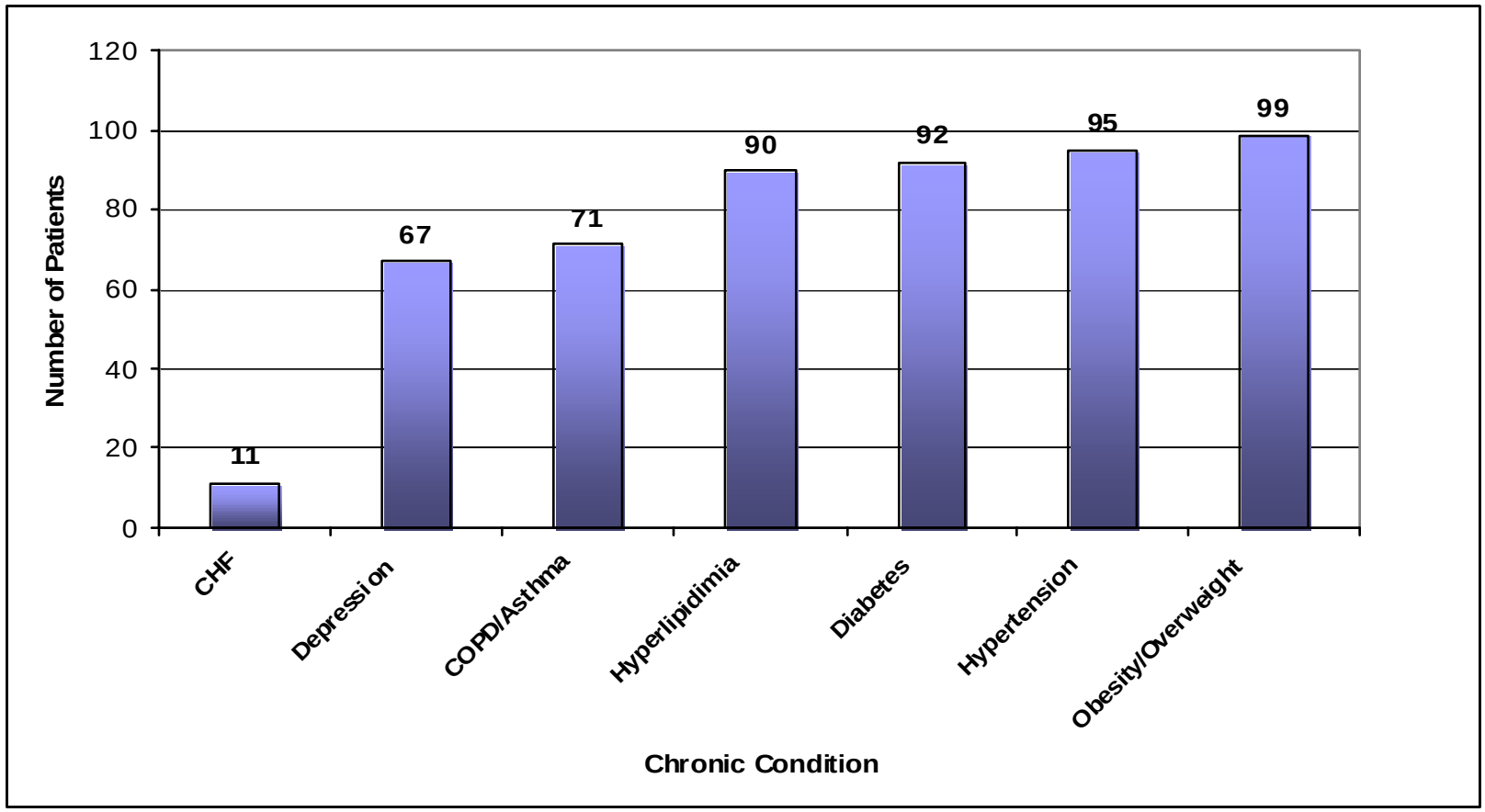
- **Measure if practice targets are being met**
  - **Are patients receiving evidence-based care during practice visits?**
- **Measure changes in patient outcomes during the project implementation**
  - **Are measurements in blood pressure, LDL, weight, etc. improving?**

