

## Community-based Childhood Obesity Prevention: Family Breakfast at School

### Proposal summary

The Injury Free Coalition for Kids of Seattle is collaborating with Seattle Public Schools and Feet First to increase kids' activity level and prevent obesity through a walking school bus program. We propose to augment this work with a healthy eating intervention that will focus on promotion of nutritionally sound, culturally-diverse school breakfasts. We will work to identify ethnically favored breakfast foods that could be added to existing school menus, ensure time for breakfast participation by modifying transportation plans, and engage families in breakfast promotion through activities to promote walking to school and sharing a school breakfast with their children.

### Targeted Environment and Population

Walking school buses increase student physical activity while providing supervision to reduce the risk of child pedestrian injury. The Injury Free Coalition for Kids of Seattle has worked with Seattle Public Schools and Feet First, a pedestrian advocacy organization, to implement and evaluate a walking school bus program at an elementary school in Central Seattle. Building on the success of this project, the coalition plans to extend this model to additional schools in the Injury Free catchment area. The healthy eating intervention described in this proposal is designed to complement the extension of walk-to-school activities into elementary schools in Southeast Seattle.

"Partners for Successful Schools" is an existing coalition with a mission to enhance student development and academic success by bringing together families, schools and communities in Southeast Seattle into working partnerships that build and share resources. The 4 elementary schools in the coalition will be our intervention sites. Over 1300 students, 4-12 years old, attend these schools. These schools are ethnically diverse and serve primarily low-income families from racial/ethnic minorities at high risk of childhood obesity. The target population will be reached primarily through a school-based intervention.

School	Students	Free or Reduced Lunch	ESL	Race / Ethnicity				
				White	African-American	Asian-American	Hispanic	Native American
Emerson	287	82%	24%	8%	54%	20%	14%	3%
Graham Hill	376	56%	22%	20%	33%	39%	7%	2%
Van Asselt	416	80%	47%	2%	25%	58%	14%	1%
Wing Luke	283	68%	36%	9%	28%	51%	10%	1%

### Family Breakfast at School Project Area

Injury Free Seattle's project area encompasses Central and Southeast Seattle. Southeast Seattle lies south of the Central Area and continues to the southern border of the City.

Southeast Seattle is racially and ethnically diverse, and more than 27% of Southeast residents are immigrants. About 11,500 children live in Southeast Seattle. Median income is \$24,474 and 12.4% of the population lives below the Federal Poverty Line.

### Primary Challenges to Healthy Eating

The growing prevalence of obesity among school children is a major public health challenge. Promoting safe and enjoyable physical activity is one component of a comprehensive strategy to combat childhood obesity. Interventions to promote healthy eating address the other side of the energy balance. School lunches are planned to meet 1/3 of a child's daily energy

requirements while breakfasts are planned to meet ¼ of those requirements. In addition, the school curriculum and environment offer numerous opportunities to influence decisions about food choices and physical activity. School-based interventions are thus crucial in combating childhood obesity.

Seattle Public Schools garnered national recognition in 2004 for the progressive nutritional policies adopted by the district. These policies establish guidelines on the nutrient quality of school meals and acknowledge the importance of the environment in food consumption decisions. The policy notes that "an environment that is pleasant and relaxed encourages more children to participate in school breakfast and lunch programs and ensures that they have an opportunity to consume energy and nutrients to fuel optimal learning and physical development." Despite a significant budget shortfall, the District has made strides in implementing these policy goals including an increase in its use of fresh, local, unprocessed foods and implementation of ethnically diverse foods in its lunch menu. Individual schools are encouraged to supplement district-wide policies with local school-based initiatives.

While lunch menus and sale of competitive foods have been early foci of district-wide initiatives, less attention has been given to school breakfast. School breakfasts are an important component in both the battle against childhood obesity and in efforts to combat food insecurity. Kids who eat school breakfast are nearly twice as likely to meet the "5-a-day" goal for fruits and vegetables as kids who don't. Nationwide, kids who eat school breakfast eat more fiber, vitamin C and calcium and less added sugar than non-participants. (J Am Diet Assoc. 2005 105(5):743).

