

Participatory Dissemination:

Promoting Healthy Weight Loss through Exercise and Lifestyle Changes to Prevent Diabetes

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Objectives

- A. Describe the benefits of, and recommendations for, exercise for people with pre-diabetes.
- B. Detail the underlying principles of successful exercise and lifestyle changes to prevent diabetes.
- C. Highlight a system-based approach for translating evidence-based principles into practical interventions.

A Time for Action

- 1 in 3 people born in 2000 will develop diabetes
- 41% of 40 to 75 year olds in the U.S. pre-diabetes
- Lifestyle interventions can substantially reduce the risk of diabetes through changes in physical activity, diet, & body weight

Regular Physical Activity Improves:

- Lipids, Blood pressure
- Endothelial function
- Glycemic control, Hypertension, CHD
- Response to cancer treatment
- ...Type 2 diabetes prevention & treatment
- ...Risk of gestational diabetes by 50% (if active during pregnancy)

Recommendations for Physical Activity

Aerobic Training

Moderate
30 Minutes
5 days/Wk

OR

Vigorous
20 Minutes
3 days/Wk

AND

Strength Training

8-10
Exercises
8-12 Repetitions
2 days/Wk

Recommendations for Physical Activity

- Pre-diabetes BMI>25
 - Increase to 60 minutes of moderate to vigorous PA 5 days per week
- Gestational Diabetes
 - No need to modify unless medical or obstetric complications
 - In the case of complications, individualized prescription is recommended.



**We know why, we know what,
but how do help people be
more active?**

The Diabetes Prevention Program

- **A multi-site RCT**
- **Intervention included:**
 - **Weight loss and physical activity goals**
 - **Individualized training by lifestyle coaches**
 - **Supervised exercise sessions**
 - **Individualized strategies to overcome barriers**
 - **Materials targeted toward ethnically diverse populations**
 - **An extensive network of physical activity, nutrition, and clinical support**