Patient Chart Review Sample

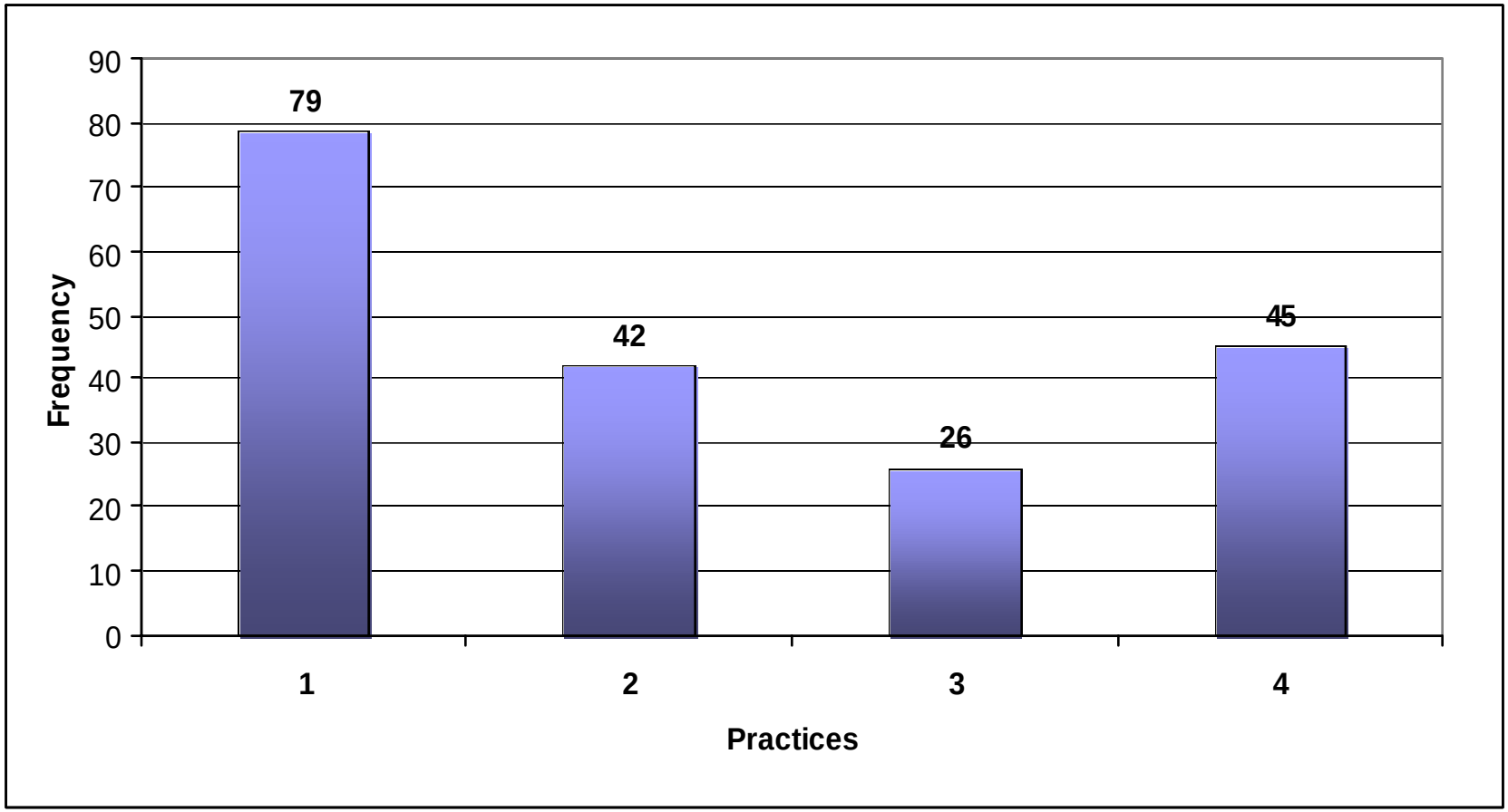
- **192 adult patients (ages 18-96)**
  - **March-December 2006—Sept 2007**
  - **Patients who died or relocated were removed from study**
  - **Patients with only baseline data recorded were removed from the outcomes analysis (will be followed up later)**

- **Most had multiple chronic conditions (e.g., diabetes, hyperlipidemia, hypertension, obesity, depression, etc.)**