Participating in school breakfast has been shown to protect low-income girls from becoming overweight. (*Arch Ped Adol Med* 2003;157:780) Eating breakfast lowers fat intake and limits snacking over the rest of the day. Cross-sectional studies have found that skipping breakfast is more common among overweight and obese children (Center on Weight & Health, *Pediatric Overweight*, June 2001). In addition to its nutritional benefits, eating school breakfast is also associated with improved test scores (*AJDC* 1989 143:1234). Offering breakfast to all students increases school attendance and decreases tardiness and nurses' office visits (*Arch Ped Adol Med* 1998 152: 899-907) Recognizing this, Seattle Public Schools recently adopted a policy to allow schools in which 80% or more of the students qualify for free or reduced price lunch to offer a free breakfast to all students at the school.

Despite this progressive policy, student participation in school breakfast is low at each of our 4 partner schools: Emerson (39%), Graham Hill (14%), Van Asselt (17%), and Wing Luke (30%). Reasons for poor uptake of this program are unclear: meals may be unpalatable or unsuited to the ethnic groups represented at the schools; the timing of breakfast service may conflict with school arrival or school bus schedules; and there may be little environmental attraction to the breakfast area to enhance attendance at the meal. Focus groups conducted elsewhere have also found that lack of time, concerns about nutritional value, and perceived stigma associated with free breakfast programs are barriers to participation.

This project will work to improve participation in school breakfast in 3 ways: 1.) assessing and improving breakfast offerings; 2.) encouraging school and school transport policies supportive of breakfast participation; and 3.) implementing promotional activities to increase family participation in breakfast. Our interventions will support on-going walk-to-school initiatives; increase community-based family activity levels; and increase family participation in nutritious, culturally appropriate breakfasts.

## **Proposed methods**

Our goal is to increase the proportion of students who participate in the school breakfast program at our target schools. We will address this goal by: (1) improving the appeal, cultural suitability and nutritional value of school breakfast offerings; (2) exploring changes in school policies, school schedules or school transportation plans that would allow more time and greater opportunity for children partake in a school breakfast program; and (3) integrating school breakfast promotion into walk-to-school initiatives already underway in a manner that encourages family members to walk children to school and to join their children for breakfast in the school setting.

A grant-funded, part-time coordinator will oversee breakfast promotion, collaboration with Seattle Public Schools nutrition staff and food service staff on breakfast offerings, and pursuit of policy improvements necessary to increase breakfast participation. Initial work will be conducted with 2 of the 4 partner schools, while the other 2 schools pilot test new (independently funded) walk-to-school promotion strategies. In the 2006-2007 all 4 schools will receive the breakfast promotion and walk-to-school interventions.

1) Increasing the cultural-appropriateness, nutritional value and desirability of school breakfast. Effort in support of this aim will include provision of bulletin board and promotional materials to remind students and families about the value and availability of school breakfasts. Menus and barriers to uptake will be included as agenda items in staff and parents meetings. Because we aim to engage a low-income, working population, many of whom have limited English proficiency, we will work closely with parents to understand their needs and preferences, and to tailor our intervention to engage and capitalize on their culture, lifestyle, and daily schedules.

We will work closely with Seattle Public Schools nutrition staff and food service staff at each site to assess current breakfast menus. Our collaborative team will identify opportunities for nutritional improvements, including increasing fruits and whole grain offerings. Implementation of diverse menu options is a challenge in Seattle Public Schools as the district relies on a central kitchen for most its meals, and individual schools tend to have limited kitchen capacity. We will attempt to identify appealing breakfast options that are feasible to implement in this restricted space. Through our collaboration, we will add culturally relevant breakfast items including rice and Injera, a spongy bread common in Ethiopia and Eritrea. These nutritious options may be offered by local school kitchens, using rice cookers and delivered Injera. Collaboration with the Washington State Department of Agriculture's farm-to-cafeteria program will be examined as a strategy to increase availability of local fruit products as breakfast items.

2) School policy, schedule and environmental modifications. A 2002 survey of state officials who oversee school breakfast programs found that school bus arrival time is the top barrier to breakfast participation. Our number one policy outcome will be to overcome this barrier. We will work with principals in our target schools to assure school bus arrival is 20 minutes before the start of school. When all 4 school sites have implemented both the walking and healthy eating interventions walking arrival 20 minutes early will be promoted, encouraged, and measured.

