

# TOTAL HEALTH EXPENDITURE ANALYSIS: AGENCY OF TRANSPORTATION RESULTS



## SUMMARY

Vermont is transforming the way we evaluate investments in health and wellbeing across all state sectors. One action is to conduct a cross-agency appraisal of state spending on factors that impact population health beyond the traditional health care system. The Total Health Expenditure Analysis (THEA) serves as a core tool for assessing cross-sector investments for health in non-health sectors. The Vermont Agency of Transportation (VTrans), a traditional non-health agency, recognizes how their work influences population health in the following domains: Safety, Active Transportation, Air Quality and Environmental Health, and Connectivity and Equitable Access. VTrans took part in the Total Health Expenditure Analysis during Winter 2016/2017. Below are the results from the Expenditure Analysis, along with a detailed analysis and utility of this project to the Agency of Agriculture and beyond. This is one approach used by the Health in all Policies Task Force which seeks to integrate health in the programming, policy, and budgeting activities of state government.

### HOW WILL THIS DATA BE USED?

In order to spend more effectively and promote population health, we must first understand what and how we are investing in health and wellbeing beyond the traditional medical care system. Information on how we spend and budget across sectors can help us understand 3 guiding questions:

- 1. WHAT ARE WE SPENDING NOW?**
- 2. WHAT IS OUR SPENDING GETTING US?**
- 3. WHAT HAPPENS WHEN WE CHANGE THE WAY WE SPEND?**

Knowing how and what we spend as a state gives us the opportunity to evaluate how we spend on investments made on population health and prevention. By working synergistically with other health reform efforts already in place in Vermont, this project will highlight how a shared commitment of resources, both financial and programmatic, can lead to greater gains in population health outcomes. This shared accountability for health emphasizes the importance of prevention and how investments in the social determinants of health can lead to greater health and financial gains.

### WHY TRANSPORTATION AND HEALTH?

Transportation is an essential component of a functioning society. Transportation provides access to goods and services, offers opportunities for individual mobility and for better quality of life, and plays an important role in economic development. Expanding the availability of, safety for, and access to a variety of transportation options and integrating health-enhancing choices into transportation policy has the potential to save lives by preventing chronic diseases, reducing and preventing motor-vehicle-related injury and deaths, and improving environmental health, while stimulating economic development and ensuring access for all people.<sup>3</sup> Transportation and public health agencies have shared interest in four areas: safety, active transportation, air quality and environmental health; connectivity and equitable access.

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## METHODOLOGY

The methodology of this project was dependent on extracting reliable information that was able to both quantify and describe VTrans' health-related spending across key determinants of health during the 2015 State Fiscal Year (July 1, 2014-June 30, 2015). Spending includes all money that went out the door, regardless of its funding stream. This includes all direct (personnel, travel, subgrantees) and indirect expenditures. This process relied heavily on the knowledge of financial managers and program managers who administer program codes. Consistent and understandable terminology was necessary for all stages of implementation, data collection, and results sharing. To accommodate this, tailored trainings were held that outlined universal language, definitions, and methodologies to ensure reliable data collection.

With the Agency of Transportation being a non-health related agency, it could not be assumed that 100% of their spending was related to health (as compared to the Department of Health, for instance). The first step in the analysis was parsing out health-related spending from their total expenditures for this time period. Transportation influences public health through these four major pathways that represent the most significant intersections between transportation and health. These health-related transportation links, steeped in evidence-based research, provided a guide in determining which programs to include in the Total Health Expenditure Analysis and also best practices.<sup>234</sup>

Health-related spending from the Agency of Transportation refers to money spent on:

- **SAFETY**
- **ACTIVE TRANSPORTATION**
- **AIR QUALITY AND ENVIRONMENTAL HEALTH**
- **CONNECTIVITY AND EQUITABLE ACCESS**

This health-related spending amount was then categorized based on expense function to describe how the money was spent, and then cross-categorized by determinant area. Determinants of health are conditions in the environment in which people live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Resources that enhance quality of life can have a considerable influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins.<sup>5</sup> Although genetics play an important role in health, they are not included in this analysis.

### EXPENSE FUNCTIONS

Based on the 10 Essential Public Health Services,<sup>6</sup> these describe how the money was spent

#### MONITOR/INVESTIGATION:

Any activity related to the systematic collection, analysis, and dissemination of data.

#### POLICY ENFORCEMENT/REGULATION:

Related to the regulation and promotion of policies (local, state, or national guidelines, evidence-based tools).

#### MOBILIZE COMMUNITY PARTNERSHIPS:

Any activity related to the creation and sustainment of community-based strategic partnerships, including coalition groups and stakeholder engagement.

