

COLLABORATIVE CARDIAC CARE IN PRIMARY CARE

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OBJECTIVES

- Awareness of importance of quality of life in heart disease.
- Describe the SAQ and KCCQ instruments.
- Describe 2 multi-center VA studies of collaborative care consultation in both ischemic heart disease and congestive heart failure.
- Describe novel strategies utilizing the electronic medical record, patient self-monitoring, and the electronic order-entry process to assist in delivery of care thru PCPs.

WHY FOCUS ON ANGINA?

- Ischemic Heart Disease (IHD) accounts for almost 20% of all deaths, and is the leading cause of permanent disability in the U.S.
- The most common manifestation of IHD is angina pectoris: out-numbers acute MI 30 to 1.
- In the U.S., between 6-16 million persons have chronic stable angina.
- Dramatic improvements in survival in IHD have not been matched by improvements in management of chronic stable angina.
- Angina adversely affects the quality of life, and may signify increased risk of cardiac complications in patients with IHD.

HOW WELL DO WE TREAT ANGINA?

- VA study of 7,038 veterans with self-reported IHD from 1997-2000.
- 70% of cohort were considered to be successfully treatment.
- BUT, of the 30% below SAQ of 70 (CCS class II-IV), 55% were prescribed ≤ 1 anti-anginal medication.
- In the most severe subgroup (SAQ 0-30, daily angina), 22% were on NO anti-anginal medications at all.
- Beta blockers only prescribed in 36%, CCBs in 42%, nitrates in 30%.

SEATTLE ANGINA QUESTIONNAIRE (SAQ)

- Self-administered, 19 question survey assessing 5 domains in patients with CAD.
 - Activity limitations, 9 specific activities.
 - Anginal stability over past 4 weeks.
 - Anginal frequency over past 4 weeks.
 - Treatment satisfaction.
 - Disease perception scale, measuring CAD burden on quality of life (QOL).
- Symptoms, function, quality of life.
- 100 point scale, higher score implies better functioning.

SAQ

- Tested for validity, reproducibility and responsiveness to change in multiple patient cohorts.
- In comparison to a variety of other outcome measures, including the SF-36, the SAQ was valid, stable over time and more responsive to changes in patients' clinical status.
- Main limitation in comparisons is lack of recognized “gold standard” functional outcome measures in CAD.
- Well-recognized, disease-specific quality of life assessment tool.

SAQ ANGINAL BURDEN AND MORTALITY

- VA study assessing all-cause mortality in a cohort of patients with self-reported IHD.
- Using the Physical Limitation sub-score of the SAQ, reference group was 75-100 (adjusted):
 - 50-74: mortality hazard ratio 1.26 (0.95-1.68), NS.
 - 25-49: HR 1.69 (1.28-2.23)
 - 0-24: HR 2.48 (1.81-3.39)
- Angina instability was also significantly associated with mortality.

SAQ SCORE AND LONG TERM OUTCOMES IN CAD

- VA prospective cohort study of 5,558 outpatients with self-identified CAD were followed for 1 year after initial SAQ.
- Primary outcome-all-cause mortality.
- 1-year mortality was predicted by increasing severity of SAQ physical limitation scores:
 - Compared to minimal limitation, mild OR=1.7 (NS), moderate OR=2.6, severe OR=6.0.
- 1-year admission for ACS:
 - Mild OR=1.4 (NS), moderate OR=2.1, severe OR=2.4.
- SAQ score was therefore predictive of adverse outcomes and identification of high risk outpatients with self-reported CAD.

DO EMR CLINICAL CARE PROMPTS WORK?

- An academic primary care clinic study assessed whether guideline-based EMR recommendations for CAD and IHD improved adherence to guideline-based care, health related QOL and exacerbations of heart disease.
 - No effect on compliance with guidelines.
 - Limited chart review suggested these were simply ignored in many cases.
 - No effect on QOL, hospitalizations or costs.

PROVIDING EBM GUIDELINES WITH PATIENT SYMPTOM DATA TO PCPS

- VA RCT study from Seattle and Indianapolis assessed providing both evidence-based suggestions *with patient symptoms* vs. evidence-based suggestions alone in pts with objective CHF.
- KCCQ was used to generate NYHA functional class data, which was provided to PCPs.

RESULTS

- Adherence to care recommendations:
 - No significant differences at 6 or 12 months.
- HRQOL:
 - SF-36 physical score *worsened* at 12 months in intervention
 - However, patients were more satisfied with care in intervention group.
- All-cause hospitalizations increased in intervention, but not for CHF.

