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2018 Columbia/Boone County
Community Health Assessment

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LETTER FROM THE DIRECTOR

Letter from the Director
In 2018, the sun will set on the 2013 Community Health Assessment and Community Health Improvement Plan. However, the work to improve the health of Boone County continues. Based upon the successes from the 2013 process, we have again adopted the Mobilizing for Action through Planning and Partnerships (MAPP) framework for this assessment. MAPP is a nationally-recognized process developed by the National Association of County and City Health Officials and the Centers for Disease Control and Prevention.

Over the last year, we have revitalized our community partnerships and reassessed the needs of Boone County. This document shares the results of the assessment, from the initial phase of Organizing for Success, through the revisions of the Vision Statement, and the completion of the Four Assessments. The 2018 Community Health Assessment process identified four strategic issue areas: mental health; basic needs; medical and dental; and safe, healthy, and affordable housing.

In the coming months, we will continue to work with our partners and stakeholders to develop a Community Health Improvement Plan that identifies goals, strategies, activities, and resources to address the four strategic issues identified in the Community Health Assessment. With the help from partners in the local public health system, Boone County's Community Health Improvement Plan will be implemented over the next five years.

On behalf of the Columbia/Boone County Department of Public Health and Human Services, thank you for your interest in this work. A special thanks to the more than 1,500 Boone County residents who took the time to share their views, experiences, and priorities thus far. We invite you to use this plan to help inform and enhance your knowledge of the work currently underway to improve the health of Boone County. We encourage you to get involved as we strive to reach our vision. *A caring and inclusive community where everyone can achieve their optimum well-being*.

Sincerely,

Stephanie K. Browning, Director
Columbia/Boone County Department of
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PHASE ONE:

ORGANIZING FOR SUCCESS

Prepared August 2018 by:
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EXECUTIVE SUMMARY

In 2013, Columbia/Boone County Department of Public Health and Human Services (PHHS) underwent a 16-month process with the goal of completing a comprehensive community health assessment (CHA). The findings of the CHA would inform the development of a community health improvement plan (CHIP). As part of the CHIP development, the community health improvement process was branded as Live Well Boone County. This branding is used as part of the 2018 process as well. For the purposes of this process, PHHS adopted the Mobilizing for Action through Planning and Partnership (MAPP) model. MAPP was created by the National Association of County and City Health Officials (NACCHO) and the Centers for Disease Control and Prevention (CDC) Public Health Program Practice Office. Due to the success of that process, PHHS decided to use the MAPP framework again during the development of the 2018 CHA and CHIP.

MAPP is a six-phase, community-driven process. Phase One: Organize for Success/Partnership Development involves two critical and interrelated activities: organizing the planning process and developing the planning partnership. The purpose of this phase is to structure a planning process that builds commitment, engages participants as active partners, uses participants' time efficiently, and results in a plan that can be realistically implemented. This phase identifies who should be involved and how the partnership will approach and organize the process. During this time, the framework for the process was decided and the support structure identified. Phase One concluded with the formation of the MAPP Core Plus team, the Live Well Boone County Community Health Partnership, and the Steering Committee.

OUR PROCESS

In June 2017, PHHS began the planning for the second MAPP process, thereby updating the 2013 CHA. The initial step was to reassemble the MAPP Core Plus team. The Core Plus team members are five staff from PHHS, one of whom serves as the Project Manager for Live Well Boone County. This five member team is tasked with process planning and support. PHHS contracted with an external facilitator, allowing for neutrality in the process. This contractor was also included in the MAPP Core Plus Team. The external contractor's scope of work included the facilitation of meetings and technical support in the process planning. This team met on a monthly basis. As PHHS had used the MAPP framework previously, the Core Plus Team reviewed the 2013 processes and identified areas for process improvement. Familiarity with the framework also allowed for the implementation of Phase One, Two, and Three to occur concurrently.

The CHAMP acronym used in the 2013 Community Health Assessment was not well recognized by members of the local public health system, nor did it describe the role of the group. The Core Plus Team renamed the group the Live Well Boone County Community Health Partnership. Potential members of the Community Health Partnership were identified by members of the Core Plus Team with the intentional inclusion of representatives of our larger public health system and various sectors of the community, such as higher education, parks and recreation, public schools, elected officials, municipalities, non-profits, representatives of populations with poorer health outcomes, and major employers in the community. More than 100 public health partners and stakeholders were invited to attend. Those invited were encouraged to share the invitation within their own networks and to inform PHHS if they wished to be removed from the email list for Live Well Boone County Community Health Partnership. Meeting invitations were sent electronically and attendees were asked to RSVP using a web-based invitation platform.

The Live Well Boone County kick-off meeting was held on November 1, 2017. The meeting objectives included: assembling a team of community partners, informing partners of the MAPP process, and enlisting support for the MAPP process. Sixty-eight community partners were in attendance at the meeting.

The Core Plus Team identified a community partner that could host the meeting at their location. A church in central Columbia served as the meeting host. This church is an active participant in the Live Well by Faith wellness program, which was developed as a result of the 2013 MAPP process. The meeting welcome was performed by the PHHS director, who reviewed the MAPP roadmap and a diagram of the larger public health system ***(Appendix A)***. The remainder of the meeting was facilitated by the external contractor.

OUR PROCESS

The first meeting activity was a review of successes and opportunities for improvement from the previous CHA and CHIP. Successes included the implementation of the Building Inclusive Communities (BIC) training program, the Look Around behavioral health campaign, and updates on the City of Columbia's three strategic neighborhoods. The Live Well by Faith program successes were shared with testimonials of support from program participants. The lack of successes included the challenges with access to care and the elimination of funding from the Health Eating and Active Living (HEAL) grant. Additional successes were shared in a handout titled "Making a Difference"
(Appendix B).

Additional information on the work of previous years can be located on the PHHS website, where annual CHIP reports are published: ***www.como.gov/health***.

The second meeting activity was a review of the Vision Statement "A vibrant, diverse, and caring community in which all individuals can achieve their optimum physical, mental, cultural, social, spiritual, and economic health". More information on this activity is included in Phase Two: Visioning.

The third meeting activity was a review of next steps. This included an explanation of how to become involved in future efforts of Live Well Boone County effort. The attendees were asked to indicate their interest in participating in Live Well Boone County by joining the Partnership, which would meet quarterly, and/or joining the Steering Committee, which would meet monthly ***(Appendix C)***. The community health survey would be made available in December 2017. Attendees were asked to complete the survey as well as disseminate it amongst their contacts. Focus groups were anticipated in early 2018. Group members were asked to assist with recruitment for the focus groups as needed.

The meeting concluded with asking the attendees for recommendations of additional members for the Live Well Boone County Community Health Partnership. Suggested members were listed on note cards for collection by Core Plus team members. Finally, attendees were asked to complete a meeting evaluation to inform process improvements.

OUR PROCESS

As previously mentioned, attendees of the Live Well Boone County Community Health Partnership meeting were asked to indicate if they had an interest in joining the Steering Committee. The first Steering Committee meeting was held on November 30, 2017 with seventeen members present. Three of the PHHS staff members who serve on Core Plus are non-voting members of the Steering Committee. This allows for more representation from the community, as opposed to internal PHHS staff. Steering Committee meetings are facilitated by the external contractor. The meeting objectives included a review of the project timeline ***(Appendix D)***, committee member roles and responsibilities ***(Appendix E)***, methods for group communication, frequency of meetings, and further developing the vision statement *(see Phase Two: Visioning)*. Members were also asked to
brainstorm who should be included in the Steering Committee and to complete a meeting evaluation to inform process improvements.

The Steering Committee met on two other occasions before the membership of the committee was finalized. The objectives of the December 14, 2017 meeting included the consideration of a decision making protocol, approval of the revised vision statement (see Phase Two: Visioning), approval of the focus group questions *(see Phase Three: Community Themes and Strengths)*, and a more in-depth review of the sectors which were not well represented in the process, such as representatives of populations at higher health risk. Existing members of the Steering Committee volunteered to reach out and personally invite members to join, thereby making the Steering Committee more reflective of the community.

The January 18, 2018 meeting objectives included the adoption of the decision making protocol ***(Appendix F)***, planning for the second Community Health Partnership meeting *(see Phase Three: Forces of Change)*, and focus group audiences *(see Phase Three: Community Themes and Strengths)*. New members the of Steering Committee were welcomed at this meeting. The finalization of the Steering Committee with 23 members concludes Phase One: Organizing for Success.

OUR PROCESS

Results

Phase One of the 2018 Community Health Assessment was completed from June to January 2018. At the conclusion of Phase One, PHHS successfully formed the organizational structure for the MAPP process. This included the MAPP Core Team, the Live Well Boone County Community Health Partnership, and the Steering Committee.

Dissemination of Phase One Results

The results of Phase One were shared with the Community Health Partnership in Phase Two, with the introduction of the members of the Steering Committee. Results were shared with the community at large throughout the remainder of the MAPP process.

Limitations

The process for self-selecting as a member of the Steering Committee did not fully represent the vulnerable populations within our community. This was addressed at multiple points, resulting in the recruitment of representatives of populations with poorer health outcomes.

Evaluations

The primary source for process evaluation included written evaluations at the conclusion of each meeting. Process improvements included adding a contact email on all materials and researching a new venue for the next Community Health Partnership meeting. Feedback from meeting evaluations are reviewed at the monthly Core Plus meeting for on-going process improvements.

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APPENDICES

APPENDIX A:
MAPP DIAGRAM OF HEALTH SYSTEM

Our Public Health System

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APPENDIX B:
MAKING A DIFFERENCE HANDOUT

Making a Difference

Live Well Boone County is a comprehensive initiative, focused on improving the health and wellness of Boone County residents.

Healthy Eating and Active Living grants - $200,000

- Five new community gardens
- 36 new lactation rooms
- Nine cooking classes
- 10 Move Smart childcare centers
- One new bus shelter
- 37 Live Well restaurants

Tobacco Grants - $16,000

- Anti-tobacco movie theater ads for 13 weeks
- Social media ads (39,904 views)
- Provided tobacco cessation training to two of Columbia's major employers
- Coalition organized to pass Tobacco 21
  - ◊ 51.8 – Annual number of 18 year olds who won't start smoking
  - ◊ 21.6 – Annual number of lives saved
  - ◊ 388.7 - Number of kids alive today who won't have a tobacco-caused death

Live Well by Faith - $164,331

- 100 people have participated in LWBF programs
- Outcome data not yet available

Look Around - $67,400

- Developed campaign message and aesthetics
- Developed social media content, advertising, and hard copy materials
- Implemented campaign (September 15, 2017 – May 31, 2018)
  - ◊ Social media and advertising campaign
  - ◊ School-based campaign (all Boone County public schools)
  - ◊ Community-based campaign

APPENDIX C:
WHERE DO I FIT IN?

2018 Boone County Community Health Assessment
Where do I fit in?

Thank you for joining us today! We hope you are excited about this process and want to continue on this journey towards better health in Boone County. Here are a few ways you can be involved.

Join the Live Well Boone County Community Health Partnership
We hope that you will want to stay involved in future meetings like this one today. Partnership members are the Mobilizing for Action through Planning and Partnerships (MAPP) advocates, the cheerleaders who can make connections, open doors, and ensure that our community is engaged every step of the way. This group will meet approximately every three months and will have the "big picture" overview of the process and the information learned. As a member of this group, you will have a chance to contribute your input and ensure your constituents' voices are heard.

Join the Live Well Boone County Steering Committee
Steering Committee is a smaller group of individuals (around 20) who are committed to the MAPP process and can be called on to help with specific tasks at particular times. This group will meet monthly and may be tasked with consolidating data into common themes, prioritizing strategic issues, and engaging with community members. As a member of this group, you will have a front row seat to the MAPP process and help shape the 2018 Live Well Boone County Community Health Assessment and Improvement Plan.

Columbia/Boone County Department of Public Health and Human Services provides staff support for the MAPP process. If you have any questions about where you fit in, contact Rebecca Roesslet, Public Health Planner at 573-817-6403 or send an email to Livewellboonecounty@como.gov.

Please indicate your interest and leave this portion at your table.

_____ I am in! I will be at the next Live Well Boone County Community Health Partnership meeting

_____ I am interested in the Live Well Boone County Steering Committee

_____ I want to be a part of both

_____ I am unsure of my commitment to Live Well Boone County at this time

Name	Organization	Email

APPENDIX D:
PROJECT TIMELINE

Phase	Timeframe	Activities
One- Organizing for success	September 1- November 1	First Live Well Community Partnership meeting held 11.1.17
Two- Visioning	November	Reviewed Vision at 11.1.17 meeting; agenda item for Steering Committee mtg First Steering committee mtg on 11.30.17
Three- The four assessments	December-March	Community survey begins in December- open until late Feb-early March Focus groups: Jan-March Second community meeting for Forces of Change assessment- late January or early February Photovoice project with youth: Jan-March LPHSA meetings: Jan-March Status Assessment: on-going, completed by end of March
Four- Identifying strategic issues	April-August	Community forum in May Steering Committee identify strategic issue areas using data from Phase Three
Five- Goals and strategies	August - October	Goals and strategies developed for each strategic issue area
Six- Action Plans	November-December	Action plans developed for each strategic issue

Questions? Contact Rebecca Roesslet at Livewellboonecounty@como.gov

APPENDIX E:
ROLES AND RESPONSIBILITIES

LIVE WELL BOONE COUNTY STEERING COMMITTEE

The Steering Committee is a small group of individuals responsible for organizing the Live Well Boone County (LWBC) community health assessment and improvement planning process and moving it forward.

ROLES AND RESPONSIBILITIES

Phase 1: Organizing for Success and Partnership Development

- Oversee the process
- Approve timeline for LWBC process
- Approve steering committee roles and responsibilities
- Oversee recruitment of additional participants as needed for the Steering Committee and/or the Community Health Partnership

Phase 2: Visioning

- Oversee revision of vision statement

Phase 3: Four LWBC Assessments

- Participate in the design and planning of Forces of Change session
- Provide assistance with Community Themes and Strengths Assessment (e.g. Approve focus group questions)
- Participate and assist with the recruitment of others to participate in Local Public Health System Assessment

Phase 4: Identify Strategic Issues

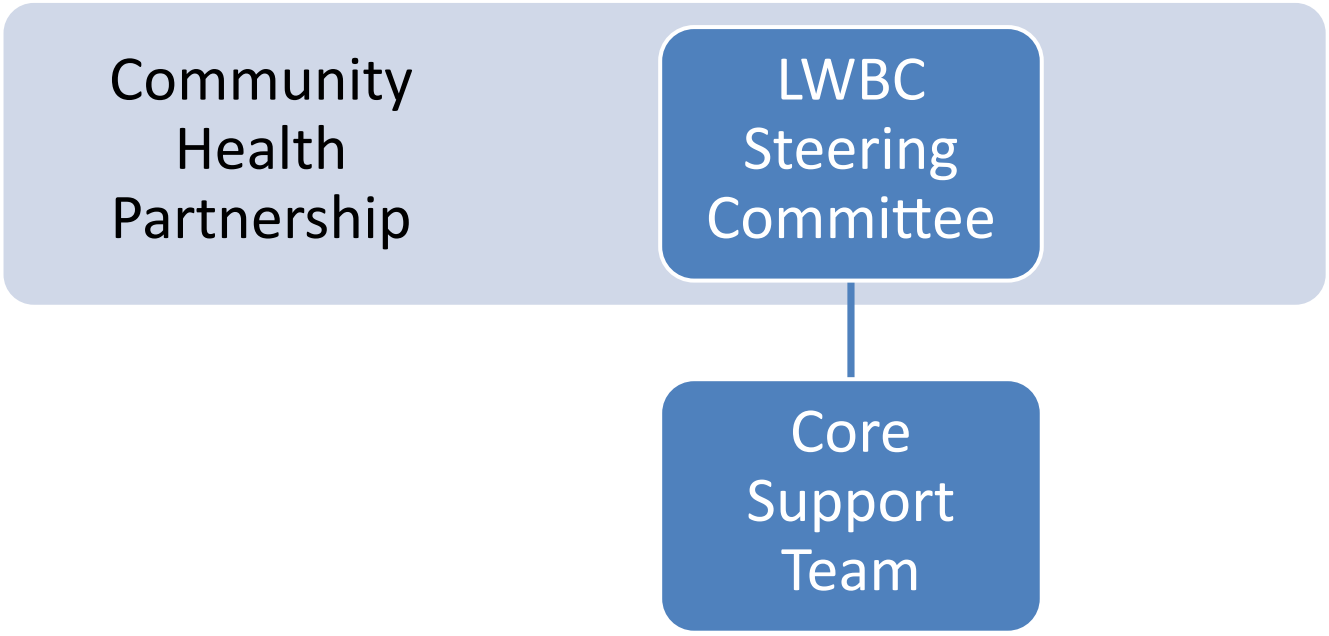
- Participate in the design and planning of the community forum
- Review assessment results and identify strategic issues

Phase 5: Formulate Goals and Strategies

- Develop draft strategies and goals
- Oversee creation of the Community Health Improvement plan

Phase 6: Action Cycle

- Oversee action planning and implementation
- Oversee recruitment of additional participants as needed



APPENDIX F:
DECISION MAKING PROTOCOL

Live Well Boone County Steering Committee Decision Making Protocol

Committee Member Expectations:

1. To the extent practical, the agenda shall signal key decisions expected to be made by members of the Steering Committee in that meeting.
2. Committee members may request to review any documents relevant to decision-making in advance of the meeting.
3. Every committee member shall endeavor to be fully informed about the issues at the heart of the decision-making before participating in any vote of the committee.
4. Every committee member shall reveal any and all real or perceived conflicts of interest relevant to the decision-making.
5. Each member of the Steering Committee shall have one vote and their vote shall not be transferable to anyone else, including any other member of their organization.
6. When deliberating and making difficult decisions, the Steering Committee shall adhere to the following principles:
    a. Listen to each other without interrupting
    b. Critique ideas, not the person
    c. Evaluate each decision on the basis of time (how quickly it needs to be made), quality (how perfectly it has to be done) and cost (how significant it is)
    d. Seek outside information, facts and data when and where needed
    e. Make every effort to reach a consensus
    f. The decision-making process should not unnecessarily take time and energy away from the work of the Steering Committee.
7. The group will work towards the highest and fullest consensus possible. (See definition below.)

Decision Making Process:

In connection with making a decision, the Steering Committee shall endeavor to follow the following process and answer the following questions:

1. Define decision to be made
2. Determine who will make the decision
3. Who, if anyone, needs to be included in the decision making process?
5. Who, if anyone, needs to approve the decision?
6. Who, if anyone, needs to be informed of the decision? When? (Before or after decision made)

Reaching Consensus[1]:

1. This committee supports and will endeavor to reach decisions by consensus, whenever possible. We agree that any decision will be made in alignment with the vision statement of Live Well Boone County and in accordance with the mandate of our Steering Committee.

2. In certain circumstances, a member can participate in decision making *in absentia*, by registering their views on an issue beforehand (this decision making should be documented), provided the issue has already been discussed in their presence and there has been no significant change in the issue. Steering Committee members are responsible to either give their comments and/or decisions via e-mail to the Project Manager, Rebecca Roesslet at livewellboonecounty@como.gov.

3. The consensus process seeks to find solutions that everyone on the Steering Committee can support. That said, after thorough discussion of the issue, if consensus cannot be reached, a simple majority rule apply to all votes.

4. Where a decision impacts directly on a member or an agency not present at the meeting, no final decision will be made until that agency expresses its position to the committee before any vote is taken.

5. The committee acknowledges that occasionally a member or members may feel it is necessary to choose to stand aside from a committee decision, thereby enabling the work of the committee to proceed.

Vision Statement: *A caring and inclusive community where everyone can achieve their optimum well-being.*

[1] "Simply stated, consensus is different from other kinds of decision making because it stresses the cooperative development of a decision with group members working together rather than competing against each other. The goal of consensus is a decision that is consented to by all group members. Of course, full consent does not mean that everyone must be completely satisfied with the final outcome – in fact, total satisfaction is rare. The decision must be acceptable enough, however, that will agree to support the group in choosing it." Source: Building United Judgment: A Handbook for Consensus Decision Making, Centre for Conflict Resolution. 1981.

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PHASE TWO:
VISIONING

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EXECUTIVE SUMMARY

Phase Two: Visioning, focused on updating the vision from the 2013 CHA. This phase provided an opportunity to increase community awareness and engagement in the MAPP Process. Members of the local public health system gathered to create a common understanding of what a healthy community looks like. This achievement is known as the community's vision. The vision provides a picture of the long-range results of the MAPP planning process and what will be accomplished when the strategies are implemented. The revision of the community vision completed Phase Two.

MAPP

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OUR PROCESS

The planning for Phase Two began with the internal Core Plus team. The team met to review the vision and values developed in 2013. It was decided that the existing vision, "A vibrant, diverse, and caring community in which all individuals can achieve their optimum physical, mental, cultural, social, spiritual, and economic health," represented the diverse views of community members and the local public health system, and should be brought to the larger group for input. The values from 2013 were not systematically used to inform the community health improvement plan and therefore, were not revised as a part of this community health assessment.

At the kick-off meeting for the Live Well Boone County Community Health Partnership, meeting attendees were provided a copy of the 2013 vision. Participants were asked to review the vision in a small group setting and consider if the vision was still representative of the diverse views of community members. Following the period of discussion, participants voted on revising the vision (22 votes) or keeping the existing vision (25). Although the majority of the votes were in favor of keeping the existing vision, it was decided that, since the vote was so close, further discussion was warranted. Participants were asked to make note of their suggestions for revision ***(Appendix A)***, which would reviewed by Steering Committee at their initial meeting.

Steering Committee members were given the suggestions for revision in advance of the initial Steering Committee meeting. The external facilitator described a vision as: clear, conjures up images, exciting, measurable, has wide appeal, and represents big goals. Members broke into small groups for discussion. Draft versions of the revised vision were collected on a flip chart for larger group discussion. Members decided to offload the finalization of the vision statement to a smaller task force.

The vision statement task force consisted of five members of the steering committee and the project manager for Live Well Boone County. The task force revised the vision statement electronically with the use of email and a Google document. Comments from the steering committee were shared with the task force for consideration ***(Appendix B)***. The task force shared the revised vision statement at the December steering committee meeting. The vision, "A caring and inclusive community where everyone can achieve their optimum well-being," was approved by the steering committee and incorporated into all future Live Well Boone County materials. The new vision was presented to the Live Well Boone County Community Health Partnership in January 2018 and incorporated into the focus group questions of the Community Themes and Strengths Assessment.

OUR PROCESS

Results

Phase Two of the 2018 Community Health Assessment was completed from November 2017 to January 2018. At the conclusion of Phase Two, the 2013 vision had been revised to reflect the views of the community and the public health system. The 2018 Community Health Vision: "A caring and inclusive community where everyone can achieve their optimum well-being" will serve as the long range goal of the community health assessment and community health improvement plan.

Dissemination of Results

The 2018 vision statement was shared with the Live Well Boone County Community Health Partnership in January 2018. It has been incorporated into focus group questions for the Community Themes and Strengths Assessment and will be used throughout the 2018 Community Health Assessment Process and the Community Health Improvement Plan. The vision is printed on all Live Well Boone County materials, such as meeting agendas.

Limitations

The final vision statement was needed in order to proceed with the planning of the focus groups for the Community Themes and Strengths Assessment. This expedited timeline prevented the Steering Committee from revising the vision statement as a collective unit.

Evaluations

The primary source for process evaluation included written evaluations at the conclusion of each meeting. Feedback from meeting evaluations are reviewed at the monthly Core Plus meeting for on-going process improvements.

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APPENDICES

APPENDIX A:
SUGGESTION SHEET

Vision Statement: A vibrant, diverse, and caring community in which all individuals can achieve their optimum physical, mental, cultural, social, spiritual, and economic health

Feedback from the Community Partnership meeting on November 1, 2017. Does the current vision still work? Participant comments are listed below.

- Shorter
- Change diverse to inclusive
- Inclusive instead of diverse. What does cultural? Spiritual?
- Inclusive instead of diverse
- Shorter
- Rose and Janet like the vast majority of the wording. The sole issue we identified was that most people look at the vision statement might not understand that it is aspirational. In can be fixed/improved solely by the addition of a couple of words
- Not clear and easy to grasp
- Eliminate “physical, mental, cultural, etc”. Optimum health
- Consider adding “inclusive” to the description of the community. “A vibrant, diverse, inclusive, and caring community….”
- Delete: physical, mental, cultural, social, spiritual, and economic. Would read: a vibrant, diverse, and caring community in which all individuals can achieve their optimum health
- Delete: physical, mental, cultural, etc and simplify
- Our group thought that the statement was very good but perhaps a little static. We advocated a change (add the word ‘welcoming’) that represents the community is dynamic, changing with folks moving in and out. Deacon George Norman also noted that a welcome packet (welcome wagon) for newcomers would be a nice way to operationalize this attitude. Welcome packet might include coupons etc. but also historical info about community, demographic, etc. that lets newcomers ‘meet’ their new neighbors and understand layers/texture of their new community a little more on arrival
- How about adding the word welcoming- restated welcome wagon idea from previous comment
- Need a system focus, not just individual. Diversity is not enough- we need inclusion and a vision that incorporates an understanding of the power inequities that frame the context within which we all live in Boone County today
- Not measurable
- Measure missing
- Address systemic issues. Language is important. Intentional. Inclusive.
- Change ‘achieve’ to ‘enjoy’
- Not measurable
- Doesn’t meet all criteria on the handout

Questions? Contact Rebecca Roesslet at Livewellboonecounty@como.gov

APPENDIX B:
STEERING COMMITTEE COMMENTS

Original Vision:
A vibrant, diverse, and caring community in which all individuals can achieve their optimum physical, mental, cultural, social, spiritual, and economic health.

Updated Draft Vision Statement:
#2- A caring and inclusive community where everyone can achieve their optimum well-being.

#1- A vibrant, inclusive, and caring community in which all individuals can realize their optimum health and well being.

Comments from 11.30.17 meeting

- A (vibrant, inclusive, and caring) welcoming, inclusive, caring and thriving community in which everyone (all individuals) can achieve their optimum health/and wellness/wellbeing
- A vibrant and inclusive community in which all individuals can achieve their optimum health
- Vibrant, diverse, and inclusive…….

Possible revisions to react to

1. A vibrant, diverse, and inclusive community in which all individuals can achieve their optimum health and wellness
2. A vibrant, diverse, and inclusive community in which everyone can achieve their optimum health and wellbeing
3. A welcoming, inclusive, caring, and thriving community in which everyone can achieve their optimum health and wellness
4. A vibrant and inclusive community in which all individuals can achieve their optimum health
5. A caring and inclusive community where everyone can achieve their optimum health

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PHASE THREE:

THE FOUR ASSESSMENTS

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Forces of Change Assessment

Boone County, Missouri

Prepared August 2018 by: Rebecca Roesslet, MPH, Senior Planner
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EXECUTIVE SUMMARY

The Forces of Change Assessment (FOCA) is one of four assessments conducted in the MAPP Process. The purpose of this assessment is to identify the trends, factors, and events that are likely to influence community health and quality of life, or impact the work of the local public health system in Boone County.

The Forces of Change Assessment focused on the following questions:

- What is occurring or might occur that affects the health of our community or the local public health system?
- What specific threats or opportunities are created by these occurrences?

The identification of the forces of change completed this assessment.

OUR PROCESS

The planning for the FOCA was initiated by the internal Core Plus team. An external facilitator outlined a process to complete this assessment. Steering Committee reviewed the proposed process prior to its implementation.

The FOCA began with the Live Well Boone County Community Partnership meeting. Partnership members were provided with the Forces of Change Analysis Worksheet ***(Appendix A)*** in advance of the meeting. Members were asked to begin brainstorming in preparation for the meeting and given an opportunity to share their completed worksheet if they were unable to attend the meeting. Further explanation of the FOCA was provided by the meeting facilitator, as listed below.

Forces of Change Assessment:

a. **What is it?** Identifies forces that affect the context in which a community and its public health system operate. Answers the questions: "What is occurring or might occur that affects the health of our community or the local public health system?" And "What specific threats or opportunities are created by these occurrences?"

b. **Why do we do it?** Our operating environment is in a constant state of flux and we need to assess how it's changing to determine how, if at all, we need to change in response.

c. **How will it help us plan?** Identifying the forces of change and the impact of these occurrences will enable us to build a plan in which we capitalize on opportunities and mitigate threats.

d. **Trends:** patterns over time

e. **Factors:** discrete elements

f. **Events:** one-time occurrences

g. **Types of forces of change include:** social, economic, political, demographic, technological, environmental, scientific, legal/legislative, and ethical

Participants shared their forces of change brainstorm lists with one another at their tables. Each table was asked to reach consensus about 10 forces they believe are having the most significant influence/impact on the health of our community/our local public health system. The 10 forces were written on sheets of paper and placed on a blue sticky wall. Participants were invited to review the items on the blue wall. Duplicate responses were removed. Some responses were clarified. Participants were asked to consider what is missing, what is wrong, and whose voice isn't reflected.

OUR PROCESS

Affinity mapping was used by the group to identify patterns/themes, group similar items together, and make a working title for each grouping. Groupings were taken back to the individual tables for further work. Groupings were substance abuse, health care, transportation, housing, public safety, technology, changing demographics, workforce, policy, and equity. At the tables, participants were asked to identify specific threats and opportunities created by the forces of change in their category. A brief period for brainwriting (3 min) was followed by table discussion (12 min). Possible impacts of forces were recorded on a worksheet during the table discussion. Worksheets were collected and then reviewed by Steering Committee at their next meeting. Moving forward, the work from the community partnership meeting was continued by the Steering Committee.

The Steering Committee reviewed the outputs from the Community Partnership meeting. They were asked to consider: What is missing? What, if anything, is inaccurate? What would you like to see done with this information in order to make it complete? Many of the identified forces were crosscutting, and several needed fact checking. Missing categories included environmental quality, climate change, and education. The decision was made to take this work to a task force of the Steering Committee. The task force was asked to expand the list to all of the items that should be considered.

At the next Steering Committee, the task force members shared the outputs of their work. The task force prioritized what was missing, added some additional forces for consideration, and combined some categories which were similar. Steering Committee categorized these outputs into one of four quadrants: Low need/high feasibility; High need/High feasibility; Low need/Low feasibility; High need/Low feasibility

Low Need/High Feasibility	**High Need/High Feasibility**	
	Workforce	Children/youth/families
	Change demographics	K-12 education
	Environment	
Low Need/Low Feasibility	**High Need/Low Feasibility**	
Technology	Housing	Equity
	Transportation	Public safety
	Workforce	Healthcare
	Higher education	Climate change

As part of Steering Committee's discussion, three new categories were added: environment, K-12 education, and children/youth/families. A decision was made to take this work to a Steering Committee task force. The task force was asked to build out the new categories by identifying the opportunities, threats, and forces to be considered. The task force accomplished this, along with adding data to many of the categories. The sharing of this information with the Steering Committee concluded the Forces of Change Assessment.

OUR PROCESS

Results

Results of the FOCA ***(Appendix B)*** were categorized by the top eleven issue areas from Phase Three. These eleven areas are mental health, obesity, tobacco, drugs and alcohol, youth and family, adolescent health, affordable housing, safety net/basic needs, medical and dental, distracted driving, and community engagement and inclusion.

Dissemination of Results

Forces of Change results were shared with members of Steering Committee in May 2018 and were incorporated into the data shared at the Community Forums. Information is also made available as part of the 2018 Community Health Assessment publication.

Limitations

The time required to complete the Forces of Change was longer than anticipated by the Core Plus team when planning the project timeline. The work of this assessment was included in meetings from January - May 2018. If necessary, the assessment will be revisited in future Phases of the project timeline.

Evaluations

The primary source for process evaluation included written evaluations at the conclusion of each meeting. Feedback from meeting evaluations are reviewed at the monthly Core Plus meeting for ongoing process improvements.

APPENDICES

APPENDIX A:
FOCA WORKSHEET

Forces of Change Analysis Worksheet

This worksheet is designed for Live Well Boone County Community Health Partnership members to use in preparing for the Forces of Change Assessment we'll do at our January 31st meeting.

What are forces of change?

Trends, factors, and events outside of our control that may influence the health of our community or our local public health system. Forces are:

- Trends = patterns over time (e.g. Columbia's growing population or a population's growing distrust of government)
- Factors = discrete elements (e.g. fact that Columbia is a university town or its proximity to I-70)
- Events = one-time occurrences (e.g. natural disaster or the passage of new legislation, such as the city's new ban on distracted driving)

Types of forces of change include (but are not limited to) the following:

Social	Economic	Political	Demographic	Technological
Scientific	Legal/Legislative	Ethical	Environmental	

Step One. Think about forces of change – trends, factors, events outside of your control – that affect the local public health system or community. Use the above list of types of forces of change as a guide and the following questions to help prime the pump!

1. What has occurred recently that may affect our local public health system or community?
2. What may occur in the future?
3. What trends are occurring that will have an impact?
4. What forces are occurring locally? Regionally? Nationally? Globally?
5. What characteristics of our community or state may pose an opportunity or threat?
6. What may occur that has occurred that may pose a barrier to achieving our shared vision?

Step Two. List here all those forces you brainstormed. Put an asterisk by the ones you perceive to be most impactful on the local public health system or community.

Forces of Change Brainstorm List

Type of Force of Change	Trend	Factor	Event
Social			
Economic			
Political			
Demographic			
Technological			
Environmental			
Scientific			
Legal/Legislative			
Ethical			
Other: _____			

Your input to this Community Assessment is invaluable. Our thanks in advance for your brainstorming and we look forward to your participation on January 31 at the ARC.

New Chapter COACHING, LLC
Exploring the Present, Transforming the Future

APPENDIX B:
FORCES OF CHANGE BY ISSUE AREA

Mental Health

• Access to care issues persist. CenterPointe Hospital will have 72 beds and provide inpatient and outpatient psychiatric care in early 2019.

• Tax policies at the state and federal levels increase pressure on local agency funding.

• Adverse childhood events increase risk of poor health outcomes, substance use disorders and mental health issues.

• Nationwide rates of depression and anxiety are increasing. Boone County schools are assessing mental health needs of students quarterly.

Obesity

• Almost all chronic diseases have a prevention component.

• Increased pedestrian/cyclist infrastructure results in positive health outcomes.

Tobacco

• Almost all chronic diseases have a prevention component.

• Tobacco cessation services funding cuts.

Drugs and Alcohol

• Substance Use Disorders: meth responsible for most arrests (per Boone County Sheriff's Office), opioid addiction increasing.

