

Using Cancer Epidemiology Data for Comprehensive Cancer Control Planning, Implementation, and Evaluation

Jennifer Redmond, DrPH; Thomas Tucker, PhD, MPH; Robin Vanderpool, DrPH; Debra Armstrong, MSW, MPA; Carol Hurst, RN
 Kentucky Cancer Consortium, Kentucky Cancer Registry, University of Kentucky College of Public Health, Kentucky Cancer Program

Background and Methods

Several relevant types of data exist for use in comprehensive cancer control planning, implementation, and evaluation. The challenge lies in determining which type of data to use in decision-making and strategic planning, especially data related to regional disparities.

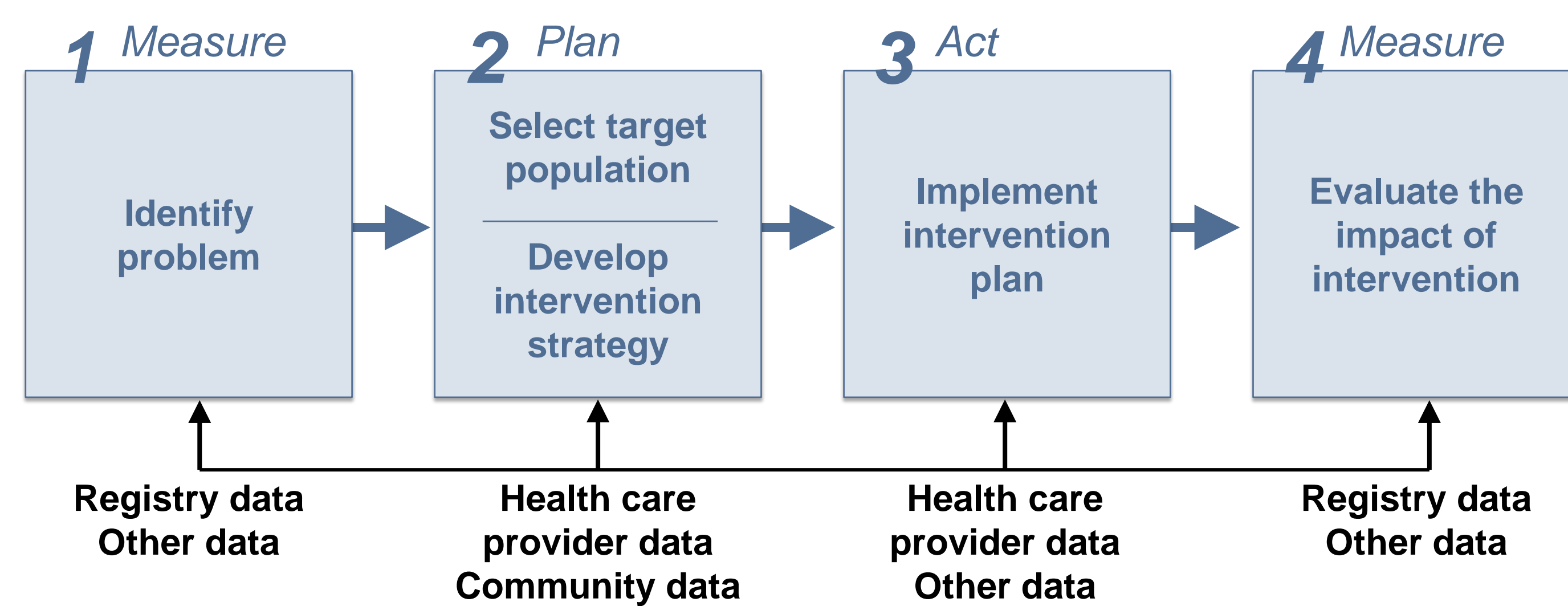


Figure 1. Model for Cancer Control. The Kentucky Cancer Program’s model shows 4 steps in designing activities to reduce morbidity and mortality from cancer. Types of data available for each step are shown at the bottom.