COLLABORATIVE CARE IN IHD

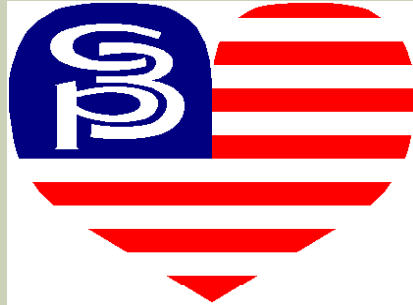
- Has been shown to improve outcomes in management of diabetes and depression.
- A study of Medicare post-MI patients found that while patients managed by cardiologists had better 2-year mortality (14.6%) than those managed exclusively by PCPs (18.3%), co-management by **both** cardiologists and primary care providers was superior to cardiology care alone (11.1% vs. 12.1%, P=0.02)

WHY COLLABORATIVE CARE IN IHD?

- IHD shares many similarities to depression management.
- A VA post-discharge study of 1,660 ACS patients found that physical health status at 7 months by SF-36 was adversely influenced by:
 - Arthritis
 - COPD
 - Prior CABG
 - CVA
 - DM
 - depression
 - Discharge diagnosis of unstable angina
- To impact QOL, both cardiac and non-cardiac issues likely need to be addressed.

A Collaborative Care Intervention to Improve Treatment of Chronic Stable Angina

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***COLLABORATIVE CARDIAC CARE
PROJECT (C3P)***
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Submitted for publication

OBJECTIVE

- To determine if a multifaceted intervention based upon a collaborative care model and directed through the PCP would improve angina control, quality of life, and guideline concordance in patients with chronic stable angina.

Design & Patient Sample

- Randomization by provider.
- SAQ mailed to pts. with IHD identified from VA administrative records (IHD, prior revascularization, prior MI).
- Pts with SAQ frequency score ≤ 70 eligible
 - Angina or NTG use \geq twice weekly.
Corresponds to CCS class II-IV angina.
- Informed consent from patients AND providers.

INTERVENTION

- Standardized review of clinical data by collaborative care team:
 - Requests for additional data.
 - Guideline-based recommendations to PCPs re: Dx & Rx.
 - Unsigned orders entered into EMR for PCP review.
 - Letters to patients advising of recommendations.
- Phone calls or emails to providers as needed.
- Patient education:
 - Standardized educational materials by mail.
 - Group education sessions.
- Serial measurement of symptoms & QOL.
- Control patients received usual medical care by PCPs.

SAMPLE EMR NOTE:

This patient is enrolled in the Collaborative Cardiac Care project (C3P, PI=Dr. John Rumsfeld). The collaborative review team re-reviewed this patient on 8/29/06. After a review of the patient's medical record including medications, treatment history and progress notes, the following recommendations were made:

- 1) Increase atenolol to 100 mg per day (order entered into CPRS for signature).
- 2) Increase simvastatin to 40 mg daily to achieve LDL target of under 100 (order entered into CPRS for signature).
- 3) Consider smoking cessation class referral.

These recommendations (based on this remote review) have been entered as unsigned order(s) into CPRS for your final approval. Upon your approval and signed order(s), we will write a correspondence note for your approval that will be sent to the patient to communicate this recommendation.

Note that this patient has not been seen/examined by this collaborative care team. These recommendations are therefore for your consideration only.

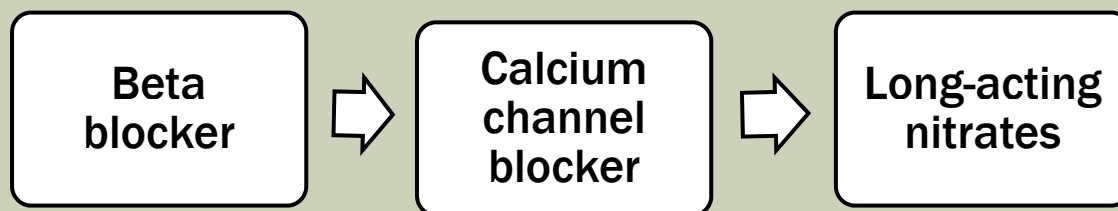
OUTCOME MEASURES

- Seattle Angina Questionnaire.
- Veteran Rand 12-item Health Survey (VR12) physical and mental components.
- Seattle Outpatient Satisfaction Questionnaire (SOSQ)– with provider, organization.
- AUDIT-C.
- PHQ-9.
- Mortality.
- Provider satisfaction at baseline and 12 months.
- All surveys administered to both intervention and control at 0, 4, 8 and 12 months.