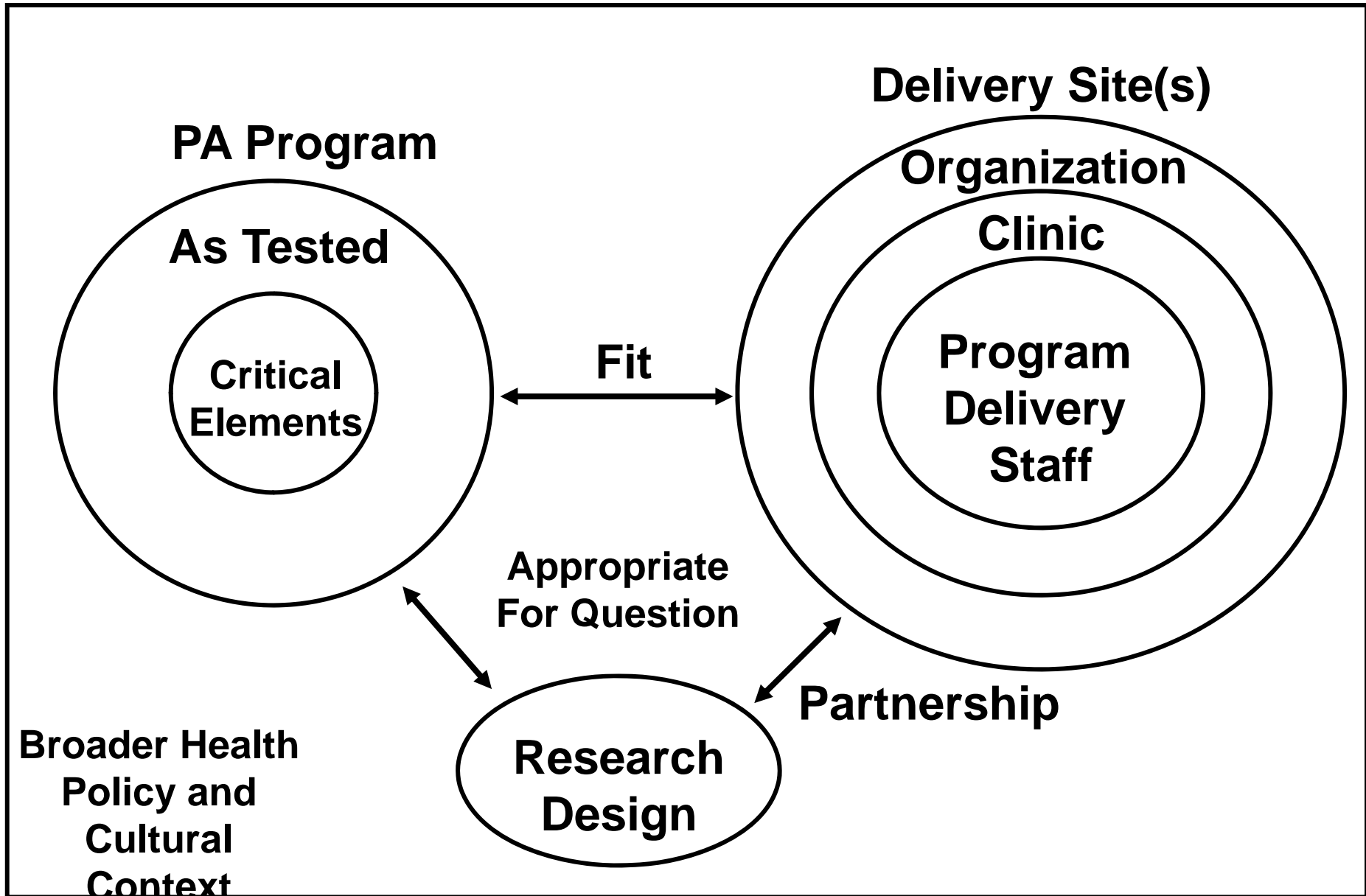
The Diabetes Prevention Program

- **Significant weight loss and increased physical activity**
- **Lowered the incidence rate of diabetes by 58 percent.**
- **The success attributed to:**
 - **The blend of nutrition, exercise and behavioral weight loss strategies employed**
 - **Intensive & highly individualized to improve the participants' chances of achieving challenging goals**

Is the DPP effective?

- Demonstrated the efficacy of a lifestyle intervention when delivered under optimal conditions
- While this teaches valuable lessons about the types of behavior and weight change that can delay the onset of diabetes, the effectiveness of such a clinical program is yet to be determined
- How can the DPP be translated into practice and demonstrate effectiveness?

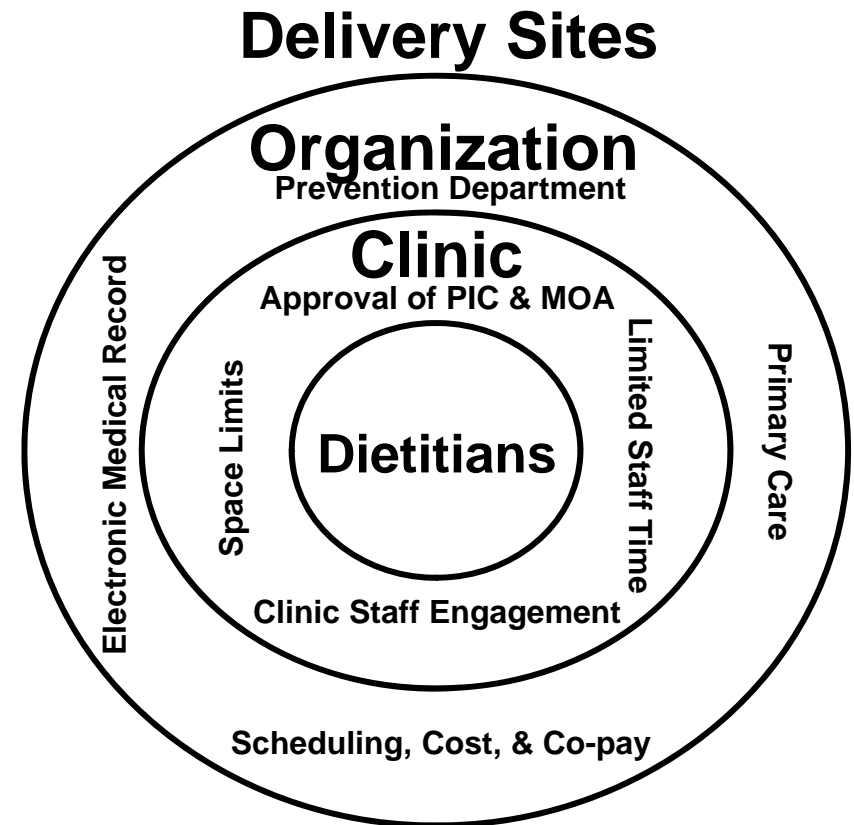
Integrated Research-Practice Partnerships



