Multi-level, Multi-factorial Interventions
Community-Based Participatory Research

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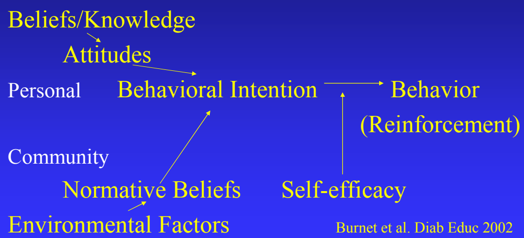
Roadmap

- Discuss multi-level, multi-factorial interventions
  - Background premises
  - 3 paradigmatic examples
  - Conclusions / Challenges / Recommendations
- Discuss community-based participatory research
  - Definitions / Principles
  - 2 paradigmatic examples
  - Conclusions / Challenges / Recommendations

Background Premises for Multi-level, Multi-factorial Interventions

- We live in contexts – patients, families, providers, clinics, health systems, societies
- Behavior change and quality improvement are difficult
- Multiple interventions more effective than single
- Diabetes and obesity are chronic conditions – chronic care / chronic disease models

Practical Model for Preventing Type 2 Diabetes in Minority Youth

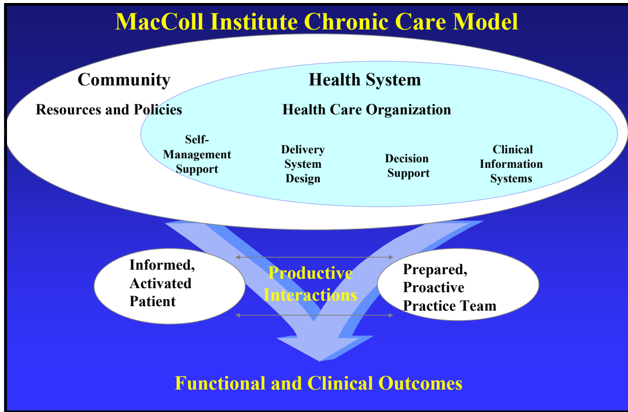


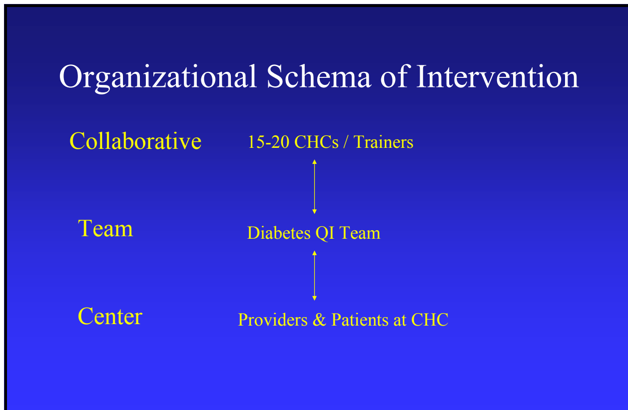
Childhood Obesity Interventions

- Child education and behavior
- Parental behavior
- Environmental influences – school food and PE
- Social marketing – media message and culture

Diabetes Breakthrough Series – Diabetes Collaboratives

- CQI: Rapid Plan-Do-Study-Act cycles
- Chronic Care Model
- Learning sessions





“Standard” QI Package

- Education
- Practice guidelines / flow sheets
- Computerized patient tracking and reminders
- Audit and feedback
- Opinion leaders

Conclusions

- Reality – Multi-level, multi-factorial interventions are frequently:
  - Most effective
  - Most acceptable in real world
  - Standard of care plus intervention – ethics
  - Where the field has progressed

Challenges

- Distinguishing relative impact of each component
- Dose-response
- Feasibility: Example of the DPP
- Cookie cutter vs. need to individualize
  Standard product vs. standard process intervention
- Statistics
  - Hierarchical methods
  - Sample size – clustering

Recommendations 1

- Interdisciplinary, integrative teams
  - Subject area
  - Methods
  - NIH Roadmap
- Review be cognizant of the whole: beware multi-factorial, multi-methods means multiple targets to attack – stifles innovation; implies review panels must be interdisciplinary and respectful