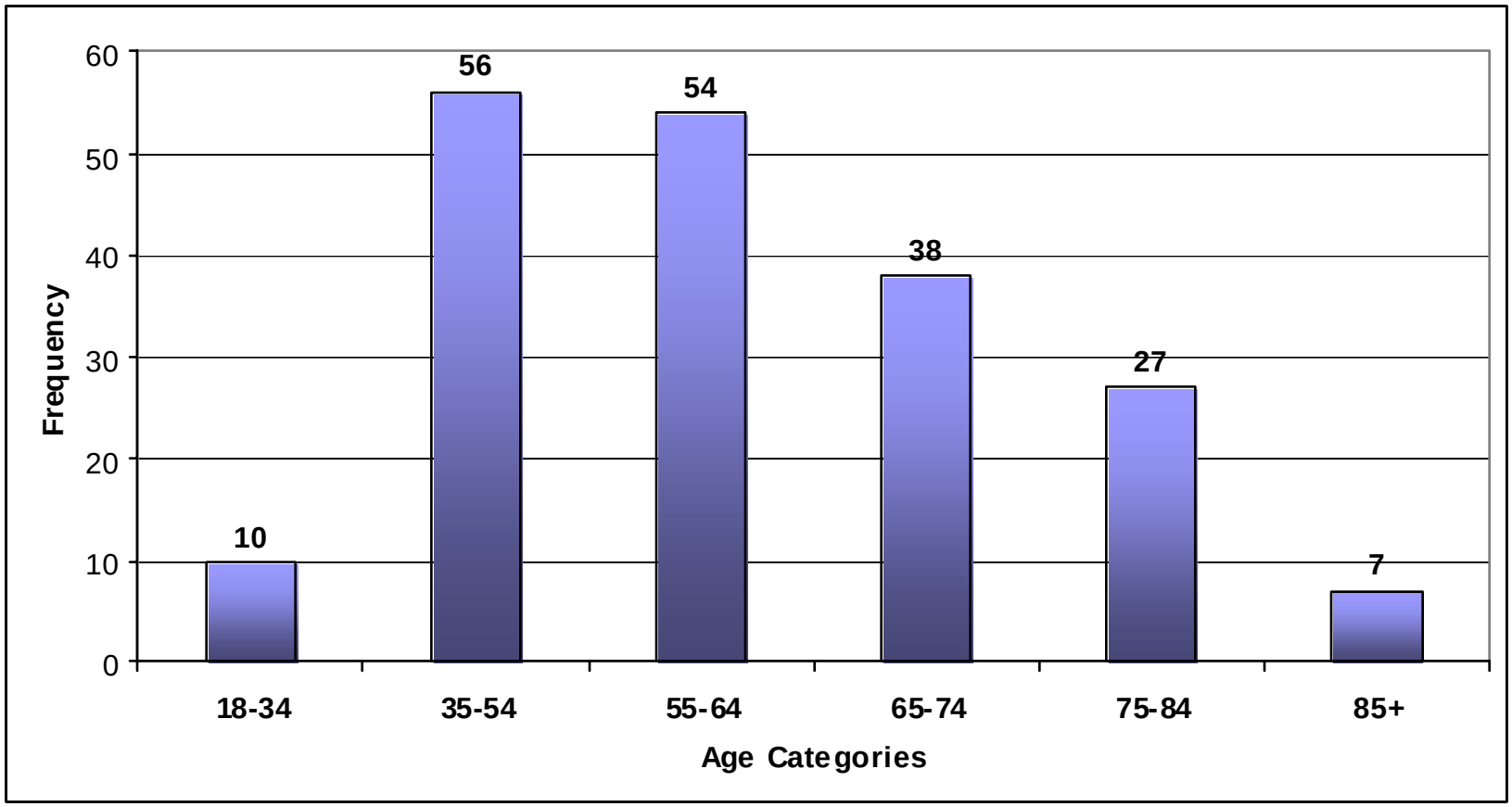
Total Cases per Chronic Condition



