


Pulling Together for Health, Fitness and Academics: Lessons from Cambridge, MA

Robert McGowan, Ed.D.
Coordinator
Health, Physical Education and Athletics
Cambridge Public Schools

Quick Background on Cambridge

- **Urban population of 101,355***
- **Public Schools:**
 - Diverse: Over 100 countries represented
 - ~ 36 Languages: English, Spanish, Portuguese, Haitian Creole

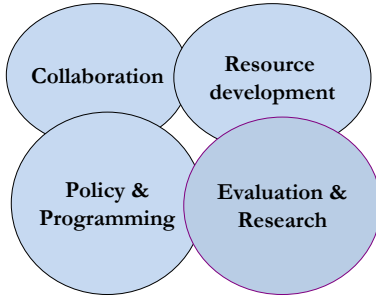


Sources: U. S. Census, Decennial Census, 1950 - 1970; STF1A data file, 1980; STF1A data file, 1990; SF1 data file, 2000.
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- **Socioeconomic status**
 - ~ 50% of students qualify for free/reduced lunch program
 - While ~10% of the Cambridge population live in public housing
 - 54% attend our high school &
 - 44% attend our K-8 elementary schools
 - **12 Elementary Schools (K-8), 1 High School**
 - ~ 7,000 students
- **In 2004:**
 - 39% of our K-8 students were either at-risk for overweight or overweight

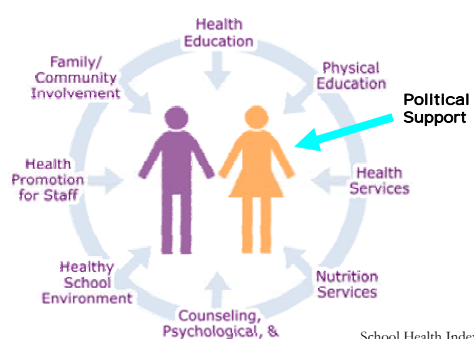
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4 Areas of Success in Cambridge



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Collaboration



School Health Index
CDC

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Some of our collaborations include:

- **Cambridge Public School Department**
 - Physical Education, Food Services, Health Education programs and instruction, professional development
- **Institute for Community Health**
 - Research, evaluation, education, disseminations, policy
- **Community Partners**
 - CitySprouts gardening program, Federation of Massachusetts Farmers
- **Cambridge Department of Human Services**
 - Recreation facilities, summer food program, Community Schools
- **Healthy Children Task Force**

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Healthy Children Task Force

Expert Committee

- Meet once a month
- Membership:
 - Political
 - Medical
 - Education
 - Health
 - Human Services
 - Mental Health
 - Nutrition
 - Social

Agenda:

networking, policy development, focus groups, resource development, program collaboration

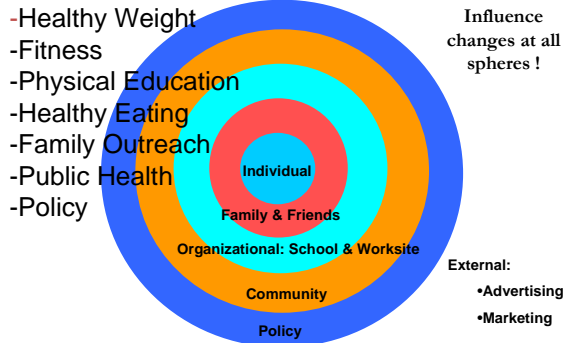
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Resource Development

- Examples of Grants and In-kind support
 - DOE Physical Education for Progress Grant ('04-'07) \$1.5 million (Pending grant 09-12)
 - USDA Community Food Program – Growing Healthy Farm-to-School-to-Home grant ('05-'08) \$300,000
 - BCBS Healthy Choices grant ('05-'08) \$50,000
 - Cambridge Public Health Department

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Program & Policy



Healthy Weight & Fitness: Health & Fitness Progress Report

- **Surveillance** – Annual Height, Weight, 5 Fitness tests by PE teachers & school nurses
- **Progress reports to families** – Fitness results, BMI percentile and weight status, community resources
- **School nurse outreach**
 - Clinical
 - School-based family information nights
 - Family outreach

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Health and Fitness Progress Report

- **Health and Fitness Progress Reports were mailed to 92% (3864) of parents of K-8th graders in May 2006**



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National Media Coverage of Cambridge Health Report Cards



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Physical Education Enhancement

- **Before & after school programs**
 - Provided time that did not take away from the school day
- **Professional development**
 - 63 trainings offered
 - Professional staff
 - Non-professional staff
 - Project Adventure
- **Equipment**
 - enough equipment for everyone to use during PE



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Healthy Eating



- **Food Service reforms**
 - Healthy foods offered
 - Menu & recipe development
 - Fruit and vegetable promotion
 - Taste-testing: new cereals, vegetables
- **Farm-to-school activities**
 - Local produce
 - Farmer visits
 - School gardens
 - Farmer's Market events

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Family Outreach



- School-based Fit Together family sessions – 132 families; 405 individuals participated
- District-wide health information forums
- Family-based clinical follow-up for overweight students

