Utilizing the Chronic Care Model in the Management of Obesity In Primary Care Practices Serving an Urban Minority Population – Lessons Learned

James Plumb MD, MPH, Rickie Brawer PhD, MPH, Nancy Brisbon MD, *Thomas Jefferson University and Hospital*
Bonita Falkner MD – Principal Investigator, *Center for Excellence Obesity Research*

Background

- Pennsylvania Department of Health – Create Centers of Excellence in Obesity Research
- State Tobacco Settlement Funds
- Four Year Project
- 4+ million
- Five grantees
  - Jefferson, CHOP, Penn, Temple and Pitt
- Basic Research and Clinical Care
- Historical Black Institution and Industry

Overall Goal

- Develop knowledge to advance treatments and reduce disparities in obesity and obesity related co-morbidities
- Project – *"Adipokines and Genotypes: Injury vs. Protection in Obesity-Related Co-Morbidity"*

COE Objectives

1) Identify clinical, biochemical and genetic markers of obesity co-morbidities in young adults
   – Determine if the clinical phenotype of obesity plus high blood pressure identifies the metabolic syndrome and predicts vascular injury
   – Determine if obesity plus high blood pressure is associated with a specific adipokine profile
   – Determine if genetic polymorphisms regulating adipose cell secretion of adipokines distinguish obesity plus high blood pressure – Determine if weight reduction and/or blood pressure reduction in obese adults alters the adipokine profile and markers of vascular injury
2) Apply interrelated components of the Chronic Care Model in low income urban minority communities to improve control of obesity and obesity related co-morbidities

Health Services Research

Outcome Measures

- Primary – change in BMI
- Secondary –
  – Diet choices
  – Physical activity
  – Biological measures
- Blood pressure
- Lipids
- Glucose
  – Waist Circumference

COE Objectives

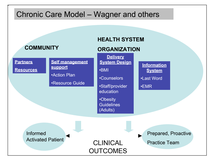
3) Establish a Data Resource and Management Center to assist investigators and community based organizations to design, analyze and evaluate research projects and test interventions for weight management and obesity related comorbidities
   – Provide the data management and analysis for the hypothesis driven research project
   – Manage and analyze the data obtained from the CCIP and Chronic Care Model components, as preliminary data for subsequent projects
4) Establish collaborations for education and training between the components of the COE
   – Provide education and training opportunities for Cheyney University students through courses, mentors, and active participation in research through data collection, analysis and independent projects
   – Develop interdisciplinary research with Cheyney faculty – biologic sciences, economics, sociology, physical education/recreation, computer science and IT
   – Support Cheyney faculty development for acquisition of extramural sponsored research and prepare Cheyney students for advanced training in science

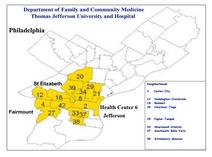
The Problem

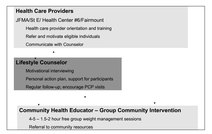
- Obesity – 35.7% in AA adults; 30.9% in Latino
  – targeted Philadelphia neighborhoods
- Obese individuals receive advice to lose weight in 50% of primary care visits; 34% receive advice about physical activity
- AA less likely to receive such advice
- Under-diagnosis of obesity by relying on appearance and not BMI
- Clinical inertia, lack of time, lack of training in counseling and motivating behavior change
- Obesity guidelines exist – not routinely used

Objective II - Clinic Community Intervention Program (CCIP)

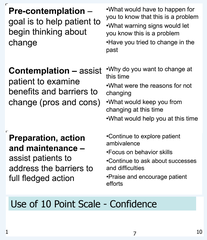
Applies interrelated components of the **Chronic Care Model** in low income urban minority communities to improve control of obesity and obesity related comorbidities
   – Provide programs for management of obesity, blood pressure control, and obesity related co-morbidities
   – Provide supportive services for weight reduction and for blood pressure control by utilizing and augmenting existing community resources
   – Evaluate the data for feasibility, effect and economic cost of delivery of community based interventions that are linked to primary care







Stage of Change and Motivational Interviewing



Five A's

- **A**sk – permission to sensitively approach weight
- **A**dvise – "excess weight can negatively impact your health"
- **A**ssess – readiness to change
- **A**ssist – "let's negotiate a realistic step toward weight loss or maintenance
- **A**rrange - referral

Personal Action Plan

- Set goals
- How do you plan to achieve goals
- Within the plan, what are some specific first steps you might take
- When, where and how will these steps be taken
- Three items