Application of Model to Diabetes Prevention

Broader Health Policy and Cultural Context

1. National Organizational Campaign To Promote Healthy Lifestyles
2. Prevention Department Desire to Provide Diabetes Prevention Program

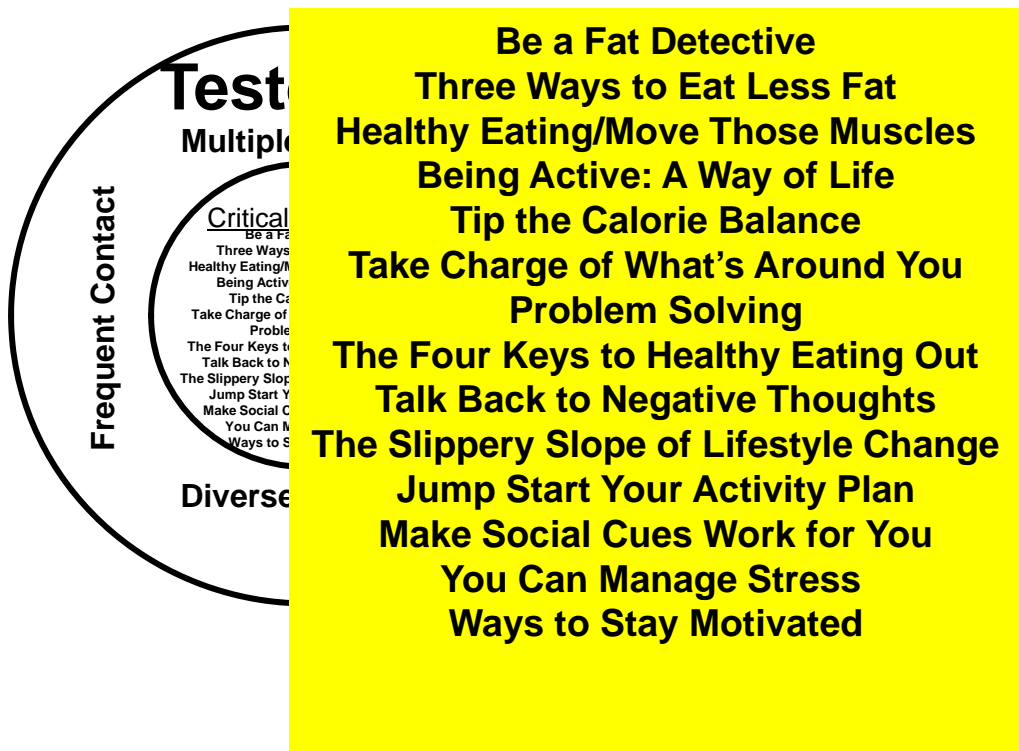


Partnerships across organizational structure defined necessary results for decision to deliver broadly across multiple clinics

Note: PIC=Physician in Charge; MOA=Medical Office Administrator

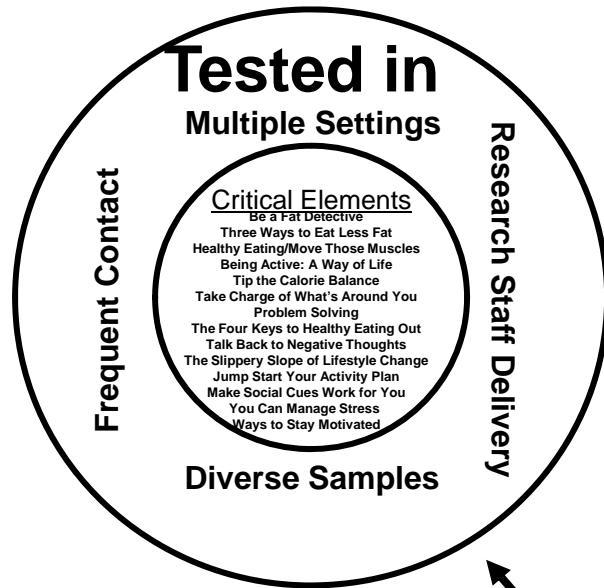
Application of Model to Diabetes Prevention