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Public Health



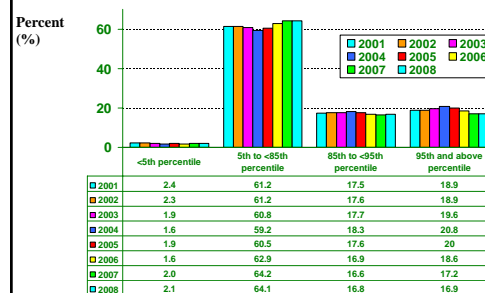
- “Cambridge Moves” distributed
- Advertising
- Before- & after-school options
- “5-2-1” opportunities
- Formation of a youth sports commission
- TV reduction campaign

Research and Evaluation

- Weight status
- Fitness status
- Fitness & Academic Achievement

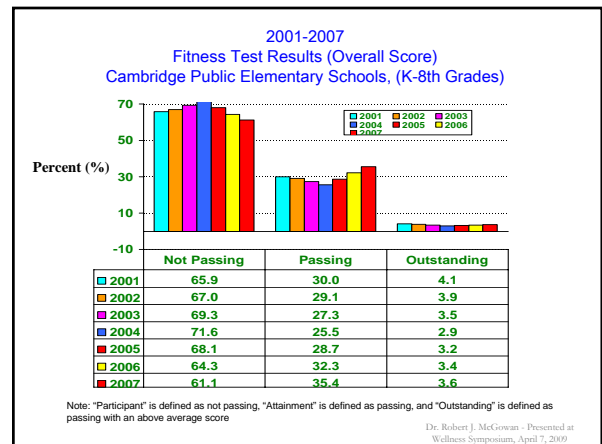
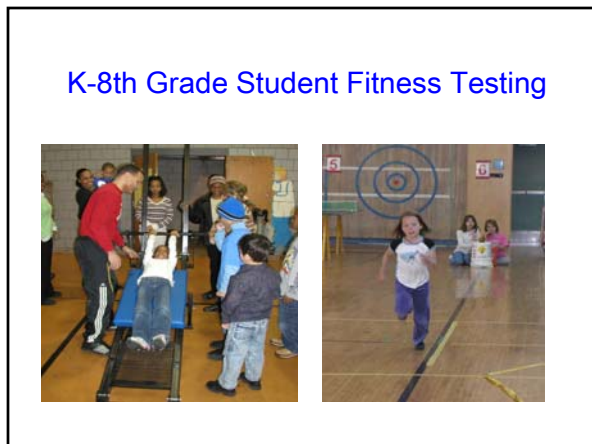
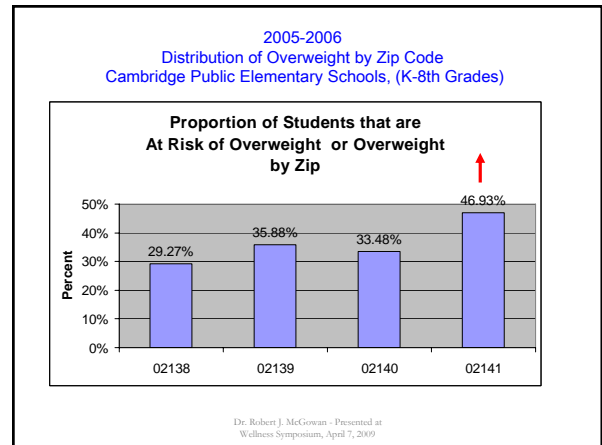
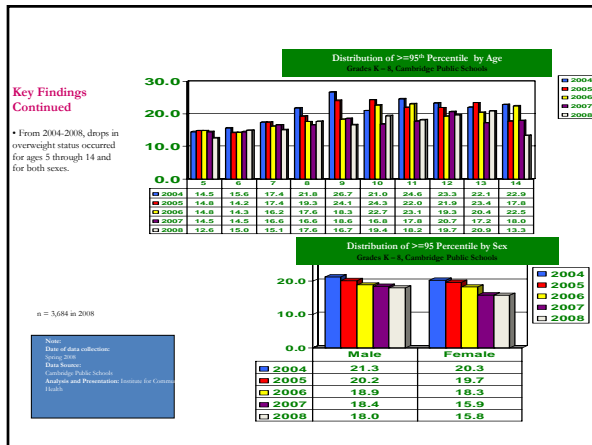
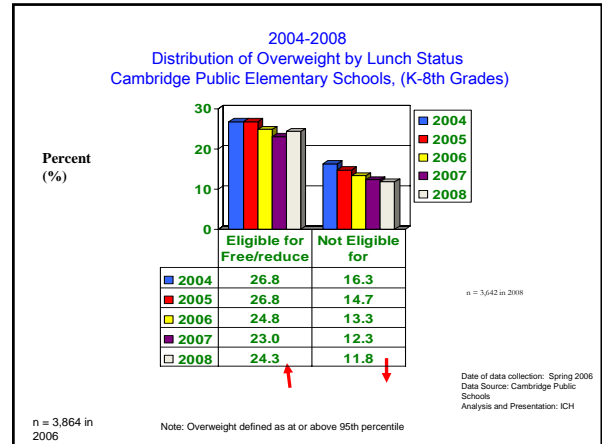
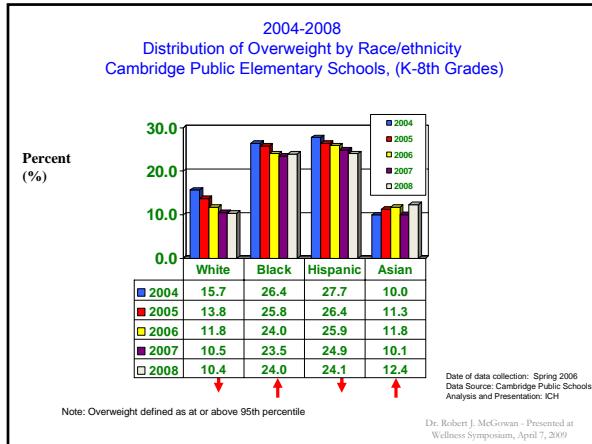
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2001-2008
Distribution of Weight Status
Cambridge Public Elementary Schools, (K-8th Grades)