• Boone County has Prescription Drug Monitoring Program

• Binge drinking

Youth and Family

• Adverse childhood events

• Mental health

• Parenting support

• Lack of out of school activities/or access to those activities

• Disparities in kindergarten readiness

• Increased use of technology by kids

Adolescent Health

- Adverse childhood events
- Mental health
- Homelessness (students/families)
- Parenting support
- Lack of out of school activities/or access to those events
- Disparities in graduation rates
- Increased use of technology by kids.
- Disproportionate minority contact

Affordable Housing

- Limited affordable housing
- Inconsistent enforcement of housing standards
- Homelessness
- Utility costs
- High cost of living (specific around owning or renting)
- Gentrification

Safety Net/Basic Needs

- Homelessness
- Utility costs
- Income inequality
- Lake of safe, affordable transportation choices
- Stagnant wage growth

Medical and Dental

• Access to care issues can lead to bigger problems, crisis situations, increased ER usage and less preventive care.

• Health Literacy

• Health Research Center - pending approval, a Translational Precision Medicine Complex will be a center of biomedical innovation at MU.

• Future of Boone Hospital

• Political polarization - healthcare has become a political issue

• Changing/unsure future of health insurance

• Transition from fee for services to value based health care system.

Distracted Driving

• Vision Zero implementation

Community Engagement and Inclusion

• Vision Zero implementation

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Local Public Health System Assessment

Boone County, Missouri

Prepared August 2018 by: Jason Wilcox, MPH, Senior Planner
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Public Health
Prevent. Promote. Protect.
Columbia/Boone County
Public Health & Human Services

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EXECUTIVE SUMMARY

The Local Public Health System Assessment (LPHSA) is an instrument developed by the National Public Health Performance Standards Program (NPHPSP). The NPHPSP is a collaborative effort to improve the practice of public health performance of public health systems. The NPHPSP helps the local public health system (LPHS) in answering questions such as, "What are the components, activities, competencies, and capacities of our public health system?" and "How well are the 10 Essential Public Health Services being provided in our system?". The LPHSA is a self-assessment tool that focuses on the delivery of the 10 Essential Public Health Services by the local public health system (see Figure 1: The Local Public Health System). The local public health system is commonly defined as all "public, private, and voluntary entities that contribute to the delivery of the essential health services within a jurisdiction." There are four core concepts of the LPHSA:

• The 10 Essential Public Health Services provide the fundamental framework describing all the public health activities that should be carried out in all local public health systems.

• The standards focus on the overall public health system, and not the work of a single organization.

• The standards describe an optimal level of performance, not minimum expectations.

• The standards intend to support a process of quality improvement. The local public health system uses information from the assessment to create a snapshot of activities being performed. In addition, results can help identify the system's strengths and weaknesses. Standards showing low activity are prioritized for future improvement.

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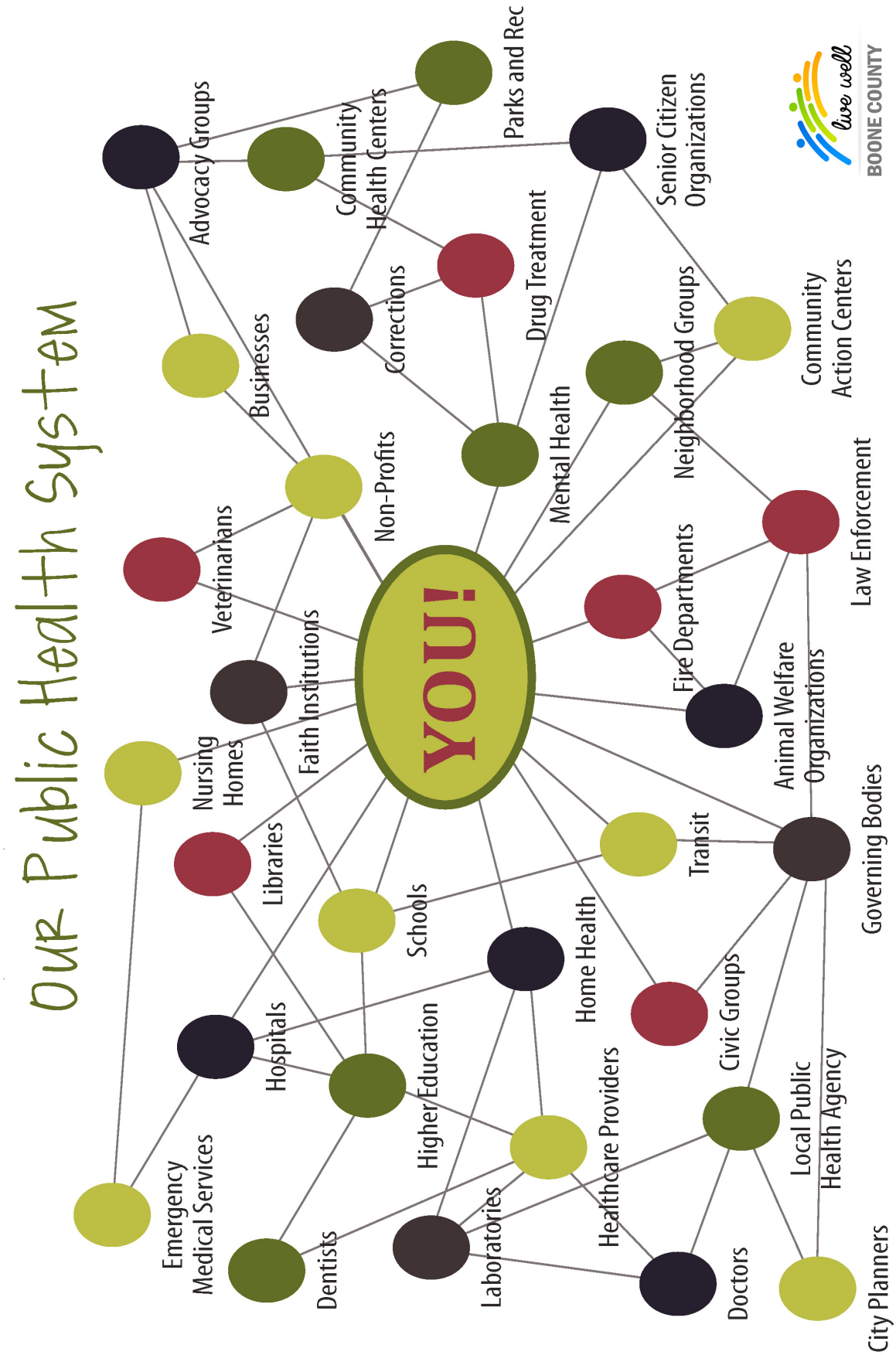
FIGURE 1: Local Public Health System Diagram



ESSENTIAL PUBLIC HEALTH SERVICES

FIGURE 2: 10 Essential Public Health Services

Using the 10 Essential Public Health Services as a framework, a total of 30 Model Standards (2-4 Model Standards per Essential Service) describe an optimally performing local public health system. Model Standards represent the major components, activities, or practice areas related to the Essential Service. Discussion questions provided in the instrument help participants fully explore activities happening in their local public health system. These five discussion questions are Awareness, Involvement, Frequency, Quality and Comprehensiveness, and Usability. Responses to these questions describe the level of performance of each Model Standard compared to the "gold standard". A facilitator leads participants through a discussion of each Model Standard. After completion of the discussion questions, participants use color-coded cards to indicate the level of performance of their local public health system. Further discussion occurs when there is disparity among responses. The list of participant's response options are in Table 1 below. Using responses to all assessment questions, a scoring process generates scores for each Model Standard, Essential Service, and an overall system score.

A recorder captures participant's responses to the discussion questions. After voting on the system's performance, participants are led in a discussion by the facilitator to identify the strengths, weaknesses, short-term, and long-term opportunities for improvement of each Model Standard. The Summary Notes section of the assessment captures responses to each of these factors.

TABLE 1: SUMMARY OF ASSESSMENT RESPONSE OPTIONS

Optimal Activity (76% - 100%)	Greater than 75% of the activity described within the question is met
Significant Activity (51% - 75%)	Greater than 50% but no more than 75% of the activity described in the question is met.
Moderate Activity (26 - 50%)	Greater than 25% but no more than 50% of the activity described within the question is met.
Minimal Activity (1 -25%)	Greater than zero but no more than 25% of the activity described within the question is met.
No Activity (0%)	0% or absolutely no activity.

ASSESSMENT PROCESS

At the February 15, 2018 Steering Committee meeting, a PHHS planner presented an orientation of the Local Public Health System Assessment. The presentation's focus was on the four core concepts of the assessment and each of the 10 Essential Public Health Services. During the presentation, the planner asked committee members to decide which essential service or services they or their organization fit. At the end of the presentation, committee members self-selected into their respective service or services. Using the same process format from 2013, small workgroups sorted by essential services with common themes completed the assessment. The initial small workgroups were as follows: Essential Services 1 & 2, Essential Services 3 & 4, Essential Services 5 & 6, Essential Service 7, Essential Services 8 & 9, Essential Service 10.

After compiling the list of Steering Committee participants, staff from the PHHS Epidemiology, Planning, and Evaluation unit met to identify participants from Live Well Boone County Community Health Partnership and PHHS staff to invite to each essential service workgroup. Staff used Version Three of the LPHS assessment instrument as a guide for including participants in the appropriate workgroups. After some discussion, the PHHS staff chose to separate Essential Services 1 & 2 into stand-alone workgroups based on review of the performance measures and specific questions asked in the two essential services. All other workgroups remained the same as before.

To prepare for the assessment, facilitators from Live Well Boone County Community Health Partnership and PHHS attended a three-hour training performed by the external contractor. Training included overcoming issues with the assessment, how consensus would be reached among participants, and common facilitation challenges.

After finalizing the date, format, and location of the assessment, participants received an email invitation asking for their participation. If the participant could not attend, the invitation indicated an alternate person or persons to attend. Those who replied their intention to take part received their assessment questions in advance by email. Workgroups made up of Essential Services 3 & 4, 5 & 6, and 7 met on Monday, March 12. Other workgroups met at an agreed upon date and time. PHHS was the site for the assessments.

On the day of the assessment, participants gathered for an introductory session in their workgroup's assigned conference room. The session familiarized participants with the 10 Essential Public Health Services, the goal of the assessment, voting cards, and voting process. Each Essential Service took between two to three hours to complete. Fifty-six people participated across all 10 essential services. All sessions were audio recorded. Audio recording was an identified process improvement after completing the 2013 LPHSA.

RESULTS

A scoring process is used to generate a score for each Model Standard, Essential Service, and an overall score of the local public health system. The score of each Essential Service relates to the degree in which the local public health system meets the performance measures for the service. Scores can range from a minimum value of 0% (no activity performed compared to the standard) to a maximum of 100% (all activity performed compared to the standard).

FIGURE 3: Summary of Average Essential Public Health Service Performance Scores

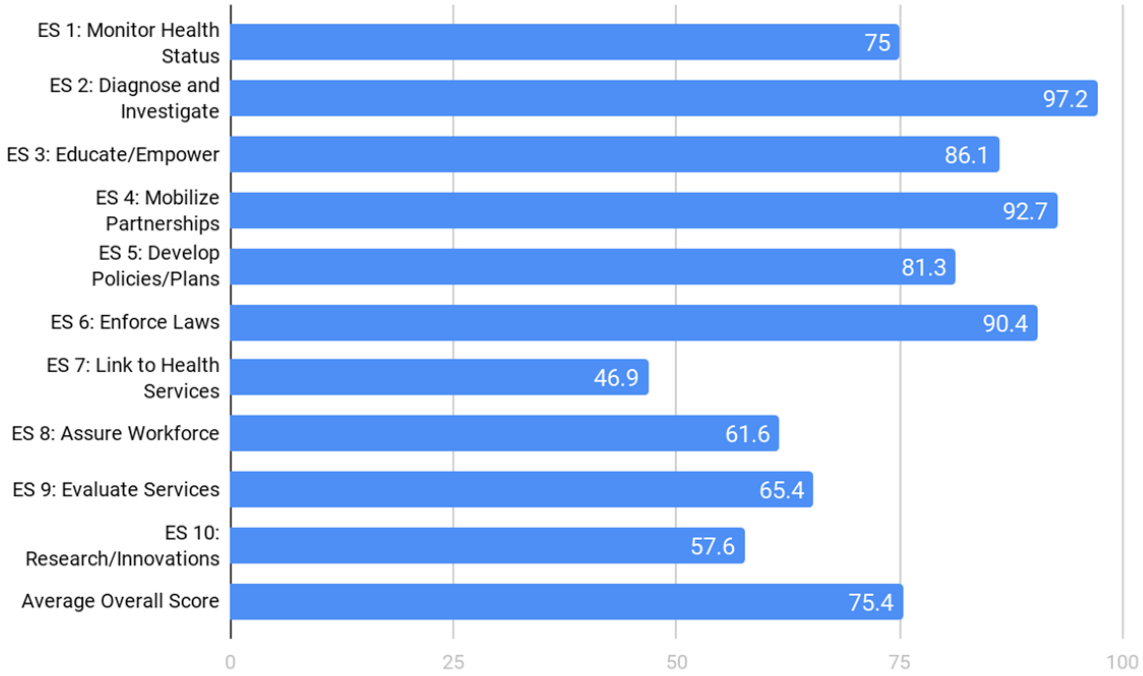


FIGURE 4: Summary of Average Essential Public Health Service Performance Scores by Activity Level

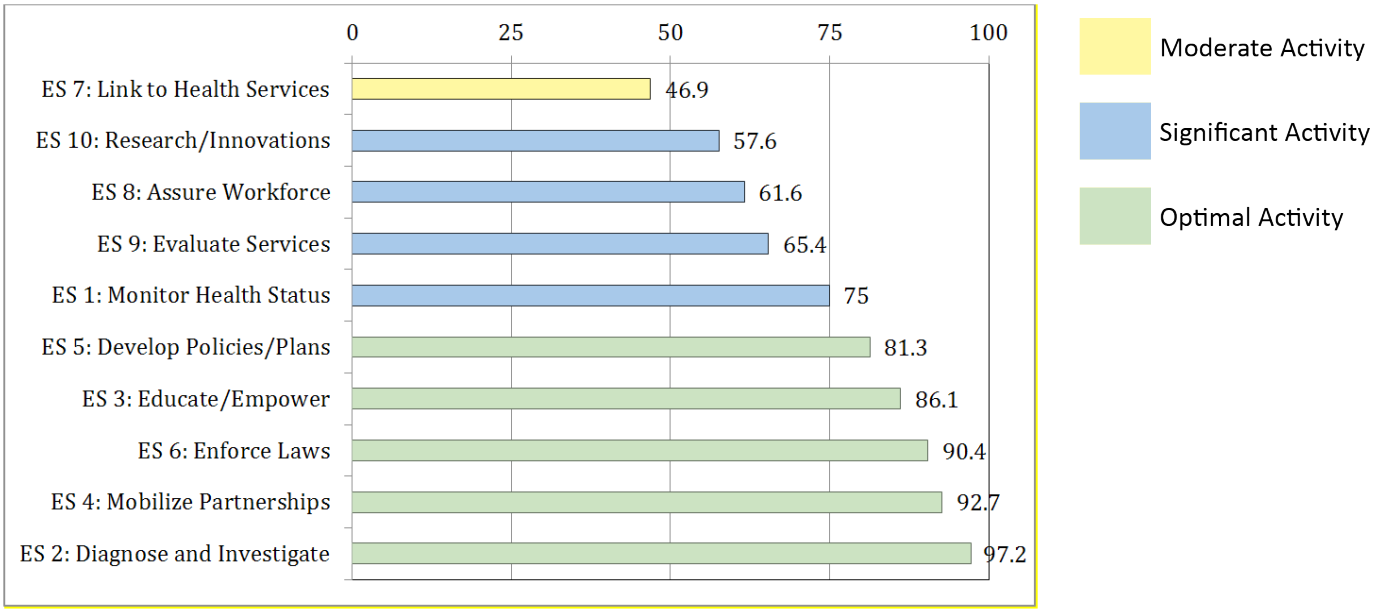


FIGURE 5: Number of Essential Service Performance Scores That Fall Within the Five Activity Ranges

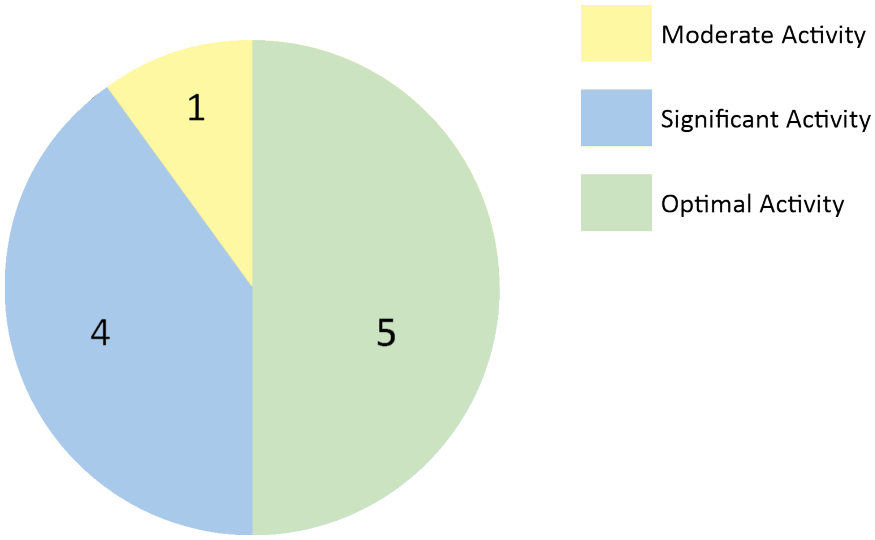
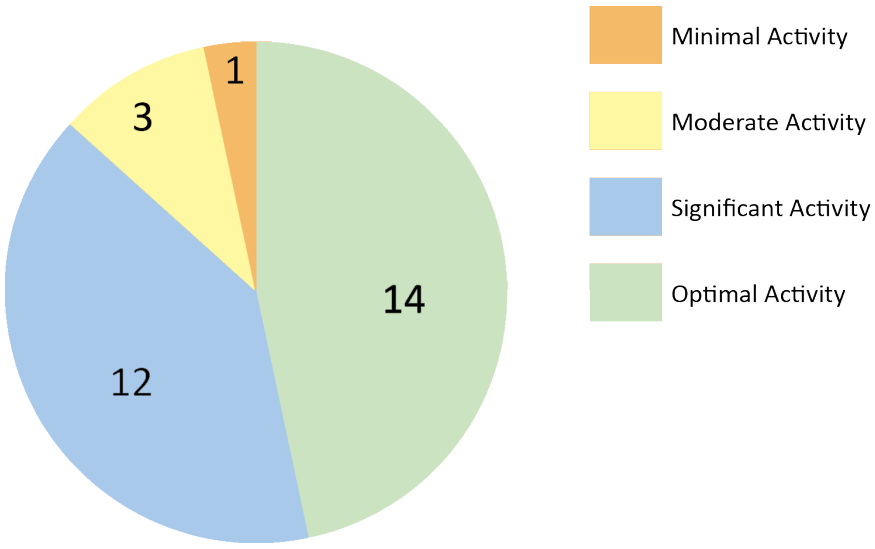


FIGURE 6: Number of the 30 Essential Service Model Standard Performance Scores that fall within the Five Activity Ranges



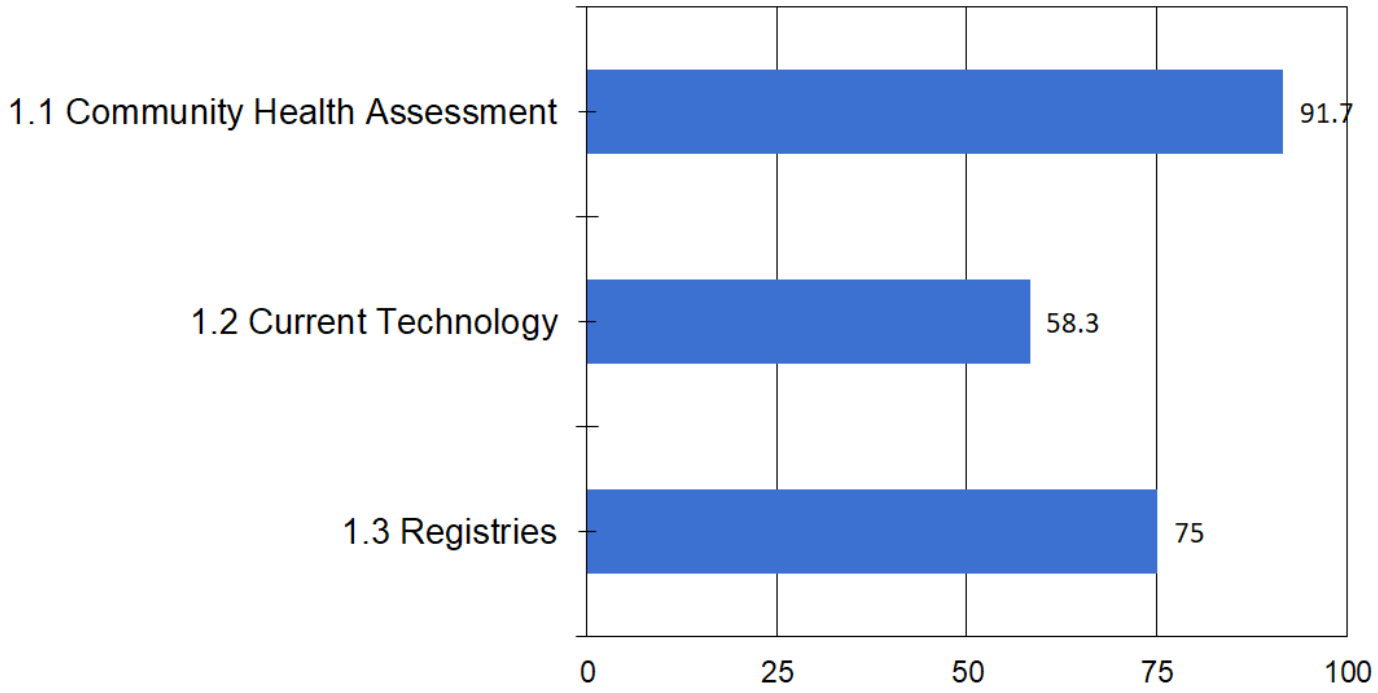
ESSENTIAL SERVICE 1:
Monitor Health Status to Identify Community Health Problems

Participants of Essential Service 1 answered the following core questions: What is going on in our community?, and Do we know how healthy we are?

Monitoring health status to identify community health problems encompasses the following:

- Assessing, accurately and continually, the community's health status
- Identifying threats to health
- Determining health service needs
- Paying attention to the health needs of groups that are at higher risk than the total population
- Identifying community assets and resources that support the public health system in promoting health and improving quality of life
- Using appropriate methods and technology to interpret and communicate data to diverse audiences
- Collaborating with other stakeholders, including private providers and health benefit plans, to manage multi-sectorial integrated information systems

Essential Service 1: Performance Score - 75.0



Model Standard 1.1: Population-based Community Health Assessment

Discussion focused on community health assessments performed by organizations in Columbia and Boone County. Boone Hospital Center performs a community health needs assessment every three years, and Columbia/Boone County Department of Public Health & Human Services (PHHS) performs an assessment every five years. Primary data collected in the assessments includes responses from community surveys and focus group participants. Secondary data includes demographics, quality of life, socioeconomic indicators, and health data. Where possible, data are broken down by race, sex, age, graduation rates, and income.

Community health assessments are accessible by the public through a variety of avenues including hard copy, websites, and listservs. Participants did mention that readability of the assessments is higher than sixth-grade level, which may create barriers for public use. Public Health & Human Services uses the assessment as part of their strategic planning process. The City of Columbia has used the assessment in their strategic planning process. Boone Hospital Center uses their assessment to inform program planning. Other agencies throughout Columbia and Boone County use the assessments to aid in grant writing and planning.

Performance Measure	At what level does the LPHS...	Activity Level
1.1.1	Conduct regular community health assessments?	**Optimal**
1.1.2	Continuously update the community health assessment with current information?	**Optimal**
1.1.3	Promote the use of the community health assessment among community members and partners	**Significant**

Strengths	Weaknesses
The fact that assessments are done	Literacy level too high
A living document	Some data is not available by age, race, etc.
Available to the community	Some data not available at county level (mental health, homelessness, dental health)
Includes the community in the process	Only available online
Amount of primary data received	Written for stakeholders
Use of the MAPP process	CHA process is very expensive
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Find partnerships that can help with data	More money to perform assessments
Access to new data	Taking advantage of partnerships
Sections of data need to be more available	More agencies and entities using the data
Better job of promoting the assessment	Finding the right collaboration
Knowing and learning how people use the assessments	

Model Standard 1.2: Current Technology to Manage and Communicate Population Health Data

To provide the public with a clear picture of the current health of the community, the local public health system:

- Uses the best available technology and methods to combine and show data on the public's health
- Analyzes health data, including geographic information, to see where health problems exist
- Uses computer software to create charts, graphs, and maps which show trends over time and compare data for different population groups

The local public health system in Boone County uses a variety of data sources to create health profiles including County Health Rankings & Roadmaps, Community Commons, Missouri Public Health Information Management System (MOPHIMS), Boone Indicators Dashboard, American Community Survey (ACS), prescription drug monitoring program (PDMP), and local hospital data. Some data are available at the zip code or census tract level, however most sources only offer county-level data. Although Columbia's population is over 100,000 people, it is difficult to collect meaningful data based on zip codes due to a number of variables. PHHS has collaborated with the City's Geospatial Information System (GIS) Office. Partnerships between the two include using maps to find food deserts, view tobacco retailers' proximity to middle schools, and identification of areas to test mosquitoes for West Nile Virus. The City of Columbia GIS Office provides resources such as aerial imagery and geospatial information to the public on the City's website. Boone Hospital also provides dashboards presenting data from their organization's community health needs assessment.

To present data, the system primarily uses Microsoft Excel for creating charts and graphs. GIS maps, community and health dashboards, and reports also provide data collected by the system. The group was in agreement that funding for technology needs to increase for the system to improve data collection and communication to the public.

Performance Measure	At what level does the LPHS...	Activity Level
1.2.1	Use the best available technology and methods to display data on the public's health?	**Significant**
1.2.2	Analyze health data, including geographic information, to see where health problems exist?	**Moderate**
1.2.3	Use computer software to create charts, graphs, and maps to display complex public health data (trends over time, sub-population analyses, etc.)?	**Moderate**

Strengths	Weaknesses
Lots of resources available Access to a variety of data Excellent job of presenting data with limitations to software	Do not utilize GIS on a regular basis (don't have dedicated staff and lack of funds) Disconnected datasets at different levels No access to geocoding health data
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
More access to geocoding health data More funding for technology improvement More opportunities to utilize GIS for data Using GIS in CHA	A GIS staff member focused on health data A way of incorporating GIS in primary data collection methods

Model Standard 1.3: Maintaining Population Health Registries

The local public health system collects data on health-related events for use in population health registries. To accomplish this, members of the LPHS work together to:

- Collect data on specific health concerns to provide to population health registries in a timely manner and consistent with current standards
- Use information from population health registries in CHAs or other analyses

Organizations in Columbia and Boone County contribute to their own health databases. Registries originating at the local level include immunizations and communicable disease. The Missouri Department of Health & Senior Services (MODHSS) maintains data and surveillance systems that local public health systems contribute to. Other organizations that contribute to local health databases include, but are not limited to, Columbia Public Schools, Boone Hospital Center, MU Health Care, outpatient surgical centers, and MU Student Health Center. Each organization has its own standards for data collection and contributing to databases. Standards ensure reporting methods and protocols are followed along with maintaining confidentiality.

Local public health system organizations use databases to find community needs, change policy, apply for funding, GIS mapping, and community health assessments.

Performance Measure	At what level does the LPHS...	Activity Level
1.3.1	Collect data on specific health concerns to provide the data to population health registries in a timely manner, consistent with current standards?	**Moderate**
1.3.2	Use information from population health registries in community health assessments and other analyses?	**Significant**

Strengths	Weaknesses
MOPHIMS Having standardized reporting process Organizations that provide good data Data that is available is user-friendly	Some registries are not mandatory or kept up with in a timely manner Hard to find data in some registries Data is not always collected with specific demographics Hard to capture data on newly emerging conditions
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Encourage the development of registries for newly emerging health issues such as opioids Improve data collection to include better demographic data	Mandate participation for registries Quicker data release Better geocodes More data on mental health, vision, dental, and suicide behavior Improve quality of death data

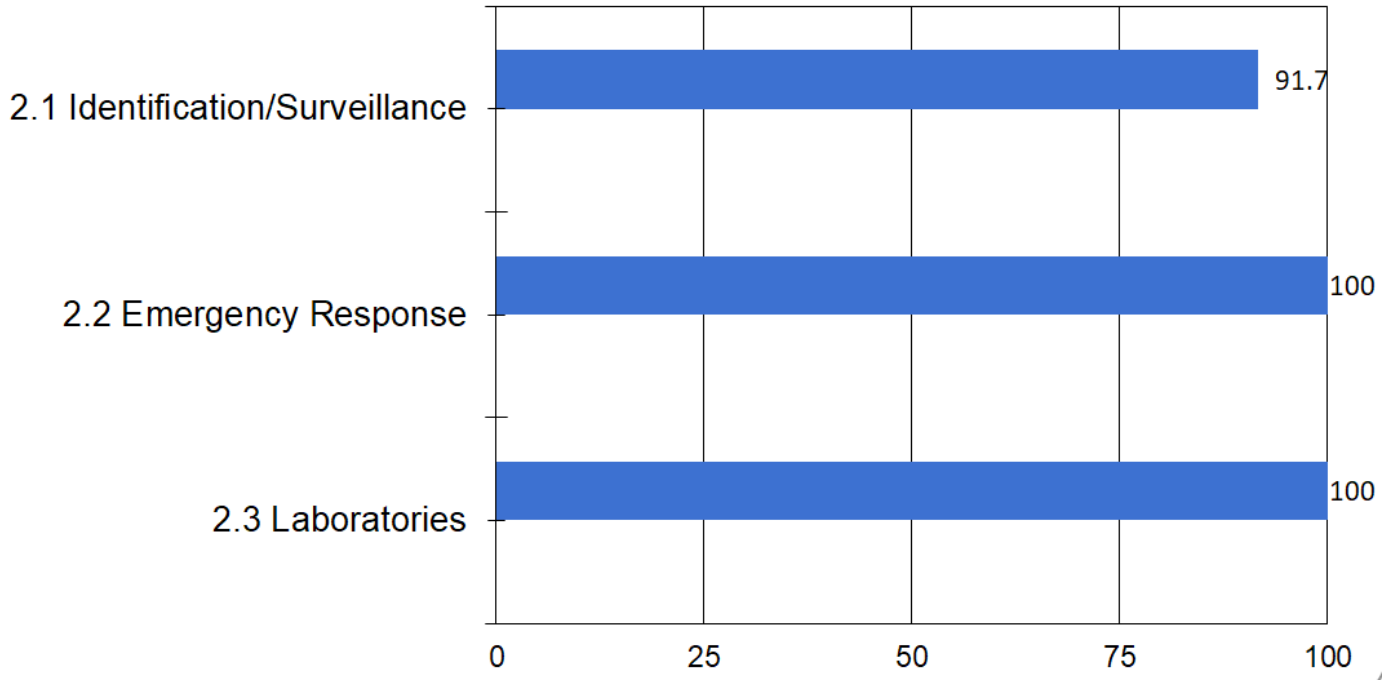
ESSENTIAL SERVICE 2:
Diagnose and Investigate Health Problems and Hazards

Participants of Essential Service 2 answered the following core questions: Are we ready to respond to health problems or health hazards in our community? How quickly do we find out about problems? How effective is our response?

Diagnosing and investigating health problems and health hazards in the community encompass the following:

- Accessing a public health laboratory capable of conducting rapid screening and high-volume testing
- Establishing active infectious disease epidemiology programs
- Creating technical capacity for epidemiologic investigation of disease outbreaks and patterns of the following: (a) infectious and chronic diseases, (b) injuries, and (c) other adverse health behaviors and conditions

Essential Service 2: Performance Score - 97.2



Model Standard 2.1: Identifying and Monitoring Health Threats

The local public health system conducts surveillance to watch for outbreaks of disease, disasters, emergencies (both natural and manmade), and other emerging threats to public health.

To accomplish this, members of the LPHS work together to:

- Participate in a comprehensive surveillance system with national, state, and local partners to identify, monitor, and share information and understand emerging health problems and threats
- Provide and collect timely and complete information on reportable diseases, potential disasters and emergencies, and emerging threats (natural and manmade)
- Ensure that the best available resources are used to support surveillance systems and activities, including information technology, communication systems, and professional expertise

Participants agreed that the LPHS in Boone County has a comprehensive surveillance system. There are a number of entities that make up the system, and good relationships exist between members of the system. Identified partners include, but are not limited to, MU Health Care, Columbia Public Schools, MU Student Health Center, MOPHIMS, City of Columbia Public Works, Missouri Department of Natural Resources, Boone Hospital Center, and Boone County Office of Emergency Management.

Typically, MODHSS sets regulations that apply to all LPHS surveillance participants. Regulations apply to diseases that are notifiable and determine the reporting time frame notifying either a local entity and/or MODHSS. Missouri Department of Health and Senior Services base their reportable diseases on the Council of State and Territorial Epidemiologists nationally notifiable disease list. Data sets used by the surveillance system include demographic information, symptoms, possible exposure(s) contacts, lab tests, on-set dates, and if the patient needs hospitalization. Boone County entities integrate their surveillance system with the MODHSS communicable disease surveillance system. System partners perform both active and passive surveillance. Information can come to PHHS before passing to MODHSS. In some instances, information goes directly to the state.

Syndromic surveillance systems used by LPHS partners include ESSENCE, FirstWatch, Columbia Public Schools system, hospital infection control, and postal service biodetection system at Columbia Regional Airport. ESSENCE monitors chief complaints of people going to emergency rooms. The FirstWatch system triggers alerts according to different syndromes such as falls, cardiac arrest, gastrointestinal, neurological, and possible overdose. Each agency sets their own triggers notifying them when a specific syndrome occurs.