Recommendations 2

- Outcomes for each level and for each factor
- Include intermediary process variables – e.g. not just HbA1c or clinical outcomes
- Record what intervention was actually done
- Go inside black box
  - Qualitative work

Recommendations 3

- Multiple arms of study – difficult & expensive
- Practice-based research networks
- Macro
  - Organizational change
  - Health policy

Community-Based Participatory Research

- Community focus – often vulnerable or hard to reach populations
- Collaboration – community and academic partners
- Equal relationships
- Benefit of community
  - Ultimately interventions
  - Reduce disparities

CBPR – Main Pros

- Translating research into practice
- Buy-in
- Designing and implementing effective, realistic intervention
- Analyzing and interpreting data

CBPR – Main Cons

- Hard to do
- Traditional research challenges plus more
- Less control

Key Principles of Community-Based Research 1

- Recognizes community as a unit of identity
- Builds on strengths and resources within the community
- Facilitates collaborative partnerships in all phases of the research
- Integrates knowledge and action for mutual benefit of all partners

Israel et al. Ann Rev Pub Health 1998

Key Principles of Community-Based Research 2

- Promotes a co-learning and empowering process that attends to social inequalities
- Involves a cyclical and iterative process
- Addresses health from both positive and ecological perspectives
- Disseminates findings and knowledge gained to all parties

Israel et al. Ann Rev Pub Health 1998

Diabetes in East Harlem

- Formation of coalition: community, providers, academics, policymakers
- Consensus on goals of coalition
- Survey of Harlem residents
- Infrastructure for improving DM care in Harlem
- Address mistrust

Horowitz et al. JGIM 2003

Health Disparities Collaborative: Improving Diabetes Care in Community Health Centers

- Breakthrough Series initiative
- Partnership: CHCs, Govt., Non-profits, Academics, Funders
- Univ. of Chicago – culmination of 7 yrs of partner
- Studies: Descriptive, Barriers, Interventions
- Relation building: CHCs, Govt., NIDDK
- Major national impact improving DM care

Chin et al. Diabetes Care 2004

CBPR Conclusion

- Tremendous potential
- Face validity and successful models exist
- Significant challenges
- Example of RWJ Clinical Scholars Program

CBPR Issues 1: Relationships

- Takes time
  - Trust
  - Establishing infrastructure
  - Pilot funding crucial
- Institutionalizing the relationship

CBPR Issues 2: Equality?

- Equal partnerships in spirit
  - Practically what does this mean?
  - Goals, needs, and skills of different parties
  - When to lead, when to follow, when to facilitate

CBPR Issues 3: Flexibility and Constraints

- Flexibility - working in the real world
  - Time constraints of community partners
  - Simple and practical are good
  - Community autonomy
- Select community partners ready to change

CBPR Issues 4: Time

- Academic time and real-world time
  - Idea --> grantwriting --> funding --> execution--> analysis --> completion --> dissemination
- Changing landscape
  - Before-after study
  - Suitable control group
  - Confounding of randomized controlled trials

CBPR Issues 5: Academic Challenges

- Slow for tenure clock
- Lack of respect from tenure committees, grant study sections, journals?
- Risky for junior investigator

CBPR Issues 6: Partnerships

- Funders / Agencies / Communities / Researchers - Promote a common vision vs. separate agendas
  - Improve health care of communities and patients
  - Service versus research - role of rigorous evaluation
  - Funders promote collaborations: e.g. joint funding
- Partnerships of major groups can be powerful
- Senior support is key - evidence of buy-in

CBPR Recommendations 1

- Emphasize rigor within CBPR domains
- Recognize that CBPR lies on spectrum – avoid tyranny of the "gold standard" for CBPR

Some Proposed CBPR Domains

- Community hard to reach
- Limitations of traditional / Advantage of CBPR
- Role of community in project
- Community perspective in analysis/interpretation
- Community-level findings and results
- Challenges / opportunities

O'Toole et al. JGIM 2003.

CBPR Recommendations 2

- Study sections, journal reviewers with CBPR expertise
- Pilot funding
- Career development; institutional training awards
- Align incentives for partners to work together
- Good CBPR rewarded at universities
- Model contracts / agreements / relationships