Change in measures from baseline to 1-year for collaborative care vs. routine care, adjusting for baseline

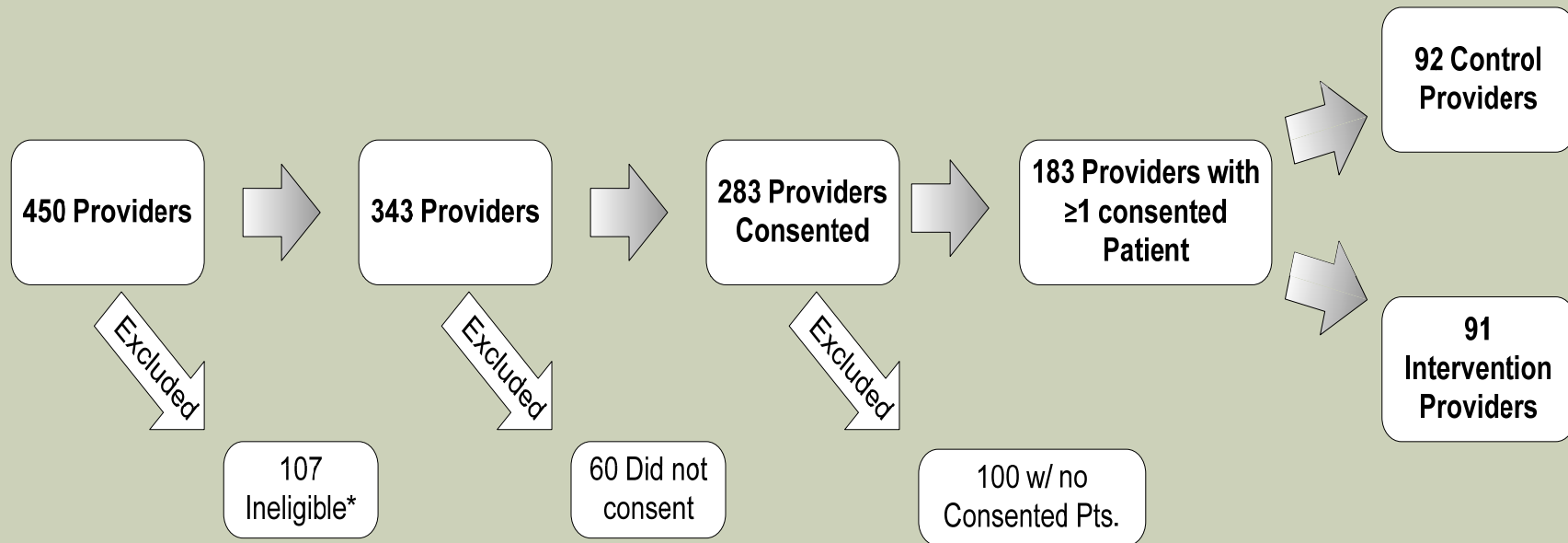
GUIDELINE CONCORDANCE

- Assessed use of, or contra-indications in records to:
 - Anti-platelet therapy (1 point).
 - Lipid-lowering therapy, or LDL<100 (1 point).
 - Anti-anginal therapy, stepwise (1 point):