Performance Measure	At what level does the LPHS...	Activity Level
2.1.1	Participate in a comprehensive surveillance system with national, state, and local partners to identify, monitor, and share information and understand emerging health problems and threats?	**Optimal**
2.1.2	Provide and collect timely and complete information on reportable diseases and potential disasters, emergencies, and emerging threats (natural and manmade)?	**Significant**
2.1.3	Ensure that the best available resources are used to support surveillance systems and activities, including information technology, communication systems, and professional expertise?	**Optimal**

Strengths	Weaknesses
Automation The large number of systems Cheat sheets for reportable diseases Good relationships within the system The system is used frequently	Not infallible Gaps in data providers Information share can be inconsistent Receive lots of reports that are not in Boone County's jurisdiction Addresses of college students often are not in Boone County - makes follow-up difficult Diseases aren't always reported as they should be - examples: diseases without labs, animal bites, chicken pox, STDs not lab tested.
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Continue to build and maintain relationships Boyce & Bynum are working on a fix for jurisdiction issues Provider education Maintain current systems of notification and communication - examples: email, fax, etc. Identify solution to reporting for passive surveillance sites	Continue to build and maintain relationships Standardized provider information Technology - some improvement opportunities are not in our control

Model Standard 2.2: Investigating and Responding to Public Health Threats and Emergencies

The LPHS stays ready to handle possible threats to public health. As a threat develops - such as an outbreak of a communicable disease, a natural disaster, or a biological, chemical, nuclear, or other environmental event-a team of LPHS professionals works closely together to collect and understand related data.

To accomplish this, members of the LPHS work together to:

- Maintain written instructions on how to handle communicable disease outbreaks and toxic exposure incidents, including details about case finding, contact tracing, and source identification and containment
- Develop written rules to follow in the immediate investigation of public health threats and emergencies, including natural and manmade disasters
- Designate a jurisdictional Emergency Response Coordinator
- Rapidly and effectively respond to public health emergencies according to emergency operations coordination guidelines
- Identify personnel with the technical expertise to rapidly respond to possible biological, chemical, or nuclear public health emergencies
- Evaluate emergency response exercises and incidents for effectiveness and opportunities for improvement (e.g., using hot washes, After Action Reports, and Improvement Plans).

Model Standard 2.2 scored in the optimal activity range for each performance measure. As a whole, the LPHS maintains master lists of personnel who can respond to natural and intentional emergencies and disasters. Emergency response plans between PHHS and Boone County Office of Emergency Management provide coordination between entities and are National Incident Management System (NIMS) compliant. Emergency response representatives within the LPHS regularly meet to discuss awareness and response, and plan exercises with partners. Local public health system entities take part in state drills and conduct their own tests typically every few months. Training and exercises may involve individual entities, LPHS partners, and the community. After Action Reports, hot washes, and improvement plans are evaluation tools used by the LPHS to improve response effectiveness and find opportunities for improvement. PHHS uses quality improvement tools, specifically the Plan-Do-Study-Act model, to improve processes related to emergency response.

Performance Measure	At what level does the LPHS...	Activity Level
2.2.1	Maintain written instructions on how to handle communicable disease outbreaks and toxic exposure incidents, including details about case finding, contact tracing, and source identification and containment?	**Optimal**
2.2.2	Develop written rules to follow in the immediate investigation of public health threats and emergencies, including natural and intentional disasters?	**Optimal**
2.2.3	Designate a jurisdictional Emergency Response Coordinator	**Optimal**
2.2.4	Prepare to rapidly respond to public health emergencies according to emergency operations coordination guidelines?	**Optimal**
2.2.5	Identify personnel with the technical expertise to rapidly respond to possible biological, chemical, and/or nuclear public health emergencies?	**Optimal**
2.2.6	Evaluate incidents for effectiveness and opportunities for improvement (such as After Action Reports, Improvement Plans, etc.)?	**Optimal**

Strengths	Weaknesses
The LPHS has numerous plans and are practiced and improved System-wide adoption of NIMS Strong Office of Emergency Management Partners and system embrace preparedness and response Strong resources Agile system - reacted to a number of diseases recently from Ebola to Mumps to Zika	Continuity of State/Federal resources (staff, funding, etc.) Changing staff in local jurisdiction Informing the public about their role in preparing and response Hard to engage and keep volunteers The number of staff dedicated to emergency preparedness is decreasing
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Coordinate planning efforts with partners Continue awareness of plans through training and exercises Collaborate in public information and awareness campaigns	Seek sustainable volunteer solutions - several agencies have the same list of volunteers, who cannot possibly respond when each agency needs them Seek additional funding opportunities Contribute to a culture of public role preparedness

Model Standard 2.3: Laboratory Support for Investigation Health Threats

The LPHS has the ability to produce timely and accurate laboratory results for public health concerns.

To accomplish this, members of the LPHS work together to:

- Have ready access to laboratories that can meet routine public health needs for finding out what health problems are occurring
- Maintain constant (24/7) access to laboratories that can meet public health needs during emergencies, threats, and other hazards
- Use only licensed and credentialed laboratories
- Maintain a written list of rules related to laboratories, for handling samples (including receiving, collecting, labeling, storing, transporting, and delivering), determining who is in charge of the samples at what point, and reporting the results.

The LPHS has access to several laboratories that offer support services, such as the Missouri State Public Health Lab in Jefferson City, and local reference labs. System entities choose labs based on the best result, test, communication, and cost depending on the emergency or outbreak situation. By contract, labs are licensed and must provide proof (Clinical Laboratory Improvement Amendments, or CLIA, regulated by the Centers for Medicare & Medicaid Services) of their certifications. Protocols exist for handling samples, chain of custody situations between system partners, and following HIPAA regulations.

Performance Measure	At what level does the LPHS...	Activity Level
2.3.1	Have ready access to laboratories that can meet routine public health needs for finding out what health problems are occurring?	**Optimal**
2.3.2	Maintain constant (24/7) access to laboratories that can meet public health needs during emergencies, threats, and other hazards	**Optimal**
2.3.3	Use only licensed or credentialed laboratories?	**Optimal**
2.3.4	Maintain a written list of rules related to laboratories, for handling samples (including collecting, labeling, storing, transporting, and delivering), determining who is in charge of the samples at what point, and reporting the results?	**Optimal**

Strengths	**Weaknesses**
System labs are certified or credentialed Labs have strong protocols Several different types of lab options available - state, private, etc. Labs and LPHS can respond as needed to time-sensitive emergencies	Cost of lab tests Communication between providers on lab testing protocols/appropriate tests - some lab tests need corresponding medical lab tests included Lab errors - protocols not always followed when dealing with certain diseases and reporting results
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Communication of protocols between providers More in-house training can be done	Continued education Continued awareness of reporting on diseases

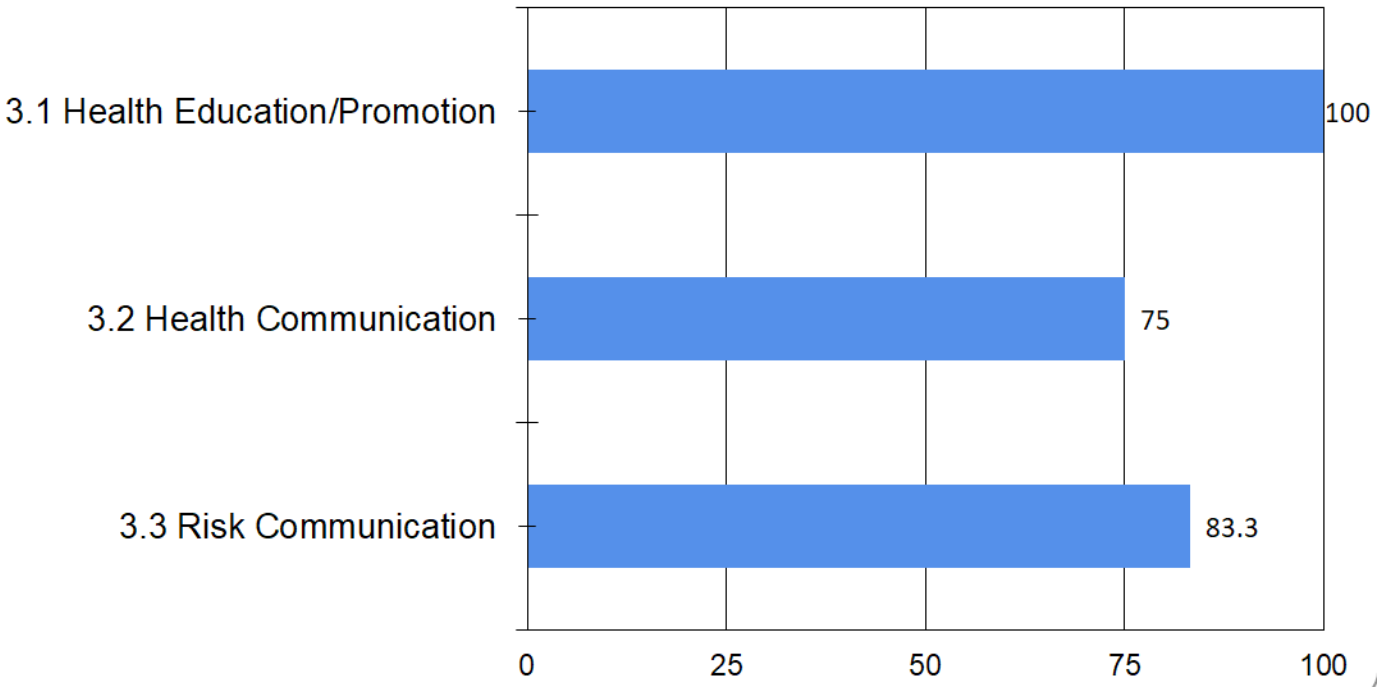
ESSENTIAL SERVICE 3:
Inform, Educate, and Empower People about Health Issues

Participants of Essential Service 3 answered the following core question: How well do we keep all segments of our community informed about health issues?

Informing, educating, and empowering people about health issues encompass the following:

- Creating community development activities
- Establishing social marketing and targeted media public communication
- Providing accessible health information resources at community levels
- Collaborating with personal healthcare providers to reinforce health promotion messages and programs
- Working with joint health education programs with schools, churches, worksites, and others

Essential Service 3: Performance Score - 86.1



Model Standard 3.1: Health Education and Promotion

The LPHS designs and puts in place health promotion and health education activities to create environments that support health.

To accomplish this, members of the LPHS work together to:

- Provide policymakers, stakeholders, and the public with ongoing analyses of community health status and related recommendations for health promotion policies
- Coordinate health promotion and health education activities at the individual, interpersonal, community, and societal levels
- Engage the community in setting priorities, developing plans, and implementing health education and health promotion activities

Participants agreed that many health promotion campaigns exist throughout the LPHS due to the large healthcare infrastructure available in Boone County. Numerous coalitions collectively work together on issues like tobacco, community gardens, and mental health awareness. Atypical partners, such as banks and grocery stores, work with LPHS members on programs such as trail runs and store tours for refugees. Partners within the LPHS provide health promotion programs for their employees, for example, breastfeeding rooms for new mothers. Health promotion campaigns are rooted in evidence of effectiveness, and evaluation tools like surveys, analytics, and tracking of health indicators assist in documenting progress and improving programs.

Performance Measure	At what level does the LPHS...	Activity Level
3.1.1	Provide policymakers, stakeholders, and the public with ongoing analyses of community health status and related recommendations for health promotion policies?	**Optimal**
3.1.2	Coordinate health promotion and health education activities at the individual, interpersonal, community, and societal levels?	**Optimal**
3.1.3	Engage the community throughout the process of setting priorities, developing plans, and implementing health education and health promotion activities?	**Optimal**

Strengths	Weaknesses
Partners Local, state, and federal funding Clear mission and vision Creative community engagement Evaluated and evidence-based Time constricted but make time to go to events - health fairs, etc. Community experts Cutting-edge information Access to free media and promotions Good relationships with media	Sometimes do not get input from populations Reliance on partners who don't have sustainable funding Educate public on policies Not represented by all partners
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Spend a month educating - ex. Parks & Rec Month is July Identify partners to spread word and supply them with information Re-engage community partners Creative engagement - how to effectively communicate with certain populations Establish a communications group Adding facts like "Did you know?" to things like receipts	Institute communications groups Funding to promote - ex. having money in budget

Model Standard 3.2: Health Communication

The LPHS uses communication strategies to contribute to healthy living and healthy communities.

To accomplish this, members of the LPHS work together to:

- Develop health communication plans for media and public relations and for sharing information among LPHS organizations
- Use relationships with different media providers (e.g., print, radio, television, and the internet) to share health information, matching the message with the target audience
- Identify and train spokespersons on public health issues

Large organizations within the LPHS in Boone County have communication plans for media and public relations, but participants were unaware at what level smaller organizations have formalized plans. Numerous media outlets are present in Boone County, providing communication through many different types of formats including television, radio, social media, internet, and newspaper/magazines. In addition, organizations hold public meetings to get community input and feedback on policies and programs.

To identify target audiences, the system coordinates with local media and uses data to determine the potential impact and reach of health messages. Participants' discussion focused on lack of formalized training for organization-specific spokespersons, particularly among smaller organizations whose staff assumes multiple roles. Participants also identified a need for a mechanism to document interactions with the media, as well as a centralized location to document communication methods with community members and the results of campaigns.

Performance Measure	At what level does the LPHS...	Activity Level
3.2.1	Develop health communication plans for media and public relations and for sharing information among LPHS organizations?	**Significant**
3.2.2	Use relationships with different media providers (e.g., print, radio, television, the Internet) to share health information, matching the message with the target audience?	**Optimal**
3.2.3	Identify and train spokespersons on public health issues?	**Moderate**

Strengths	Weaknesses
Hospitals, PHHS, and City of Columbia have communication plans Variety of ways to communicate in the media Scope of services in community Subject matter experts Social media - getting the information out quickly	Social media overload No formal training for spokespersons Small organizations have no time to meet with media Lack of communication plans/strategies outside of hospitals and health department
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Communication strategy training for health communicators Identify a health communication spokesperson within each organization Develop mechanism to share best practices for hard to reach audiences Specialized messages validated by credible sources	Review processes and update with best practices

Model Standard 3.3: Risk Communication

The LPHS uses health risk communications strategies to allow individuals, groups, organizations, or an entire community to make optimal decisions about their health and well-being in emergency events.

To accomplish this, members of the LPHS work together to:

- Develop an emergency communications plan for each stage of an emergency to allow for the effective creation and dissemination of information
- Make sure that systems and mechanisms are in place and enough resources are available for a rapid emergency communication response
- Provide crisis and emergency communication training for employees and volunteers

Similarly to Model Standard 3.2, emergency communication plans exist among the large players in the LPHS. Known emergency communication plans in the community involve the following organizations: PHHS, Boone County Office of Emergency Management, Columbia Fire Department, Columbia Police Department, Boone County Sheriff's Department, MU Health Care, and Boone Hospital Center. These organizations have access to emergency management and the resources to establish, test, and improve their plans. Coordination among the partners exists through several methods. During an emergency, NIMS, ICS, WebEOC, and a Joint Information Center (JIC) may be used depending on the size of the event or incident. Specific to planning for emergencies, the Health and Medical Emergency Preparedness Committee meets on a quarterly basis and has representatives from the organizations named above. The committee plans to reach out to mental health providers in the future. Specific emergency response plans have protocols to alert the media and community through a number of formats, such as text, phone, and email.

Performance Measure	At what level does the LPHS...	Activity Level
3.3.1	Develop an emergency communications plan for each stage of an emergency to allow for the effective dissemination of information?	**Optimal**
3.3.2	Make sure resources are available for a rapid emergency communication response?	**Optimal**
3.3.3	Provide risk communication training for employees and volunteers?	**Moderate**

Strengths	Weaknesses
Having existing collaborations and resources to plan Knowledgeable staff Have established and effective plan Have access to emergency management Healthcare rich	Lack of systemic plans Not enough trained personnel Low perceived risk
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Invite additional health care organizations to coalitions Increase awareness of training	Deliver specialized training Build template for training

ESSENTIAL SERVICE 4:

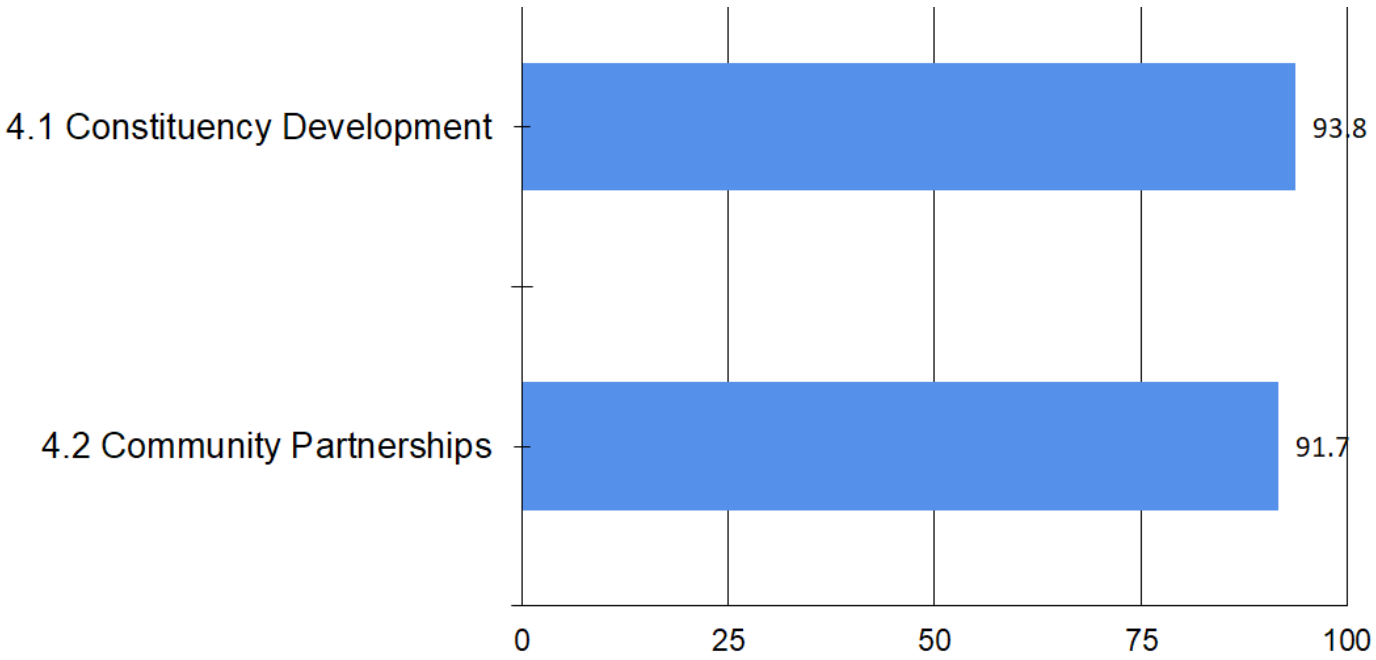
Mobilize Community Partnerships to Identify and Solve Health Problems

Participants of Essential Service 4 answered the following core question: How well do we truly engage people in local health issues?

Mobilizing community partnerships to identify and solve health problems encompasses the following:

- Convening and facilitating partnerships among groups and associations (including those not typically considered to be health related)
- Undertaking defined health improvement planning process and health projects, including preventive, screening, rehabilitation, and support programs
- Building a coalition to draw on the full range of potential human and material resources to improve community health

Essential Service 4: Performance Score - 92.7



Model Standard 4.1: Constituency Development

The LPHS actively identifies and involves community partners—the individuals and organizations (constituents) with opportunities to contribute to the health of communities.

To accomplish this, members of the LPHS work together to:

- Follow an established process for identifying key constituents related to overall public health interests and particular health concerns
- Encourage constituents to participate in CHA, planning, and improvement efforts.
- Maintain a complete and current directory of community organizations
- Create forums for communication of public health issues

Members of the LPHS in Boone County are part of many partnerships, coalitions, and committees throughout the jurisdiction. Maintaining memberships with these various groups allows for discussion of public health issues with the community and other organizations that are or are not a part of the LPHS. Good partnerships with local media also allows for dissemination of public health topics and information. By keeping the vision of health broad, LPHS members encourage organizations and groups to come to the table and be involved in projects or partnerships, or share what they are doing in the community. The Community Health Improvement Plan (CHIP) keeps members engaged and encourages them to reach out to others in the community that have similar missions or key stakeholder groups. The Voluntary Action Center (VAC) maintains a directory of community services in an effort to give information to the community and other organizations about agencies that serve Boone County. The directory is searchable by specific populations, problems, and services. Meetings, community forums, and surveys are some of the ways the LPHS receives communication from the public about health issues.

Performance Measure	At what level does the LPHS...	Activity Level
4.1.1	Maintain a complete and current directory of community organizations?	**Optimal**
4.1.2	Follow an established process for identifying key constituents related to overall public health interests and particular health concerns?	**Significant**
4.1.3	Encourage constituents to participate in activities to improve community health?	**Optimal**
4.1.4	Create forums for communication of public health issues?	**Optimal**

Strengths	Weaknesses
Coalitions and partnerships Youth resource page VAC directory Continually seeking community input at events, etc.	Participant/survey fatigue Competing priorities No known process to identify key constituents
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Establish process to identify key constituents Establish a database of public input	Maintain and update database Maintain list of key constituents

Model Standard 4.2: Community Partnerships

The LPHS encourages individuals and groups to work together so that community health may be improved.

To accomplish this, members of the LPHS work together to:

- Establish community partnerships and strategic alliances to provide a comprehensive approach to improving health in the community
- Establish a broad-based community health improvement committee
- Assess how well community partnerships and strategic alliances are working to improve community health

The LPHS in Boone County has many partnerships and coalitions that exist which address public health topics such as mental health, youth health, affordable housing, homelessness, active transportation, tobacco, and health disparities. Groups interact through formal processes such as meetings, appointed staff members, or work groups. Coalitions and partnerships discussed by the participants have broad-based participation from community and LPHS members. Several coalitions are overseen by steering committees, and work from plans driven by gathered data and needs/health assessments. Several funders in Boone County have recently partnered to track and visualize community indicators that can be easily accessed by stakeholders and more effectively inform and align planning processes. While there are numerous partnerships, groups, and coalitions that interact and work with one another, no formal process exists for reviewing these partnerships.

Performance Measure	At what level does the LPHS...	Activity Level
4.2.1	Establish community partnerships and strategic alliances to provide a comprehensive approach to improving health in the community?	**Optimal**
4.2.2	Establish a broad-based community health improvement committee?	**Optimal**
4.2.3	Assess how well community partnerships and strategic alliances are working to improve community health?	**Optimal**

Strengths	Weaknesses
Funders meeting Strong and diverse partnerships Community health improvement process and application	No systematic process to review partnerships
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Action teams to identify who is not coming Personal reach out	Develop systematic process for reviewing partnerships Identify wins that groups can rally around

ESSENTIAL SERVICE 5:

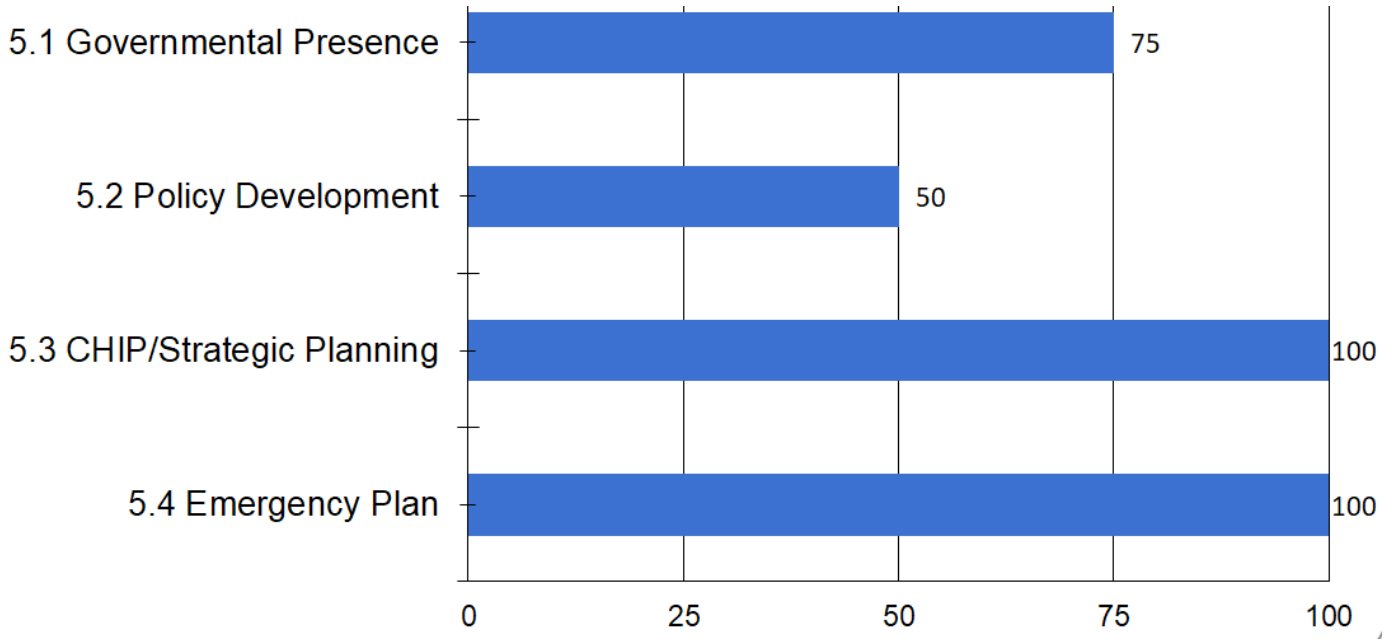
Develop Policies and Plans that Support Individual and Community Health Efforts

Participants of Essential Service 5 answered the following core questions: What local policies in both the government and private sector promote health in my community? How well are we setting healthy local policies?

Developing policies and plans that support individual and community health efforts encompasses the following:

- Ensuring leadership development at all levels of public health.
- Ensuring systematic community-level and state-level planning for health improvement in all jurisdictions
- Developing and tracking measurable health objectives from the (CHIP) as a part of a continuous quality improvement plan
- Establishing joint evaluation with the medical healthcare system to define consistent policies regarding prevention and treatment services
- Developing policy and legislation to guide the practice of public health

Essential Service 5: Performance Score - 81.3



Model Standard 5.1: Governmental Presence at the Local Level

The LPHS includes a local public health department (which could also be another governmental entity dedicated to public health). The LPHS works with the community to make sure a strong local public health department exists and that it is doing its part in providing the 10 Essential Public Health Services.

To accomplish this, members of the LPHS work together to:

- Support the work of the local health department to make sure the 10 Essential Public Health Services are provided
- See that the local health department is accredited through PHAB's national voluntary public health department accreditation program
- Ensure that the local health department has enough resources to do its part in providing essential public health services

The Local Public Health System in Boone County has governmental local public health presence through the Columbia/Boone County Department of Public Health & Human Services (PHHS). PHHS is a City of Columbia department that also contracts with Boone County to provide public health services to residents living outside the Columbia city limits. The Department has been accredited by the Public Health Accreditation Board (PHAB) since 2016. Services provided by PHHS include, but are not limited to, STD/HIV testing, breastfeeding and nutrition, disease surveillance, social services, refugee physicals, immunizations, vital records, animal control, health promotion, and environmental health programs. Authority to carry out administrative rules and statutes is given by the Columbia City Council within city limits, and the Boone County Commission outside city limits. An internal performance management and quality improvement structure allows for measuring and monitoring services and programs within the Department. PHHS works with other LPHS entities in a number of ways such as partnering on grants, collaborative research, coordinating training, and sharing technical assistance.

Performance Measure	At what level does the LPHS...	Activity Level
5.1.1	Support the work of the local health department (or other governmental local public health entity) to make sure the 10 Essential Public Health Services are provided?	**Significant**
5.1.2	See that the local health department is accredited through the PHAB's voluntary, national public health department accreditation program?	**Optimal**
5.1.3	Ensure that the local health department has enough resources to do its part in providing essential public health services?	**Moderate**

Strengths	Weaknesses
Engaged partners Leadership with Columbia/Boone Public Health and Human Services City and County support PHAB accreditation Community support Wide variety of services Internal performance management system	Not enough partner advocacy for resources Lack of engagement in budget process Have to look for policies More communication with the public
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Budget engagement with partners of the LPHS Activating partners	Partner and support in research opportunities State funding

Model Standard 5.2: Public Health Policy Development

The LPHS develops policies that will prevent health problems and protect, or promote the public's health. Public health problems, possible solutions, and community values are used to inform the policies and any proposed actions, which may include new laws or changes to existing laws.

To accomplish this, members of the LPHS work together to:

- Contribute to new or modified public health policies by engaging in activities that inform the policy development process and facilitate community involvement
- Alert policymakers and the community of the possible public health impacts (both intended and unintended) from current and/or proposed policies
- Review existing policies at least every three to five years

The LPHS in Boone County alerts policymakers and the public of health impacts from current and/or proposed policies through public meeting announcements, fact sheets, public comment, work sessions, coalitions, media, and legislative comments. Over the past year (2017), system partners worked together on activities such as the prescription drug monitoring program (PDMP), opioid legislation, engagement with local coalitions and committees, and working with partners on input for summer food locations. Surveys, health assessments, health impact assessments (HIA), and organizational policies gather data on health disparities within the system. Funding organizations in the LPHS build upon the results of these assessments. While no formal Health in all Policies framework exists in the LPHS, partnership groups, coalitions, and action teams are beginning to add an equity component to their efforts. Not all public health policies in the system have an existing ordinance; therefore, reviews of existing policies are not always carried out every three to five years.

Performance Measure	At what level does the LPHS...	Activity Level
5.2.1	Contribute to public health policies by engaging in activities that inform the policy development process?	**Significant**
5.2.2	Alert policymakers and the community of the possible public health effects (both intended and unintended) from current and/or proposed policies?	**Moderate**
5.2.3	Review existing policies at least every three to five years?	**Minimal**

Strengths	**Weaknesses**
Strong coalitions	Not all stakeholders at the table
System to inform the public	No systematic review of policies
Process to analyze and provide technical assistance for public health policy	No Health in all Policies
	Not enough funding for HIAs
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Not all stakeholders at the table	Health in all Policies
No systematic review of policies	Systematic review of policies
No Health in all Policies	
Not enough funding for HIAs	

Model Standard 5.3: Community Health Improvement Process and Strategic Planning

The LPHS seeks to improve community health by looking at it from many sides, such as environmental health, healthcare services, business, economic, housing, land use, health equity, and other concerns that affect public health.

To accomplish this, members of the LPHS work together to:

- Establish a CHIP, with broad-based and diverse participation that uses information from a community health (needs) assessment, including the perceptions of community members
- Develop strategies to achieve community health improvement objectives, including a description of organizations accountable for specific steps
- Connect organizational strategic plans with the CHIP

In 2013, representatives from over 70 members of the LPHS in Boone County began a community health assessment (CHA) using the Mobilizing for Action through Planning and Partnerships (MAPP) process. Completed in 2014, the CHA provided data from community members and the LPHS which lead to the creation of the community health improvement plan (CHIP), and five strategic action areas: Safe and Healthy Neighborhoods, Health Disparities, Access to Healthcare, Behavioral Health, and Healthy Lifestyles. Each action team works from an action plan with identified goals, objectives, and strategies driven from the results of the CHA. The CHIP aligns with the State of Missouri health improvement plan through the following priorities: access to healthcare, obesity, smoking/tobacco use, behavioral health, and substance use/abuse. The Columbia/Boone County Department of Public Health and Human Services strategic plan incorporates results from the CHA. The City of Columbia's strategic plan also incorporates results from the CHA, and City staff performs plans and programs aligned with the CHIP in strategic plan areas such as Safe and Healthy Neighborhoods and Health Disparities. The first five-year CHA/CHIP cycle will end in 2018.

Performance Measure	At what level does the LPHS...	Activity Level
5.3.1	Establish a CHIP, with broad-based diverse participation, that uses information from the CHA, including the perceptions of community members?	**Optimal**
5.3.2	Develop strategies to achieve community health improvement objectives, including a description of organizations accountable for specific steps?	**Optimal**
5.3.3	Connect organizational strategic plans with the CHIP?	**Optimal**

Strengths	Weaknesses
Strong process Community driven and community involved in the process Strong partner support	Not all action plans continued for 5 years Not confident information from CHA/CHIP included in all portions of strategic plan
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Opportunity for action plans to continue for length of the CHIP Identify partners to include CHA/CHIP information on their strategic plans	Ensure action plans last the length of the CHIP Ensure partners are using information from the CHA/CHIP in their strategic plans

Model Standard 5.4: Planning for Public Health Emergencies

The LPHS adopts an emergency preparedness and response plan that describes what each organization in the system should be ready to do in a public health emergency.

To accomplish this, members of the LPHS work together to:

- Support a workgroup to develop and maintain preparedness and response plans
- Develop a plan that defines when it would be used, who would do what tasks, what standard operating procedures would be put in place, and what alert and evacuation protocols would be followed
- Test the plan through regular drills and revise the plan as needed, at least every two years

The LPHS in Boone County has many organizations that take part in a coalition that develops and maintains emergency preparedness and response plans including PHHS, Boone County Office of Emergency Management, fire, police, EMS, MU Health Care, Boone Hospital Center, the Missouri State Emergency Management Agency, Region F Healthcare Coalition, and the Missouri Department of Health and Senior Services. The all-hazards emergency preparedness and response plan review is consistent and ongoing, with revisions made at least annually. Sections of the plan that follow national standards include surveillance, public communication plan, environmental health, biological, chemical and nuclear response, and mass prophylaxis. Organizations within the LPHS test the plan through simulations, mock events, and table-top exercises, often including other LPHS entities. Review of drills, exercises, revisions, after action reports, partners, and organization and staff capabilities lead to opportunities for improvement of the plans.