Introduction to school breakfast may be made through period "in class" breakfast deliveries for all students. Bagged breakfast meals will be delivered to first hour classrooms for students to enjoy during start-of-day activities. These activities are designed to introduce school breakfasts as fun and palatable to the students.

We also aim to make the cafeteria a desirable and popular location for children, teachers, and parents to spend time before school begins. In doing so, families will begin to carve out the daily time and routine necessary for breakfast. Bulletin boards will be installed at each site to highlight breakfast menus and planned breakfast activities. Activities added in the mornings may include live or recorded music, activities for younger children, tutoring for English as a second language, educational presentations by community agencies, or homework assistance.

We will engage parents and school staff to share breakfast with the children and provide education on the nutritional value of various breakfast options. To encourage family participation in these programs, we will set up “coffee carts” for parents as an incentive to sit with children while they eat. These carts will offer free coffee and breakfast fruit for parents and teachers who participate in eating breakfast with children. We will work collaboratively with target school principals and food service staff to make the morning cafeteria appealing and exciting for students, parents and staff. As the intervention matures at these grant funded sites, models and strategies for replication will be described and disseminated to other district schools.

3) Integration of school breakfast promotion into walk-to-school initiatives. Breakfast promotion will be themed as “fuel for the walking school bus,” to tie in with walk-to-school and physical activity promotion campaigns. School recognition and celebration for walk-to-school activities will occur over breakfast and walking school bus routes will be timed to allow arrival with time to eat school breakfast.

### **Primary partners**

Lead partner: Injury Free Coalition for Kids of Seattle.

- Brian D. Johnston, MD MPH, co-director. Box 359774, 325 Ninth Avenue, Seattle WA 98104. Phone 206 744.9507. E-mail: [bdj@u.washington.edu](mailto:bdj@u.washington.edu)
- Denise Gonzalez-Walker M.A., Community Coordinator, Injury Free Coalition for Kids
- Sarah Rafton MSW, Assistant Director of Community, Government Affairs and Advocacy at Children's Hospital and Regional Medical Center.

Partnering agencies and individuals:

- Brita Butler-Wall, President, School Board. Seattle Public Schools.
- Anita Finch, RD. Nutrition Services Director, Seattle Public Schools.
- Kirsten Frandsen, Nutrition Education Coordinator, STEPS to a Healthier US and Seattle Public Schools
- Feet First, a pedestrian advocacy organization and Active Living grant recipient, spearheading walk-to-school activities at target school sites. Contact: David Levinger PhD.
- Lenna Liu, MD MPH, University of Washington; academic focus on health promotion in ethnic communities and program evaluation for youth obesity prevention interventions.
- H. Mollie Greves, MD. University of Washington, fellow in General Pediatrics with interest in school nutrition and childhood obesity.
- Children's Obesity Action Team (COAT); multidisciplinary group of healthcare professionals working to decrease childhood obesity. Contact: Polly Lenssen, MS RD CD FADA.
- Shelly Curtis RD MPH. Washington State Children's Alliance. Policy and advocacy.

This collaboration taps into a wealth of experience developing and implementing nutritional curricula and policies, school-based service provision, outreach to low-income, culturally diverse communities and rigorous program evaluation. Coordination among the various agencies represented here will allow us to leverage our resources and avoid unnecessary duplicative efforts.

### **Integration of the Project into existing Injury Free work**

Injury Free has worked closely with community partners to promote and evaluate a walking school bus program in a multi-lingual, multi-ethnic school. We now plan to replicate and expand this program in the 4 schools that would also be sites for this child obesity prevention project. Our evaluation plan calls for 2 schools to receive a physical activity intervention (walk-to-school promotion through Injury Free) while 2 schools receive the proposed healthy eating intervention. This would allow concurrent comparisons of the 2 interventions. All schools would then receive 9 months of both interventions. This project will not overtax the partnership as we have identified new members of the Coalition eager and trained to undertake nutrition and obesity-prevention interventions. We have been successful in leveraging coordinator support by forming work-groups of coalition partners to address specific injury projects (child passenger safety; suicide prevention; etc.) We will approach obesity prevention work in the same manner.