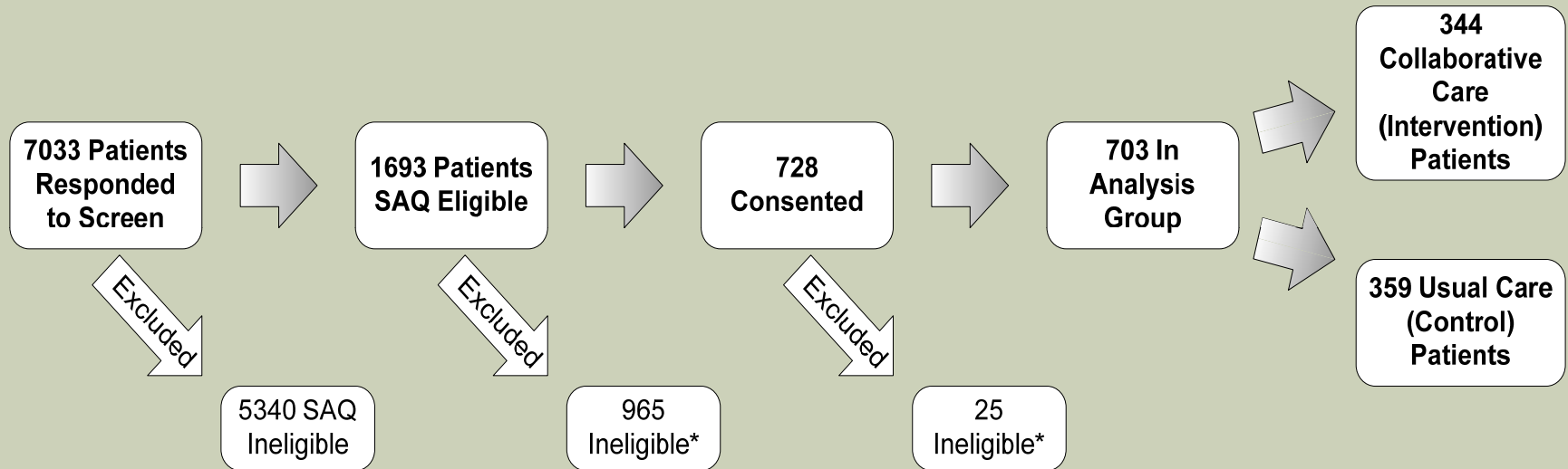
- Diagnostic testing for Dx, prognosis (1 point).
- Overall concordance score range 0-4.

PROVIDER ENROLLMENT



* Providers were ineligible if not associated with any patients, were associated with excluded clinics, or were leaving the VA in the near future.

PATIENT ENROLLMENT



* Patients were ineligible if they moved, were no longer seen by participating sites, could not be contacted by study staff, refused consent, or switched to an ineligible provider

BASELINE PATIENT CHARACTERISTICS

	Collaborative Care <u>N=344</u>	Routine Care <u>N=359</u>	<u>P</u>
Mean Age	68.3	67.2	0.15
Mean BMI	30.2	31.4	0.03
Mean SAQ Freq.	52.8	53.8	0.46
% \geq HS education	72.1	78.3	0.07
% Married	61.3	63.8	0.53
% White	79.4	80.8	0.29
% Non-VA cardio. care	20.3	17.5	0.39
% receiving mostly VA care	86.9	88.3	0.66
% Smoking past year	20.1	19.2	0.82
Guideline concordance score	3.0	2.9	0.01

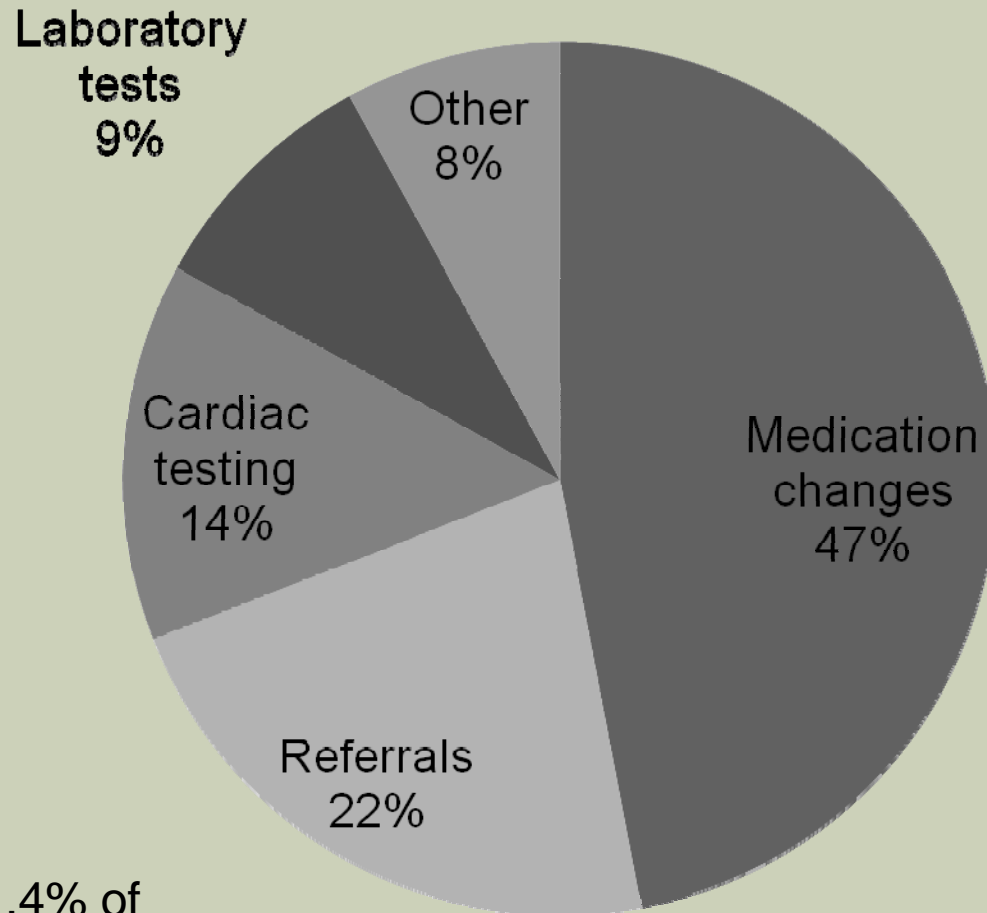
BASELINE CHARACTERISTICS (CONT'D)