Performance Measure	At what level does the LPHS...	Activity Level
5.4.1	Support a workgroup to develop and maintain emergency preparedness and response plans?	**Optimal**
5.4.2	Develop an emergency preparedness and response plan that defines when it would be used, who would do what tasks, what standard operating procedures would be put in place, and what alert and evacuation protocols would be followed?	**Optimal**
5.4.3	Test the plan through regular drills and revise the plan as needed, at least every two years?	**Optimal**

Strengths	**Weaknesses**
Dedicated funding Strong partnerships and active coalitions Outstanding staff Clear process Ongoing evaluation	Some sectors of public not engaged Equity of communication of defining at risk populations
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Identify at risk populations Develop partnerships Climate trend summary shall be included in plans	Advocate for funding Recognize outstanding staff

ESSENTIAL SERVICE 6:

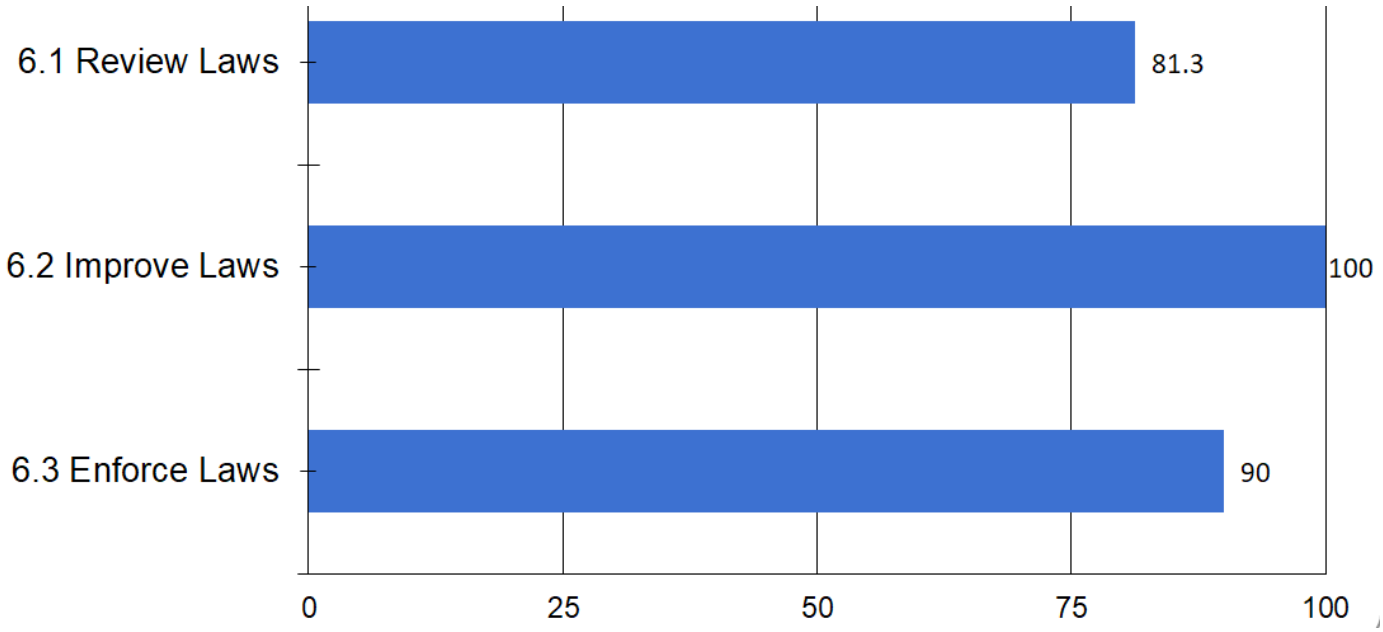
Enforce Laws and Regulations That Protect Health and Ensure Safety

Participants of Essential Service 6 answered the core question: When we enforce health regulations are we technically competent, fair, and effective?

Enforcing laws and regulations that protect health and ensure safety encompasses the following:

- Enforcing sanitary codes, especially in the food industry
- Protecting drinking water supplies
- Enforcing clean air standards
- Initiating animal control activities
- Following-up hazards, preventable injuries, and exposure-related diseases identified in occupational and community settings
- Monitoring quality of medical services (e.g., laboratories, nursing homes, and home healthcare providers)
- Reviewing new drug, biologic, and medical device applications

Essential Service 6: Performance Score - 90.4



Model Standard 6.1: Reviewing and Evaluating Laws, Regulations, and Ordinances

The LPHS reviews existing laws, regulations, and ordinances related to public health, including laws that prevent health problems, promote, and protect public health.

To accomplish this, members of the LPHS work together to:

- Identify public health issues that can and should be addressed through laws, regulations, or ordinances
- Stay up-to-date with current laws, regulations, and ordinances that prevent health problems and promote, or protect public health on the federal, state, and local levels
- Review existing public health laws, regulations, and ordinances at least once every three to five years
- Have access to legal counsel for technical assistance when reviewing laws, regulations, or ordinances
- Involve the local public health governing entity and other local government in reviewing and developing laws, regulations, or ordinances related to public health

During the discussion, participants identified several public health issues that can be addressed through laws, regulations, and ordinances including tobacco, drink specials, on-site sewage, animal tethering, opioids, food code, and county nuisance codes. Members of the LPHS in Boone County have access to legal counsel to assist with review of laws, regulations, and ordinances. However, there is not a systematic process to review existing public health laws, regulations, and ordinances. Current processes for review include citizen-driven complaints, neighborhood inspections, food inspections, and contract monitoring. Some processes may be difficult to enforce due to lack of ability, authority, or relying on other enforcement agencies that may have other priorities. LPHS organizations stay up-to-date regarding federal, state, and local laws, regulations, and ordinances through meetings, sharing of information, stakeholder engagement, conferences, state associations, legislation, and commission meetings.

Performance Measure	At what level does the LPHS...	Activity Level
6.1.1	Identify public health issues that can be addressed through laws, regulations, or ordinances?	**Significant**
6.1.2	Stay up-to-date with current laws, regulations, and ordinances that prevent health problems or that promote or protect public health on the federal, state, and local levels?	**Significant**
6.1.3	Review existing public health laws, regulations, and ordinances at least once every three to five years?	**Significant**
6.1.4	Have access to legal counsel for technical assistance when reviewing laws, regulations, or ordinances?	**Optimal**

Strengths	Weaknesses
Strong coalitions Access to legal counsel Input from partners and stakeholders Very vocal community	Process for systematic review
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Develop process for policy review Identify what we need for policy review Identify community desire to support enforcement Empower to support Health in all Policies	Community support Clearly authorized authority to enforce policies related to health

Model Standard 6.2: Involvement in Improving Laws, Regulations, and Ordinances

The LPHS works to change existing laws, regulations, or ordinances—or to create new ones—when they have determined that changes or additions would better prevent health problems or protect or promote public health.

To accomplish this, members of the LPHS work together to:

- Identify local public health issues that are inadequately addressed in existing laws, regulations, and ordinances
- Participate in changing existing laws, regulations, and ordinances, and/or creating new laws, regulations, and ordinances to protect and promote public health
- Provide technical assistance in drafting the language for proposed changes or new laws, regulations, and ordinances
- Evaluate the effects of policies, laws, regulations, and ordinances

Participants identified several local public health issues that are not adequately addressed through existing laws, regulations, and ordinances, such as transportation, policies that influence disparities, healthy eating, and minimum age for tobacco sales. LPHS organizations in Boone County provide technical guidance or support to groups drafting proposed legislation or modifying existing laws through committees, technical assistance, public hearings, providing data and input into ongoing policy discussions, and testimony.

Performance Measure	At what level does the LPHS...	Activity Level
6.2.1	Identify local public health issues that are inadequately addressed in existing laws, regulations, and ordinances?	**Optimal**
6.2.2	Participate in changing existing laws, regulations, and ordinances, and/or creating new laws, regulations, and ordinances to protect and promote public health?	**Optimal**
6.2.3	Provide technical assistance in drafting the language for proposed changes or new laws, regulations, and ordinances?	**Optimal**

Strengths	Weaknesses
Good participation from system partners on changing, reviewing, and updating laws, regulations, etc. Trust in Columbia/Boone County Public Health & Human Services by partners	Lack of stakeholder input at times Lack of proactive approach to develop policies based on strategic priorities Lack of funding
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Next CHIP = look at policies in each area Partner with public policy and public health students to increase stakeholder engagement Diversity engagement opportunities (get a variety of stakeholders invited)	Implement stakeholder and diversity engagement plan

Model Standard 6.3: Enforcing Laws, Regulations, and Ordinances

The LPHS sees that public health laws, regulations, and ordinances are followed. The LPHS knows which governmental agency or other organization has the authority to enforce any given public health-related requirement within its community, supports all organizations tasked with enforcement responsibilities, and ensures that the enforcement is conducted within the law.

To accomplish this, members of the LPHS work together to:

- Identify organizations that have the authority to enforce public health laws, regulations, and ordinances
- Ensure that a local health department (or other governmental public health entity) has the authority to act in public health emergencies
- Ensure that all enforcement activities related to public health codes are done within the law
- Inform and educate individuals and organizations about relevant laws, regulations, and ordinances
- Evaluate how well local organizations comply with public health laws

Columbia/Boone County Department of Public Health and Human Services (PHHS) is the local governmental public health entity that has authority to enforce laws, regulations, and ordinances related to public health. Authority is given to PHHS by the City of Columbia City Council and City Manager for public health enforcement within city limits, while the Boone County Commission grants authority outside city limits. Ordinance and policy language determine roles and responsibilities of the enforcement agencies. PHHS provides information to individuals and organizations required to comply with certain laws, regulations, and ordinances. A recent example of PHHS providing information about a new public health law is the Tobacco 21 ordinance. Frequency of compliance checks depends on ordinance language and funding. Compliance checks include daily activities, routine inspections, and complaint-driven inspections. Results of inspections and compliance checks are available on city and county websites. Ordinances have built-in checks and balances that ensure all compliance, enforcement, and inspection activities conducted are in accordance with existing laws and regulations.

Performance Measure	At what level does the LPHS...	Activity Level
6.3.1	Identify organizations that have the authority to enforce public health laws, regulations, and ordinances?	**Optimal**
6.3.2	Ensure that a local health department (or other governmental public health entity) has the authority to act in public health emergencies?	**Optimal**
6.3.3	Ensure that all enforcement activities related to public health codes are done within the law?	**Optimal**
6.3.4	Educate individuals and organizations about relevant laws, regulations, and ordinances?	**Significant**
6.3.5	Evaluate how well local organizations comply with public health laws?	**Significant**

Strengths	Weaknesses
Our ordinances and authority	Lack of authority Not all ordinances are measurable Lack of active engagement with stakeholders Lack of funds for enforcement Lack of public education
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Comprehensive compliance Opportunity to engage with Truman School for evaluation and engagement Evaluate how we educate on public health laws	Giving authority and funding for enforcement Articulating funding needs Implements evaluation and engagement opportunities

ESSENTIAL SERVICE 7:

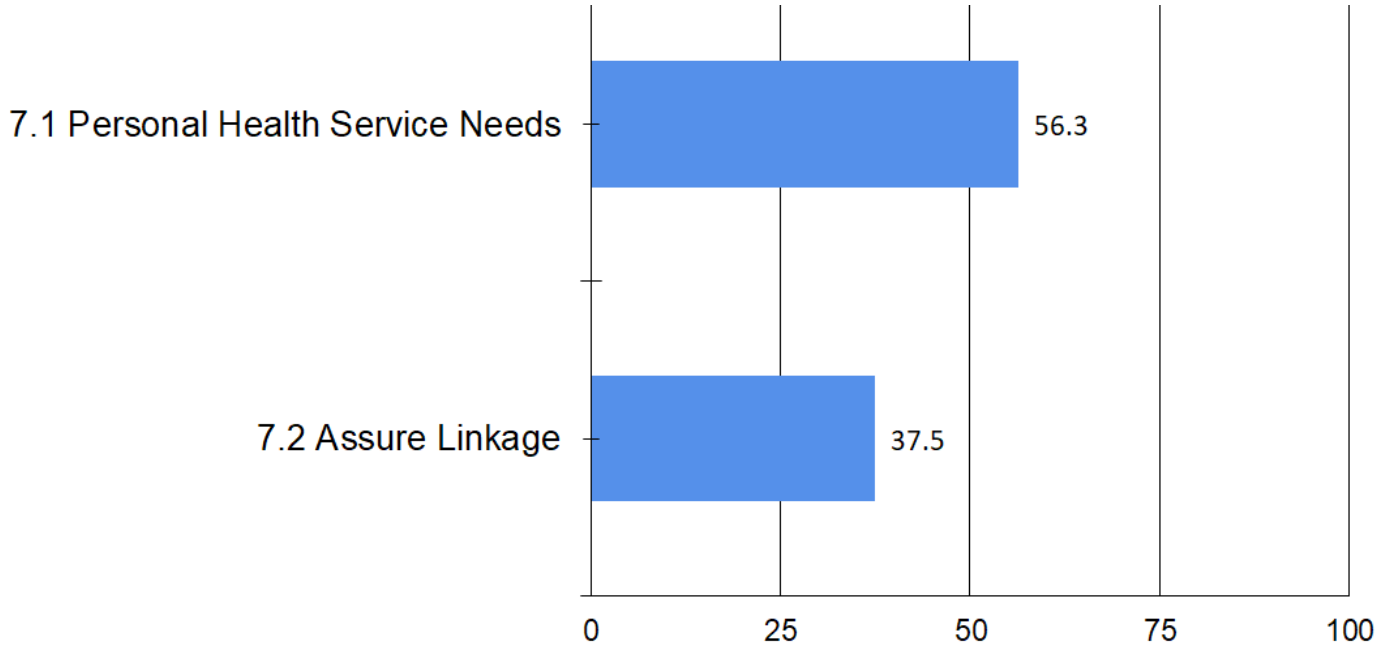
Link People to Needed Personal Health Services and Assure the Provision of Healthcare When Otherwise Unavailable

Participants of Essential Service 7 answered the core question: Are people in my community receiving the health services they need?

Linking people to needed personal health services and assuring the provision of healthcare when otherwise unavailable (sometimes referred to as outreach or enabling services) encompass the following:

- Ensuring effective entry for socially disadvantaged and other vulnerable persons into a coordinated system of clinical care
- Providing culturally and linguistically appropriate materials and staff to ensure linkage to services for special population groups
- Ensuring ongoing care management
- Ensuring transportation services
- Orchestrating targeted health education/promotion/disease prevention to vulnerable population groups

Essential Service 7: Performance Score - 46.9



Model Standard 7.1: Identifying Personal Health Service Needs of Populations

The LPHS identifies the personal health service needs of the community and identifies the barriers to receiving these services, especially among particular groups that may have particular difficulty accessing personal health services.

To accomplish this, members of the LPHS work together to:

- Identify groups of people in the community who have trouble accessing or connecting to personal health services
- Identify all personal health service needs and unmet needs throughout the community
- Define roles and responsibilities for partners to respond to the unmet needs of the community
- Understand the reasons that people do not get the health services and healthcare they need

The LPHS in Boone County uses a variety of methods to understand personal health services used by populations who may experience barriers to care. Participants described methods their organizations use to collect data such as demographics, networking, stakeholder meetings, and patient/client follow-up. Assessments, such as the Community Health Assessment (part of the MAPP Process), homeless counts, and Boone Indicators Dashboard provide population data to organizations in the county. Community and faith-based coalitions provide resources to serve special populations and partner with LPHS organizations. Although Boone County is healthcare rich, the system is disconnected with referrals and services across many locations. A common discussion point is that many organizations find out about system changes from their frontline staff. System changes might be a loss in an organization's funding or loss of staff members. Loss of staff through either funding or turnover contributes to a disconnect between patient/client referrals and loss of communication between service providers.

Performance Measure	At what level does the LPHS...	Activity Level
7.1.1	Identify groups of people in the community who have trouble accessing or connecting to personal health services?	**Significant**
7.1.2	Identify all personal health service needs and unmet needs throughout the community?	**Moderate**
7.1.3	Defines partner roles and responsibilities to respond to the unmet needs of the community?	**Moderate**
7.1.4	Understand the reasons that people do not get the care they need?	**Moderate**

Strengths	Weaknesses
Collect data Community coalitions - ex Centro Latino that serve special populations Having land grant university Money-funded Strong medical infrastructure - medical school/ other graduate programs Involved community Education and community library Resources ex. faith-based (not available in other communities) Columbia/Boone County Dept. of Public Health & Human Services Service deliveries Primary care providers address multiple areas	Know how to find those in need Communication/integration Transportation barriers Overcome huge disparities People deciding for others Everyone needs to be at the table A lot of talk with no action - ex Vandiver location 1 stop shop for services on a bus route Use of data/drilling down to certain sub-populations Not all minorities/ages discussed Who collects data on those we never see? Human contact offered to most marginalized - phone menus, level of understanding, complicated correspondence Interpretation services - untrained staff Grants-specific Lack of money
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
More training - cultural sensitivity, interpreter, etc. Feasible expectations - identify low hanging fruit Prioritize on higher needs Refugees - number may drop due to political climate Male underserved population - focus changing/ adding questions to capture them Input from groups working in communities, not via surveys (ex. street roundtables, neighborhood associations) Going to them (formal/informal) Reviewing working models	Use models to serve populations Regular evaluation Increase health literacy - ex. education on personal health, insurance, etc. Identify who needs health education - to do in home Identify groups to be intervention guides - ex. students as part of educational experience Resource mapping - identify a coordinator - identify recurring/emerging needs - create apps

Model Standard 7.2: Ensuring People Are Linked to Personal Health Services

The LPHS identifies the personal health service needs of the community and identifies the barriers to receiving these services, especially among particular groups that may have particular difficulty accessing personal health services.

To accomplish this, members of the LPHS work together to:

- Connect (or link) people to organizations that can provide the personal health services they may need
- Help people access personal health services, in a way that takes into account the unique needs of different populations
- Help people sign up for public benefits that are available to them (e.g., Medicaid or medical and prescription assistance programs)
- Coordinate the delivery of personal health and social services so that everyone has access to the care they need

Participants agree that the LPHS in Boone County consists of informal networks that work together to link people to health services, but system coordination is not formal outside of a few coalitions. Each provider has their own way of linking clients/patients to personal health services. Coordination appears to take place on a case-by-case basis, by outreach to agency/funder target population, or through programming. Outside of these population groups, coordination is relationship-based, not systematic. There is a large volume of clients/patients trying to get into a system that is already stretched with long waits and limited in-service providers. However, organizations within the LPHS can provide access to different populations to enroll in benefit programs like Medicaid. System members are partnering to help with costs of transportation or co-locating services.

Performance Measure	At what level does the LPHS...	Activity Level
7.2.1	Connect or link people to organizations that can provide the personal health services they may need?	**Moderate**
7.2.2	Help people access personal health services in a way that takes into account the unique needs of different populations?	**Minimal**
7.2.3	Help people sign up for public benefits that are available to them (e.g., Medicaid or medical and prescription assistance programs)?	**Moderate**
7.2.4	Coordinate the delivery of personal health and social services so that everyone in the community has access to the care they need?	**Minimal**

Strengths	Weaknesses
Indirect programs do the work Dedicated individuals within specific agencies Informal partnership - creating solutions outside of the box Community less territorial - ex CPS works with hospital - not siloed We are not stifled Patient-centered health home model	Creative solutions when repeated often needs to become systematic - small things don't lead to big change Continuity of advocacy Patient advocacy needs to be a system Positions undervalued/underpaid Patient-centered health targets only specific groups (ex. Medicaid) Lack of strong relationship with State (ex. Medicaid) Better understanding of complex needs of unique populations Knowing how to serve populations
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Increase the number of patient-centered health homes Education on available resources Understand policies of other organizations Increase coordination events (1-stop shop) Sharing human capital Share space for multiple services Financial resources shared Provide accurate and good referrals Feedback loop	Patient advocacy program How to improve MO HealthNet Portal/data Develop alternate services if funding goes away Maintain sharing of human capital

ESSENTIAL SERVICE 8:

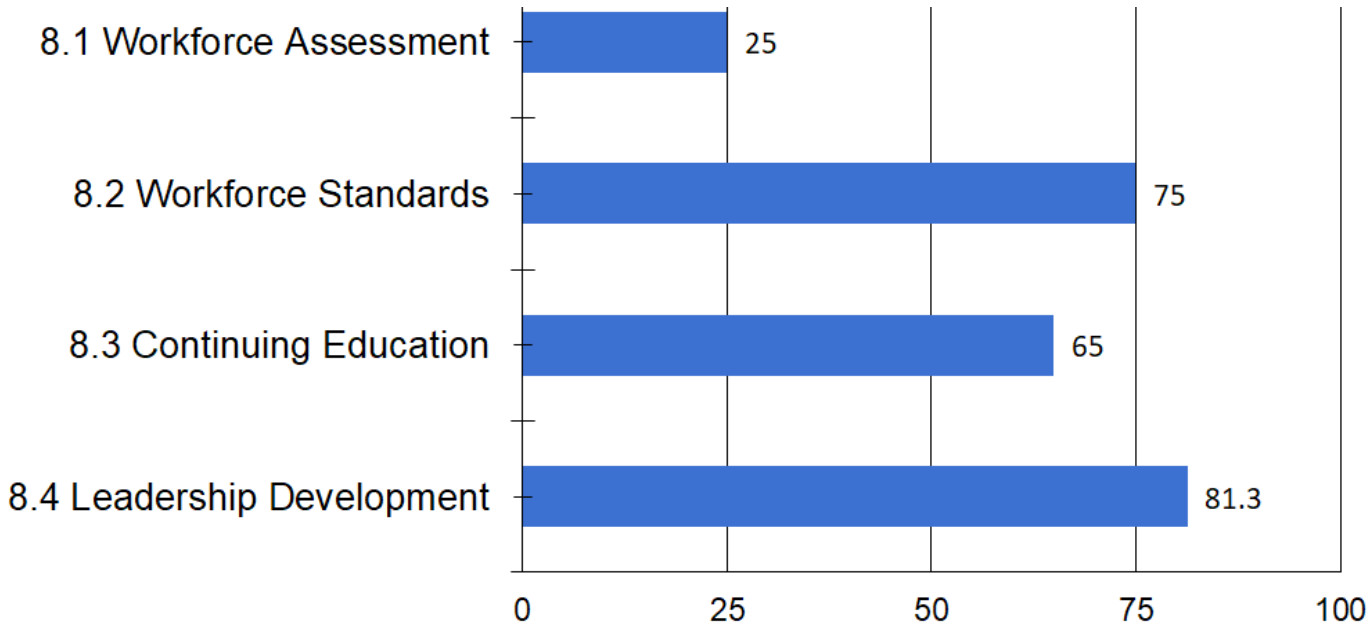
Assure a Competent Public Health and Personal Healthcare Workforce

Participants of Essential Service 8 answered the core questions: Do we have a competent public health staff? Do we have competent healthcare staff? How can we be sure that our staff stays current?

Ensuring a competent public and personal healthcare workforce encompasses the following:

- Educating, training, and assessing personnel (including volunteers and other lay community health workers) to meet community needs for public and personal health services
- Establishing efficient processes for professionals to acquire licensure.
- Adopting continuous quality improvement and lifelong learning programs
- Establishing active partnerships with professional training programs to ensure community-relevant learning experiences for all students
- Continuing education in management and leadership development programs for those charged with administrative/executive roles

Essential Service 8: Performance Score - 61.6



Model Standard 8.1: Workforce Assessment, Planning, and Development

The LPHS assesses the local public health workforce—all who contribute to providing the 10 Essential Public Health Services for the community. Workforce assessment looks at what knowledge, skills, and abilities the local public health workforce needs and the numbers and kinds of jobs the system should have to adequately prevent health problems and protect and promote health in the community.

To accomplish this, members of the LPHS work together to:

- Assess over time the numbers and types of LPHS jobs in the public or private sector and the knowledge, skills, and abilities that they require
- Review the information from the workforce assessment and use it to find and address gaps in the local public health workforce
- Provide information from the workforce assessment to other community organizations and groups, including governing bodies and public and private agencies, for use in their organizational planning

Participants were aware of only two public health workforce assessments conducted within the community. Since 2014, Columbia/Boone County Department of Public Health and Human Services (PHHS) has a workforce development plan in place. Revisions to the PHHS workforce development plan occur annually. The Missouri Department of Health and Senior Services completed a state public health system assessment (SPHSA) in 2013. The Essential Service 8 activity level ranking in the SPHSA is 14, corresponding to No Activity. The Missouri Department of Health and Senior Services also conducted a local public health agency infrastructure survey in 2015. The purpose of the survey is to gather information about public health system capabilities, capacity of administration, facility, workforce, and systems offered, and information related to their governing bodies. Data from these surveys and assessments helps identify gaps in workforce knowledge, causes in turnover, and formalizing internal processes. Organizations in Boone County have formalized existing agreements with universities and colleges regarding internships in public health professions such as nursing and health education. The University of Missouri now offers an undergraduate degree in public health in response to the growing number of students interested in public health careers.

Performance Measure	At what level does the LPHS...	Activity Level
8.1.1	Complete a workforce assessment, a process to track the numbers and types of LPHS jobs—both public and private sector—and the associated knowledge, skills, and abilities required of the jobs?	**Minimal**
8.1.2	Review the information from the workforce assessment and use it to identify and address gaps in the LPHS workforce?	**Minimal**
8.1.3	Provide information from the workforce assessment to other community organizations and groups, including governing bodies and public and private agencies, for use in their organizational planning?	**Minimal**

Strengths	Weaknesses
Undergraduate and MPH programs	Coordination in local public health system
Good relationships with academia	Lack of assessment in local public health system
Participation in statewide workforce assessment	Shortage of qualified professionals
Columbia/Boone County Dept. of Public Health & Human Services workforce development plan	Non-competitive salaries
Potential for public health spectrum to collaborate	
Nursing community clinical experience	
Creativity at different levels	
Large medical community	
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Undergraduate public health program	Conduct workforce assessment of local public health system
Identifying an assessment - capturing diversity	Adopt academic health departments - agreements between local academia and local public health
Fellowship for public health nurses	

Model Standard 8.2: Public Health Workforce Standards

The LPHS maintains standards to see that workforce members are qualified to do their jobs, with the certificates, licenses, and education that are required by law or by local, state, or federal guidance.

To accomplish this, members of the LPHS work together to:

- Ensure that all members of the local public health workforce have the required certificates, licenses, and education needed to fulfill their job duties and meet all legal obligations
- Develop and maintain job standards and position descriptions based in the core knowledge, skills, and abilities needed to provide the 10 Essential Public Health Services
- Base the hiring and performance review of members of the local public health workforce in public health competencies

Organizations within the LPHS of Boone County ensure compliance with guidelines, licensure, and certification requirements through several means. In positions requiring licenses, staff members are routinely checked to ensure licenses are up-to-date and/or valid. Some organizations perform degree or transcript verifications. Others require a standard number of annual training hours or continuing education credits. Most, if not all, organizations within the LPHS have written job qualifications and standards for job positions. However, not all job qualifications or standards tie to public health competencies. Most or all LPHS organizations conduct staff performance evaluations annually or upon contract renewal.

Performance Measure	At what level does the LPHS...	Activity Level
8.2.1	Ensure that all members of the local public health workforce have the required certificates, licenses, and education needed to fulfill their job duties and comply with legal requirements?	**Optimal**
8.2.2	Develop and maintain job standards and position descriptions based in the core knowledge, skills, and abilities needed to provide the 10 Essential Public Health Services?	**Significant**
8.2.3	Base the hiring and performance review of members of the public health workforce in public health competencies?	**Moderate**

Strengths	Weaknesses
Educated workforce Workforce population is young Workforce hired on knowledge, skills, abilities	Over-educated workforce for some positions Workforce population is transient Competition within the local public health system for staff Lack of public health competencies in job requirements and performance evaluations Lack of understanding of public health core competencies Lack of career progression
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Develop tools for health departments to incorporate public health core competencies into job descriptions and performance evaluations Develop career ladder	Develop career ladder Increase retention of staff

Model Standard 8.3: Life-Long Learning through Continuing Education, Training, and Mentoring

The LPHS encourages lifelong learning for the local public health workforce. Both formal and informal opportunities in education and training are available to the workforce, including workshops, seminars, conferences, and online learning. The LPHS trains its workforce to recognize and address the unique culture, language, and health literacy of diverse consumers and communities and to respect all members of the community.

To accomplish this, members of the LPHS work together to:

- Identify education and training needs and encourage the workforce to participate in available education and training
- Provide ways for workers to develop core skills related to the 10 Essential Public Health Services
- Develop incentives for workforce training, such as tuition reimbursement, time off for attending class, and pay increases
- Create and support collaborations between organizations within the LPHS for training and education (e.g., practice and academic collaborations between public health workforce members and/or healthcare professionals and the faculty and students of academic institutions). Continually train the public health workforce to deliver services in a culturally competent manner and understand social determinants of health

With many colleges and universities in Boone County, there are opportunities for faculty to interact with staff from LPHS organizations. LPHS staff takes part as guest lecturers or adjunct faculty. Faculty from colleges and universities work with the LPHS to place interns, clinical students, fellowships, and residencies. Organizations within the LPHS dedicate resources for training and staff education. Resources are staff, funding, tuition reimbursement, or dedicating time for training. However, participants described the lack of incentives provided for the workforce to pursue training. Some contract LPHS employees must complete training to keep their position. Certain positions must complete yearly continuing education to stay compliant, licensed, or credentialed. Time allowed for staff to attend training is often the largest barrier.

Performance Measure	At what level does the LPHS...	Activity Level
8.3.1	Identify education and training needs and encourage the public health workforce to participate in available education and training?	**Optimal**
8.3.2	Provide ways for public health workers to develop core skills related to the 10 Essential Public Health Services?	**Moderate**
8.3.3	Develop incentives for workforce training, such as tuition reimbursement, time off for attending class, and pay increases?	**Moderate**
8.3.4	Create and support collaborations between organizations within the LPHS for training and education?	**Significant**
8.3.5	Continually train the public health workforce to deliver services in a culturally competent manner and understand the social determinants of health?	**Moderate**

Strengths	**Weaknesses**
Lots of training opportunities - MU, CDC	Identify funding to provide and attend training
Webinars	Lack of CHES credits
Physical proximity to instate training	Lack of incentives for training
Employees interested in continuing education	Limited sector diversity at trainings
Collaboration with local academia and the state	Lack of comprehensive training
	High cost of training
	Superficial training - mile-wide, inch-deep
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Educating at a younger level	Providing CHES and other credits
Have workforce that looks like the community it serves	Health in all Policies
Have focused training - more than one level, secondary - next steps to implement what was learned	Academic health department
Partnering to provide CHES and other credits	Basic public health education and awareness
Engage initiatives with MU Extension - opportunities seem to be public health- related	

Model Standard 8.4: Public Health Leadership Development

Leadership within the LPHS is demonstrated by organizations and individuals that are committed to improving the health of the community. Leaders work to continually develop the LPHS, create a shared vision of community health, find ways to achieve the vision, and ensure that local public health services are delivered.

To accomplish this, members of the LPHS work together to:

- Provide access to formal and informal leadership development opportunities for employees at all organizational levels
- Create a shared vision of community health and the LPHS, welcoming all leaders and community members to work together
- Ensure that organizations and individuals have opportunities to provide leadership in areas where they have knowledge, skills, or access to resources
- Provide opportunities for the development of leaders that reflect the diversity of the community

Leaders in Boone County have been collaborating the past few years on wide-ranging topics that influence health such as diversity, inclusion, youth mental health, and sustainability. The MAPP process is one example that has allowed LPHS leaders to collaborate and receive input and direction on community-identified health issues. Live Well Boone County has formalized a vision in which all LPHS members can align their programs. Community leaders use data from the community health assessment for their organization's program planning, while others are a part of the community health improvement plan action teams. Opportunities to serve in professional organizations, community coalitions, and action teams promote the development of leadership skills for LPHS staff. Participation also allows for improving communication between LPHS members. LPHS staff members also serve in developing future leaders by creating opportunities for accepting interns, fellows, and residents. Columbia and Boone County residents also serve on boards, steering committees, and commissions on many local public health system organizations. Opportunities exist to create leaders that reflect the groups of people that LPHS organizations serve.

Performance Measure	At what level does the LPHS...	Activity Level
8.4.1	Provide access to formal and informal leadership development opportunities for employees at all organizational levels?	**Significant**
8.4.2	Create a shared vision of community health and the LPHS, welcoming all leaders and community members to work together?	**Optimal**
8.4.3	Ensure that organizations and individuals have opportunities to provide leadership in areas where they have knowledge, skills, or access to resources?	**Optimal**
8.4.4	Provide opportunities for the development of leaders who represent the diversity of the community?	**Moderate**

Strengths	**Weaknesses**
Lots of training Leadership opportunities beyond organization management Academics training future leaders Good leaders and role models in the community Progressive community	Lack of collaboration with hospitals Limited career paths Lack of diversity in leadership positions - low income, youth, persons with disabilities, persons with mental health diagnosis Institutional barriers to involvement Our current leaders aren't "making the ask" of new members and seeking diversity
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Identify new leaders and ask to table Mentorship Community leadership opportunities Investigate reorganization of Board of Health related to diversity Identify barriers for leadership positions Look for models Need teaching strategies for developing leadership competency	Reorganization of Board of Health Implement leadership programs Develop leadership ladders

ESSENTIAL SERVICE 9:

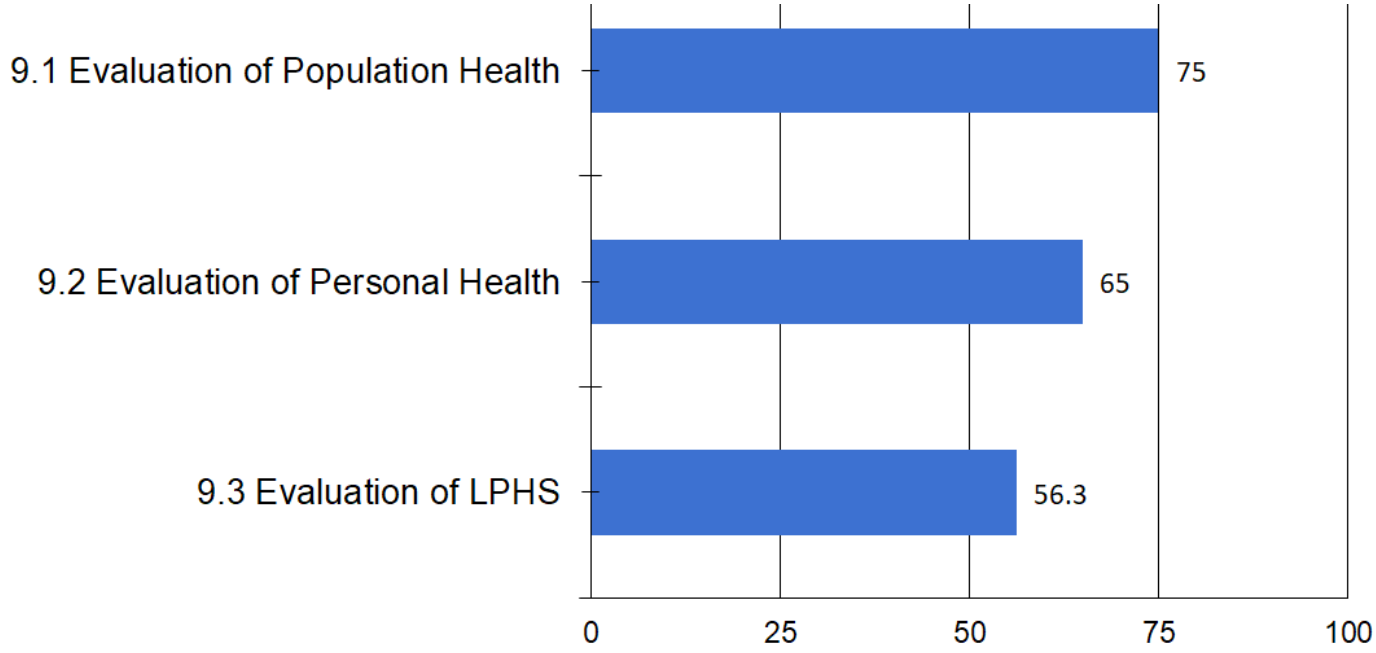
Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services

Participants of Essential Service 9 answered the core questions: Are we meeting the needs of the population we serve? Are we doing things right? Are we doing the right things?