Since multiple factors impact need and cancer burden, there is a need to find a way to combine data from several sources to provide planners a comprehensive view of the burden of cancer.

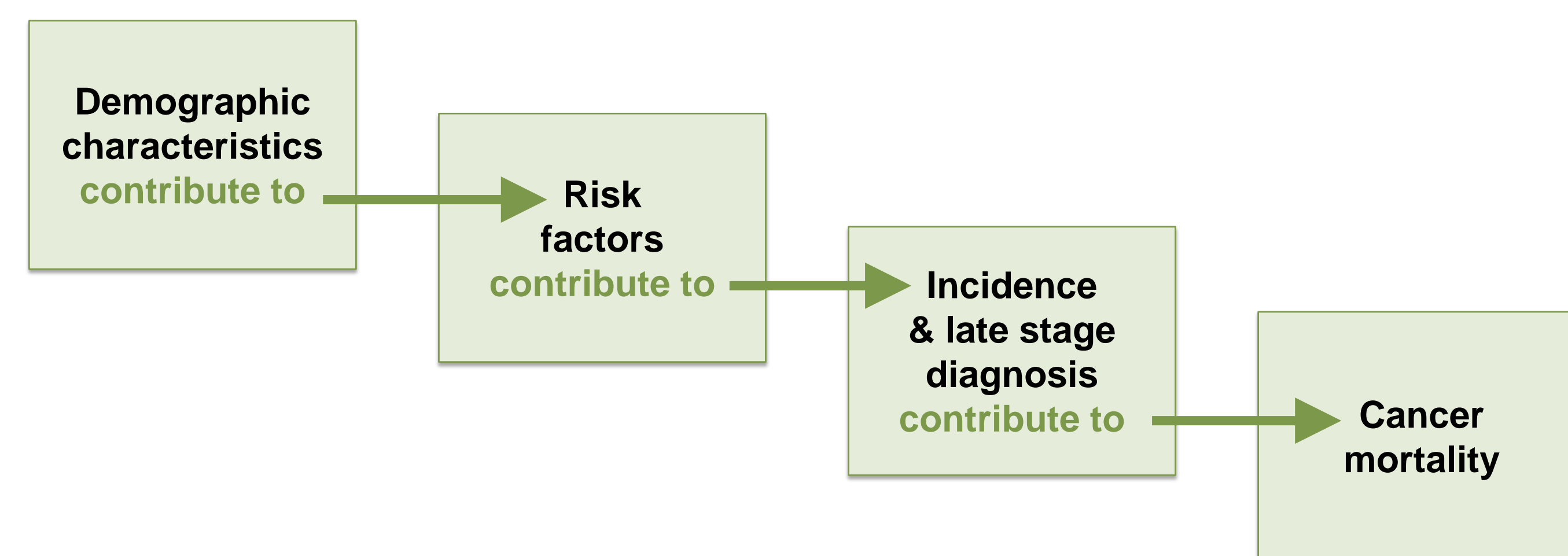
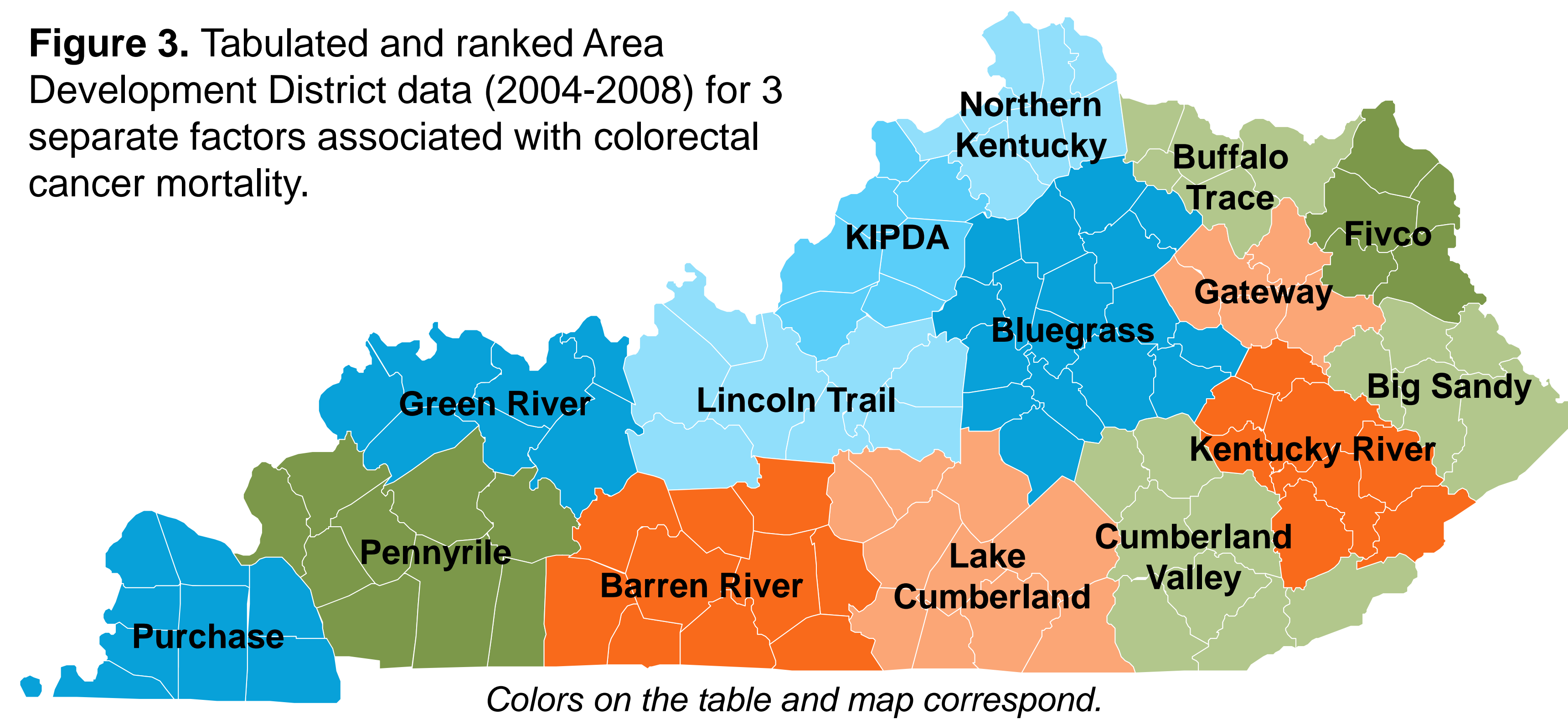