DPP Intervention

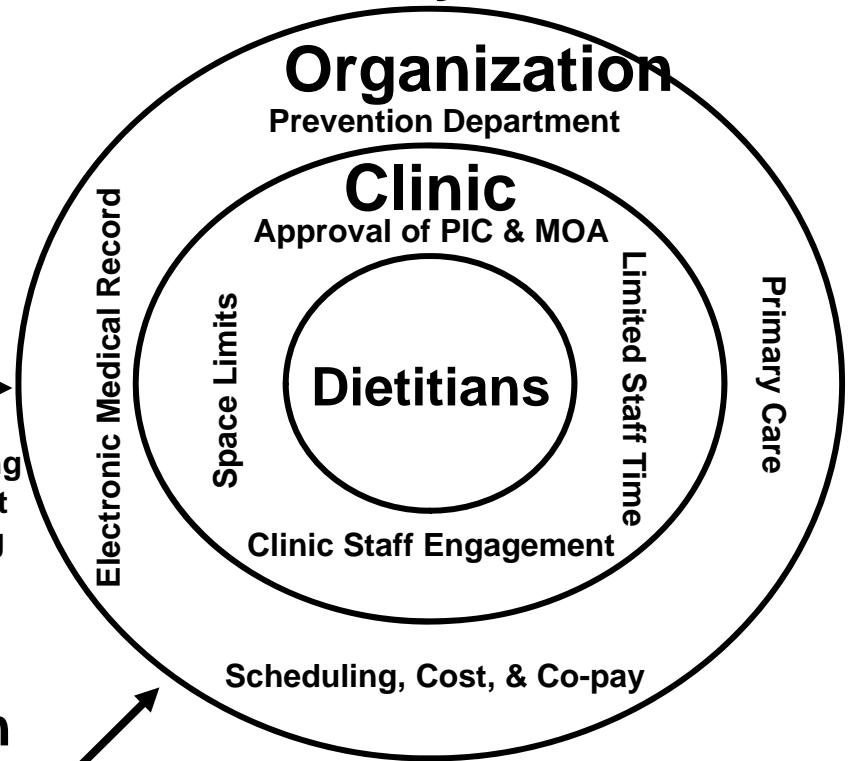


Application of Model to Diabetes Prevention

DPP Intervention



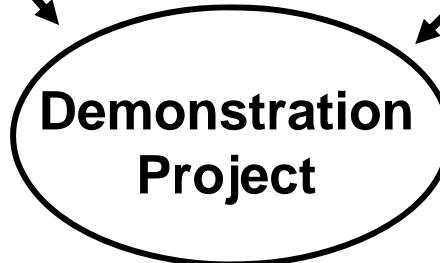
Delivery Sites



Fit

Re-invention of intervention retaining critical elements but drastically reducing contact

Appropriate For Question



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Partnership Driven Re-invention & Intervention Testing

- A 90-minute intervention was developed based upon a patient-centered approach that highlighted the content used in the Diabetes Prevention Program.
- The intervention was taken to scale and offered for all patients with pre-diabetes
- The proportional reach of the intervention based on the number of patients with pre-diabetes was calculated
- A matched-case control group (n=1095 pairs) was used to determine effectiveness

Partnership Driven Re-invention & Intervention Testing

- Over the 12 months 12,834 patients were eligible, 1080 (8.4%) received the intervention



Happy?

- **Clinical partners were pleased that a single session program could demonstrate modest effect**
- **Team acknowledged need to improve effectiveness and reach**
- **Phase 2 pilot study agreed upon with the following criteria:**
 - **Based on DPP elements**
 - **Delivered to those receiving initial intervention**
 - **Use modality that could, if effective, be delivered to a broader population of patients with pre-diabetes**

Phase 2: Automated Telephone

• Intervention

- Interactive voice response (IVR) automated telephone calls over a 12-week period
- Addition to the 90-minute pre-diabetes class
- IVR calls were designed to address and reinforce the messages delivered in the pre-diabetes class and follow DPP components
- Participants allowed to choose messages that were most applicable to them during each call
- 7 calls provided about 5-10 minutes of participant driven counseling
- 5 calls provided a tip of the week (<1 minute)