Evaluating effectiveness, accessibility, and quality of personal and population-based health services encompasses the following:

- Assessing program effectiveness through monitoring and evaluating implementation, outcomes, and effect
- Providing information necessary for allocating resources and reshaping programs

Essential Service 9: Performance Score - 65.4



Model Standard 9.1: Evaluating Population-Based Health Services

The LPHS evaluates population-based health services, which are aimed at disease prevention and health promotion for the entire community. Many different types of population-based health services are evaluated for their quality and effectiveness in targeting underlying risks.

To accomplish this, members of the LPHS work together to:

- Evaluate how well population-based health services are working, including whether the goals that were set for programs and services were achieved
- Assess whether community members, including vulnerable populations, are receiving services and are satisfied with the approaches to promoting health and preventing disease, illness, and injury
- Identify gaps in providing population-based health services
- Use evaluation findings to improve plans and services

The local public health system in Boone County has several ways of evaluating population-based health services. Population health indicators summarize information about a particular factor or behavior. These indicators help the public health system track how well the system is functioning. Other ways of evaluation include process and outcome evaluations, surveys, and reports. Review of health indicators and results of evaluations help the Boone County LPHS prioritize strategic and operational plans. Programs, funding, and resources change as a result of reviewing indicators. Regular review of indicators helps identify gaps in services. For example, a survey of food service workers identified a need to hold food handler classes in Spanish. Data collected in the 2013 CHA indicated disparities between residents of Boone County, resulting in the Live Well by Faith program providing health education in historically black churches. Some LPHS organizations have made use of health impact assessments (HIA), a tool to help evaluate potential health impacts of programs, policies, and plans.

Performance Measure	At what level does the LPHS...	Activity Level
9.1.1	Evaluate how well population-based health services are working, including whether the goals that were set for programs and services were achieved?	**Significant**
9.1.2	Assess whether community members, including vulnerable populations, are satisfied with the approaches taken toward promoting health and preventing disease, illness, and injury?	**Significant**
9.1.3	Identify gaps in the provision of population-based health services?	**Significant**
9.1.4	Use evaluation findings to improve plans, processes, and services?	**Significant**

Strengths	Weaknesses
Process and outcome evaluations are conducted	Communicating findings
Performance management	Gaps in collecting satisfaction
Customer service and satisfaction surveys	No formalized process for identifying gaps
Use findings to inform future work	Lack of data that would identify gaps and/or assist in program evaluation
Innovative local public health system	Technology needs (lack of data analysis tools)
Expansion of population health into other areas	Not all improvements can be implemented due to cost, lack of funding, contract guidelines, day-to-day work, etc.
Systemic and repeatable processes	Lack of funding to address needs
Local public health system capabilities to perform evaluation	Not all policies and processes are evaluated
Public Health & Human Services staff with expertise in evaluation	
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Explore partnerships with MU Health Communication to communicate findings	Communicate evaluation and process improvement findings
Increase the collection of satisfaction information	Develop threshold for conducting HIAs
Increase the use of health impact assessments (HIA)	
Develop partnerships for data analysis and/or share the licenses for usage	
Develop a process for utilizing qualitative data	

Model Standard 9.2: Evaluating Personal Health Services

The LPHS regularly evaluates the accessibility, quality, and effectiveness of personal health services. These services range from preventive care, such as mammograms or other preventive screenings or tests, to hospital care, to care at the end of life.

To accomplish this, members of the LPHS work together to:

- Evaluate the accessibility, quality, and effectiveness of personal health services
- Compare the quality of personal health services to established guidelines
- Measure satisfaction with personal health services
- Use technology, like the Internet or electronic health records, to improve quality of care or communication among healthcare providers
- Use evaluation findings to improve services and program delivery and modify organizational strategic plans, as needed

The LPHS in Boone County has several ways of evaluating personal health services. Hospitals use evaluations and customer satisfaction surveys. Electronic medical records (EMR) track quality indicators by diagnosis. Hospital infection control performs measurement on indicators such as falls and hospital infections. At the state-level, the Missouri Department of Health and Senior Services collect vital records, and use a data tracking and monitoring system called the Missouri Public Health Information Management System (MOPHIMS).

MOPHIMS provides data profiles for geographic (county-level) locations on various indicators such as chronic diseases, injury, death, hospital and emergency room visits, and population. Other LPHS organizations use customer service surveys as in-house evaluation methods. Some programs at the local level that receive funding from state and/or federal entities must do evaluations based on contract terms. In Boone County, the LPHS makes use of information technology to ensure quality of personal health services through methods such as telehealth, webinars, grand rounds, prescription drug monitoring program (PDMP), ShowMeVax, and health portals. Information gathered by these methods provides opportunities to improve health service delivery to different populations such as youth and refugees. The LPHS also uses translation systems. Personal health service providers in Boone County are evaluated against clinical standards through a combination of commissions, federal-level, and state-level entities. As previously mentioned, the LPHS gathers client feedback through several methods, however, participants feel that evaluation of data gathered is sporadic.

Performance Measure	At what level does the LPHS...	Activity Level
9.2.1	Evaluate the accessibility, quality, and effectiveness of personal health services?	**Moderate**
9.2.2	Compare the quality of personal health services to established guidelines?	**Significant**
9.2.3	Measure user satisfaction with personal health services?	**Significant**
9.2.4	Use technology, like the Internet or electronic health records, to improve quality of care?	**Significant**
9.2.5	Use evaluation findings to improve services and program delivery?	**Moderate**

Strengths	Weaknesses
Show Me Vax - used to evaluate immunization rates Established quality care guidelines exist Patient satisfaction is measured Use of technology Embracing new technology such as telehealth, prescription drug monitoring plan (PDMP), ECHO calls	Gaps exist in measuring quality of care Gaps exist in measuring patient satisfaction Providers in different health systems don't have access to all patient info Public Health & Human Services can't interface with labs Lack of LPHS knowledge of results Sporadic evaluations at PHHS on personal health care Challenges with EMR data Evaluation is not a key requirement
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
EMR improvements -ability to measure patient satisfaction Identifying what personal health services need evaluations	Improving quality of care based on patient input Collaborate with LPHS partners for patient outcomes Conduct evaluations with EMR

Model Standard 9.3: Evaluating the Local Public Health System

The LPHS evaluates itself to see how well it is working as a whole. Representatives from all groups (public, private, and voluntary) that provide all or some of the 10 Essential Public Health Services gather to conduct a systems evaluation.

To accomplish this, members of the LPHS work together to:

- Identify all public, private, and voluntary organizations that contribute to providing the 10 Essential Public Health Services
- Evaluate how well the LPHS activities meet the needs of the community at least every five years, using guidelines that describe a model LPHS and involving all entities contributing to the delivery of the 10 Essential Public Health Services
- Assess how well the organizations in the LPHS are communicating, connecting, and coordinating services
- Use results from the evaluation process to improve the LPHS

The Local Public Health System Assessment (LPHSA) identifies community organizations that contribute to the delivery of the 10 Essential Public Health Services. The Columbia/Boone County Department of Public Health and Human Services perform the LPHSA every five years with system partners. Outside of the LPHSA, participants are unaware of assessments that specifically evaluate relationships among organizations of the LPHS. Emergency planning staff comes the closest to evaluating relationships due to regular meetings and mock drills that involve LPHS organizations.

Performance Measure	At what level does the LPHS...	Activity Level
9.3.1	Identify all public, private, and voluntary organizations that contribute to the delivery of the 10 Essential Public Health Services?	**Optimal**
9.3.2	Evaluate how well LPHS activities meet the needs of the community at least every five years, using guidelines that describe a model LPHS and involving all entities contributing to the delivery of the 10 Essential Public Health Services?	**Significant**
9.3.3	Assess how well the organizations in the LPHS are communicating, connecting, and coordinating services?	**Minimal**
9.3.4	Use results from the evaluation process to improve the LPHS?	**Minimal**

Strengths	Weaknesses
Partner identification	Don't assess partnerships
Partner engagement	Don't assess communication
Assessment is completed every five years	Don't assess linkages
Emergency preparedness does a good job of communicating between system partners/entities	Don't assess use of resources that support coordination
	Due to no assessments occurring, the system can't use information to guide community health improvements
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Identify formal and informal tools for partnership assessments	Use tools for assessment
	Use assessment to guide community health improvements

ESSENTIAL SERVICE 10:

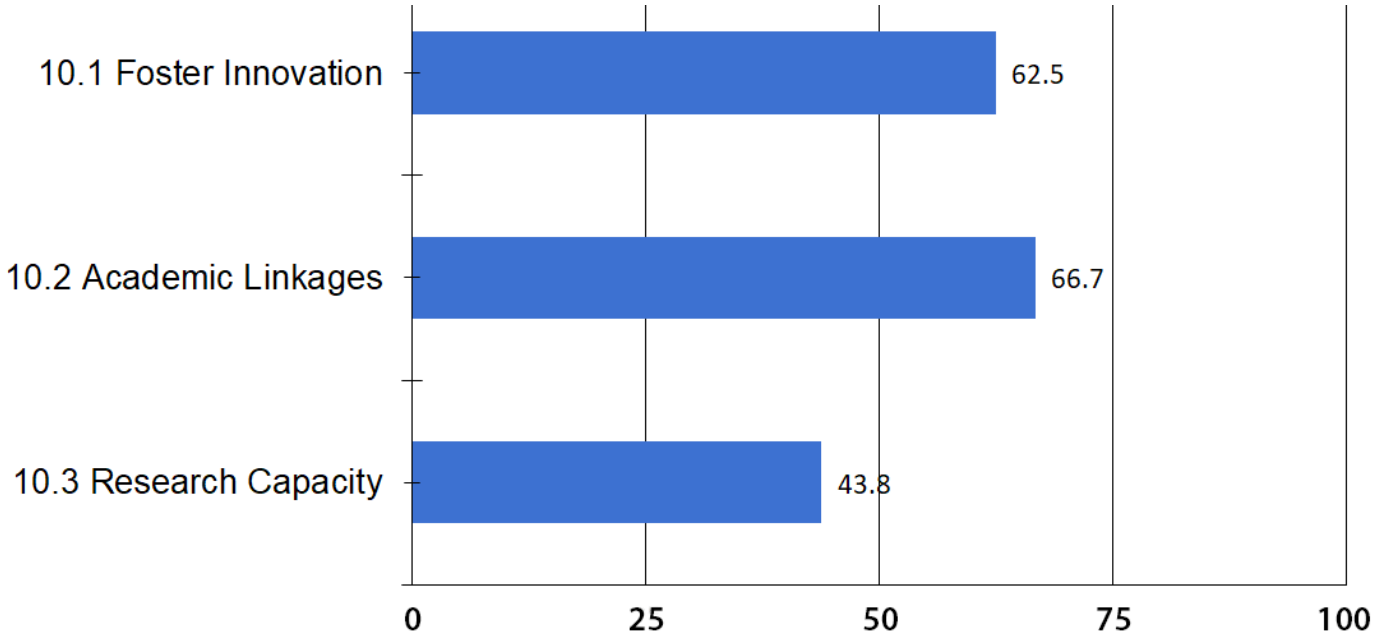
Research for New Insights and Innovative Solutions to Health Problems

Participants of Essential Service 10 answered the core question: Are we discovering and using new ways to get the job done?

Researching new insights and innovative solutions to health problems encompasses the following:

- Establishing full continuum of innovation, ranging from practical field-based efforts to fostering change in public health practice to more academic efforts that encourage new directions in scientific research
- Continually linking with institutions of higher learning and research
- Creating internal capacity to mount timely epidemiologic and economic analyses and conduct health services research

Essential Service 10: Performance Score - 57.6



Model Standard 10.1: Fostering Innovation

LPHS organizations try new and creative ways to improve public health practice. In both academic and practice settings, such as universities and local health departments, new approaches are studied to see how well they work.

To accomplish this, members of the LPHS work together to:

- Provide staff with the time and resources to pilot test or conduct studies that test new solutions to public health problems and see how well they actually work
- Suggest ideas about what currently needs to be studied in public health to organizations that conduct research
- Keep up with information from other agencies and organizations at the local, state, and national levels about current best practices in public health
- Encourage community participation in research, including deciding what will be studied, conducting research, and sharing results

Over the past two years, LPHA organizations in Boone County proposed public health issues for inclusion in a research organization's agenda. Several colleges/schools within the University of Missouri conduct research such as the School of Medicine, Truman School of Public Affairs, College of Education, College of Human Environmental Sciences, and the School of Health Professions. To encourage community participation in research, the LPHS uses advisory groups to provide direction, as well as partnerships to access hard to reach populations. With the volume of research being done in Boone County, participants said it is often not communicated outside of academic journals. A lot of research being shared is by word of mouth. An opportunity exists for the LPHS to improve sharing research results and building an evidence base. Currently, it is hard to know if an organization is building an evidence base as there is not a resource for capturing evidence. Organizations working on grant funding may see their research end when funding ends. Many agencies in Boone County connect to national groups and have an opportunity to learn best practices for capturing evidence from them.

Performance Measure	At what level does the LPHS...	Activity Level
10.1.1	Provide staff with the time and resources to pilot test or conduct studies to test new solutions to public health problems and see how well they actually work?	**Significant**
10.1.2	Suggest ideas about what currently needs to be studied in public health to organizations that conduct research?	**Moderate**
10.1.3	Keep up with information from other agencies and organizations at the local, state, and national levels about current best practices in public health?	**Significant**
10.1.4	Encourage community participation in research, including deciding what will be studied, conducting research, and sharing results?	**Moderate**

Strengths	Weaknesses
The University of Missouri and their research Skilled workforce Networking among organizations Favorable city council and county commission Curious and engaged students	Not sharing results Impossible to know what everyone is doing - volume Reliance of grant funding that could end No central authority for reporting results Some (smaller) groups may not have capacity to evaluate but are creative A lot of groups not capturing evaluation and documentation Need a stronger bond with the colleges and organizations for research Not a streamlined way for reporting Every organization has a bias (put out information to look good) Need stronger bond between the hospitals, universities, and the system Results often hung on until researcher wants it released (culture of propriety)
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Share results Relationship building Creating networking opportunities Sharing resources (including financial) Increase evaluation skills and training Get University of Missouri Engagement Council involved	Share results Share resources Share evaluation resources and personnel Have a repository for reporting Shared outcomes so everyone across the system is connected Add MU Engagement Council as a partner

Model Standard 10.2: Linking with Institutions of Higher Learning and/or Research

The LPHS establishes relationships with colleges, universities, and other research organizations. The LPHS is strengthened by ongoing communication between academic institutions and LPHS organizations. They freely share information and best practices and set up formal or informal arrangements to work together.

To accomplish this, members of the LPHS work together to:

- Develop relationships with colleges, universities, or other research organizations to create formal and informal arrangements to work together
- Partner with colleges, universities, or other research organizations to conduct public health research, including community-based participatory research
- Encourage colleges, universities, and other research organizations to work together with LPHS organizations to develop projects, including field training and continuing education

Organizations within the LPHS have partnerships/relationships with various colleges and universities in Boone County. Opportunities exist to place interns, fellows, clinical students, and medical residents within the LPHS. Members of the LPHS guest lecture on the various college campuses. Academic organization members sit on city, county, and non-profit boards and commissions and vice versa, acting as stakeholders in each other's programs. Academic agencies tend to approach LPHS members more so than the system encouraging natural collaboration.

Performance Measure	At what level does the LPHS...	Activity Level
10.2.1	Develop relationships with colleges, universities, or other research organizations, with a free flow of information, to create formal and informal arrangements to work together?	**Significant**
10.2.2	Partner with colleges, universities, or other research organizations to conduct public health research, including community-based participatory research?	**Significant**
10.2.3	Encourage colleges, universities, and other research organizations to work together with LPHS organizations to develop projects, including field training and continuing education?	**Moderate**

Strengths	Weaknesses
Partnerships exist Multiple organizations Interns from all over the state The diversity and expertise of the available research Community support The willingness of the LPHS to take interns/ students Students do a lot of volunteering in organizations and are also stakeholders More diversity brought in by university staff, interns, students, faculty Money	Money/funding Partnerships won't exist in the absence of money Consistent structure of linkage Time Different expectations for partnerships Communication between school and agency regarding students - some partnerships are informal and only involve taking students - need to be formalized Hard to have time to work with a student as opposed to faculty Underutilized expertise Research not being utilized locally
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Money/funding Formalize relationships Become an academic health department Create partnerships to freely share information and best practices Establish process for LPHS organizations in the community to request research	Money/funding Operationalize academic health department Have free flow of information and best practices More community-based participatory research

Model Standard 10.3: Capacity to Initiate or Participate in Research

The LPHS takes part in research to help improve the performance of the LPHS. This research includes examining how well LPHS organizations provide the 10 Essential Public Health Services in the community (public health systems and services research) and studying what influences healthcare quality and service delivery in the community (health services research).

To accomplish this, members of the LPHS work together to:

- Collaborate with researchers who offer the knowledge and skills to design and conduct health-related studies
- Support research with the necessary infrastructure and resources, including facilities, equipment, databases, information technology, funding, and other resources
- Share findings with public health colleagues and the community broadly, through journals, websites, community meetings, etc.
- Evaluate public health systems' research efforts throughout all stages of work from planning to effect on local public health practice

Participants agree that the LPHS in Boone County has access to research support, but that the process to initiate research needs to be easier. As mentioned in previous model standards, with the large amount of research being done between the colleges and universities in Boone County, it is difficult to aggregate and disseminate findings to the LPHS. Resources exist within the university systems, but are not as available outside the academic setting. The relationship between academic settings and the rest of the LPHS in Boone County is strong, creating networking opportunities in order to share research findings. LPHS participants outside the academic setting said that networking is the one of the methods in which they learn about in-progress and completed research. Conferences, social media, journals, and word-of-mouth are other methods for communicating research findings in Boone County. Outside of mandated evaluations, by a funder for example, there is not a defined process to evaluate research from planning phase to effect on the community or identified populations.

Performance Measure	At what level does the LPHS...	Activity Level
10.3.1	Collaborate with researchers who offer the knowledge and skills to design and conduct health-related studies?	**Moderate**
10.3.2	Support research with the necessary infrastructure and resources, including facilities, equipment, databases, information technology, funding, and other resources?	**Moderate**
10.3.3	Share findings with public health colleagues and the community broadly, through journals, websites, community meetings, etc.?	**Moderate**
10.3.4	Evaluate public health systems research efforts throughout all stages of work from planning to effect on local public health practice?	**Minimal**

Strengths	Weaknesses
Lots of research being done University has the expertise Geographically small - easy to get to meetings Some models of engaging academia to assist with research available to build on People are nice and receptive Have conference opportunities here to show research	Don't do a good job sharing results Hard for other organizations in the LPHS to access resources - need to start that process People in the community are pragmatic, researchers are more academic Not prioritizing evaluation Resources can be hit or miss - not always available due to money/time Money can drive research Budget cuts
Short-Term Improvement Opportunities (1-3 yrs)	**Long-Term Improvement Opportunities (5+ yrs)**
Process for the LPHS to initiate research More opportunities for the system to network and match make for research Pooling expertise and other resources Sharing creative and best practices on partnering and partnerships	Evaluate LPHS research efforts as a whole (not individual projects)

Limitations

There are a number of data limitations in the LPHSA. Due to the fact that a variety of participants from the local public health system perform the assessment, variations in the knowledge of the local public health system's activities occur. Each respondent self-reports with their different experiences and perspectives. Based on these perspectives, gathering responses for each question includes some subjectivity. Each score of the assessment is an average. Model Standard scores are an average of the questions discussed in each Model Standard. Essential Service scores are an average of the scores of the Model Standards within the Essential Service. The overall score is an average of each Essential Service score. Although there are a number of recommended ways to conduct the LPHSA, the process differs by site. Some organizational participation is limited, possibly due to the dates and times chosen for the assessment.

Outside of the assessment instrument, participants feedback for improvements to the LPHSA process included the time needed to complete the assessment, and more diversity of the assessment groups. Some participants felt rushed to complete the assessment, while others suggested having more time for discussion. In the future, the MAPP Core Plus Team should review other assessment process formats that will maximize participation by Boone County LPHS members. Creating a new process format may solve the issue of lack of diversity in groups brought up during this MAPP cycle, as the two-day format done in this cycle conflicted with some Steering Committee and Live Well members' schedules.

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Community Health Status Assessment

Boone County, Missouri

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Public Health
Prevent. Promote. Protect.
Columbia/Boone County
Public Health & Human Services

Table of Contents

EXECUTIVE SUMMARY

The Community Health Status Assessment (CHSA) is one of four assessments completed as part of the MAPP process (Mobilizing for Action through Planning and Partnerships). The 2018 CHSA provides quantitative information on community health conditions and answers the questions “How healthy is the community?” and “What does the health status of the community look like?”

Data was collected and analyzed to identify what best represented the health status of the Boone County. The data used for this assessment came from sources such as the U.S. Census, Missouri Department of Health and Senior Services, Centers for Disease Control and Prevention, Missouri Highway Patrol, Missouri Hospital Association, and County Health Rankings and Roadmaps. When possible, state and national data was used to compare against county level data and analyzed by race and sex to give a clearer picture of the community.

Overall, Boone County is a healthy community with well-educated residents, a stable economy, and many health and community resources.

Although good health outcomes and behaviors are prominent in Boone County, there are still gaps to be addressed. Disparities were identified between racial and socioeconomic groups within income, education, birth outcomes, chronic diseases, and health outcomes.

The information in the CHSA, along with the three other MAPP assessments, will be used by community teams to identify strategic priorities and to develop the Community Health Assessment and Community Health Improvement Plan.

CHARTS AND GRAPHS

DEMOGRAPHIC CHARACTERISTICS

Population

Boone County, Missouri is centrally located along Interstate 70 between Kansas City and St. Louis. Eleven major U.S. cities are located within 500 miles of the county seat, Columbia. (Regional Economic Development Inc., 2017/2018).

Boone County has been growing in population for several years. The 2006 census estimated a population of 146,048 residents. Ten years later, the 2016 estimated population has increased to 176,594, a 20.9% increase. Overall, Boone County covers 687 square miles with an estimated 2016 population density of 257.05 persons per square mile (American Commmunity Survey). During this same time period, Missouri's population increased 4.3%.

Figure 1: Population Percent Change, Boone County, Missouri and United States

Population/Percent Change				
	2006	**2011**	**2016**	**% Change from 2006-206**
Boone County	146,048	165,627	176,594	20.9%
Missouri	5,842,713	6,010,688	6,093,000	4.3%
United States	299,398,485	311,591,919	323,127,515	7.9%
Source: American Community Survey Table B01003				

There are 10 incorporated cities in Boone County: Ashland, Centralia, Columbia, Hallsville, Harrisburg, Hartsburg, McBaine, Pierpont, Rocheport, and Sturgeon. Approximately 74% of all Boone County residents live within an incorporated city. The largest city, Columbia, is the county seat, with a population of 117,165 (American Commmunity Survey). The majority of the county's population (67%) lives in Columbia as shown in Figure 2.

Located in the northern part of the county, Centralia is the second largest community with a population of 4,167. Ashland, located in the southern part of the county, is the third largest town with a total of 3,851 residents.

Figure 2: Population of Boone County Communities

Population	2007-2011 Estimated Population	2012-2016 Estimated Population*
Boone County	160,628	172,773
Ashland	3,572	3,851
Centralia	4,020	4,167
Columbia	106,658	117,165
Hallsville	1,709	1,421
Harrisburg	273	344
Hartsburg	122	97
McBaine	27	8
Pierpont	75	63
Rocheport	153	253
Sturgeon	783	803
**Source: American Community Survey Table B01003*		

Population

Figure 3 compares the 2012-2016 estimated population of Boone County by age group to both Missouri and the United States. Figure 4 shows a further breakdown of population by age group and sex using the 2012-2016 estimated population. In Boone County, 15.5% of the population is between the ages of 20-24 as compared to 7.1% for Missouri and the United States. This age distribution may be impacted by the multiple colleges located in the county. Boone County also has a smaller percentage of residents 65 and older than both Missouri and the United States.

Figure 3: Boone County, Missouri, and United States by Age Group, 2012-2016

Age	Boone County	Missouri	United States
Under 5	6.0%	6.2%	6.2%
	10,366	375,698	19,750,606
5 to 14	11.4%	12.9%	12.9%
	19,696	781,695	41,094,003
15-19	8.3%	6.6%	6.7%
	14,340	399,937	21,343,397
20-24	15.5%	7.1%	7.1%
	26,780	430,235	22,617,630
25-44	26.6%	25.2%	26.3%
	45,958	1,527,032	83,780,797
45-64	21.7%	26.7%	26.2%
	37,492	1,617,927	83,462,238
65 and Over	10.5%	15.3%	14.5%
	18,141	927,127	46,190,933
Total	172,773	6,059,651	318,588,162

Figure 4: Boone County Population Distribution by Age and Sex, 2012-2016

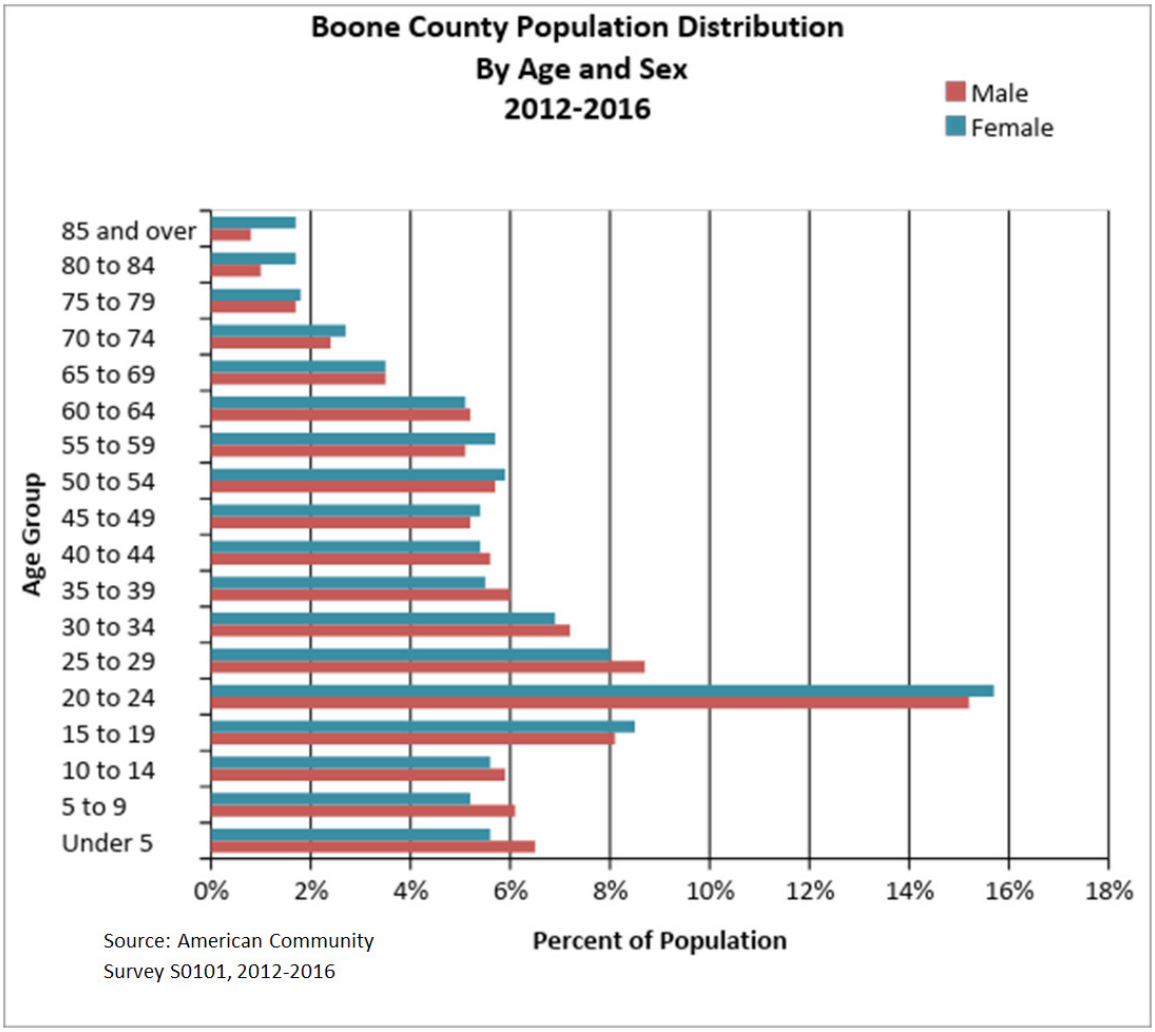


Figure 4 gives a detailed look at the age distribution in Boone County by sex. Females account for 51.5% and males 48.5% of Boone County's 2012-2016 estimated population. Figure 5 compares the median age of Boone County to the median age of both Missouri and the United States. While 20 to 24 year olds have the highest percentage of the county population (15.5%), 15 to 29 year olds combined make up 32% of the total Boone County population.

Figure 5: Median Age, Boone County, Missouri and United States, 2016

Boone County Median Age	Missouri Median Age	United States Median Age
30.6 Years	**37.1 Years**	**37.9**

The American Community Survey estimates 93.7% of Boone County residents were either born in the United States, Puerto Rico, other U.S. island area, or born abroad to American parent(s). The remaining 6.3% of the 2012-2016 estimated population are foreign born.

Race and Ethnicity

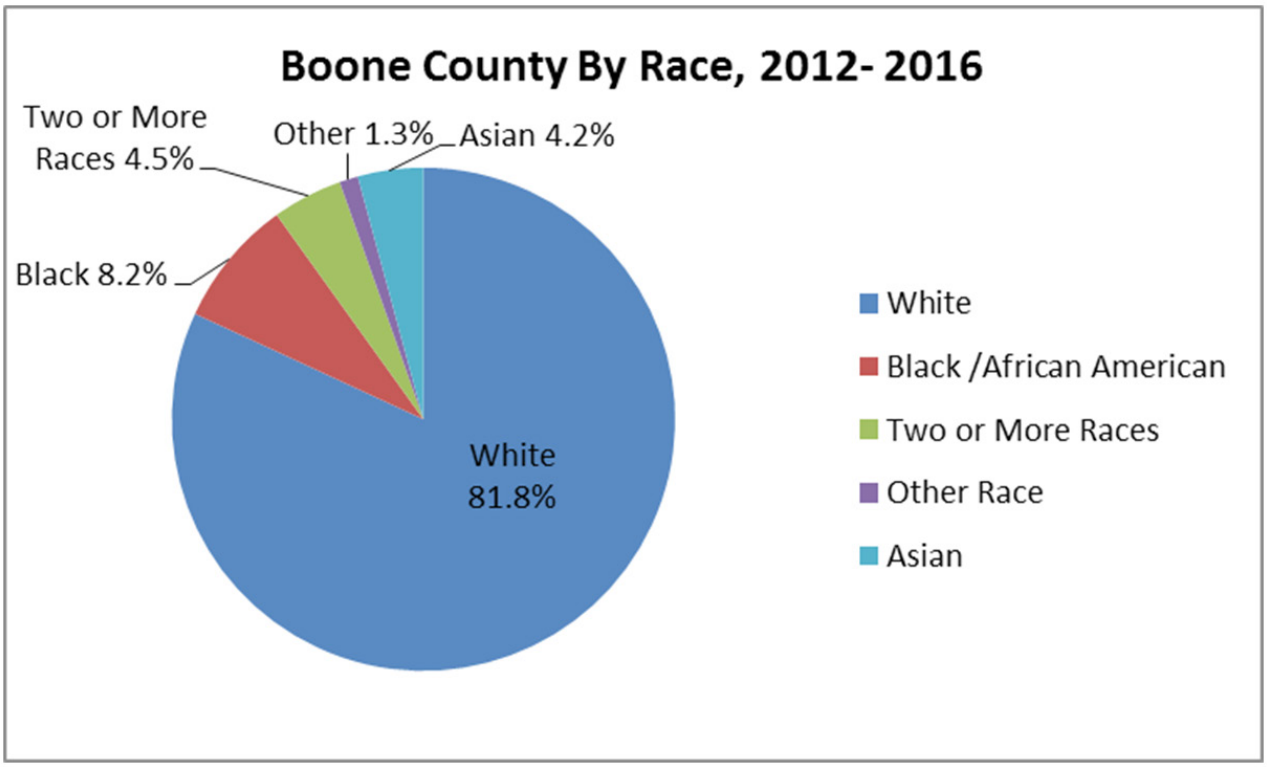
Whites and black/African Americans compose the two largest racial groups in Boone County and Missouri (Figures 6 and 7). The percentage of whites in Boone County in 2012-2016 is 81.8% compared to 82.5% for Missouri; there is a smaller percentage of black population in Boone County than Missouri (8.2% compared to 11.6%).

Figure 6: Boone County and Missouri Population and Race/Ethnicity, 2012-2016

	Boone County		Missouri
	Number	Percentage	Percentage
White	141,402	81.8%	82.5%
Black/African American	14,222	8.2%	11.6%
Two or More Races	7,711	4.5%	2.4%
Asian	7,319	4.2%	1.8%
Other	2,119	1.3%	1.7%
Hispanic or Latino*	5,494	3.2%	3.9%

**Hispanic or Latino may be of any race*
Source: American Community Survey Tables B02001, B03002, 2012-2016

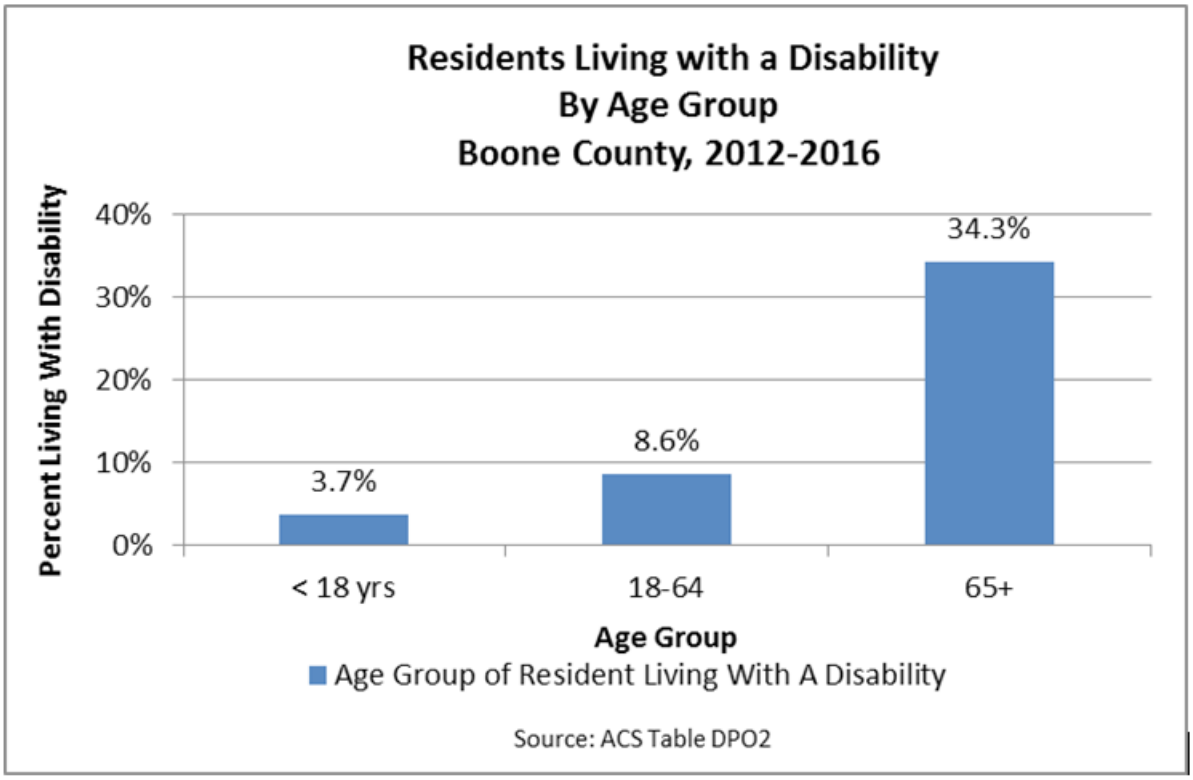
Figure 7: Boone County by Race, 2012-2016



Persons With Disabilities

In Boone County, the 2012-2016 American Community Survey (ACS) reports that 10.2% of the population is living with a disability. Of those in Boone County living with a disability, 60% reside within Columbia. Increased access to healthcare services, shopping, social services and a public transportation system make it easier for many adults with disabilities to live within Columbia's city limits.