Patients per Practice



Patient Age Distribution



Patient Visits during Study Period

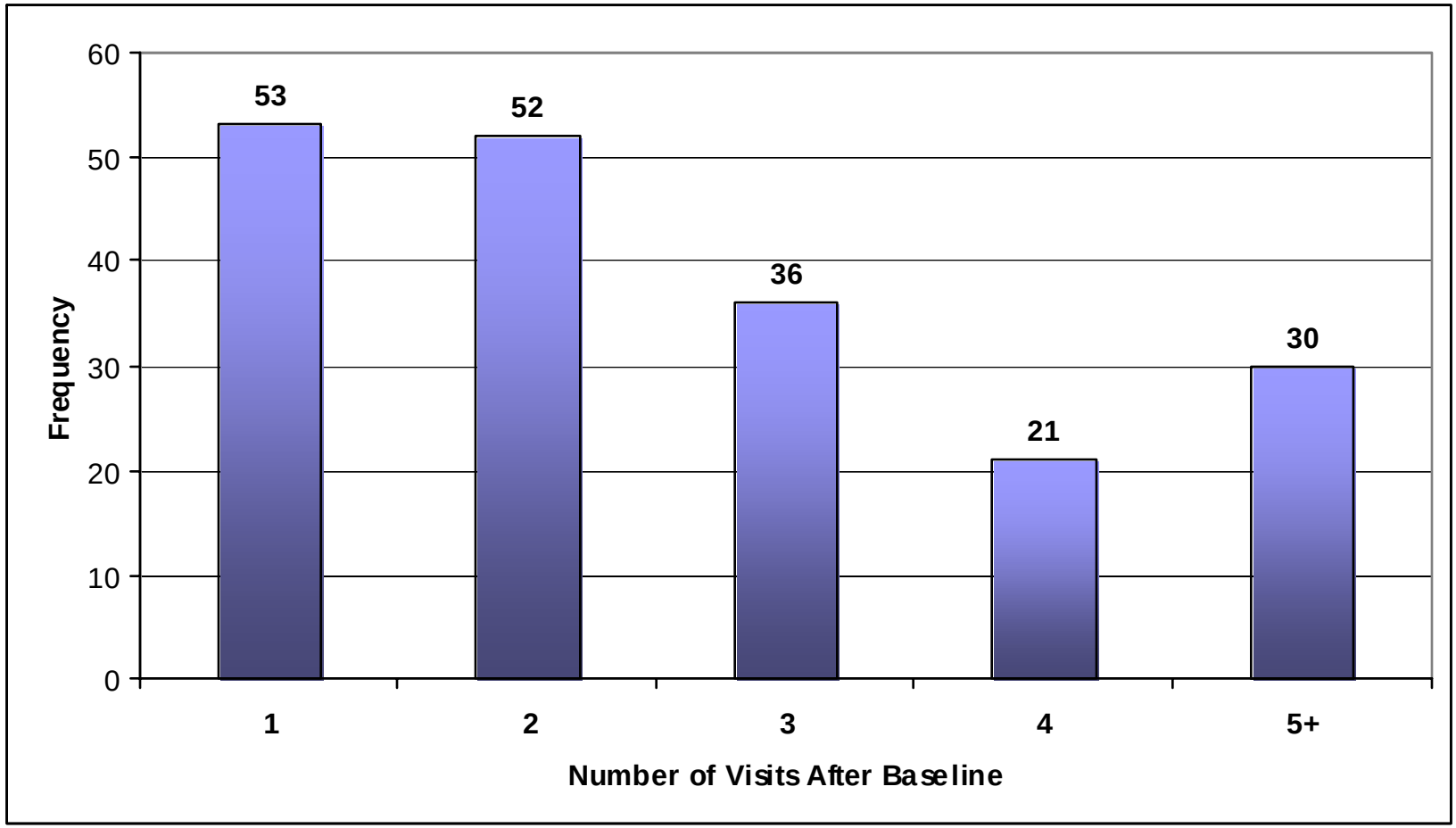
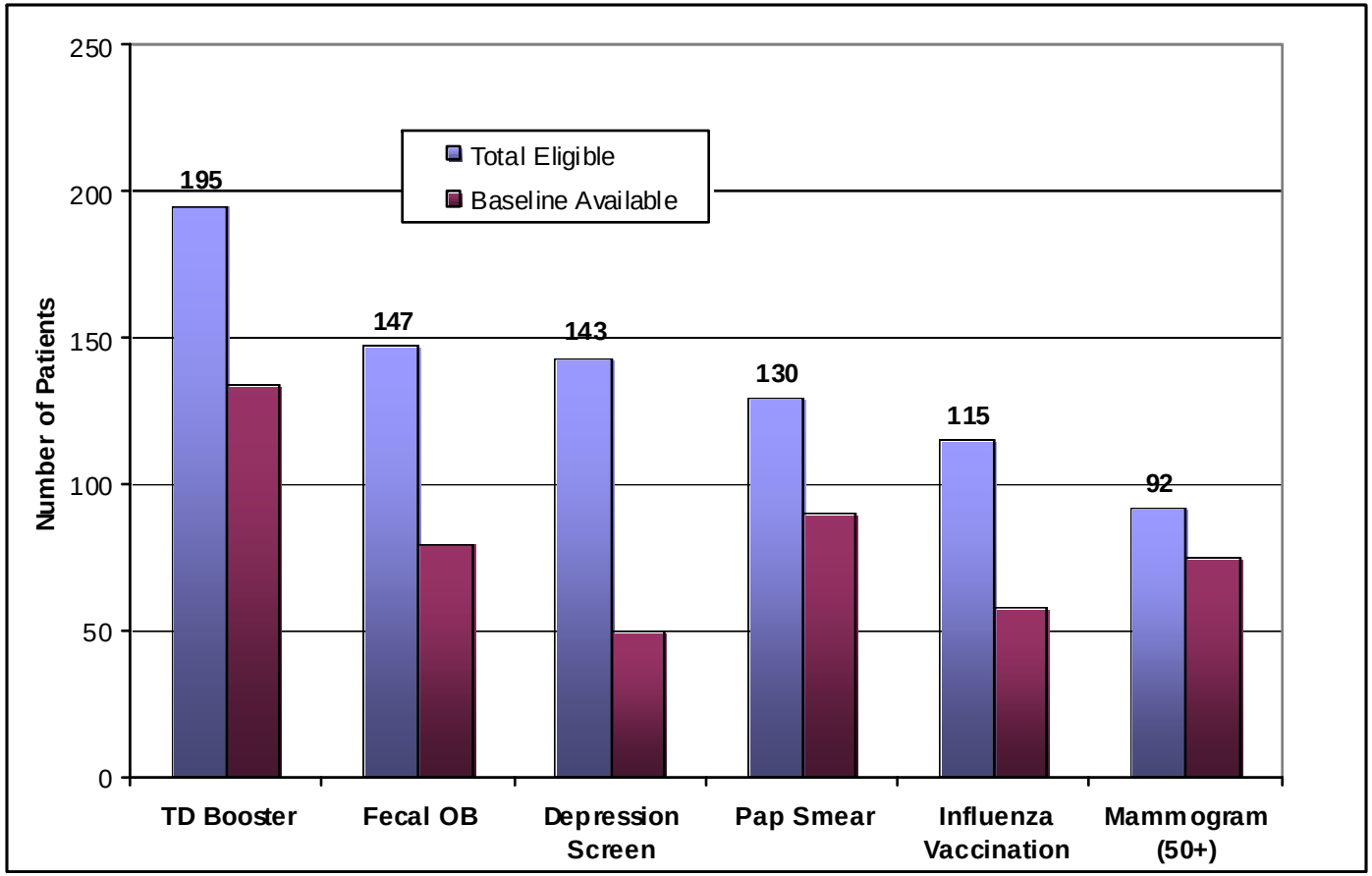