#### EVALUATION:

Related to the collection, ongoing assessment, and dissemination of program-specific evaluation efforts.

#### CAPITAL INVESTMENT:

Acquisition of fixed assets, such as land, machinery, buildings, or IT systems.

#### TREAT/LINK TO CARE:

Activities that either directly treat a patient or connects people to services.

### DETERMINANTS

This analysis highlights six key determinant that are known to affect health outcomes

#### INDIVIDUAL HEALTH BEHAVIORS:

Any activity related to health attainment at an individual level such health promotion, diet, exercise, disease management, mental health promotion, tobacco cessation, nutrition counseling, etc.

#### ECONOMIC STABILITY:

Any activity related to income redistribution such as food security, housing stability, unemployment, etc.

#### EDUCATIONAL ATTAINMENT:

Related to formal educational attainment such as high school graduation, job skills development, and early childhood education programs.

#### NATURAL AND BUILT ENVIRONMENT:

Related to the physical and built environment including safety, complete streets, emergency preparedness, environmental conditions, etc.

#### SOCIOCULTURAL:

Combining the many sociocultural facets such as social cohesion and connectedness, civic participation, perceptions of discrimination and social and racial justice, inclusivity, etc.







#### CLINICAL CARE:

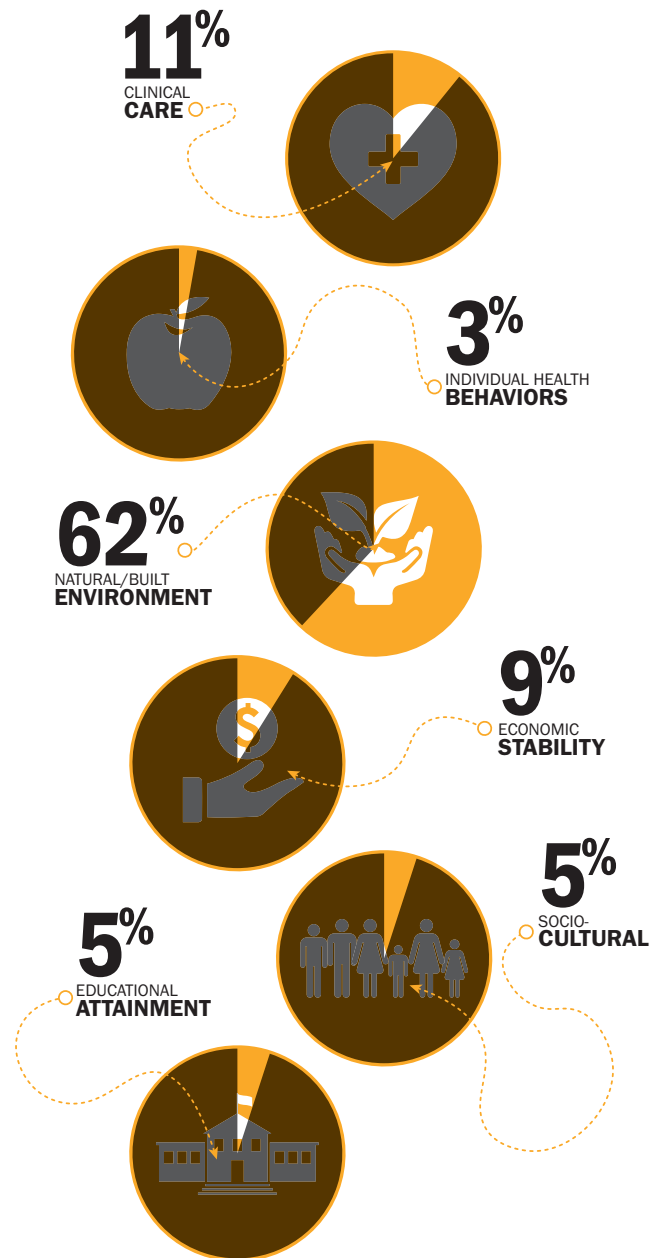
Access to and quality of health care utilization.

**RESULTS**

In the Total Health Expenditure Analysis spending is classified by Expense Function (how the money was spent) and by Determinant of Health (health factors impacted by spending). Only spending from health-related programs was counted towards this. VTrans attributed 8% of their State Fiscal Year 2015 spending as being health-related, which amounted to approximately \$46,000,000.