Figure 8: Boone County Residents Living With a Disability by Age Group, 2012-2016



Veterans

In Boone County, 6.6% of the population is veterans. Figure 9 shows a breakdown of veterans by period of service, sex, age, poverty level, and disability status.

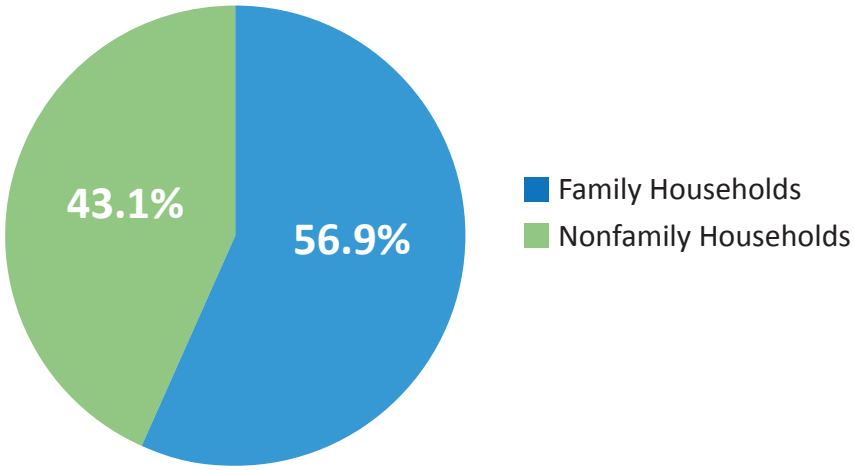
Figure 9: Status of Veterans, Boone County, 2012-2016

Period of Service	
Gulf War (9/2001 or later) veterans	17.8%
Gulf War (8/1990 to 8/2001) veterans	17.8%
Vietnam era veterans	36.9%
Korean War veterans	8.7%
World War II veterans	5.8%
Sex	
Male	89.8%
Female	10.2%
Age	
18 to 34 years	10.8%
35 to 54 years	24.5%
55 to 64 years	20.2%
65 to 74 years	24.0%
75 years and over	20.5%
Income in the last 12 months below poverty level	7.6%
With a disability	31.4%
With a service - connected disability	21.2%
Source: American Community Survey Tables S2101 and B2100	

Households and Families

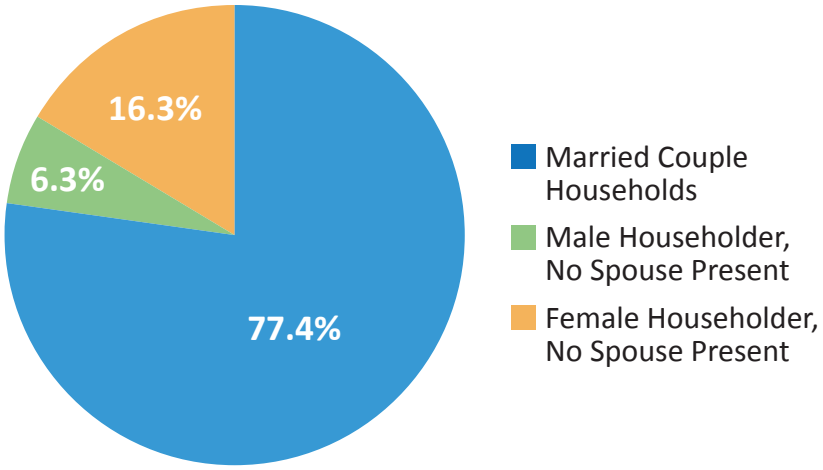
According to the U.S. Census, a household consists of all that occupy a housing unit. A family household consists of a group of two or more related by birth, marriage or adoption who reside together, and may include unrelated members living in the same house. A married couple household consists of a married couple in the same household and may or may not have children living with them (U.S.Census). According to the 2012-2016 American Survey, there were 67,833 total households in Boone County with an average household size of 2.4. Of all of the households, 56.9% were family households and 43.1% nonfamily households (Figure 10). Married couple families make up 77.4% of family households; male householder, no spouse present, 6.3%; female householder, no spouse present, 16.3% (Figure 11).

Figure 10: Boone County Households by Type, 2012-2016



Source: American Community Survey Table DPO2

Figure 11: Boone County Family Households by Type, 2012-2016



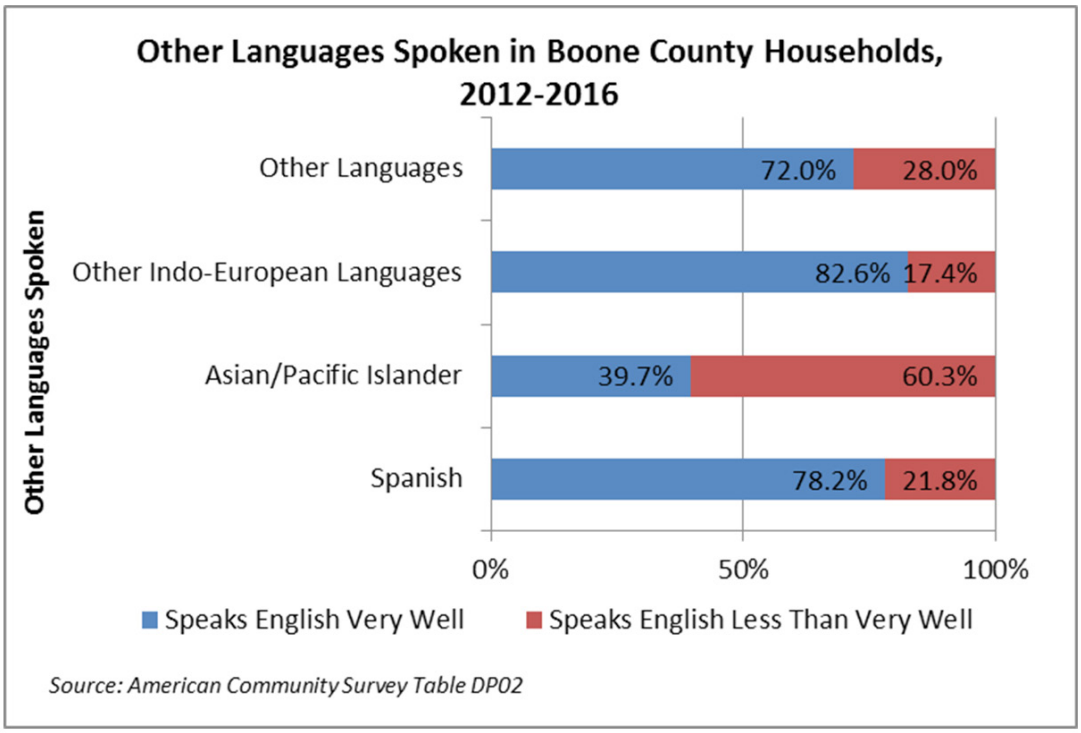
Source: American Community Survey Table DPO2

Language

English is the primary language spoken in Boone County with 92.2% of households speaking only English in the home. Of the remaining 7.9% of households who speak a language other than English in the home, 2.8% of these households speak English less than "very well". Due to such barriers, these houeholds may have difficulties in regards to education, jobs, social services and health care. Figure 12 breaks down the households of the most frequently spoken languages for Boone County by how well English is spoken in the household.

See Figure 12 on next page.

Figure 12: Other Languages Spoken in Boone County Households, 2012-2016



Income

Median household income is the most widely used measure of income. Median is a good predictor of household income because it is less impacted by the income highs and lows and divides the income distribution into two equal parts, one-half falling below and one-half above the median. Median income can also define the ability of a household to have access to affordable housing, health care, higher education opportunities, and food. The median household income (2012-2016) in Boone County is $50,813, which is an estimated $24.43 an hour. Approximately 49% of Boone County households make below $50,000 annually.

Figure 13: Median Household Income, Boone County, Missouri, United States, 2012-2016

Median Household Income 2012-2016		
Boone County	Missouri	United States
$50,813	$49,593	$55,322
Source: American Community Survey Tables S2101 and B2100		

Figures 14 and 15 highlight the disparities between white and black median household earnings. The disparity exists within both Missouri and Boone County, with a wider gap seen in Boone County.

Figure 14: Disparity of Median Household Income between White and Black Boone County Households, 2012-2016

In Boone County, the 2012-2016 median household income shows that for every dollar earned in a white household, a black household earns 56 cents. This is a (very) slight increase from the 2007-2011 ACS which showed that for every dollar earned by a white household, a black household earned 54 cents.

Figure 15: Median Household Income by Race, Boone County and Missouri, 2012-2016

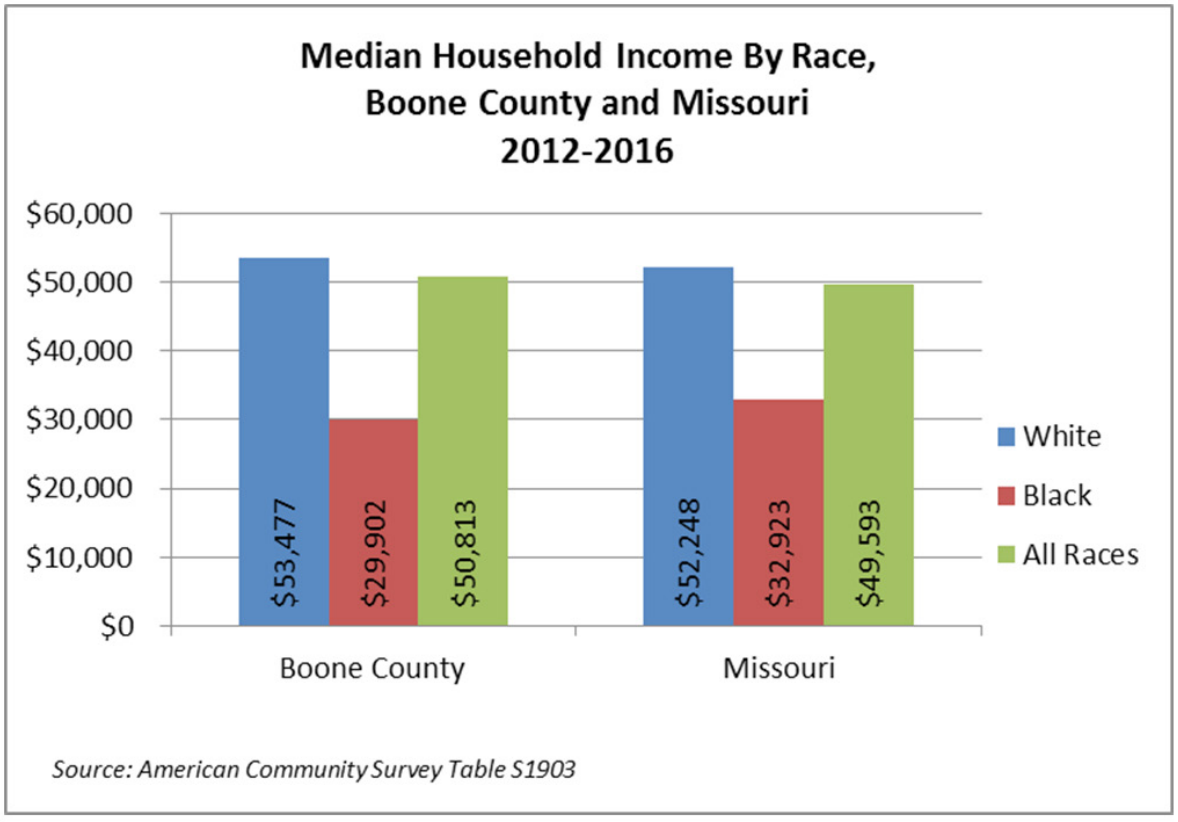


Figure 16: Median Household Income in Boone County Communities, 2012-2016

	Median Household Income	Number of Households
Boone County	$50, 813	67,833
Ashland	$56,696	1375
Centralia	$50,136	1863
Columbia	$45,221	46,184
Hallsville	$46,736	573
Harrisburg	$44,500	138
Hartsburg	$39,219	57
McBaine	(Data not available)	5
Pierpont	$68,750	26
Rocheport	$35,556	120
Sturgeon	$45,250	323
Source: American Community Survey Tables S2101 and B2100		

Figure 16 highlights differences in median household income in the 10 Boone County communities. Communities with a low number of households tend to have a higher margin of error and may not be as accurate. The minimum wage in Missouri is $7.85 per hour, approximately $16,328 a year working full time. Approximately 16% of households in Boone County make less than $15,000 a year. A living wage is the hourly rate that an individual must earn to support their family, if they are the sole provider and are working full time, defined as 2080 hours per year (MIT Living Wage Calculator). A living wage is defined as the wage needed to cover basic family expenses plus relevant taxes. Basic needs include food cost, childcare cost, insurance premiums, healthcare costs, transportation cost, and other necessities. Figure 17 shows the living wage calculations for Boone County.

Figure 17: Living Wage Calculation for Boone County, Missouri, 2018

Hourly Wages	1 Adult	1 Adult 1 Child	1 Adult 2 Children	1 Adult 3 Children	2 Adults (1 Working)	2 Adults (1 Working) 2 Children	2 Adults (1 Working) 3 Children
Living Wage	$10.64	$22.94	$26.41	$33.38	$18.07	$21.88	$27.51

Hourly Wages	2 Adults (1 Working Part Time) 1 Child	2 Adults (2 Working)	2 Adults (2 Working) 1 Child	2 Adults (2 Working) 2 Children	2 Adults (2 Working) 3 Children
Living Wage	$16.16	$9.04	$12.36	$14.79	$17.01

Employment

According to the Missouri Economic Research and Information Center, (MERIC), the 2017 unemployment rate in Boone County averaged 2.6%, one of the lowest in Missouri. During the same time period, Missouri's unemployment rate was 6.1%, and the overall U.S. unemployment rate was 5.8%. Boone County traditionally has an unemployment rate well below the national and state levels and has been declining steadily since 2010. This trend can be seen for Boone County, Missouri and the United States in Figure 18.

Figure 18: Average Annual Unemployment Rate, Boone County, Missouri, United States, 2008-2017

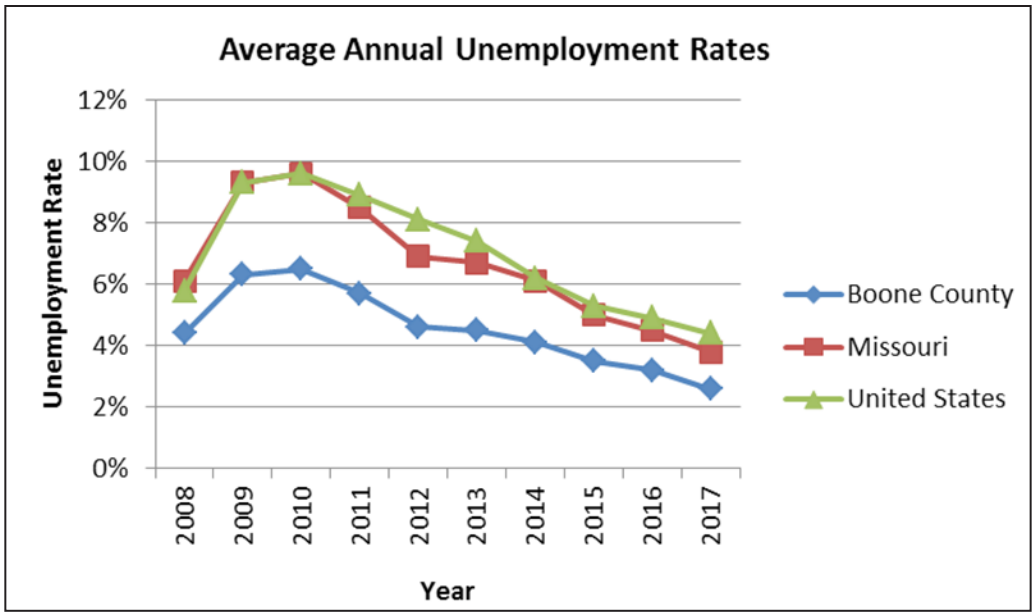


Figure 19: Boone County Largest Employers, 2016

Employer	Number Employed
University of Missouri - Columbia	8,706
University Hospital and Clinics	4,600
Columbia Public Schools	2,517
Veterans United Home Loans	1,742
City of Columbia	1,487
Harry S Truman Veteran's Hospital	1,341
Boone Hospital Center	1,220
Shelter Insurance Companies	1,139
Joe Machens Dealerships	882
MBS Textbook Exchange	827

The three largest employment sectors in Boone County according to the American Community Survey are:

- 35.1% Education services, health care, and social services
- 12.4% Retail Trade
- 11.6% Arts, entertainment, recreation, accommodations and food service

Mean travel time to work for Boone County residents is 17.7 minutes. Figure 20 breaks down mode of transportation to work.

Figure 20: How Boone County Residents Commute to Work

Mean Travel Time to Work 17 Minutes
79% Drove Alone
10.2% Carpooled
1.0% Used Public Transportation
2.1% Walked
2.1% Used Other Means
3.8% Worked From Home
Source: American Community Survey Tables DP02, 2012-2016

Education

There is a clear connection between education, race, unemployment, and health outcomes. According to the 2012-2016 American Community Survey, 93.7% of those living in Boone County are high school graduates or higher, and 46.8 % have a bachelor's degree or higher. Boone County has higher rates of residents 25 years and over with a bachelor's degree or higher than Missouri (Figure 21). Figure 22 breaks down the educational attainment of Boone County residents by race and ethnicity.

Figure 21: Educational Attainment, Boone County, 2012-2016

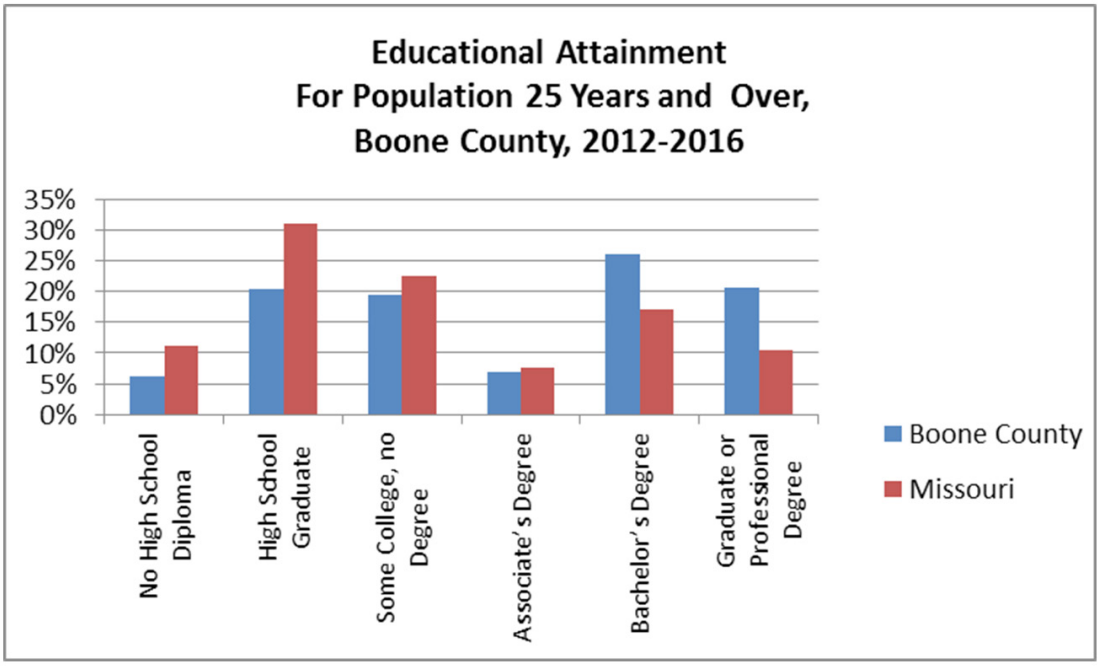
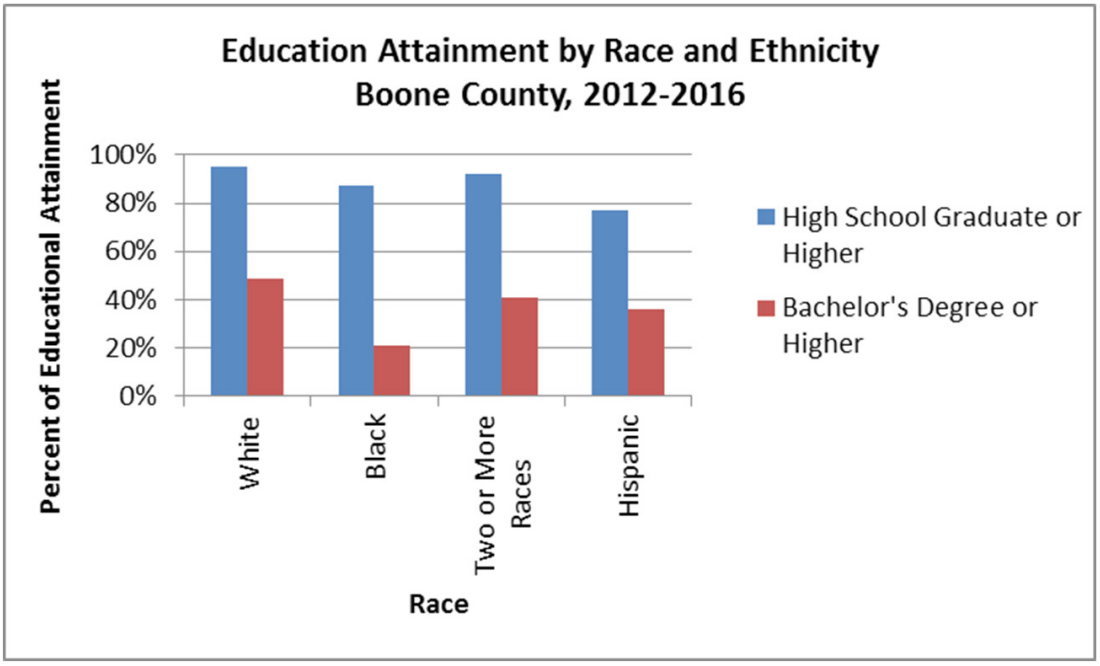


Figure 22: Educational Attainment by Race and Ethnicity, Boone County, 2012-2016



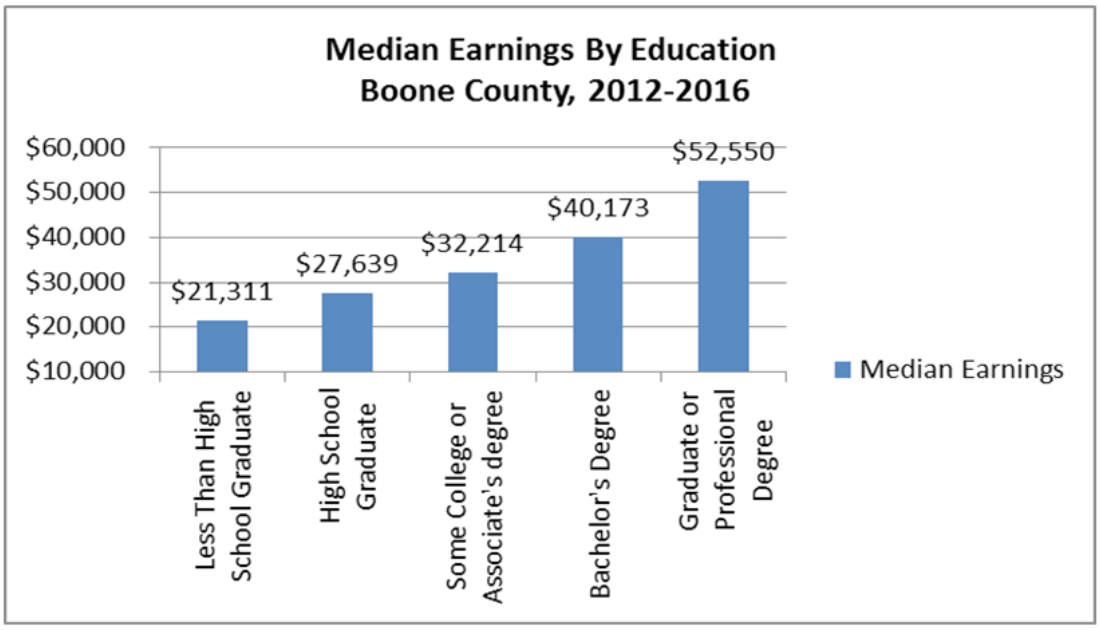
In addition to the University of Missouri System flagship campus which is located in Columbia, there are other higher education opportunities nearby (Regional Economic Development Inc., 2017/2018). Table 23 highlights post-secondary educational opportunities.

Figure 23: Post-Secondary Education Opportunities within 50 Miles of Boone County

School	Enrollment
University of Missouri	33,239
Columbia College	16,413
Moberly Area Community College	5,060
Lincoln University	2,738
William Woods University	2,076
State Technical College of Missouri	1,227
Central Methodist University	1,094
Westminster College	876
Stephens College	954
Metro Business College	58
Bryan College	74
Columbia Area Career Center	59
Source: Columbia REDI	

In Boone County, adults 25 years and older with only a high school diploma earn about one-third less income than those with a bachelor's degree. Those adults with less than a high school diploma earn approximately one-half of those with a bachelor's degree.

Figure 24: Median Earnings by Educational Attainment, Boone County, 2012-2016



Adults with a college degree are also less likely to live in poverty. In Boone County, the poverty rate for those who do not have a high school diploma is 2.5 times greater than the high school graduate rate, and 5.2 times higher than the poverty rate of a person with a bachelor's degree.

High school graduation rates are an important indicator, and may influence an individual's economic and health outcomes. Figure 24 shows an additional $6,300 in annual median income for a Boone County resident holding a high school diploma or equivalent.

In Boone County, there are six separate school districts, with enrollments varying from 462 students in Sturgeon Public School District to 17,334 students in the Columbia Public Schools.

Figure 25: Boone County School Districts by Population, 2017

Boone County School Districts, 2017		
District	Population	Student-Classroom Teacher Ratio
Columbia Public Schools	17,334	17:1
Southern Boone Public Schools (Ashland)	1,607	18:1
Centralia Public Schools	1,370	18:1
Hallsville Public Schools	1,378	18:1
Harrisburg Public Schools	552	17:1
Sturgeon Public Schools	462	14:1

The four-year high school graduation rate is the percentage of freshmen students who graduate in four years with a traditional high school diploma. It allows rates to be compared across counties and states. The Missouri Department of Elementary and Secondary Education have collected this statistic since 2011 (DESE). Figure 26 shows Columbia frequently graduates a lower percentage of its students than the other districts in Boone County. Of note, the Columbia school district is much larger and more diverse than the other school districts.

Figure 26: Four Year Graduation Rates, Boone County School Districts, 2013-2017

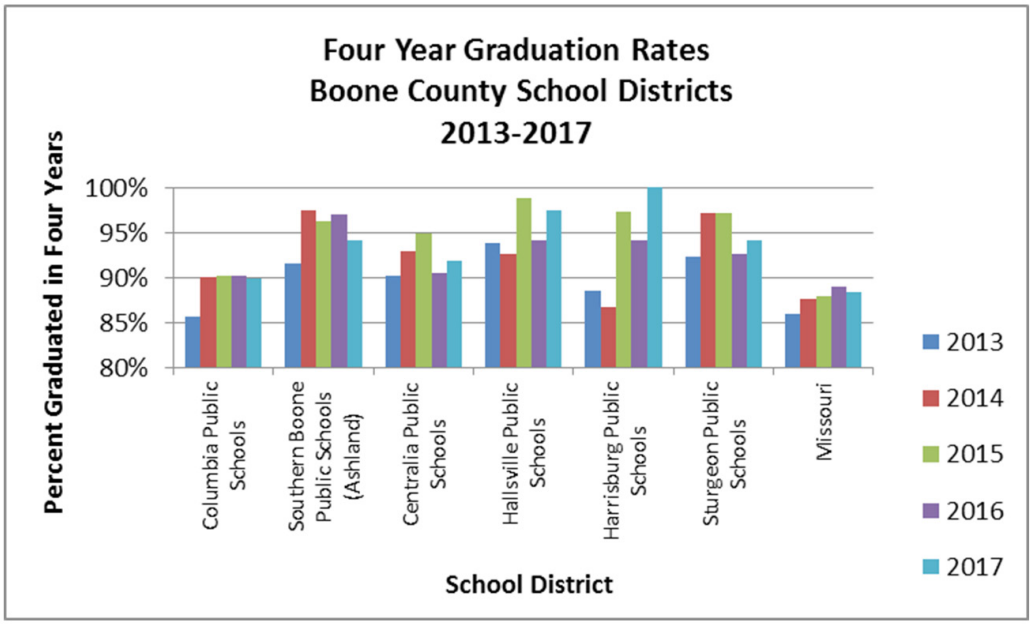
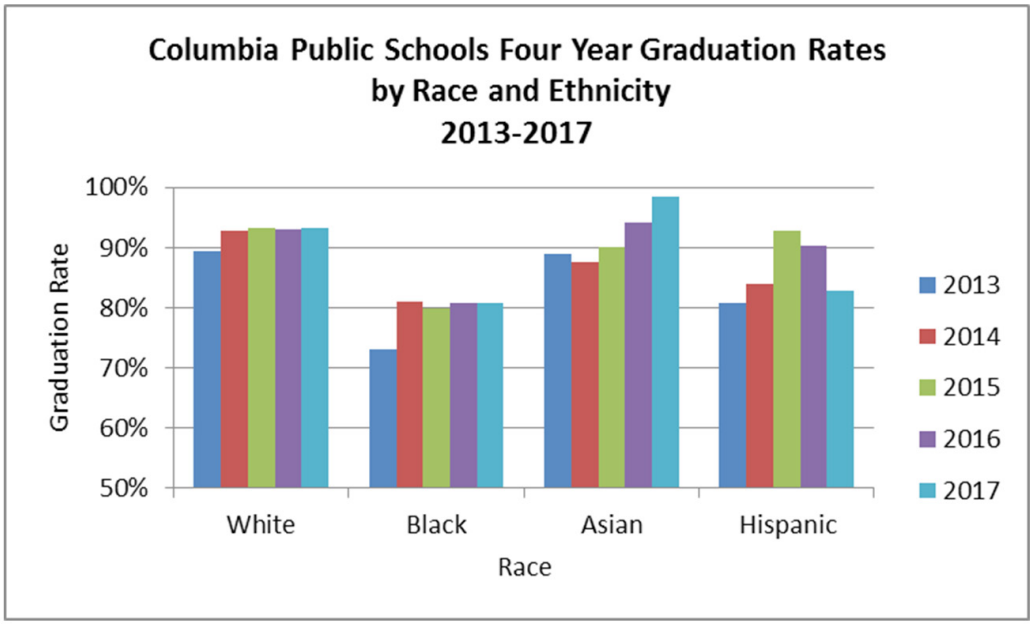


Figure 27 breaks down the Columbia graduation rates by race, showing black students consistently are less likely to graduate than students of other races.

Figure 27: Four Year Graduation Rates by Race and Ethnicity, Columbia Public Schools, 2013- 2017



As mentioned previously in this assessment, the 2012-2016 American Community Survey estimates 6.3% of Boone County's population is foreign born, and discussed that those who speak English less than very well may have difficulties with education, employment and healthcare. Figure 28 shows the percentage of students in Columbia Public Schools who are enrolled in the ELL (English Language Learners) program, and the percentage of those enrolled who graduate in four years. This information was only available for the years 2011 to 2017, and the same information was not available for other Boone County school districts (DESE).

Figure 28: Percentages of English Language Learners (ELL) and Four Year Graduation Rates, Columbia Public Schools, 2011-2017

Year	ELL Enrollment %	ELL Four Year Graduation Rate
2017	6.1%	66.7%
2016	5.8%	78.1%
2015	5.7%	33.3%
2014	5.4%	44.8%
2013	5.0%	33.3%
2012	4.5%	52.0%
2011	3.8%	47.1%
Source: DESE		

Poverty

According to the U.S. Department of Health and Human Services, there are two slightly different versions of the federal poverty thresholds and poverty guidelines. Poverty thresholds, issued by the U.S. Census Bureau, are weighted statistical calculations that consider family size and age. Poverty guidelines, issued by the Department of Health and Human Services, vary by family size and are used to determine financial eligibility for certain programs. The poverty guidelines are often referred to as the Federal Poverty Level (FPL). The following figures are the 2018 U.S. Department of Health and Human Services poverty guidelines which were published in the Federal Register on January 18, 2018 (U.S.Department of Health and Human Services, 2018).

