System helps public health officials identify priorities to better allocate resources

April 30 2012

As the United States grapples with health care reform, much attention has focused on the importance of preventative health care. Now, a researcher at the University of Missouri has developed a system that could help public health care organizations determine the best method of allocating resources by prioritizing health risk factors and conditions – in some cases before these conditions become major health problems.

"Every state, county and community has different trends and needs in public health," said Eduardo Simoes, chair of the Department of Health Management and Informatics in the MU School of Medicine. "By reviewing localized data and previous research that examined promotion and preventive interventions, public health officials can create and fund programs that target the most important issues in their communities."

Simoes adapted his system of prioritization by assessing health risk factors in Italy at the request of the National Italian Ministry of Health. The system prioritizes 15 risk factors, such as smoking, obesity and unhealthy eating habits and calculates priorities through a formula that uses the following criteria:

- severity: the proportion of deaths attributable to risk factors;
- magnitude: the prevalence of risk factors (e.g. the proportion of people engaging in the at-risk behavior, such as smoking);
- urgency: the increase or decrease in prevalence of risk factors in the population.
- disparity: the differences in prevalence of risk factors among

different populations, such as differences among racial groups;
- effectiveness of intervention: how effective treatments and interventions are in reducing the risk factor;
- cost: the cost of the intervention.

"The system identifies which risk factors are important now, as well as those that will cause further health problems in the future," Simoes said. "The system balances the influence of the six criteria to determine the top health priorities by individually comparing the 'severity' criterion to the other five criteria. It also can accommodate more than six criteria and weight each criterion differently, if necessary."

For example, in his study in Italy, Simoes determined that physical inactivity, cigarette smoking and hypertension should be the highest priorities for intervention programs in Italy. With this information, he said Italian public health officials can begin to develop prevention programs before these conditions become widespread.

Provided by University of Missouri-Columbia