Community Curriculum Skill-Based

- Using the food guide pyramid
- Reading food labels
- Healthy meal planning
- Supermarket tours
- Shopping on a budget
- Cooking healthy for a family
- Healthy snacking
- Dining out
- Healthier shopping at corner stores
- Putting physical activity into daily life

Process Evaluation – Year 1

- Providers
  – Expand eligibility criteria – Zip Code and Age
  – Increase visibility of counseling team in practice
- Counselors
  – More provider involvement to encourage, motivate, and follow participants
- Participants
  – More timely and flexible enrollment appointments
  – Fewer community classes per cycle

Year 2 – CCIP Changes

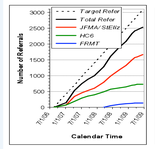
- Expand zip code eligibility
- Expand age eligibility – 18-55
- Add an additional Jefferson practice (Fairmount)
- Staff increase (1 FTE to 1.5 FTE Lifestyle Counselor)
- Intensify referral, enrollment and retention efforts in practices
  – On-going orientation – students, residents, new faculty
  – Case management conferences
  – Enhanced motivational interview training
  – Development of recruitment video
  – Encourage patient self referral

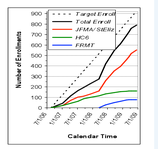
Referrals and Enrollment

Referred	Contacted	Enrolled
2525	1695 (67%)	790 (30%)
3.66 per workday		**1.11 per workday**

Final Referrals and Enrollment

- Referrals
- Enrollment





Demographics (N=102)

Age	18 to 45 – Mean 33- sd 7
Sex	76% women
Race	7% Caucasian; 56% AA; 36% Hispanic, 1% other
Education	45% HS or less, 12% Vocational; 44% College
Employment	53% Fulltime

Behaviors (N=102)

Smoke	16%
Drink Alcohol	37%
Exercise	Vigorous – 13% Moderate – 45% Walk – 72%

Measurements

Weight (kg)	mean = 114, sd = 8.6
Weight (lb)	mean = 251, sd = 68
Total caloric intake	range = 688 to 7313, mean = 2346, sd = 1186
BMI	mean = 41, sd = 12
Systolic BP	mean = 124, sd = 12
Diastolic BP	mean = 77, sd = 10

Laboratory

Total cholesterol	mean = 188, sd=35
HDL	**mean = 50**, sd = 26
LDL	mean = 110, sd = 37
Triglyceride	mean = 153, sd = 57
Glucose	mean =109, sd = 42

PRELIMINARY RESULTS

	CCIP (100*)	CONTROL (155)	p
AGE (YEARS), MEAN AND ±SD	33 ± 7	37 ± 10	.001
SEX, N (%)			
MALE	19 (19)	41 (26)	
FEMALE	81 (81)	114 (74)	.071
RACE, N (%)			
WHITE (NON-HISPANIC)	11 (11)	n/a	
AFRICAN AMERICAN	85 (85)		
HISPANIC	2 (2)		
OTHER	2 (2)		
BMI AT BASELINE	36.9 ± 6.4	36.9 ± 6.3	
BMI AT 9 MONTHS	36.0 ± 7.0	36.8 ± 7.0	
BMI CHANGE	-0.9 ± 2.1	-0.1 ± 2.5	.213

*15 SUBJECTS

Impact

- Use of BMI in practices
- Integration of obesity guidelines (NHLBI)
- Motivational interviewing training
- 180+ providers and staff involved
- Medical students (130), Residents (36), Public Health students (5)
- Gradual mitigation of "clinical inertia"
- Community partnerships – Churches, Congresso, Project HOME, HC 6

Challenges

- Integration project into busy practices
- Scheduling
- Recruiting
- Retention
- Follow-up
- Integrating students at all levels

Observations - Providers

- Providers will refer if given simple mechanism to do so, and have frequent reminders
- Provider support is important, but not the sentinel event in stimulating change
- Many providers are not following obesity management guidelines
- Referral rates impacted by healthy competition
- Some providers refer more than others – personal interest in obesity or research studies

Observations - Patients

- Patient readiness matters
- Stressors impact obesity in same way as compliance with any other chronic disease or prevention counseling
- Giving patients information about appropriate weight stimulates conversation about weight management – BMI charts in examination rooms

Observations - Practice

- Integrating LC into one practice challenging and impacted informal and formal communication loops
- Gaining staff support to change practices (i.e. H, W, BMI) a challenge
- Delay in EMR implementation was a barrier to utilizing all components of Chronic Care Model

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