Chart Review Data

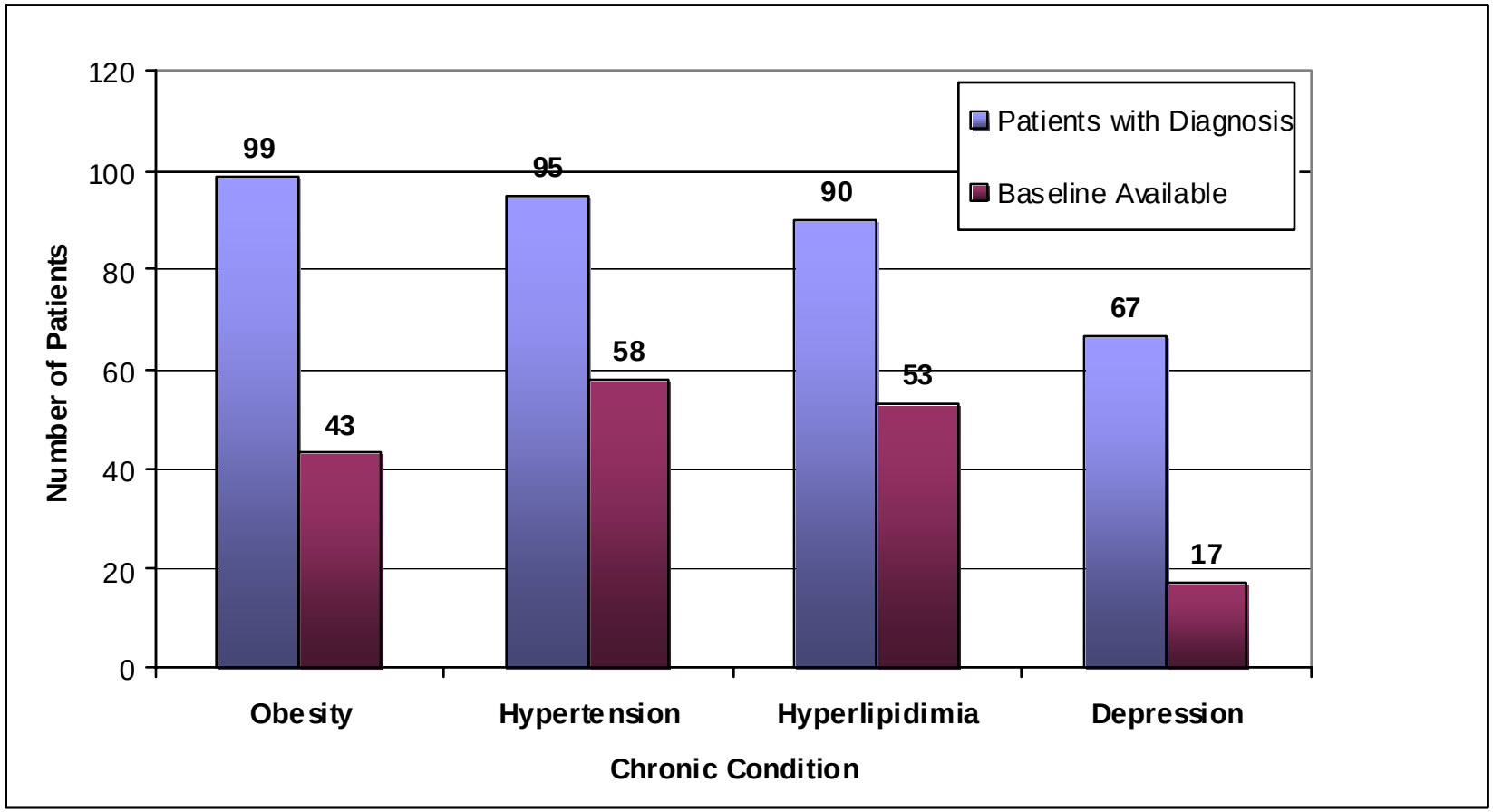
- **Measures**
  - ➢ **% patients by condition with care recorded on Health Maintenance Record**
    - **Health maintenance activities (e.g., annual tests and screening questions, seasonal flu vaccination)**
  - ➢ **% patients who had care specific to their chronic conditions recorded on flow sheet**
    - **e.g., annual goal setting, periodic measurements of health outcomes, referrals to SCORE (self-management program)**
  - ➢ **change in health outcomes between first and last visit for patient during study**
    - **e.g., blood pressure, LDL, weight, BMI**