### **Previous Injury Free collaboration as a Predictor of Success**

The Injury Free Coalition for Kids of Seattle is a unique partnership between Harborview Medical Center, Children's Hospital and Regional Medical Center and Public Health Seattle & King County. These 3 organizations have consistently mobilized resources and personnel in support of the collaborative projects we undertake on behalf of children in Central and Southeast Seattle. Our successful implementation of a walking school bus program has highlighted the enthusiasm of school personnel to welcome and work with our coalition partners. In addition, this project will build on the resources and expertise developed by a multi-disciplinary Obesity Action Team based at Children's Hospital.

### **Sustainability**

Seattle's new school district policies regarding nutrition are seen as some of the toughest and most comprehensive in the country. Focused efforts to apply these policies to school breakfasts and to integrate breakfast promotion with school transportation policies are likely to have the most sustained impact. Interventions to promote family breakfast at school are designed to be sustainable by school services after funding ends; these include one-time equipment costs, developmental research to identify ethically appropriate breakfast options, and resources shared with a Safe Routes to School program to promote breakfast alongside walking to school.

### **Expansion and Replication**

Lessons learned, policies adopted and materials developed in the context of this intervention are likely to be immediately transferable to other neighborhood schools in the Seattle school system. Evaluation of projects to implement breakfast promotion, including impact, acceptability, uptake and costs, will offer a replicable model to share with other schools or district planners. Preparation and dissemination of a replication kit will be a goal of the project.

### **Evaluation**

Evaluation will include *process measures* to verify completion of the work plan as proposed, including policy changes, menu additions and promotional events completed. *Impact evaluation* will include assessment of changes in i) school breakfast participation; ii) the number of parent/child and teacher/child breakfast groups; and iii) school arrival times. We will survey parents and students before and after the intervention to measure changes in breakfast habits, beliefs about school breakfast, cultural acceptability of school breakfast plans, and knowledge of breakfast nutrition. We will work collaboratively with principals and school staff to document challenges, successes and changes in the school environment, student absences and tardiness, and parent engagement associated with this intervention.

## **BUDGET JUSTIFICATION**

### **Personnel**

#### **Project Directors**

Two Project Directors/Principal Investigators (Johnston & Liu) are named for this project - one each from Harborview Medical Center (Dr. Brian Johnston - 0.05 FTE) and Children's Hospital and Regional Medical Center (Dr. Lenna Liu - 0.05 FTE).

The Project Directors will oversee all project activity, establish and maintain advisory relationships with community and school representatives, insure compliance with all fiscal and reporting activities, evaluate local programming, publish results in peer-reviewed journals and respond to local media queries regarding coordinated obesity and injury prevention efforts. In addition, they will supervise any academic fellows who may participate in grant-funded intervention or program-evaluation activities.

Each Project Director is donating time to this project.

#### **Project Staff**

A Project Coordinator (TBN) will be hired as a staff member for this project. The Coordinator will be charged with maintaining stakeholder relations, overseeing focus groups or school surveys related to program priorities, handling community inquiries, working with school district personnel to achieve the policy and programmatic goals of the proposal. Although this individual will be paid through the University of Washington, we expect a significant amount of his/her time to be spent working at the partner schools and in school district offices. We are requesting 0.50 FTE in salary support for this individual.

The Assistant Director, Community, Government Affairs & Advocacy at Children's Hospital (Sarah Rafton, MSW) will function as the Community Relations liaison for the project. She will work with the Program Coordinator to influence school policy, to continue productive relationships with local school principals and food service supervisors, and to maintain broad-based community and school district support for the program. The Community Relations liaison will work directly with the Marketing Department and Advocacy Committees at Children's Hospital to identify and develop initiatives and resources to support project aims. Ms. Rafton will donate 0.10 FTE to coalition activities.

#### **Administrative Support**

Bi-lan Chiong – a research coordinator at the Harborview Injury Prevention and Research Center who has worked the Injury Free Coalition for Kids and other RWJF funded programs in the past - will provide administrative and fiscal oversight for the project. She will be responsible for periodic reporting, budget oversight, contractual services and hiring grant-supported project personnel. We believe that 0.10 FTE will be required to accomplish these functions.

