



## Coronary Artery Risk Detection in Appalachian Communities — CARDIAC

### STATE OF WEST VIRGINIA

#### Purpose

To combat the unacceptably high prevalence of heart disease and diabetes in West Virginia through a chronic disease risk surveillance and intervention initiative

#### Target Population

- Initial population: Students in fifth grade (*CARDIAC Kid*)
- 2003–2004: Expanded to students in kindergarten in five counties (*CARDIAC Kinder*)
- 2005–2006: Expanded to students in second grade (*CARDIAC Too*)
- Parents and school staff have also received free fasting lipid profiles to assess their personal risk

#### Goals

- Reduce heart disease mortality to no more than 200 deaths per 100,000 population (baseline age-adjusted rate of 323.5 in 1998), West Virginia's Healthy People 2010 flagship objective
- Provide the opportunity for West Virginia's health science students to learn concepts of health promotion/disease prevention at the local community level (West Virginia Rural Health Education Partnership)
- Partner with state government, secondary and higher education, and the private sector to reverse the obesity epidemic in West Virginia

#### Years in Operation

1998 – present

#### Results

- *CARDIAC Kid*: Since 1998, almost 45,000 fifth-graders have been screened: 27.1 percent of all children were overweight, and 18.4 percent were at risk for becoming overweight. Fifth-graders had a fasting lipid profile, and almost 20 percent (19.4 percent) had abnormal blood lipids. Almost 5 percent (4.6 percent) of children had a rash on the back of the neck, which could possibly mean insulin resistance.
- *CARDIAC Kinder*: Since the inception of the program, 1,844 students have been screened (43.5 percent of those eligible): 18.1 percent had a body mass index (BMI) over the 95th percentile and were considered overweight. An additional 16.9 percent of children were at risk for overweight, with BMIs in the 85th–94th percentiles.
- *CARDIAC Too*: In the program's pilot year, 627 second-grade students were screened: 17.4 percent of all children were overweight, and 17.4 percent were at risk for becoming overweight. In addition, 35 percent of students also had a positive family history of heart disease.<sup>8</sup>
- Children and their parents received screening results in the mail along with information about interpreting the results, and educational materials about making healthy choices to reduce health risks.

## Funding

CARDIAC funding from the state each year; additional funding comes from the federal government and private grants.

## Key Partners

West Virginia Rural Health Education Partnership; West Virginia Department of Education; Bureau of Public Health; Partnerships for Healthy West Virginia; West Virginia Medical Association; West Virginia Hospital Association; West Virginia Public Employees Insurance Agency

## What Works and Why

Not only is surveillance of children and their families needed for CARDIAC to be successful, but other interventions are needed to make children and their families well aware of the critical nature of unhealthy behaviors. Interventions occur at both the community and the school levels to reach the targeted population on multiple levels. It is also important that the program has partnered with health sciences students to allow the students first-hand experience in seeing the plight of those living in West Virginia and what behaviors need to be changed to improve health.

## Structure and Operations

The CARDIAC Project, in conjunction with the West Virginia Rural Health Education Partnership, 13 site coordinators, 640 preceptors, and hundreds of health science students, work to identify children and their families at risk of cardiovascular disease. West Virginia health sciences students are required to have three months of rural-based clinical training and spend 20 percent of their time in community service. Participation in CARDIAC provides health sciences students with the opportunity to learn about and actively engage in health promotion at the community level. CARDIAC staff and local school nurses train the health sciences students to conduct blood pressure, anthropometrical, and blood lipid testing.

All children in the target populations are eligible to participate in the program. Before the screening, parents complete forms related to family and child demographics and family history of cardiovascular risk factors in addition to a screening/consent form to record the child's height, weight, body mass index, and BMI percentile. All screening information is sent to the child's home in a comprehensive health report. Each report has additional information on how to interpret the screening results and what services beyond screening may be needed. The report also includes recommendations on how to maintain a healthy lifestyle.<sup>9</sup>

## Barriers to Success

Identifying children at risk depends upon a parent/guardian's providing a family history. Also, follow-up and reducing risk factors depends on a parent/guardian's receiving, understanding and acting on the screening results provided.

## For More Information

Additional information is available online: <http://www.cardiacwv.org>