Patient Chart Review Findings

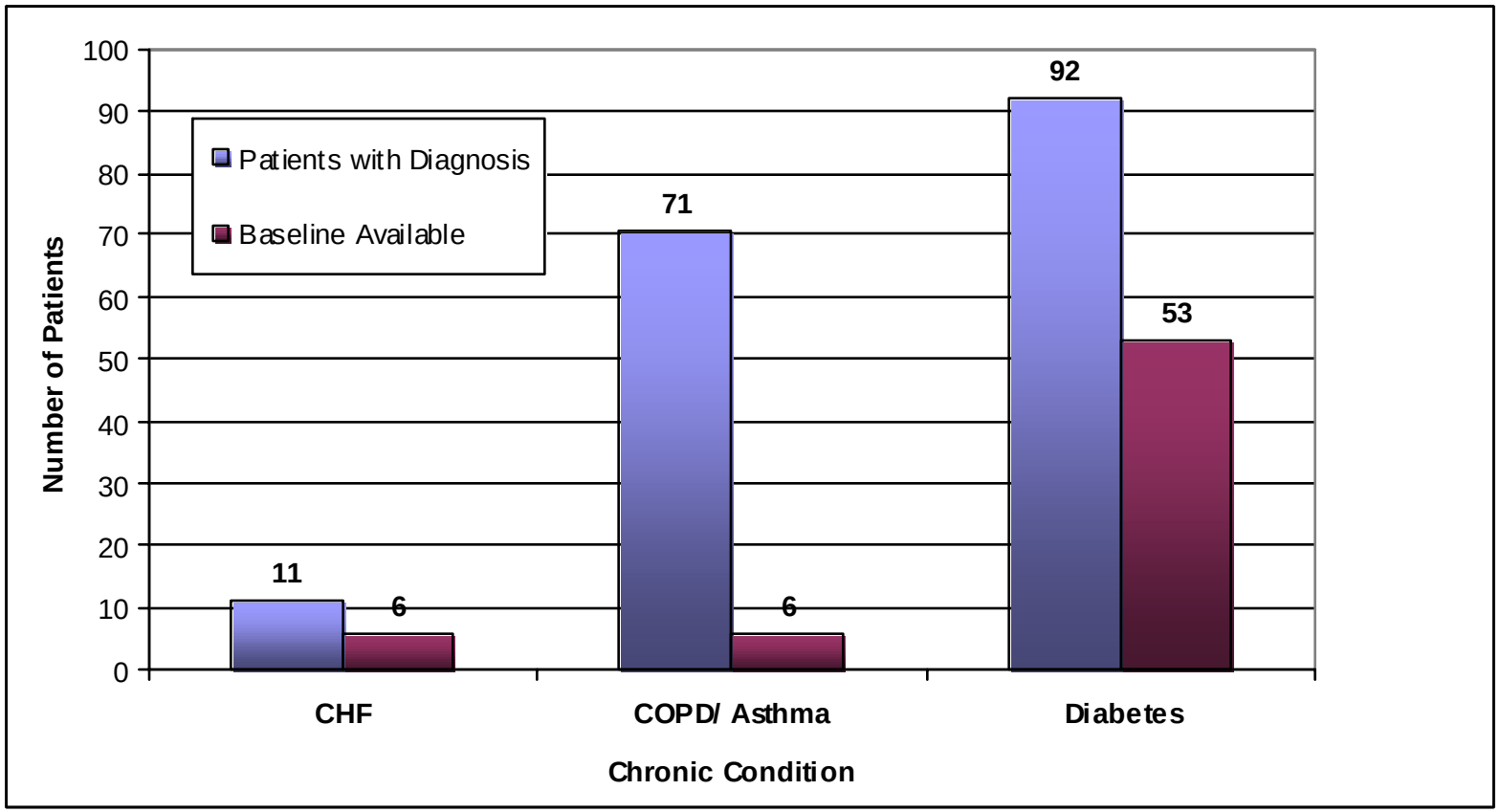
Health Maintenance Record – Eligibility and Baseline