Note: Overweight defined as at or above 95th percentile; At risk of overweight as between 85th and 95th percentile; Healthy weight as between 5th and 85th; Underweight as less than 5th percentile for BMI from NCHS reference.

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Key Findings: Weight Status

K-8th grade students 2004-2006

- **Overweight decreased 2.2%**
- **At-risk for overweight decreased 1.4%.**
- **Healthy weight increased 3.7%.**
- Similar decrease in overweight and at-risk for overweight are seen
 - for boys and girls,
 - Whites, Blacks, and Hispanics,
 - and those who are eligible for the federal free/reduced lunch program.

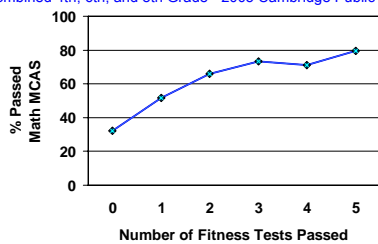
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5-2-1 Behaviors Middle School Health Survey 2003-2005

- **> 2 hours of TV decreased**
 - (from 37.6 to 35.3%) – middle school students (ave weekday)
- **5+ servings of fruits and vegetables**
 - **increased** (from 38.7 to 40.6%) middle school students (24 hr recall)
- **Physical activity increase**

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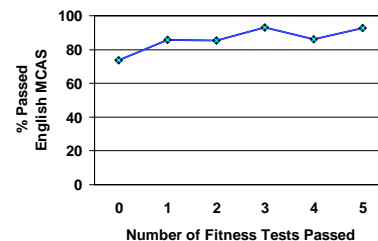
Math MCAS scores: Percent PASSED by Number of Fitness Tests Passed
Controlling for gender, ethnicity and lunch status
Combined 4th, 6th, and 8th Grade - 2005 Cambridge Public School



Note: Possible MCAS math raw scores range from a minimum of 0 to a maximum of 54. There were a total of 5 fitness tests. Number of students by fitness tests passed is: 0 tests passed: 29 students; 1 test passed: 73 students; 2 tests passed: 154 students; 3 tests passed: 195 students; 4 tests passed: 309 students; 5 tests passed: 352 students

Data Source: Cambridge Public School Department, 2005
Analysis & Presentation: Institute for Community Health, April 2006

English MCAS Scores - Percent PASSED by Number of Fitness Tests Passed
Controlling for gender, ethnicity and lunch status
Combined 4th, 6th, and 8th Grade - 2005 Cambridge Public Schools



Note: Possible MCAS English raw scores range from a minimum of 0 to a maximum of 72. There were a total of 5 fitness tests. Number of students by fitness tests passed is: 0 tests passed: 11 students; 1 test passed: 48 students; 2 tests passed: 81 students; 3 tests passed: 142 students; 4 tests passed: 218 students; 5 tests passed: 244 students

Data Source: Cambridge Public School Department, 2005
Analysis & Presentation: Institute for Community Health, April 2006

Academic Achievement & Fitness

For each one unit increase in the number of fitness tests passed, the odds of passing :

- Math MCAS increases by 38% (1.234-1.541) (p<.001),
- English MCAS increases by 24% (1.003-1.522) (p<.05)

Holding gender, ethnicity, BMIZ score, grade and National School lunch status constant

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Key Findings: Fitness

K-8th grade CPSD students 2004-2006

- Percent of students who passed the overall fitness test increased **7.3%**.
- Fitness score improved for:
 - male & female,
 - all racial and ethnic groups,
 - and those who are eligible for the federal free/reduced lunch program.
- In **2006** students passed an average of **3.7 out of 5** fitness tests.

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Key Findings: academic achievement & fitness

- Cross-sectional positive relationship between fitness and academic achievement
- While more research (prospective and intervention studies) are required to demonstrate causality
- Promoting fitness may support academic achievement
- Limitations: cross-sectional data, reliability of fitness tests, confounders

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Lessons Learned

- Multidisciplinary approach important
- Collaboration is key
- Ongoing attention to resource generation
- Use evaluation to document success
- Use research tools for new avenues

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Thank You !

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