Phase 2: Methods for Testing

• Small RCT pilot

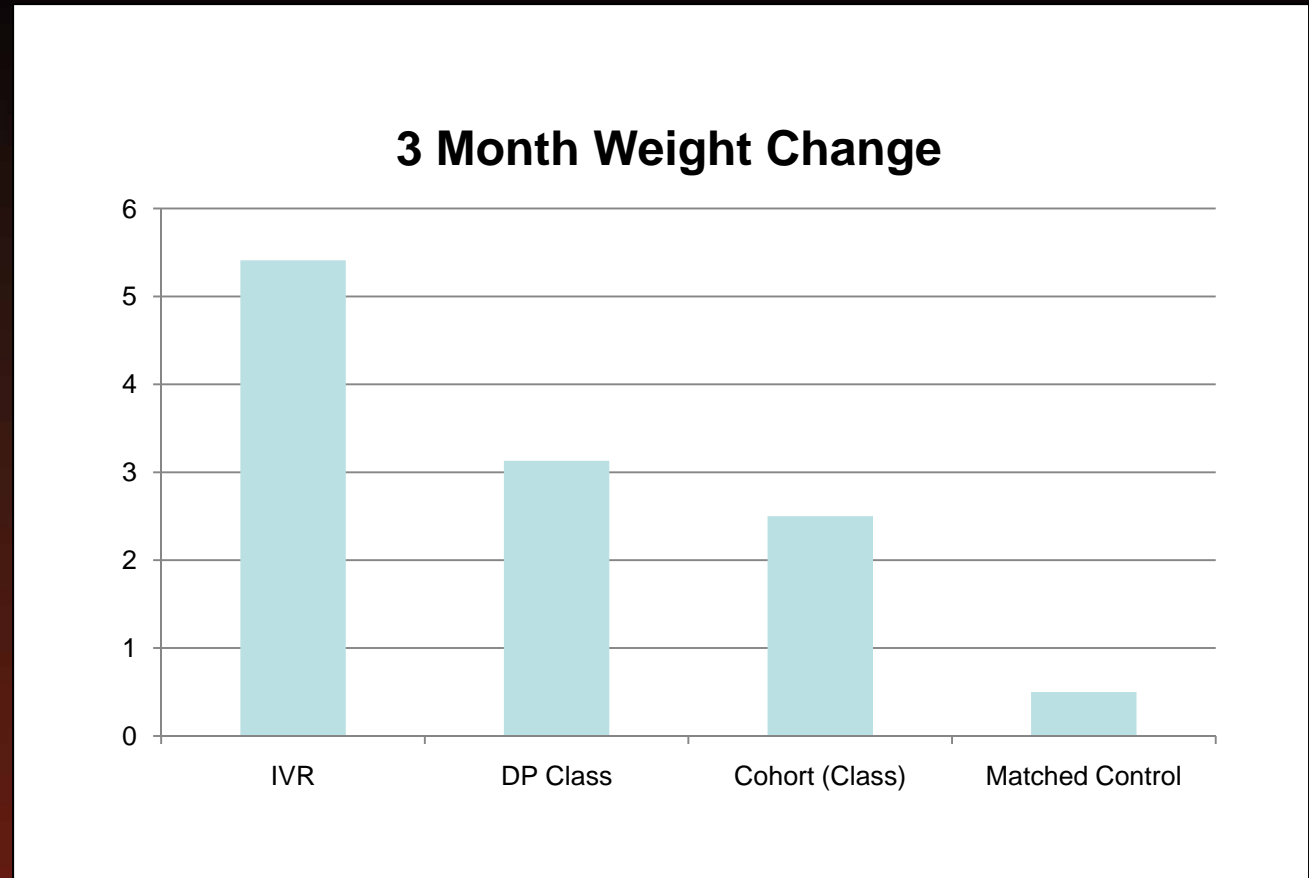
- Important dependent measures as indicated by clinical partners
 - Reach
 - Patient completion rate
 - Effectiveness at supporting weight loss through PA and eating
- Reach= 78/205 (38%)
- Completion rate=90% of participants completed 75% or more of the intervention

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Effectiveness relative to class and control



So... What happened?

- If you had to guess, which of the following is true?
- The class is still being delivered
- IVR is still being delivered
- Both are still being delivered
- Neither are being delivered



Lessons Learned

- Integration and use of existing resources can lead to translation of research into practice
- Effectiveness is not the only consideration in the translation process
- Even integrated projects may not lead to translation

Integrated Research-Practice Partnerships