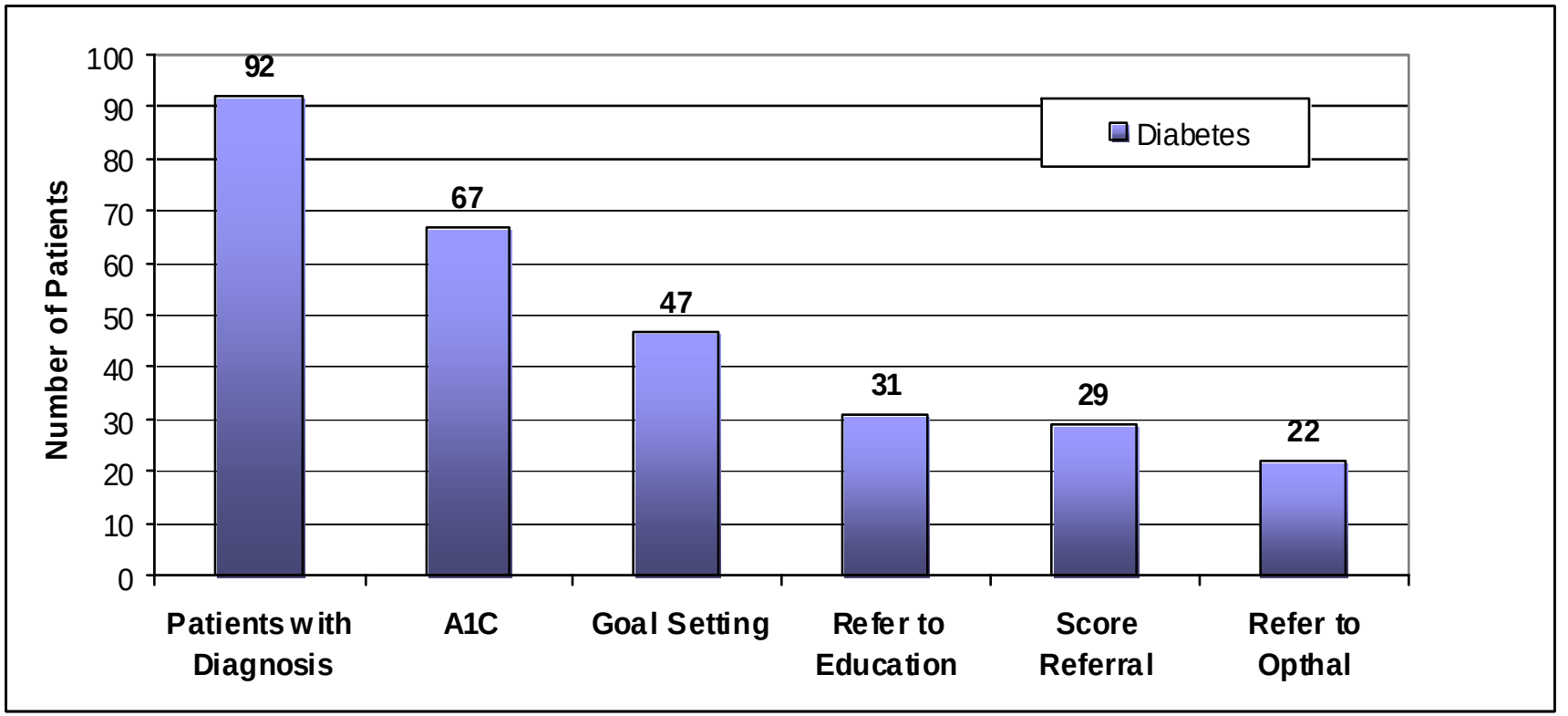
Patient Diagnosis and Baseline



Patient Diagnosis and Baseline



Diabetes Baselines



Health Outcomes of Patients in the Study

Condition	Target Indicator	First Measurement	Last Measurement	*p*-Value
Hypertension	**Blood Pressure, Systolic (mm Hg)**	**134.1**	**134.9**	**0.16**
	Blood Pressure, Diastolic (mm Hg)	**77.0**	**75.3**	**0.82**
Obesity	**Body Mass Index**	**36.4**	**37.2**	**0.08**
	Weight (lb)	**222.4**	**224.8**	**0.68**
Diabetes	**Hemoglobin A1C (mg/dL)**	**7.3**	**7.6**	**0.27**
	Fasting Lipid Profile, Low-Density Lipoprotein (mg/dL)	**107**	**82**	***0.05**

- LDL measurements among diabetics decreased significantly during the study
- *p*-values calculated through paired sample t-tests; significance * $p < .05$

Data Limitations

Practice Participation

- Patient data sheet left blank for some items of care
  - Is care still being done but staff not filling out charts?
  - If baseline is blank, cannot tell if patient is "due" for certain types of care

Patient Sample

- Excluded patients for whom there was no recorded visit during the study (14% of patients)
  - Did these patients not see providers?
  - Were practices not using flow sheets?

Data Limitations – cont.

Outcomes measurements

- Data collection timeframe may not have been long enough to observe changes
- Many patients did not have more than one outcome measurement
  - Could not be included in outcomes data

Summary/Conclusion

- Consensus driven decision making on practice change appears to work
- Evidence based changes for multiple chronic conditions appear no more difficult to implement in a practice than for a single condition
- The barriers to change are similar change occur regardless of the number of conditions the practice is addressing
- Practice change requires a lot of work, especially in primary settings that do not have access to an electronic medical record
- Compliance with guidelines, while improved, do not yet meet the targets for the project
- Health outcomes, while generally better, have not yet improved significantly.
- Sustainability is still an issue to be addressed
- Comprehensive patient self management is still needed

Contact Information

Contact Ron Deprez at CHPPR with any questions related to this presentation.

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