#### **Fringe Benefits**

Fringe benefits for all personnel are budgeted based on proposed 2005-2006 University of Washington or Children's Hospital rates.

## **Other Direct Costs**

Please note that Children's Hospital and Regional Medical Center (CHPMC) – a partner in our Injury Free Coalition for Kids – has pledged \$10,000 as in-kind support toward project costs associated with this Healthy Eating activity. The RWJF-formatted budget shows these donated funds in the Other Support column. The budget justification below discusses total project expenditures, only some of which will be funded from RWJF monies.

### **Office Operations**

No direct support is requested for office operations. Items covered in this category are subsumed as indirect costs by the host institutions. Office space, utilities, supplies, duplicating, telephone, postage, shared office rental equipment, service contracts, and computer support are included in this category.

### **Communications / Marketing**

Communication with school staff, families and children is an important component of our breakfast promotion intervention at each of 4 schools. Funds (CHPMC support) are requested for:

- Brochures for distribution to school families. These must be multilingual (English, Spanish, Somali, Vietnamese and Cantonese), so translation expenses are included here (Development & translation: \$600; printing and distribution \$1350).
- Combined physical activity/healthy eating newsletters (at 4 schools) (\$500)
- Posters and promotional materials for school rooms and cafeteria (\$250)
- Banners and flags for community celebrations (\$260)
- Development and distribution of dissemination kits to allow replication of the breakfast promotion model developed at other local schools (\$420)

### **Communications / Marketing (continued)**

Funds are requested from RWJ (RWJ support) to produce a visual display (poster) of the project findings in order to promote and disseminate the work of the project (\$705).

### **Travel**

We are requesting travel support (RWJ support) for one project investigator to travel to professional meetings to present project findings and to promote the project. Standard RWJF travel allowances are requested for a two night-two day meeting where air travel is necessary (\$1360).

### **Meeting Expenses**

Quarterly planning and oversight meetings for project staff, school personnel and parent advisors are planned. Funds (RWJ support) are requested for expenses that include:

- meeting room rental
- audiovisual rental and support; and
- refreshments served

Six meetings at \$127 per meeting are planned (\$762).

### **Surveys**

Two schools will have evaluation performed at 2 points in the first academic year of grant activity. In the second academic year, 4 schools will have 2 measurements each. In total, then, there will be 12 site evaluations or measurement opportunities. Each of these measurement points has associated funding requirements which CHPMC will cover.

Program evaluation will rely on:

- (i) observational school-based surveys of student arrival times and parent/student breakfast pairs (\$600 for temporary observer time); and
- (ii) a take-home parent-completed survey of a sample of school households with incentives provided for participation (\$3000 for design, distribution, collection and incentives for 600 total surveys); and
- (ii) in class, show of hands, breakfast participation surveys (\$120 for distribution, copying and data entry).

### **Equipment**

Equipment for the project will include:

- Coffee carts for each of 4 school cafeteria areas to provide free coffee and breakfast fruits for parents or staff eating breakfast at school with children (4 x \$1000 = \$4000) (RWJ support).
- Rice cookers for use in school kitchens to allow addition of rice to breakfast menus (8 @ \$53 ea = \$424) (RWJ support)
- Large, covered bulletin boards will be purchased for each participating school's cafeteria. These will be used to highlight healthy eating, breakfast promotion and physical activity promotion interventions (4 @ \$125 ea. = \$500) (CHRM support)
- Food products are to be purchased for i) parent coffee carts (\$1800) and ii) pilot testing menu items for palatability and acceptance in ethnically diverse school breakfast plans (\$600). Items permanently added to the school breakfast menu will be purchased using district nutrition funds. (CHRM support)

### **Project Space**

Project activities will use existing space and resources at the Harborview Injury Prevention and Research Center, Injury Free Coalition for Kids office.

### **Purchased Services**

#### **Consultants**

Funding for 2 honoraria of \$250 each is requested to support consultation by nutritional experts asked to assess the nutritional content of current school breakfast menus and potential changes in this profile associated with integration of ethnic breakfast foods.

### **INDIRECT COSTS**

We are claiming no indirect costs on this application.