Figure 29: 2018 Federal Poverty Guidelines (FPL)

2018 Poverty Guidelines for the 48 Contiguous States and the District of Columbia	
Persons in Family/Household	**Poverty Guideline**
For families/households with more than 8 persons, add $4,320 for each additional person	
1	$12,140
2	$16,460
3	$20,780
4	$25,100
5	$29,420
6	$33,740
7	$38,060
8	$42,380

Figure 30: Federal Monthly Poverty Guidelines by Percent of Poverty Level

2018 Monthly Federal Poverty Guidelines By Percent of Poverty Level				
Size of Family Unit	**100% of Poverty**	**138% of Poverty**	**150% of Poverty**	**200% of Poverty**
1	$1,012	$1,396	$1,518	$2,023
2	$1,372	$1,893	$2,058	$2,743
3	$1,732	$2,390	$2,598	$3,463
4	$2,092	$2,887	$3,138	$4,183
5	$2,452	$3,383	$3,678	$4,903
6	$2,812	$3,880	$4,218	$5,623
7	$3,172	$4,377	$4,758	$6,343
8	$3,532	$4,874	$5,298	$7,063

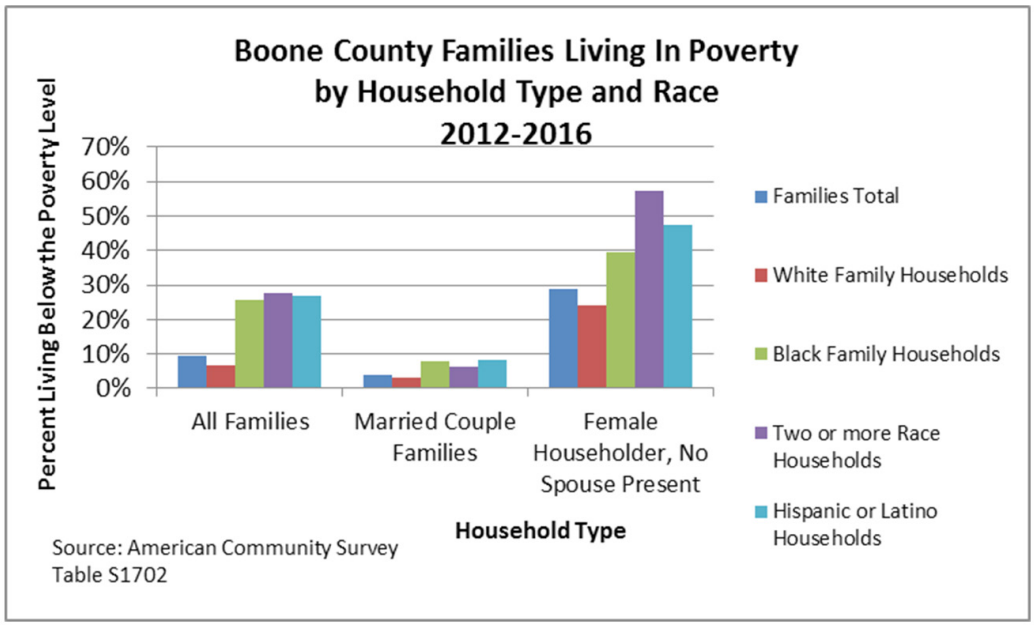
The American Community Survey 2012-2016 estimates that 19.3% of Boone County residents are living in poverty, compared to 15.3% of Missouri residents. Figure 31 breaks down the percentage of the Boone County population living in poverty by age, race and household.

Figure 31: Percent Living in Poverty, Boone County, 2012-2016

For the Estimated 163,378 Boone County Residents for Whom Poverty Status is Determined:	
• 19.3% of Boone County residents live in poverty	31,461 residents
• 17.0% of White Boone County residents live in poverty	22,734 residents
• 28.4% of Black Boone County residents live in poverty	3,879 residents
• 17.8% of Boone County male residents live in poverty	14,160 residents
• 20.7% of Boone County female residents live in poverty	17,301 residents
• 15.4% of Boone County children under 18 years live in poverty	5,383 residents
• 17.7% of Boone County children under 5 years live in poverty	1,818 residents
• 22.4% of Boone County residents 18-64 years live in poverty	24,885 residents
• 6.8% of Boone County residents 65 years and over live in poverty	1,193 residents
Source: American Community Survey Table S1701, 2012-2016	

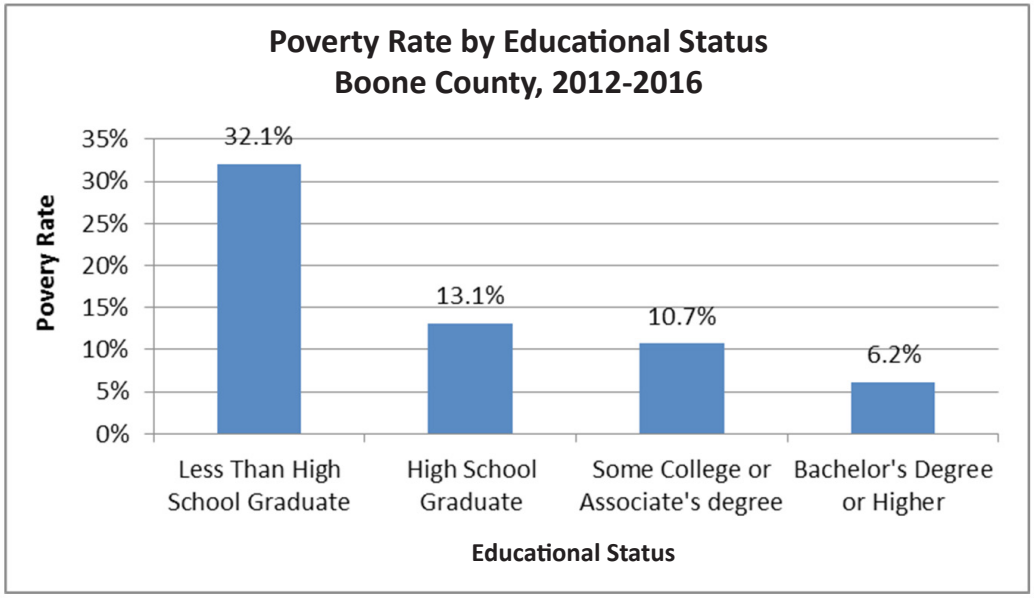
Many families live in poverty, and the extent of poverty may vary depending on both race and types of household. Figure 32 breaks down families in poverty by household type and race.

Figure 32: Percent of Boone County Families in Poverty by Household Type and Race, 2012-2016



Adults with a college degree are less likely to live in poverty. In Boone County, the poverty rate for residents 25 years of age and over decreases with each level of educational attainment. The percentage of those without a high school diploma living in poverty is over twice that of a high school graduate, and over five times greater than those with a four year college degree. Figure 33 compares the percentage of Boone County residents living in poverty by educational attainment.

Figure 33: Poverty Rate by Educational Attainment, Boone County, 2012-2016



Food Insecurity

Food security is defined by the United States Department of Agriculture as "access by all people at all times to enough food for an active, healthy life". Food insecurity is normally due to insufficient resources for food purchases. Food insecurity in a household may lead to the household relying on acquiring food through both private and public assistance programs to avoid hunger. The 2016 Missouri Hunger Atlas states "food insecurity and poverty are clearly connected-poverty is the best single predictor of food insecurity, and hunger strongly correlates with lower educational achievement, unemployment and impaired work performance." Food insecurity in children can be a predictor of chronic illness, low birth weight, lower school performance and developmental problems. (Missouri Hunger Atlas, 2016).

Boone County is ranked as a low need high performance county in the 2016 Missouri Hunger Atlas. This can be interpreted as having comparatively low percentages of population with hunger and with our service providers adequately handling food insecurity in Boone County. This is an improvement from the 2013 Missouri Hunger Atlas, which reported Boone County as having low need, but low performance, with our county not meeting the needs of those who were food insecure.

Among the resources available for Boone County residents to help with food insecurity is SNAP (Supplemental Nutrition Assistance Program) which was formerly referred to as food stamps. This program offers nutrition assistance to eligible low-income individuals and families. The National School Lunch Program (NSLP) provides students enrolled in public and nonprofit private schools who meet eligibility requirements free or reduced price lunches. The Women, Infants and Children (WIC) program provides food and nutrition education for pregnant women, non-breastfeeding women up to six months postpartum, breastfeeding women up to one year postpartum, infants, and children up to their fifth birthday. All three of these resources are offered in Boone County, along with multiple food bank distribution sites located throughout the county. Figure 34 shows the Boone County need indicator data and performance indicators in the 2016 Missouri Hunger Atlas.

Figure 34: Boone County Data, Missouri Hunger Atlas, 2016

Need Indicator	Boone County	Missouri
% individuals food uncertain	17.2%	16.4%
% individuals < 18 food uncertain	18.4%	20.9%
% individuals food uncertain with hunger	8.1%	7.7%
% of population eligible for SNAP	22.8%	28.0%
number of monthly SNAP participants	16,782	815,575
% of total population participating in SNAP	10.1%	14.3%
% of population < 18 years eligible for SNAP	22.8%	28.0%
Number of monthly SNAP participants < 18 years	7,509	353,540
% of population < 18 years participating in SNAP	21.7%	25.0%
% of children < 5 years eligible for WIC	37.2%	46.4%
Number of Monthly WIC participants	2,608	139,147
Number of monthly infants/children WIC participants	1,876	103,380
% of eligible children < 5 years participating in WIC	49.6%	59.7%

Figure 35 shows the percentage of students eligible for Free or Reduced-Price Lunch program in each Boone County school district. Not every student that is eligible participates. The 2016 Missouri Hunger Atlas reported 85.9% of eligible Boone County students participated.

Figure 35: Percentage of Students Eligible for Free or Reduced Price Lunch, Boone County Schools, 2013-2017

School District	2013	2014	2015	2016	2017
Columbia Public Schools	39.7%	40.1%	41.2%	45.0%	45.4%
Southern Boone Public Schools (Ashland)	23.3%	20.8%	20.4%	18.1%	18.1%
Centralia Public Schools	34.5%	35.9%	34.1%	31.7%	30.1%
Hallsville Public Schools	35.4%	35.2%	35.1%	35.1%	33.8%
Harrisburg Public Schools	42.1%	37.7%	37.9%	37.9%	43.0%
Sturgeon Public Schools	46.1%	44.9%	45.7%	48.3%	45.2%
Missouri Schools	49.9%	50.3%	51.7%	51.7%	51.2%
Source: DESE					

There are multiple food pantries in Boone County, located at churches, businesses, daycares, and housing areas. One organization, The Columbia Center for Urban Agriculture (CCUA), donates everything grown at the Urban Farm to hunger relief outlets. In 2017, CCUA donated over 17,000 pounds of fresh food to local food pantries (Columbia Center for Urban Agriculture).

Health Insurance Coverage

Eight percent of Boone County residents lack health insurance (American Commmunity Survey). Broken down by age group, 4.9% of residents under the age of 18 lack insurance while 10.1% between the ages 18 to 64 are uninsured. Only 0.2% of Boone County residents aged 65 and over is uninsured. Figure 35 compares the percentage of uninsured by age group.

Figure 36: Uninsured Rate for Boone County by Age Group, 2012-2016

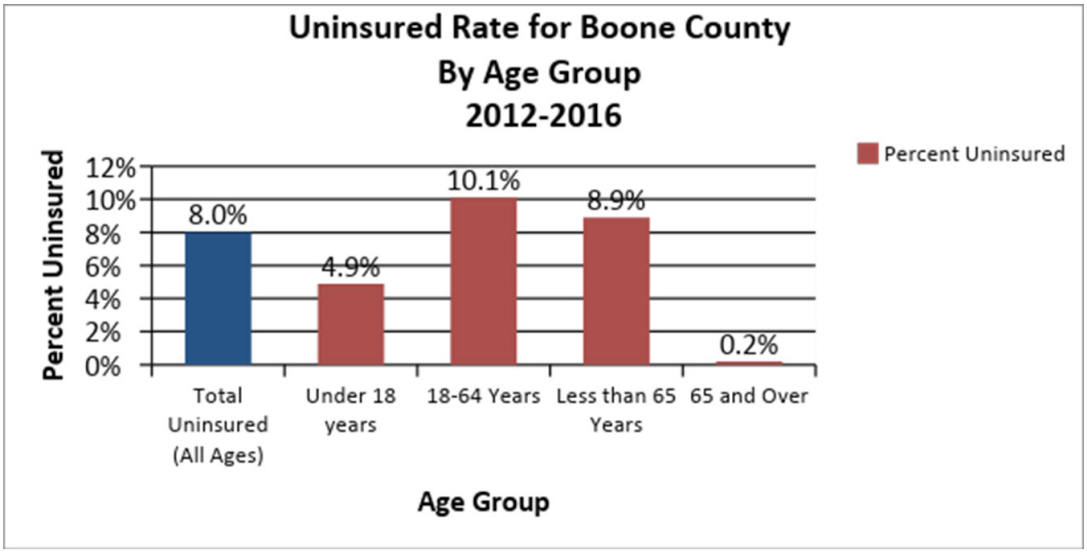
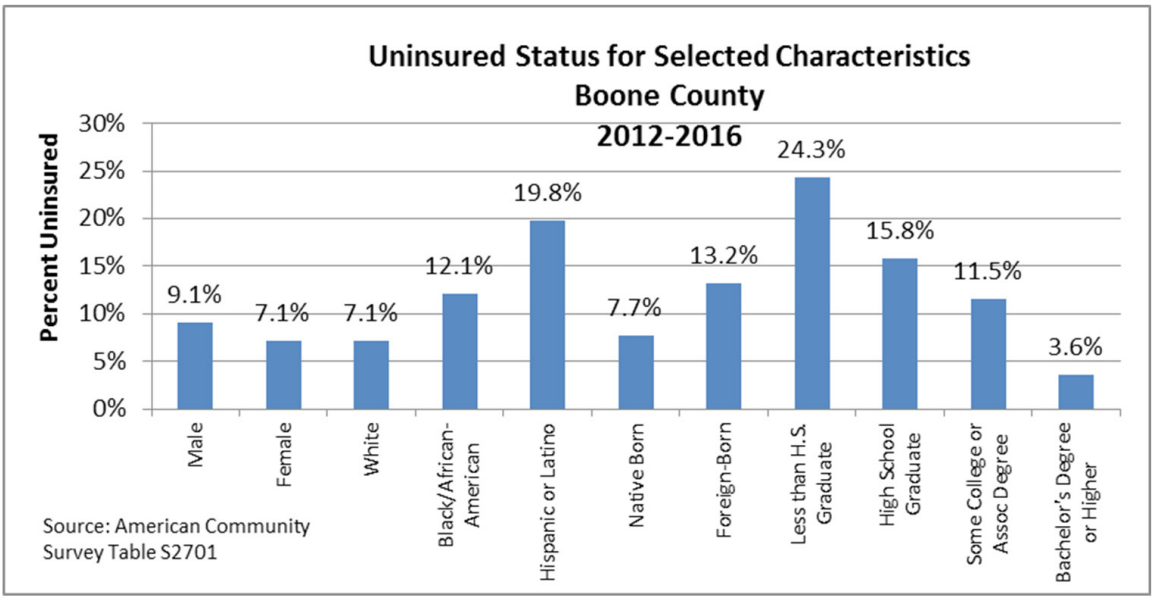


Figure 37 compares the percentage of uninsured by gender, race, and educational attainment, highlighting the characteristics with the highest rates of uninsured status.

Figure 37: Uninsured Status for Selected Characteristics for Boone County, 2012-2016



Households and Housing

Availability of safe and affordable housing can serve as an indicator of the overall social, economic, and demographic picture of the community. As mentioned previously, Boone County is home to multiple colleges which impact the community in many ways, one of which is housing. Columbia has continued to see new apartment complexes built that primarily house the student population. The cost of rent in the new complexes is generally higher than an average median rent cost in Boone County.

According to the 2012-2016 American Community Survey, there are 73,275 housing units in Boone County, with 92.6% occupied, and 7.4% vacant. Of these housing units, 64% are single unit structures, and 36% are two or more unit structures. Approximately 41.7% of the housing structures in Boone County have been built between 1990 and 2009.

Figure 38: Selected Housing Characteristics, Boone County, Missouri, 2012-2016

	Boone County	Missouri
Median gross rent	$803	$759
Median mortgage cost	$1,264	$1,210
Median home value	$171,400	$141,200

It is important to look at the amount of income spent on housing by Boone County residents. Housing costs include rent or mortgage, utilities, taxes, insurance, and condo or other fees. The U.S. Department of Housing and Urban Development (HUD) considers families who pay more than 30% of their income for housing as "cost burdened." Figure 39 looks at the percentages of both owners and renters in Boone County, and Missouri. Fifty-three percent of renters in Boone County spend 30% or more of their income on housing. Students may make up a large portion of this percentage. Without means of support other than educational and family assistance, students increase the number of households in Boone County living below the poverty level. Students add to the demand for housing and are often able to pay higher rent due to other sources of income. This often leaves those lacking additional financial support without affordable and sometimes safe housing.

Figure 39: Percent of Renters and Homeowners Who Are "Cost Burdened", 2012-2016

	Boone County	Missouri
Percent of ***Renters*** Who Pay More than 30% of Income for Housing	53.3%	47.5%
Percent of ***Homeowners*** Who Pay More than 30% of Income for Housing	16.4%	20.2%

HEALTH RESOURCES

The healthcare industry plays an important role in the health and economic well-being of Boone County. Five hospital systems, with over 1,000 hospital beds, provide a wealth of health care resources and serve as primary providers for the area. The University Hospital and Clinics, Boone Hospital, and Harry S Truman Veteran's Hospital provide over 7,000 jobs in Boone County.

Health Care Facilities

University of Missouri Health System

Five MU Health Care hospitals offer a wide variety of services to Boone County and surrounding counties (University of Missouri Health Care, 2018). It is an academic health center, providing both research and a training facility for future health professionals. They include:

- University Hospital offers the only Level I trauma center and helicopter service in central Missouri. The hospital specializes in treating the most severe illnesses and injuries, with physicians throughout the state referring cases to this location.
- Women's and Children's Hospital is Missouri's only hospital offering the most comprehensive care for women and the only hospital facility dedicated completely to children.
- Missouri Orthopaedic Institute is central Missouri's largest freestanding orthopaedic center and comprehensive orthopaedic surgery center.
- Ellis Fischel Cancer Center is dedicated to providing comprehensive care, treating all types of cancers. Named after Dr. Ellis Fischel, a physician who envisioned a statewide plan for controlling cancer, the hospital was dedicated on April 26, 1940 as the first cancer center west of the Mississippi River.
- Missouri Psychiatric Center offers short-term, intensive inpatient treatment services for adults, adolescents and children. The 61 inpatient beds include a 17 bed unit for adolescents, ages 5-12 and adolescents ages 13-17, and two units with a total of 44 beds to serve adults.

Boone Hospital Center

Opened in 1921, Boone Hospital Center, part of the BJC Healthcare family, is a full-service nonprofit hospital with a 24-hour emergency center, ambulance service, and helipad (Boone Hospital Center, 2018). Among its many specialties, Boone Hospital Center is known for its cardiology, neurology, oncology, surgical and obstetrical services.

Harry S. Truman Veterans' Hospital

Truman VA serves veterans from 43 counties in Missouri as well as Pike County, Illinois. While the University Hospital and Truman VA share medical staff, the VA does not have an emergency room or helicopter service. The hospital is a widely-used resource for not only primary care, but also extended care and social support services for veterans (Harry S Truman Memorial Veterans' Hospital, 2017).

Landmark Hospital of Columbia

Landmark Hospital is a part of the larger Landmark Hospital system. Landmark fills a niche in Boone County, providing hospital care for chronically ill patients that have medically complex conditions and are too ill for placement in a skilled nursing facility (Landmark Hospital of Columbia, 2017).

Rusk Rehabilitation Center

Rusk Rehab is a rehabilitation hospital that offers both inpatient and outpatient services. It is the only inpatient rehabilitation hospital in central Missouri, and offers a wide variety of comprehensive services (Rusk Rehabilitation Center, 2018).

Figure 40: Hospital Beds in Boone County Facilities (American Hospital Directory, 2018)

Facility	Bed Count
University Hospital and Clinics	587
Boone Hospital Center	321
Harry S. Truman Memorial Veteran's Hospital	124
Women's and Children's Hospital	98
Rusk Rehabilitation Center	60
Missouri Psychiatric Center	61
Landmark Hospital of Columbia	42
Total	**1,293**

Health Care Resources

Boone County is home to multiple physicians, health care clinics, and urgent care clinics. According to the 2018 County Health Rankings and Roadmaps, there is one primary care provider for every 890 Boone County residents, which is well above the Missouri ratio of one primary care provider for every 1,420 Missouri residents (County Health Rankings and Roadmaps, 2018). Even with this high ratio, Boone County has few resources for those who are uninsured. Family Health Center, the only Federally Qualified Health Center (FQHC) in the area, serves multiple counties. MedZou, a volunteer student-operated medical clinic, provides free primary health care. Both clinics are limited on numbers of patients without resources that can be served.

Figure 41: Licensed Providers, Boone County, Missouri, 2018 County Health Rankings

	Number of Boone County Providers	Boone Ratio of Population to Providers	Top U.S. Performers	Missouri Ratio of Population to Providers
Primary Care Providers	196	890:1	1,030:1	1,420:1
Dentists	109	1,620:1	1,280:1	1,810:1

Figure 42: Comparison of Providers, County Health Rankings 2013 and 2018

	2013 Boone Ratio of Population to Providers	2018 Boone Ratio of Population to Providers
Primary Care Providers	949:1	890:1
Dentists	1,736:1	1,620:1

Figure 42 compares the Boone County ratio of primary care providers and dentists between the 2013 and 2018 County Health Rankings, showing an improvement for both.

There is a notable gap in the ability of uninsured and Medicaid eligible Boone County residents to receive dental services. The discontinuation of Medicaid oral health benefits in 2005 left more than 850,000 adults in Missouri without dental coverage, until the return of benefits in mid-2016. Oral health care coverage is provided for children through Medicaid, but only approximately 34% of eligible patients across Missouri utilize it (Missouri Foundation for Health, 2018). A shortage of dentists that take Medicaid, along with additional costs of some recommended dental procedures make it difficult for the uninsured and Medicaid eligible population to afford. Many seniors are also without dental coverage. Most Medicare policies do not offer dental coverage, and for those that do, it is for minimal services. Figure 43 shows emergency room visits for dental complaints for the years 2006-2015. Figure 44 looks at the pay source for the 12,829 emergency room visits for non-traumatic dental problems for Boone County residents from 2006-2015 (MOPHIMS).

Figure 43: Rate of Emergency Room Visits per 1,000 for Non-Traumatic Dental Visits, Boone County, 2006-2015

Year	Rate per 1,000 Boone County Residents
2006	6.04
2007	6.51
2008	6.73
2009	7.74
2010	8.10
2011	7.71
2012	6.03
2013	7.14
2014	8.13
2015	9.24

Figure 44: Pay Source for Emergency Room Dental Complaints, Boone County, 2006-2015

Self-Pay/No Charge	45.8%
Medicaid	32.7%
Commercial Insurance	13.4%
Medicare	7.6%
Other/Unknown	13.9%

ExploreMoHealth (exploreMOhealth) reports the following health behaviors concerning Boone County residents:

- 33% do not have a regular doctor
- 16.7% did not get needed medical care in the past 12 months.
  Of that 16.7%:
    - 40.4% did not get medical care due to cost
    - 8% did not get medical care due to lack of transportation
    - 63.3% did not get medical care for other reasons
- 27% have not had a dental exam within the last 12 months
- 21.5% could not get dental care in the past 12 months due to cost
- 9% age 35 and older have not had cholesterol checked
- 10.5% of women age 40 and older have never had a mammogram
- 26% have not had a mammogram or breast exam in the past 2 years
- 18% of women age 18 and older have never had a pap test
- 15.6% had no pap test in the last 3 years
- 35% have not had a flu vaccination within the last 12 months
- 21% of adults age 65 and older have never had a pneumonia vaccination

Health Care Resources

Boone County has a combined city/county public health department with a human services division. Columbia/Boone County Public Health and Human Services (PHHS) is a City of Columbia department with an appointed Board of Health that advises elected officials regarding the operations of PHHS, and makes policy recommendations in the interest of public health. PHHS is nationally accredited through the Public Health Accreditation Board (PHAB).

The 2018 operating budget of the department is $7,467,167; the department operates with 68 permanent staff.

Mission	Vision
To promote and protect the health, safety, and well-being of the community through leadership and service.	Optimal health, safety and well-being for all.

Long-Term Care and Assisted Living Facilities

Boone County has 25 licensed long-term care facilities with 1,544 beds: nine offer skilled nursing; ten are categorized as assisted living, two as intermediate care, and four as residential. A skilled nursing facility assumes responsibility for the resident, while an assisted living facility requires the resident to be able to evacuate with minimal assistance. An intermediate care facility usually offers 24 hours accommodation and care to those with a physical and/or mental disability. A residential facility requires the resident to be able to evacuate without assistance (Missouri Department of Health and Senior Services). Of the 25 facilities, ten offer an Alzheimer's unit, and nine participate with Medicare/Medicaid.

Figure 45: Licensed Nursing Home Beds, Boone County, 2018

	Number of Licensed Facilities	Number of Licensed Beds	Number of Facilities with an Alzheimer's Unit	Number of Alzheimer's Beds
Skilled Nursing Facility	9	863	4	76
Assisted Living Facility	10	479	6	141
Residential Nursing Facility	4	63	0	0
Intermediate Nursing Facility	2	139	0	0
Total	**25**	**1544**	**10**	**217**

QUALITY OF LIFE

The National Association of City and County Health Officials (NACCHO) defines quality of life as a construct that "connotes an overall sense of well-being" when applied to an individual, and a "supportive environment" when applied to a community.

Parks and Recreation

The ability to safely access and participate in outdoor activities is important to the health of a community. Parks, walking, and biking trails are widely available throughout Boone County. In Columbia, there are 3,375 total park/green space acres and 58.1 miles of trails. Rock Bridge Memorial State Park and Finger Lakes State Park, along with several Conservation and Wildlife Management Areas are also found in Boone County. The KATY Trail, which extends over 200 miles through Missouri, runs through the county. The MKT Nature & Fitness Trail connects to the KATY Trail near McBaine and links to over four miles of trails in Columbia (Columbia Parks and Recreation, 2018). These widely used trails provide opportunities for runners, bikers, and walkers.

The Centralia Park System maintains over 30 acres and four parks, along with a municipal swimming pool. The Centralia Recreation Center was opened in 2009 and offers a fitness area, multipurpose gymnasium and walking track, and a children's play area (Centralia Parks and Recreation Department, 2018).

In 2016, the Southern Boone Area YMCA opened in Ashland after a successful community campaign. It provides a workout area and classes, summer camp programs, youth sports and youth and teen enrichment programs (Southern Boone YMCA, 2018).

Transportation

Columbia Regional Airport is located south of Columbia and offers daily flights to Chicago, Dallas, and Denver.

Columbia is the only community in Boone County with a public transportation system. The system, called Go COMO, has both fixed bus routes and Para-Transit, which offers scheduled rides to ADA-eligible citizens who are unable to use the fixed-route bus system. OATS, a nonprofit corporation, also offers specialized transportation for senior citizens, people with disabilities, and the rural general population. The 2012-2016 ACS data shows that only one percent of Boone County residents use public transportation to commute to work, and 79% drove alone in cars.

Child Services and Childcare

Affordable and safe child care services are important in every community. The 2012-2016 ACS reports that of Boone County households with children under six years of age, 67.2% have both parents in the labor force. Kids Count Data Center reports 6,566 spaces in licensed family child care homes, group child care homes, and child care centers in Boone County (Kids Count, 2018). As the cost of each daycare varies, the average cost of daycare in Boone County is unknown. One website estimates the annual cost of center based child care in Missouri being $9,412, and of home based child care being $5,564 (Childcare Aware of America, 2018). Anecdotally, the cost of daycare in Columbia seems to vary from $800 to $1200 a month. One childcare center in Columbia is over $1,000 a month ($12,000 per year) for a child under two years of age. Childcare expenses are frequently compared to the cost of college tuition.

Homelessness

The primary indicator of homelessness in Boone County is the number of individuals represented in the annual Point-In-Time Count (PITC) of persons experiencing homelessness. The PITC is conducted during a specified 24-hour period in January, as a snapshot of the number of sheltered and unsheltered individuals, as defined by the Department of Housing and Urban Development (HUD):

- Unsheltered- An individual or family who lacks a fixed, regular, and adequate nighttime residence, meaning: sleeping in a place not designed for or ordinarily used as a regular sleeping accommodation, including a car, park, abandoned building, bus or train station, airport, camping ground or other place not meant for human habitation.
- Sheltered- An individual or family residing in an emergency shelter, safe haven, transitional housing, or a hotel/motel paid for by a charitable organization.

The PITC does not capture individuals and families that are doubled up or are at imminent risk of losing their housing.

In Boone County, the PITC is led by the Columbia/Boone County Department of Public Health and Human Services Division of Human Services, as part of the Missouri Balance of State Continuum of Care PITC.
The transient nature of homeless individuals brings about challenges in obtaining an accurate count of the population and in assessing individual needs.

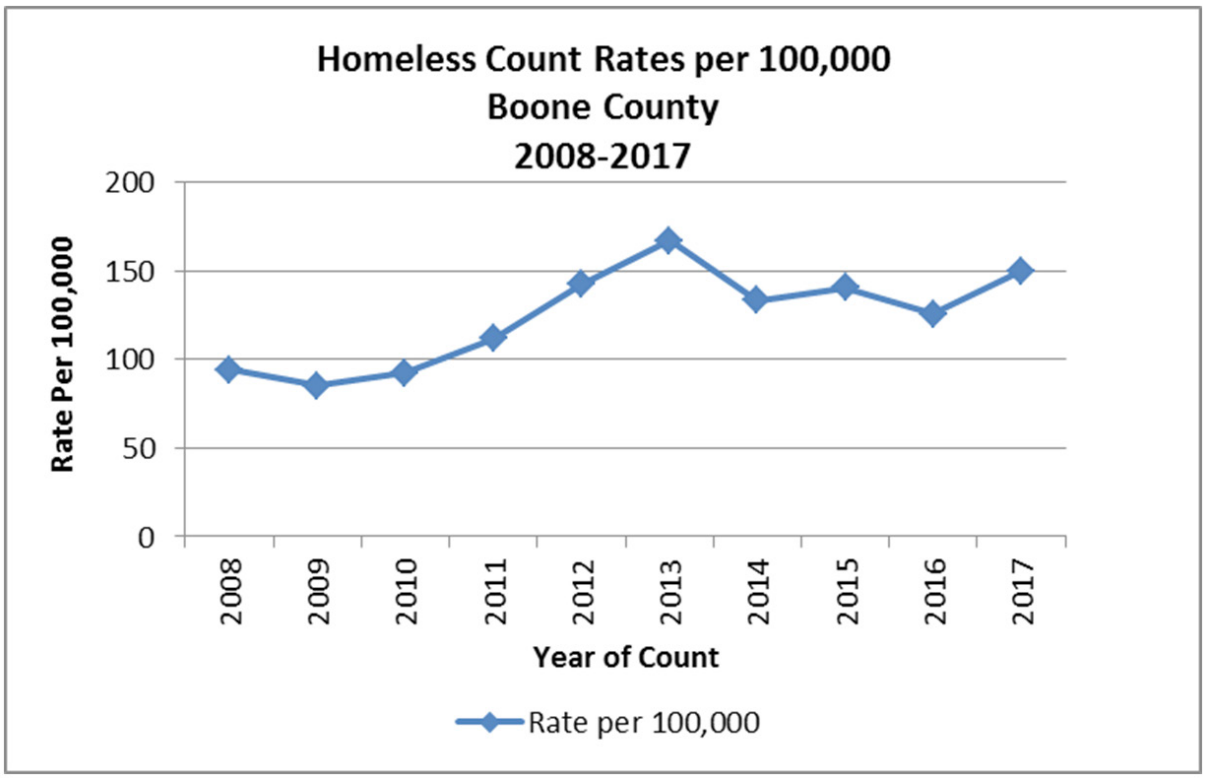
In Columbia, there are two housing options specifically for veterans experiencing homelessness. Patriot Place Apartments contain 25 fully furnished one-bedroom apartments, and Welcome Home, Inc., which is a local shelter for homeless veterans. Welcome Home has 32 temporary shelter beds (Columbia Housing Authority). The Salvation Army Harbor House in Columbia has rooms for families with small children, and single men and women. St. Francis House and Lois Bryant House provide overnight shelter for those who are homeless. Room at the Inn is a seasonal shelter for those who have no place to go in the cold winter months.

Figure 46 shows ten years of sheltered and unsheltered homeless counts in Boone County, along with the rates per 100,000 population.

Figure 46: Boone County Point in Time Homeless Count, 2008-2017

Year	Unsheltered Homeless	Sheltered Homeless	Total	Rate Per 100,000
2008	41	106	147	94.4 / 100,000
2009	42	93	135	85.4 / 100,000
2010	25	123	148	92.2 / 100,000
2011	11	171	182	111.9 / 100,000
2012	52	184	236	142.2 / 100,000
2013	70	211	281	166.7 / 100,000
2014	19	209	228	133.4 / 100,000
2015	49	194	243	140.7 / 100,000
2016	45	175	220	125.7 / 100,000
2017	44	221	265	150.1 / 100,000
Source: Columbia/Boone County Public Health & Human Services, Division of Human Services				

Figure 47: Boone County Homeless Population Count Rates per 100,000, 2008-2017



Crime

If a person in a community feels the threat of physical safety or the threat of losing property from crime, these feelings of insecurity may influence quality of life, even if the crime does not happen. The Missouri State Highway Patrol keeps crime statistics with the Uniform Crime Reporting Program (UCR). Crime data can be divided into two categories: violent crimes and property crimes. Violent crimes include homicide, rape, robbery, and aggravated assault.

Property crimes include burglary, larceny-theft, motor vehicle theft, robbery and arson (Uniform Crime Reporting).

Figures 48 & 49 compare property crimes and violent crimes and the total counts in Boone County for the years 2008 through 2017. Figure 50 shows the rate of property crimes, with figures 51-54 looking at individual property crimes by rate. Figure 55 shows the rate of violent crimes in Boone County, with figures 56-59 showing individual violent crimes rates.