Figure 2. Logic Model. The Kentucky Cancer Registry’s Logic Model illustrates why cancer control planners should incorporate data from a variety of sources.

The Kentucky Cancer Registry developed the “rank sum” methodology, which produces a comprehensive view of a region’s relative cancer burden. The process is simple: identify relevant factors, assess each factor individually, rank the results for each factor, then total the ranks. **We used the rank sum method to assess the burden of colorectal cancer for Area Development Districts in Kentucky. We then designed a corresponding, multi-faceted intervention strategy.**

Results

Figure 3. Tabulated and ranked Area Development District data (2004-2008) for 3 separate factors associated with colorectal cancer mortality.



Colors on the table and map correspond.

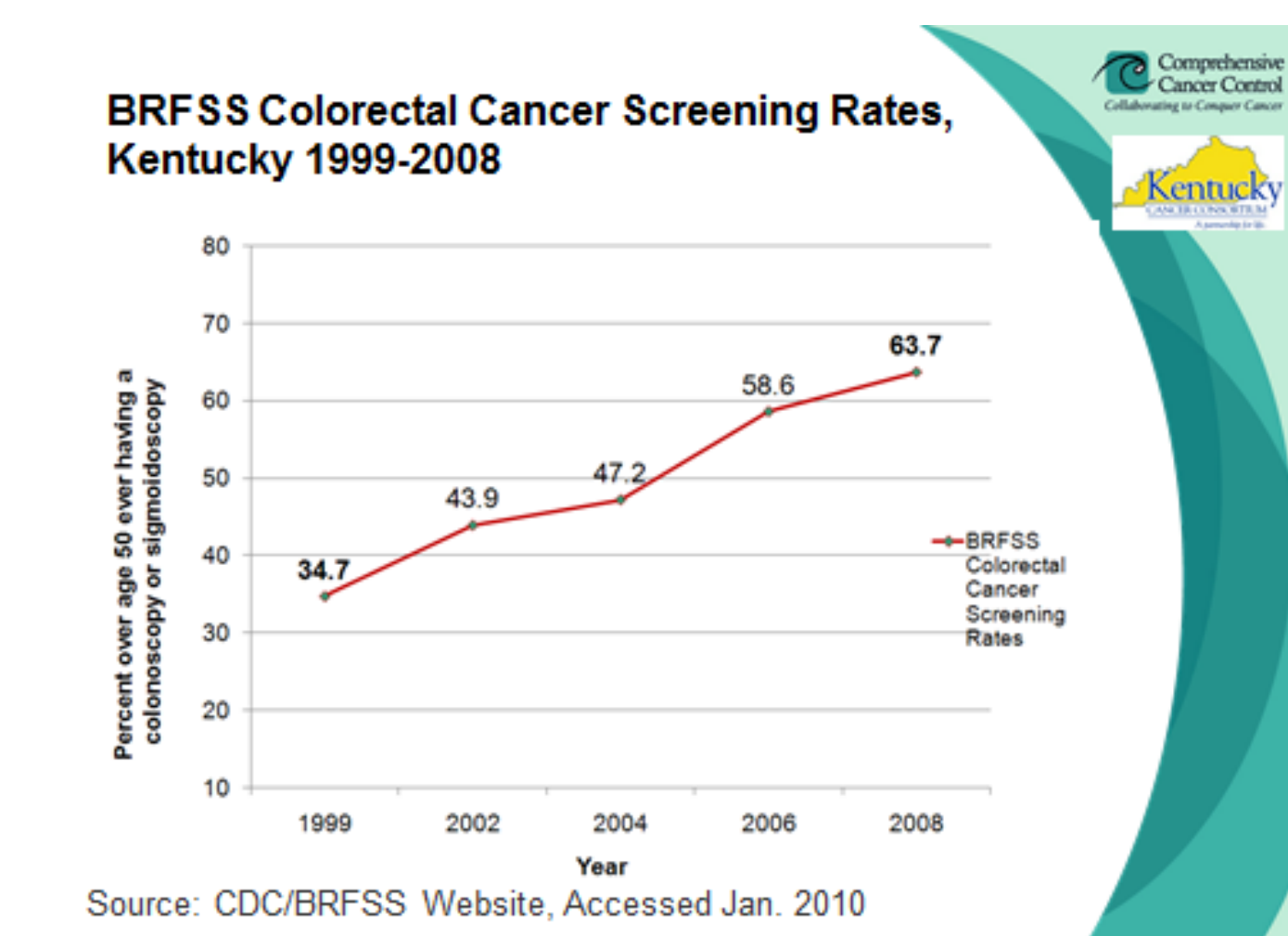
| Area Development District | FACTOR 1 High School Education (Demographic) | | FACTOR 2 Had Sigmoidoscopy /Colonoscopy (Risk Factor) | | FACTOR 3 Late Stage Diagnosis | | RANK SUM (Total of the 3 Ranks) |