Of this health-related amount (including direct and indirect expenditures), it was found that the Natural/Built Environment determinant accounted for the majority of spending at 62% of the total. Remaining spending was split between:

TOP SPENDING OF VTRANS' PROGRAMS BY DETERMINANT	
	<b>INDIVIDUAL HEALTH BEHAVIORS:</b> Bike and Pedestrian Facilities, Motorcycle Training Program, Public Transit
	<b>ECONOMIC STABILITY:</b> Public Transit
	<b>EDUCATIONAL ATTAINMENT:</b> Public Transit
	<b>NATURAL/BUILT ENVIRONMENT:</b> Bike and Pedestrian Facilities, Public Transit, Enhancements, Park and Ride, Paving, Safety and Traffic Operations
	<b>SOCIOCULTURAL:</b> Public Transit
	<b>CLINICAL CARE:</b> Public Transit



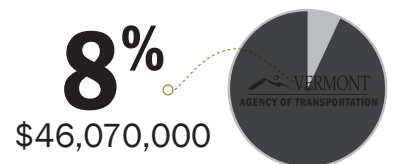
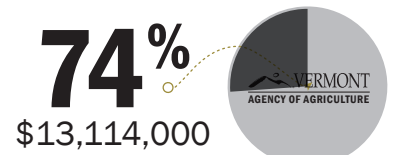
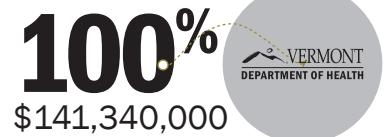
## DEEPER ANALYSIS INTO VTRANS RESULTS

The most notable finding from this analysis was that VTrans was able to attribute 8% (approximately \$46,000,000) of their total expenditures for this time period as health-related. This is significant, given that The Vermont Agency of Transportation (VTrans) is not a traditional health-related agency yet the agency recognizes the cross-sectoral overlap of how their work influences directly influences population health.

The large percentage (62%) spent on the Physical/Built Environment determinant represents much of what the Agency of Transportation seeks to affect in its work and mission. Another interesting finding is how the Public Transit program touches all determinant categories. With Vermont being a predominantly rural state, transportation is a vital component to daily living. The ability to provide safe and accessible public transportation to workplaces, medical appointments, and school, especially for vulnerable populations, is one of the agency's top priorities. In addition, the top spending by Expense Function was through Capital Investments and a small portion from the Inform/Educate category.

In comparison to other state agencies that have completed the Total Health Expenditure Analysis, the Agency of Agriculture attributed the exact same percentage of spending to the Natural/Built Environment as did the Agency of Transportation (at 62%). The Agency of Agriculture attributed 74% of their spending as being health-related (\$13,114,000), and the Department of Health attributed 100% (\$141,340,000) of their expenditures as being health related during this same time.

### Percent of Budget spent on Health Related Expenditures



## HOW WILL THIS DATA BE USEFUL FOR VTRANS?

Vermont's Long-Range Transportation Plan (LRTP) is the State's blueprint for guiding transportation decision-making and investments over the next 20 years. The Vermont Agency of Transportation (VTrans) will develop the 2040 LRTP over the next year and incorporate findings from the Total Health Expenditure Analysis to reflect a focus on population health, safety, and mobility for all Vermonters. The plan covers all modes of transportation including the highways, bicycling and walking, public transit and intercity bus service, and railroads and aviation. Consideration in the development of the plan will be given to issues such as economic vitality, safety and security, accessibility and mobility, environmental and energy conservation, travel and tourism, public health, and technological advances. Vermont spends more than \$600 million dollars annually on the state's transportation network and the Long-Range Transportation Plan serves as a guide for spending priorities, in support of multiple goals including mobility, safety & security, environmental protection, and economic development. The THEA will be helpful to VTrans in making informed decisions to improve population health. VTrans is committed using a Health in all Policies approach to inform future initiatives, including transportation-related Health Impact Assessments (HIAs) and community-based programming through the 3-4-50 campaign and their Healthy Community Design protocols.

- 1 Transportation Research Board. TR News. Public Health and Transportation. Number 299 September-October 2015.  
<http://onlinepubs.trb.org/onlinepubs/trnews/trnews299.pdf>
- 2 American Public Health Association. Transportation Background Data and Additional Resources.  
<https://www.apha.org/topics-and-issues/transportation/transportation-and-health-toolkit>
- 3 Federal Highway Administration. *Health in Transportation Corridor Planning Framework*.

- 4 American Public Health Association. *Transportation Background Data and Additional Resources*.  
<https://www.apha.org/topics-and-issues/transportation/transportation-and-health-toolkit>
- 5 U.S. Department of Health and Human Services. HealthyPeople 2020. Social Determinants of Health.  
<http://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health>. 2015.
- 6 <https://www.cdc.gov/nphpsp/essentialservices.html>