	Collaborative Care <u>N=344</u>	Routine Care <u>N=359</u>	<u>p-</u> <u>value</u>
<u>Co-existing conditions</u>			
% Hypertension	94.5	91.4	0.11
% Hyperlipidemia	91.3	90.0	0.61
% Diabetes	49.1	47.6	0.71
% Depression	36.3	37.6	0.76
% Revascularization	71.8	76.6	0.15
% prior MI	51.2	61.8	0.01
<u>Medications</u>			
% Aspirin or Plavix	48.3	46.8	0.71
% Beta Blocker	88.7	86.1	0.310
% ACE Inhibitor	67.4	63.2	0.267
% Statin	92.2	88.9	0.16
% LA nitrate	86.6	81.3	0.07

COLLABORATIVE CARE TEAM RECOMMENDATIONS

- At initial review, recommendations made for 65% of intervention patients; of these, 61% had 2 or more recommendations.
- The teams conducted 895 reviews of intervention patients and made 701 evaluation and treatment recommendations.
- Providers accepted and implemented 92% (642/701) of recommendations.

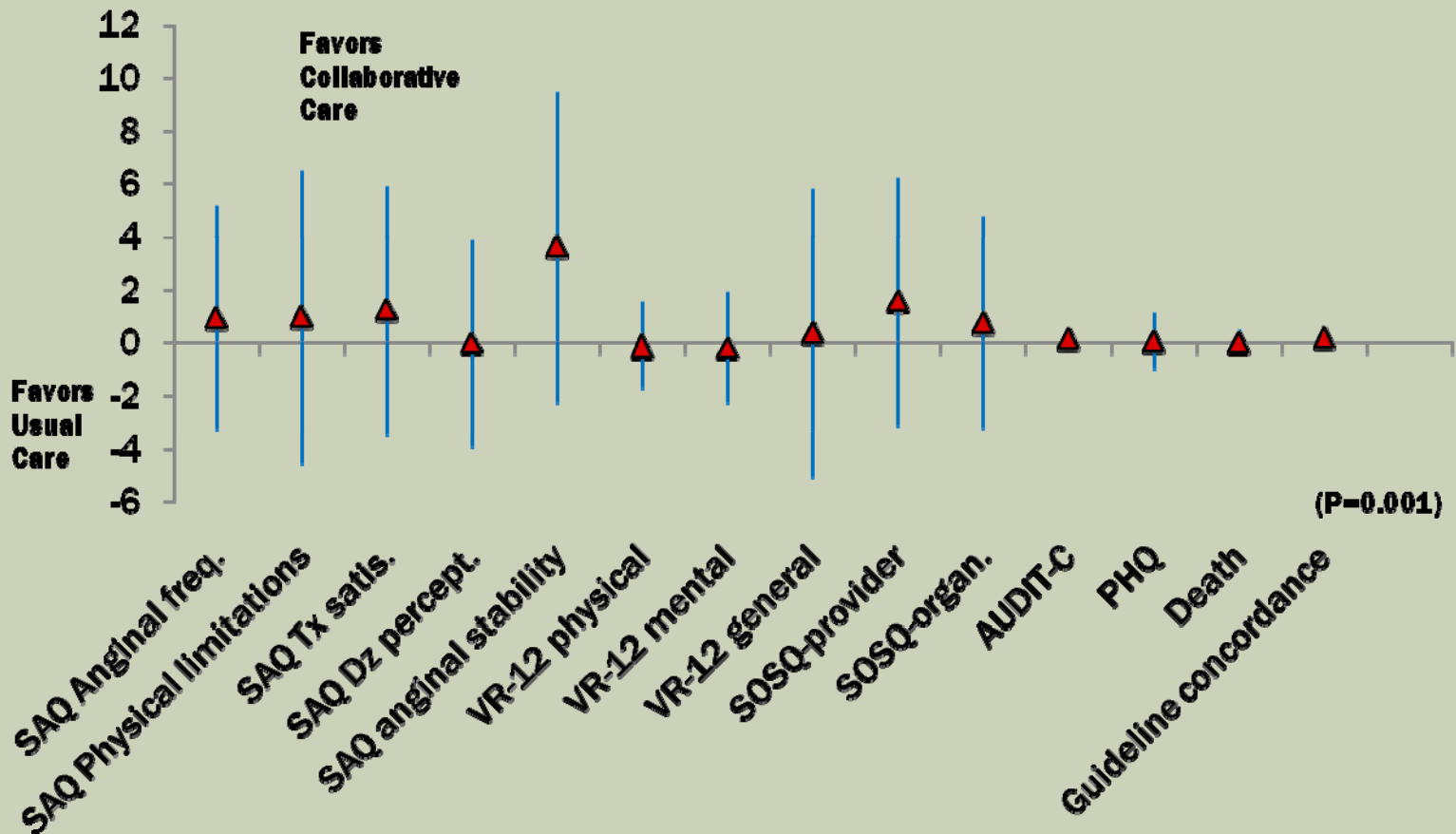
Collaborative Care Team Recommendations



Beta-blocker Changes were most frequent at 9%

11.4% of Referrals were For depression

RESULTS: ONLY GUIDELINE CONCORDANCE WAS SIGNIFICANTLY DIFFERENT



LIMITATIONS

- Low response rate (two-stage consent process).
- Potential misclassification of anginal pain by SAQ.
- Generally high quality of care at baseline:
 - High proportion of pts seeing a cardiologist.
 - Baseline guideline concordance was 3 of 4.
- Outside care-difficult to coordinate.
- Weak mental health intervention.
- ?If generalizable to non-VA settings.

CONCLUSIONS

- Collaborative care intervention did not significantly improve most clinical outcomes of patients with CSA although trends favored the intervention.