|---------------------------|--|--------|---|--------|----------------------------------|--------|------------------------------------|
| | % | Rank 1 | % | Rank 2 | % | Rank 3 | |
| Kentucky River | 56.0 | 1 | 46.5 | 1 | 59.7 | 1 | 3 |
| Lake Cumberland | 61.3 | 4 | 50.8 | 7 | 55.3 | 3 | 14 |
| Barren River | 70.3 | 7 | 46.9 | 2 | 54.0 | 5 | 14 |
| Gateway | 65.0 | 5 | 48.4 | 4 | 53.6 | 6 | 15 |
| Fivco | 71.2 | 8 | 54.1 | 10 | 56.7 | 2 | 20 |
| Buffalo Trace | 66.6 | 6 | 47.5 | 3 | 50.2 | 11 | 20 |
| Cumberland Valley | 58.0 | 2 | 49.0 | 5 | 49.6 | 13 | 20 |
| Pennyrile | 71.7 | 9 | 51.2 | 8 | 54.4 | 4 | 21 |
| Big Sandy | 59.6 | 3 | 49.4 | 6 | 45.7 | 14 | 23 |
| Purchase | 77.1 | 11 | 60.7 | 13 | 53.3 | 7 | 31 |
| Lincoln Trail | 76.1 | 10 | 53.9 | 9 | 49.8 | 12 | 31 |
| Green River | 77.1 | 12 | 56.9 | 11 | 51.3 | 9 | 32 |
| Bluegrass | 79.0 | 13 | 63.0 | 15 | 52.8 | 8 | 36 |
| Northern Kentucky | 80.6 | 14 | 58.9 | 12 | 51.3 | 10 | 36 |
| KIPDA | 81.3 | 15 | 62.3 | 14 | 42.3 | 15 | 44 |

We presented the results to the Kentucky Cancer Consortium’s Colon Cancer Prevention Committee and each of the 15 Kentucky Cancer Program District Cancer Councils (DCCs). All DCCs and the Colon Cancer Prevention Committee implemented cancer control interventions to increase colorectal cancer screening statewide, including:

- Awarding mini-grants to all DCCs to implement community interventions
- Establishing a colon cancer screening program for the medically underserved
- Educating healthcare providers on their level of influence in recommending screening
- Coordinating an annual “Dress in Blue Day” each March
- Promoting screening through regional media
- Developing and distributing tailored colorectal cancer public awareness materials
- Promoting policy, environmental and system changes focused on the state, insurers, worksites and health care providers

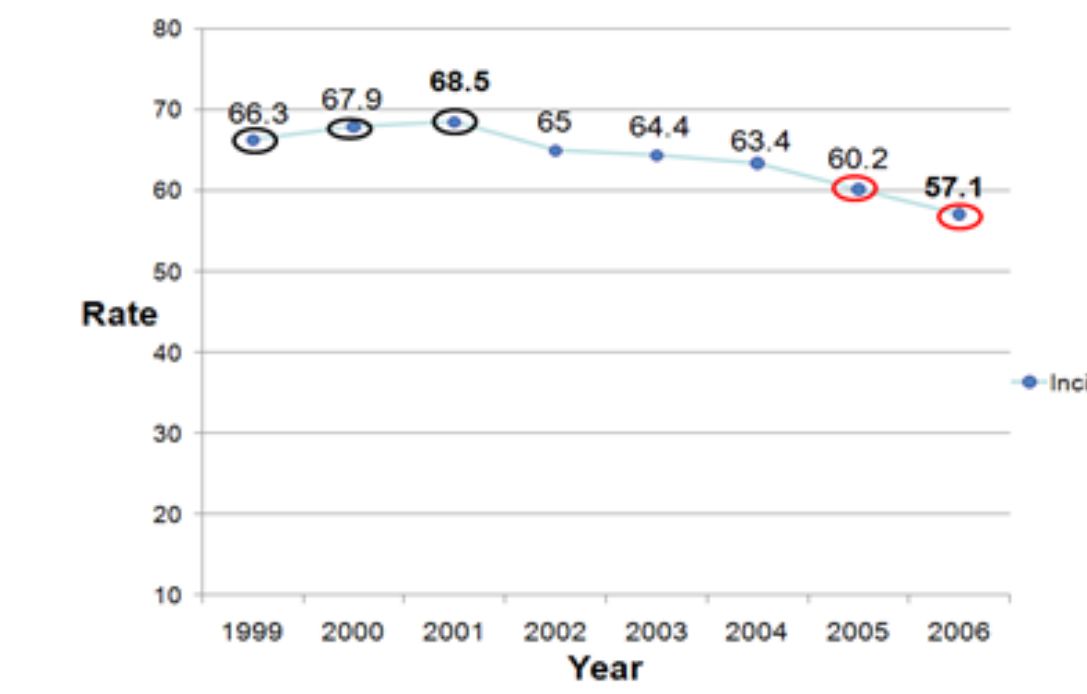
Conclusion

Through collective action and priority focus on populations with low education, colorectal cancer screening rates nearly doubled and incidence and mortality declined by 16%. Doubling the screening rate in seven years is very impressive and no other state came close to such a dramatic improvement. This represents a public health success!