- Guideline concordance did modestly improve.
- In part, may have reflected high quality of care already being provided to patients.
- Delivering guideline-based recommendations within the EHR for review/sign off by PCPs was an effective delivery platform.
 - Provider satisfaction also favored the intervention, albeit not significantly so.
 - The acceptance of 92% of recommendations is remarkable.

CONGESTIVE HEART FAILURE

■ US national data:

- 5 million Americans.
- Leading cause of hospitalizations over age 65-approx 1 million/year.
- Annual admission rate almost 50%.
- Annual cost estimated at \$28.8 billion.

■ VA data:

- 8% prevalence
- Average 1-2 hospitalizations per year for decompensation.
- Average 20 clinic visits/year.
- 5 year mortality is 36%.

- Little recent reduction in mortality from CHF.
- CHF has significant impact on health status (symptoms, functional status) as well as on health-related QOL.
- Relatively few studies have targeted these “soft” outcomes; most have been small, single-center, or case management studies.

PATIENT CENTERED DISEASE MANAGEMENT (PCDM)

- Ongoing study at 4 VA centers to assess effect of multi-disciplinary collaborative care on quality of life in CHF.
- Intervention consists of:
 - Case finding.
 - Cardiology, primary care, psychiatry, and RN collaborative care.
 - Home telemonitoring by patients.
 - Evidence-based Tx of CHF and depression.

PCDM STUDY

■ Primary outcome:

- Change in CHF-specific health status between baseline and **12** months.
- Assessment tool is the Kansas City Cardiomyopathy Questionnaire (KCCQ).

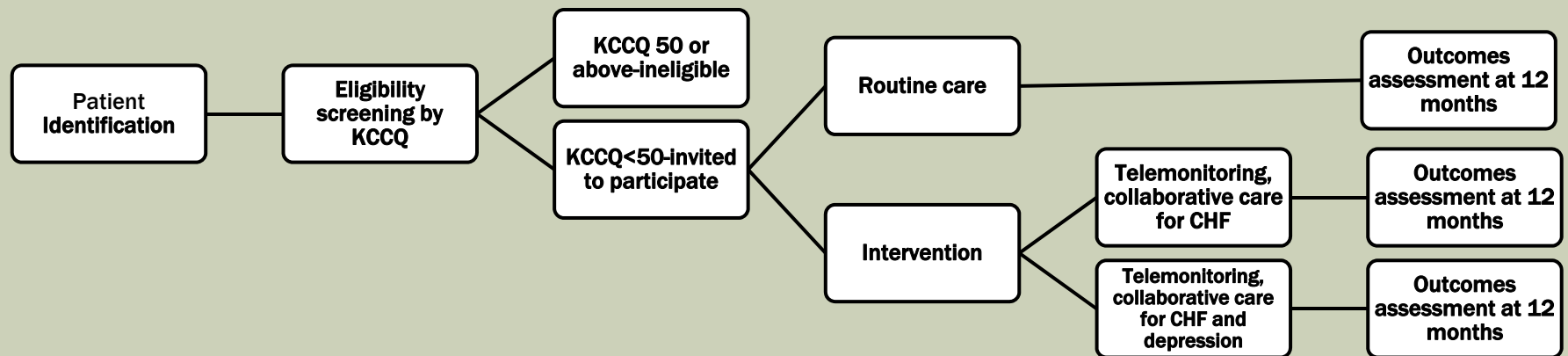
■ Secondary outcomes:

- Hospitalization.
- Mortality.
- Depression.
- Patient efficacy in self-management of CHF.
- Medication adherence.
- Patient satisfaction.
- Guideline concordant care.
- Cost-effectiveness.
- 6 minute walk test.

KANSAS CITY CARDIOMYOPATHY QUESTIONNAIRE-KCCQ

- Similar to the SAQ in that it focuses on domains of:
 - Physical limitations with specific activities.
 - Stability of symptoms in past 2 weeks.
 - Frequency and symptoms of edema, fatigue, dyspnea.
 - Quality of life as limited by CHF symptoms.
- Validated in a range of patients, countries, and shown to be an independent predictor of prognosis in outpatients with CHF.

PCDM STUDY DESIGN



Both arms have same F/U contacts/surveys at 3, 6 and 12 months

WHY DEPRESSION MANAGEMENT?

- Previous trials have found prevalence of depression in CHF outpatients of 30%.
- High prevalence of moderate-severe depression in C3P study (49%) proved difficult to manage within context of that study design.
- Shown to impact HRQOL in CHF patients, associated with greater and more severe CHF sx, predict decline of HF health status; treatment is postulated to improve QOL in CHF.

- Pts administered PHQ-9 at enrollment to all patients.
- If PHQ-9 is ≥ 10 :
 - Collaborative care: enrolled into depression treatment arm.
 - Usual care: PCP notified about high PHQ score.
- Protocol modeled after IMPACT model of collaborative depression care, with behavioral activation component.
- Close follow-up by telephone, PHQ-9 at 3, 6 months.
- Depression symptom monitoring by HealthBuddy.
- As-needed facilitated mental health referrals.
- Goal is remission, PHQ-9 score of < 5 .

TELEMONITORING: THE HEALTH BUDDY SYSTEM

- <https://vaww.icare.cc.med.va.gov/cgi-bin/WebObjects/CMD.woa/4/wa/logout?wosid=kd3MjV1fIJVE2TPDfE82btmajoX>
- In theory, this can:
 - help detect decompensated CHF earlier and allow intervention.
 - Allow follow-up of interventions, such as BP lowering and diuresis, as well as depressive symptoms.
 - promote patient self-care.

HEALTH BUDDY

- Has modules for CHF and depression for this study-other modules exist as well.
- Responses to questions are transmitted to a secure site, to be reviewed the following day by the study RN.
- Self-care is reinforced by medication adherence, sodium restriction, daily self-weighing, education about worsening signs and symptoms.

CONCLUSIONS

- Collaborative care did not improve patient symptoms or quality of life in chronic stable angina, but did improve guideline-concordant care.
- A more extensive protocol for heart failure is currently underway-remains to be seen if this proves effective.
- Protocols described help deliver consultative care, preserve the role of the PCP, and do so without a significantly increased clinical burden to the PCP.