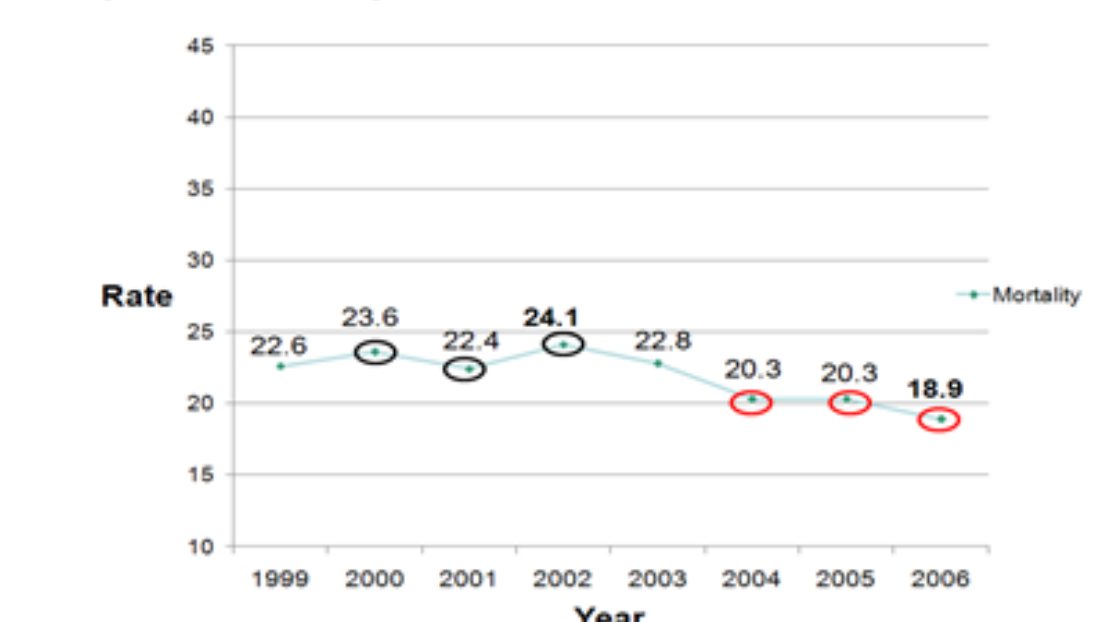
Source: CDC/BRFSS Website, Accessed Jan. 2010

Colorectal Cancer Incidence, Kentucky (1999-2006)



Source: KCR Website, Accessed Jan. 2010

Colorectal Cancer Mortality, Kentucky (1999-2006)



Source: KCR Website, Accessed Jan. 2010

This model is used by comprehensive cancer control coalitions at the state and local/regional levels, which include diverse community, non-profit, government, business, healthcare and other partners. Upon reviewing the data, these groups make informed decisions about updating the state cancer plan and selecting priority areas for implementation and evaluation of the plan, with particular attention toward regional cancer health disparities.

Funding Acknowledgement

This project was supported by Cooperative Agreement Numbers 5U58DP000810 and 1U58DP003907-01 from the Centers for Disease Control and Prevention and SEER Contract N01PC-2010-00031 from the National Cancer Institute. The findings and conclusions in this poster are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the National Cancer Institute.