Figure 48: Violent Crimes for Boone County, 2008-2017

Year	Criminal Homicide	Rape	Robbery	Aggravated Assault	Attempted Rape	Violent Crimes Totals
2008	6	24	152	343	2	527
2009	3	36	174	445	0	658
2010	4	45	138	484	2	673
2011	3	43	182	486	2	716
2012	3	45	180	398	1	627
2013	5	75	128	359	4	571
2014	6	80	131	375	1	593
2015	6	92	158	500	2	758
2016	6	130	140	406	2	684
2017	10	120	129	469	8	736
Source: Missouri Uniform Crime Reporting Program, 2008-2018						

Figure 49: Property Crimes for Boone County, 2008-2017

Year	Burglary	Larceny Theft	Motor Vehicle Theft	Arson	Property Crimes Totals
2008	1129	3942	209	27	5,307
2009	916	4042	186	20	5,164
2010	744	4008	180	14	4,946
2011	1018	4286	198	26	5,528
2012	1024	4327	201	27	5,579
2013	889	4507	229	23	5,648
2014	910	4008	227	41	5,186
2015	1020	3396	295	25	4,736
2016	692	3223	322	25	4,262
2017	642	3678	358	24	4,702
Source: Missouri Uniform Crime Reporting Program, 2008-2018					

Figure 50: Rate of Property Crimes per 100,000, Boone County, 2008-2017

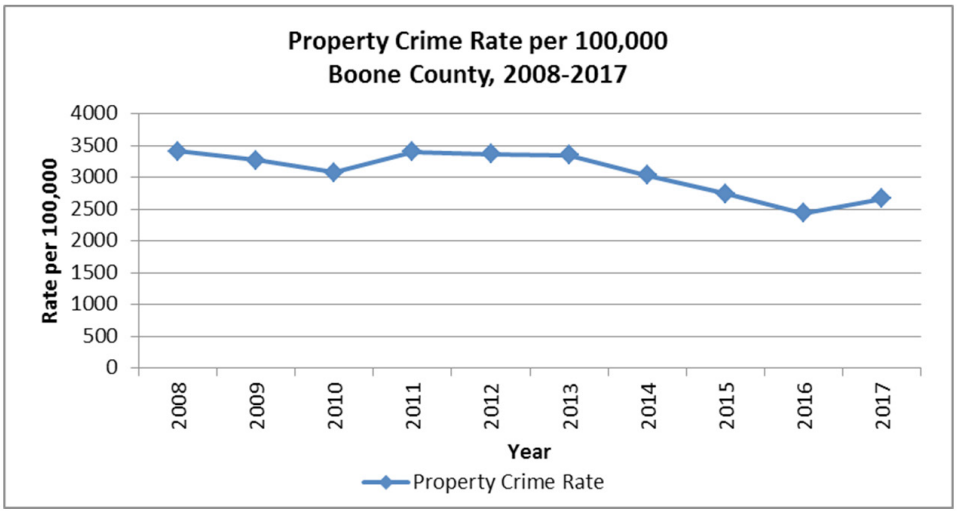


Figure 51: Larceny Rate, Boone County, 2008-2017

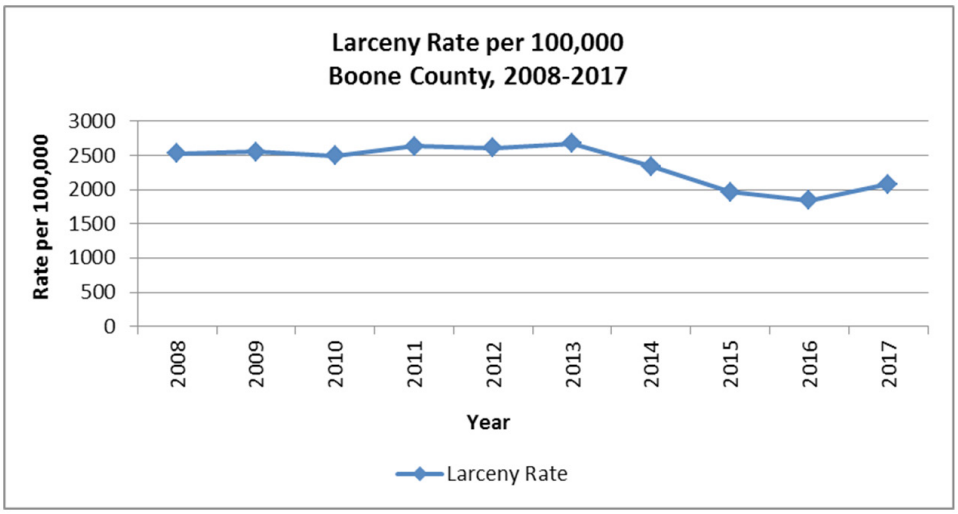


Figure 52: Burglary Rate, Boone County, 2008-2017

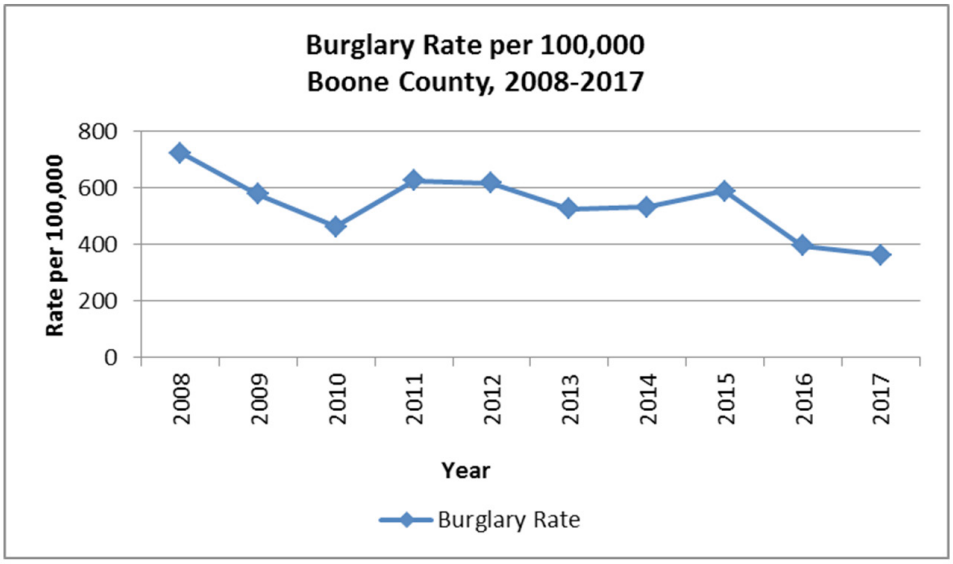


Figure 53: Motor Vehicle Theft Rate, Boone County, 2008-2017

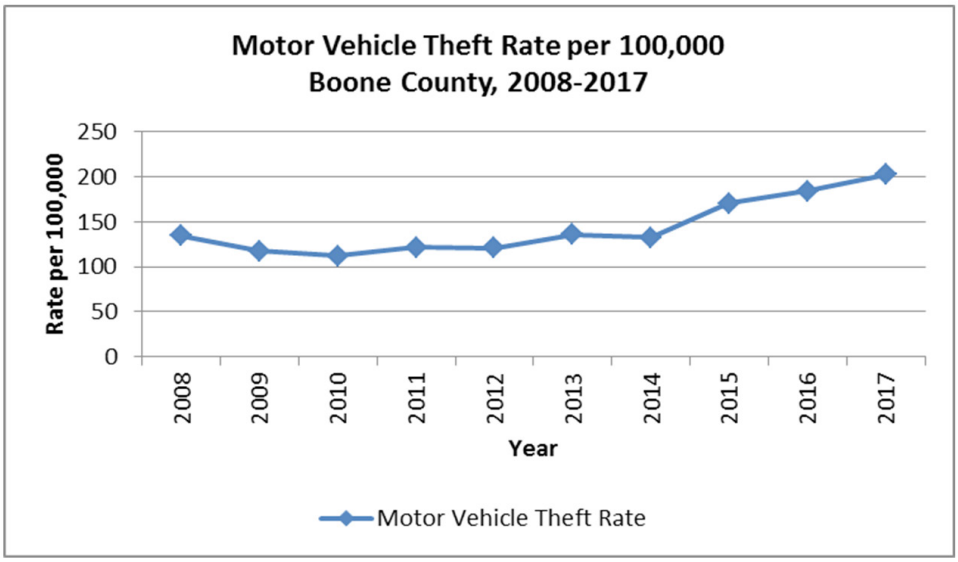


Figure 54: Arson Rate, Boone County, 2008-2017

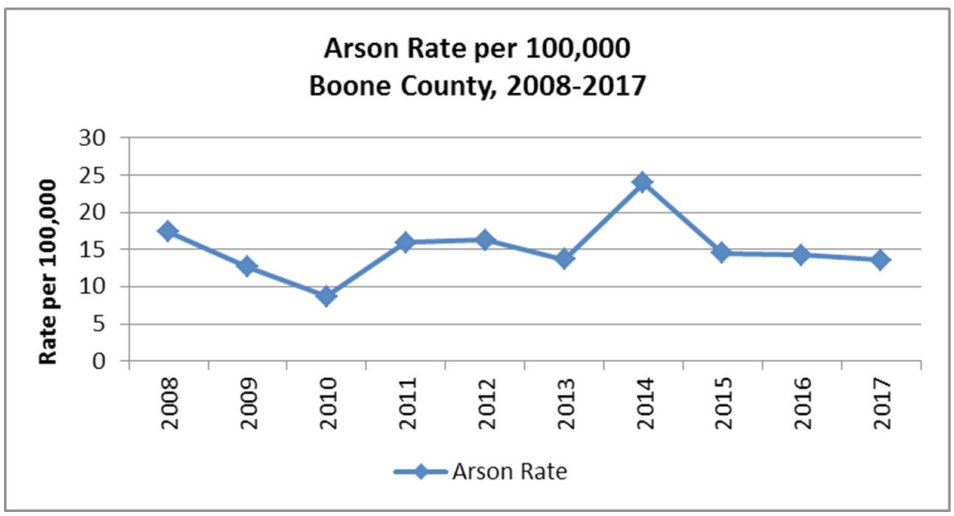


Figure 55: Rate of Violent Crimes, Boone County, 2008-2017

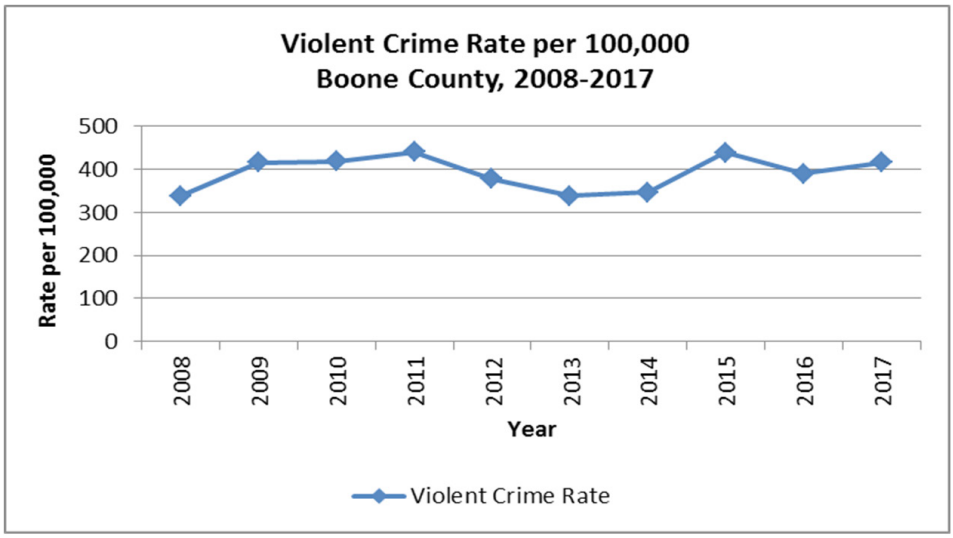


Figure 56: Rape Rate, Boone County, 2008-2017

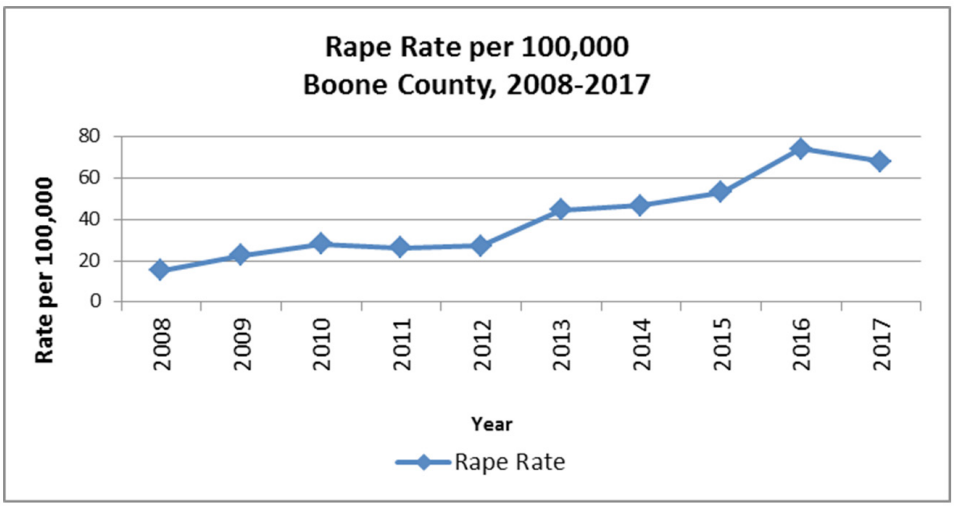


Figure 57: Homicide Rate, Boone County, 2008-2017

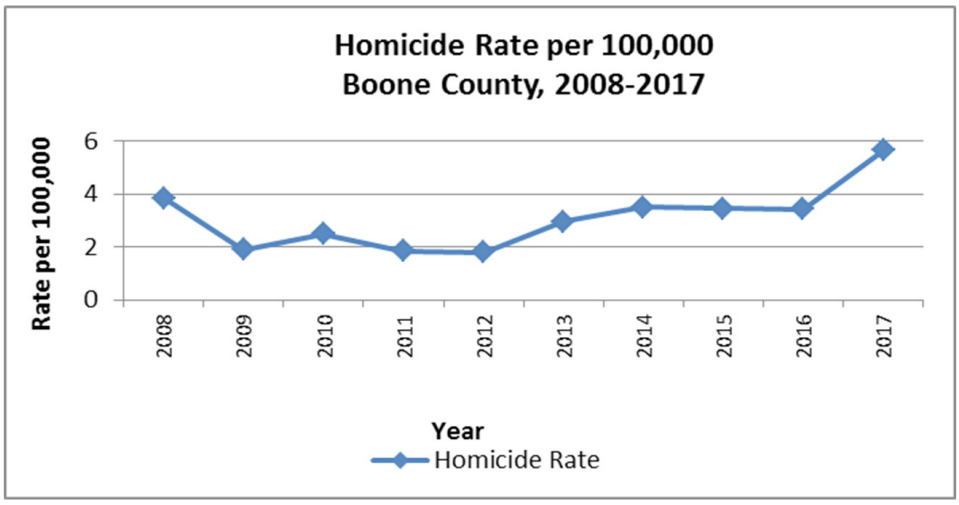


Figure 58: Aggravated Assault Rate, Boone County, 2008-2017

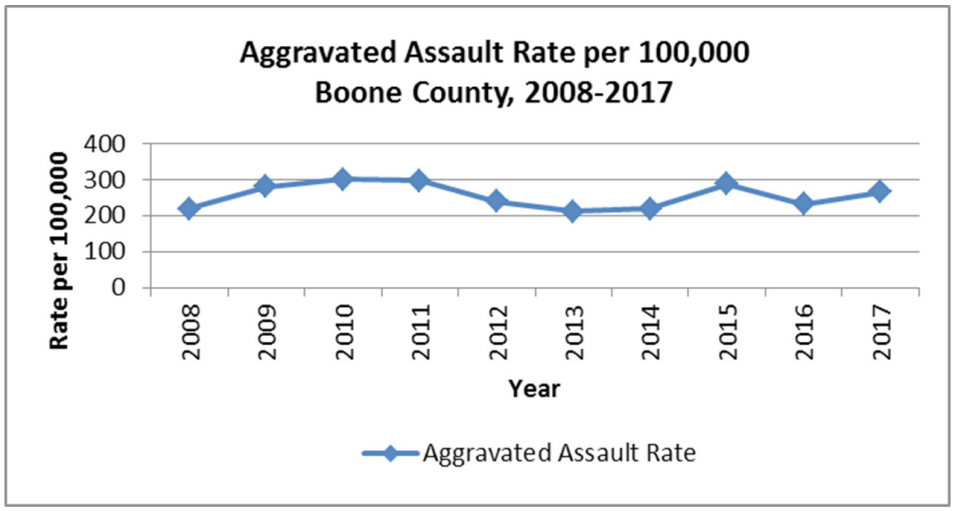


Figure 59: Robbery Rate, Boone County, 2008-2017

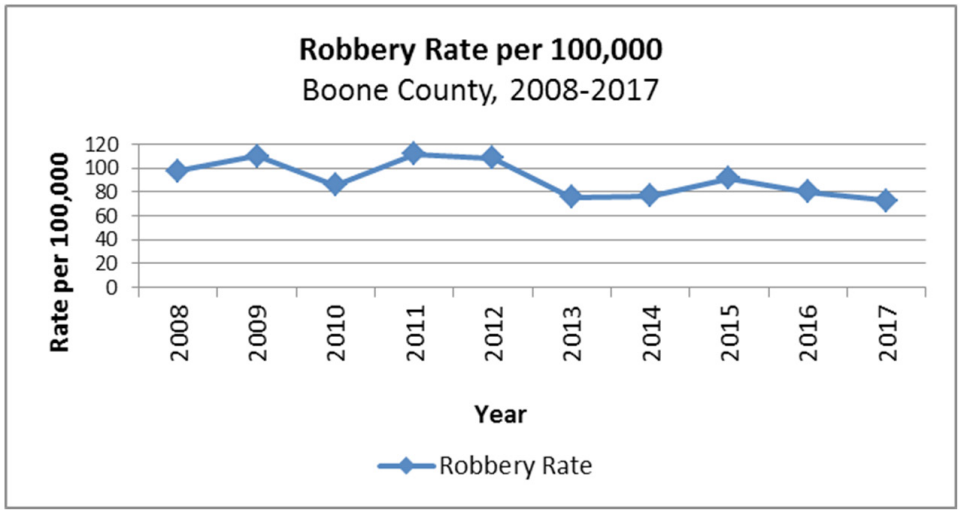
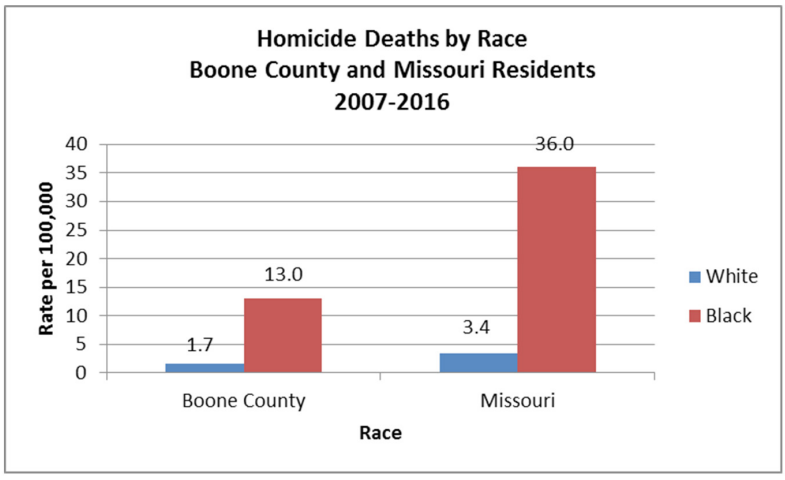


Figure 60 shows the death rate from homicide for Boone County and Missouri residents for 2007 to 2016 combined, and highlights the disparity of homicide victims by race. A black Boone County resident is over seven times more likely to die from homicide as a white Boone County resident. A black Missouri resident is over 10 times more likely than a white to die from homicide. (MOPHIMS).

Figure 60: Homicide Deaths by Race, Boone County Residents, 2007-2016



Aging

Americans are living longer, sometimes extending life into the eighties and nineties, and even reaching 100 years of age. The average life expectancy (the estimate of the number of years a person is expected to live) for a Boone County resident is 79.6 years. Boone County residents have the third highest life expectancy of all Missouri counties. The number of years a person is expected to live is impacted by both race and sex. Figure 61 breaks down the life expectancy by sex and race for both Boone County and Missouri residents (Missouri Department of Health and Senior Services).

Figure 61: Life Expectancy at Birth by Sex and Race, Boone County and Missouri, 2004-2012

Life Expectancy at Birth, 2004-2012		
	Boone County	**Missouri**
All Residents	79.6 Years	77.2 Years
Female	81.5 Years	79.7 Years
Male	77.5 Years	74.6 Years
White	80 Years	77.7 Years
Black	73.5 Years	73.0 Years

While health and economic challenges of aging are significant concerns, more of today's older adults are redefining the retirement and aging experience (Milken Institute). Many are looking for active communities that provide opportunities to pursue work, education, social and civic involvement, and interaction with younger people, while still seeking health care and increased financial security. Currently, 10.5% of Boone County's population is age 65 and over. That is a slight increase from 2010, and below Missouri's 14.5% of 65 and over population.

Columbia ranks fourth in the top small metro cities in the 2017 Milken Report "Best Cities for Successful Aging". The following were the categories where Columbia "nailed it":

- Healthcare and Fitness
  - Great Selection of orthopedic surgeons, primary care doctors and nurses
  - Many med-school-affiliated hospitals
  - Working out: many fitness centers and high rates of exercising
- Long-term Services and Supports
  - Affordable assisted living and semi-private nursing rooms
  - Many home healthcare providers, caregivers and physical therapists
- Finances and Careers
  - Educated population
  - Few reverse mortgages; thriving small businesses
  - High levels of older-adult employment

The following categories are where Columbia "needs work":

- Population Health
  - Weak outreach; insufficient enrollment of Medicare-eligible population
  - High rates of depression and Alzheimer's
  - Burgers and fries; too many fast food outlets
- Livability Factors
  - High income inequality and cost of living
  - High crime rate; many car crashes per capita

SOCIAL AND MENTAL HEALTH

Boone County has several community based-outpatient programs and residential treatment centers, but there is only one facility that offers inpatient hospitalization for psychiatric needs. The County Health Rankings (2018) reports one mental health provider for every 320 Boone County residents. This includes psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists, mental health providers that treat alcohol and other drug abuse, and advanced practice nurses specializing in mental health care.

When Boone County residents were asked "thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" the average number of days adult respondents reported was 4.2 days (County Health Rankings and Roadmaps, 2018).

Data is available for those who receive treatment, but data on mental health of the general population is very limited, especially at the local level. Individuals struggling with serious mental illness are at higher risk for homicide, suicide, and accidents as well as chronic conditions including cardiovascular and respiratory diseases and substance abuse disorders. According to the 2018 Status Report on Missouri's Substance Use and Mental Health, 2,008 Boone County residents received clinical services from the Division of Behavioral Health psychiatric programs in 2018; an increase over the 1,868 who received services in 2017. (Missouri Status Report on Substance Use and Mental Health). The most common diagnoses individuals received psychiatric services for were mood and anxiety disorders.

Suicide

Between 2007 and 2016, there were 178 deaths in Boone County as a result of suicide. As seen in Figure 62, males in Boone County are 3 times more likely to commit suicide than females. The highest percentages of suicides in Boone County are in people between the ages of 35 to 59, with 52% of the total. Figure 63 shows the suicide rates by year, and Figure 64 shows rates by age groups.

Figure 62: Suicide Rate by Sex, Boone County, 2007-2016

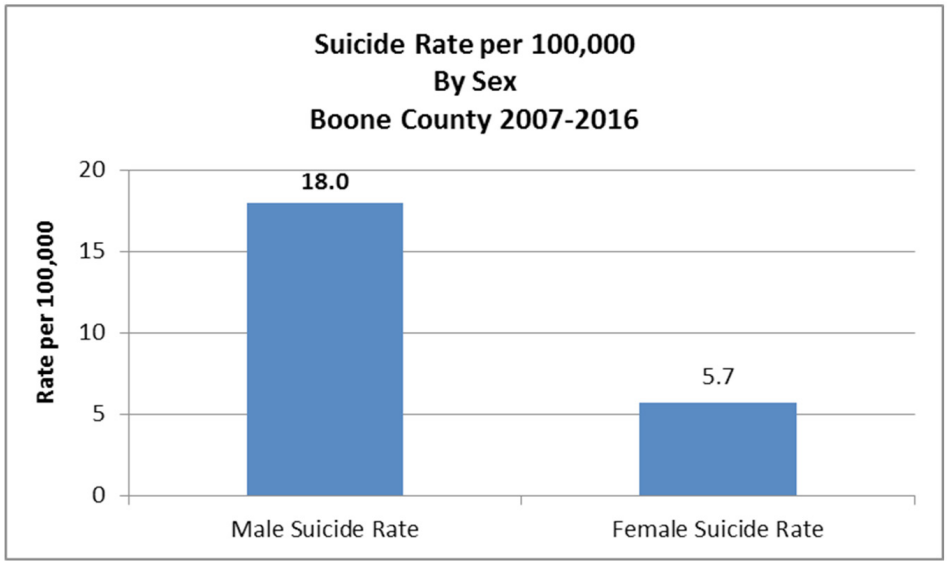


Figure 63: Suicide Rate by Year, Boone County, 2007-2016

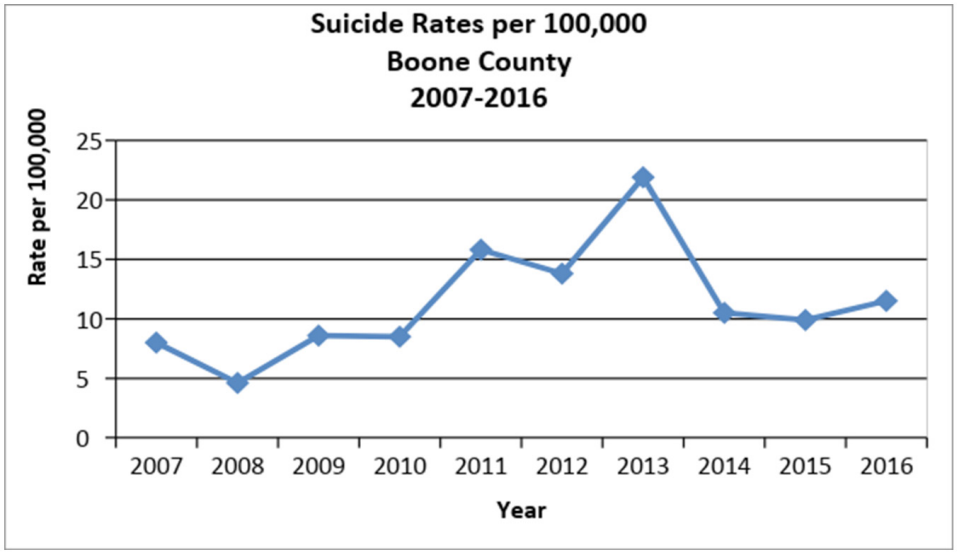
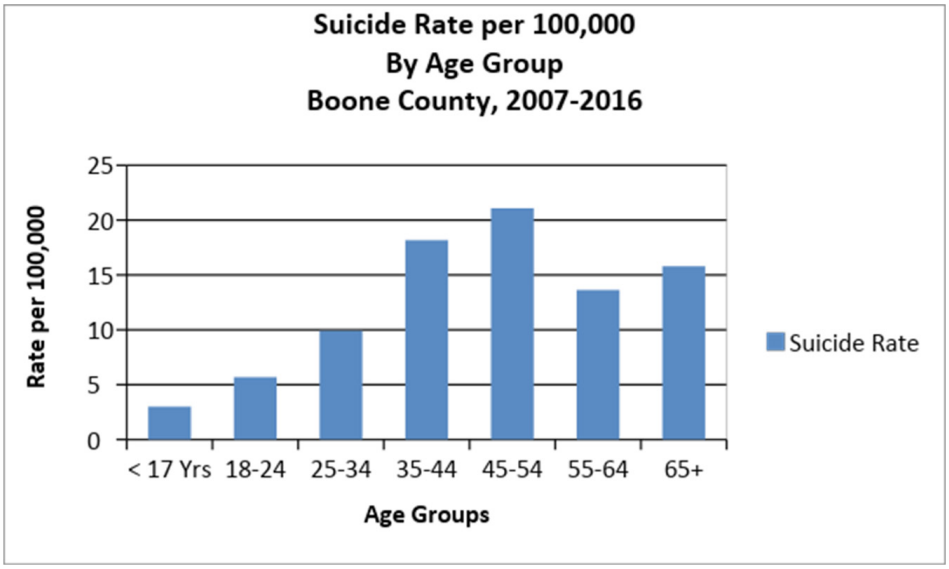


Figure 64: Suicide Rate by Age Group, Boone County, 2007-2016



Substance Use and Abuse

In Fiscal Year (FY) 2017, there were 883 Boone County residents that were admitted to a Division of Behavioral Health Substance use treatment program (Missouri Status Report on Substance Use and Mental Health). The average age at first use of drug was 18.6 years old. Figure 65 shows the primary drug problem at admittance, and compares FY2017 with FY2016 and FY2015.

Figure 65: Primary Drug Problem at Admittance to a Treatment Program, Boone County, FY 2015-2017

Primary Drug Problem	FY2015	FY2016	FY2017
Alcohol	355	296	343
Marijuana/Hashish	204	146	191
Cocaine (Total)	49	45	57
-Crack	78	26	30
Stimulant (Total)	78	119	173
-Methamphetamine	75	101	157
Heroin	39	57	54
Analgesic except Heroin	33	43	45
PCP, LSD, other Hallucinogen	6	10	10
Injection Use at Admission	68	117	111
Average Age at First Use of Drug	17.8	18.7	18.6
Source: 2018 Status Report on Missouri's Substance Use and Mental Health, Substance Use Treatment Data			

According to the 2018 Missouri Student Survey, alcohol is the most commonly used substance by youth in Missouri. An estimated 50.6% of youth in Boone County believe that it would be easy to get alcohol and 40.1% believe that using alcohol presents only 'slight' or 'no risk' of harm. The average age of first use is 13.3 years and 45.1% have at least one friend that uses alcohol (Missouri Student Survey).

With Columbia being a college community, there are many bars and alcohol outlets, and use can be significant at times. In 2016, there were 262 facilities that had on-premise drink licenses, and 111 facilities with 111 package carry-out licenses. According to the 2018 County Health Rankings, 21% of Boone County residents reported excessive drinking. There were 93 alcohol induced deaths in Boone County between 2005 and 2015 (MOPHIMS).

Figure 66 looks at drug reports on drug and alcohol involved crash statistics for Boone County, along with alcohol and drug related arrests for the years 2014-2016. (Missouri Status Report on Substance Use and Mental Health).

Figure 66: Drug and Alcohol Involved Statistics for Boone County, 2014-2016

Boone County 2017 Status Report on Substance Use and Mental Health Substance Use and Mental Health Indicators			
	2014	**2015**	**2016**
Impaired Driving			
Alcohol Involved Crashes	159	124	134
Fatal Crashes	4	3	6
Injury Crashes	49	43	50
Crash Fatalities	6	4	7
Crash Injuries	62	61	69
Drug Involved Crashes	26	17	39
Fatal Crashes	1	1	3
Injury Crashes	14	9	18
Crash Fatalities	1	1	5
Crash Injuries	21	11	27
Police Reports			
DUI Arrests	1069	811	815
Liquor Law Arrests	440	360	370
Drug Arrests	964	1016	1323
Methamphetamine Lab Seizures	12	8	6

Opioids

Since 2001, the rate of opioid-related deaths has steadily increased in Missouri. By 2010, drug overdose deaths surpassed motor vehicle-related deaths in Missouri, and between 2014 and 2016, there were 29 counties with more drug overdose than motor vehicle accident (MVA) deaths. Boone County was one of the 29 counties, with 1.2 times greater drug overdose than MVA deaths during this time period (Missouri Hospital Association).

Missouri is the only state without a statewide prescription drug monitoring program (PDMP). In response to rising opioid deaths, hospitalizations, and emergency room visits, St. Louis County Health Department worked with St. Louis County officials to establish a county ordinance which authorized the operation of a PDMP in 2016. This opened the opportunity for other Missouri local public health agencies to pass ordinances in their counties, and to join the St. Louis County PDMP. Columbia/Boone County Public Health and Human Services worked with both Columbia and Boone County governing bodies and joined the PDMP in the spring of 2017. This PDMP is not a state operated PDMP, but to date other Missouri local public health jurisdictions have joined, representing 81% of Missouri's population. The St. Louis County PDMP works with pharmacies to monitor the prescribing and dispensing of schedule II-IV controlled substances to assist in the identification and prevention of prescription drug misuse and abuse by 1) improving controlled substance prescribing by providing critical information regarding a patient's controlled substance prescription history, 2) informing clinical practice by identifying patients at high-risk who would benefit from early interventions, and 3) reducing the number of people who misuse, abuse, or overdose while making sure patients have access to safe, effective treatment (St. Louis County Health Department).

Figures 67-69 show the counts and rates for opioid-related emergency room visits, hospitalizations, and deaths for both Boone County and Missouri for the years 2012-2016. During this same time period, Boone County ranked 20th out of the 115 local health jurisdictions for death rates due to heroin overdoses. The highest, St. Louis City, had 365 deaths due to heroin overdoses, with a rate of 23.07 per 100,000 during 2012-2016.

Figure 67: Emergency Room Discharges for Opioid Use, Boone County and Missouri, 2012-2016

2012-2016	Boone County Count	Boone County Rate/10,000	Missouri Rate/10,000
Emergency Room Discharges For All Opioid Misuse	801	0.93	1.33
Emergency Room Discharges for Non-Heroin Opioid Misuse	752	0.87	1.11
Emergency Room Discharges For Heroin Misuse	49	0.06	0.22

Figure 68: Inpatient Discharges for Opioid Use, Boone County and Missouri, 2012-2016

2012-2016	Boone County Count	Boone County Rate/10,000	Missouri Rate/10,000
Inpatient Discharges For All Opioid Misuse	917	1.06	1.7
Inpatient Discharges For Non-Heroin Opioid Misuse	875	1.01	1.64
Inpatient Discharges For Heroin Misuse	42	0.05	0.06

Figure 69: Opioid Related Deaths, Boone County and Missouri, 2012-2016

2012-2016	Boone County Count	Boone County Rate/100,000	Missouri Count	Missouri Rate/100,000
All Opioid Related Deaths	43	4.98	3,407	11.24
Non-Heroin Opioid Related Deaths	26	3.01	1,942	6.41
Heroin Related Deaths	17*	1.97	1,465	4.83
**Rates calculated from counts fewer than 20 should be interpreted cautiously, as rates based on low counts can be unstable*				

HEALTH BEHAVIORS

Health risk behaviors are unhealthy behaviors a person can change. Four of these behaviors: lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol cause much of the illness, suffering, and early deaths related to chronic diseases and conditions (CDC National Center for Chronic Disease Prevention and Health Promotion, 2017).

The 2018 County Health Rankings (County Health Rankings and Roadmaps, 2018) report the following health behaviors of Boone County residents:

- 18% of adults are smokers
- 28% of adults are obese
- 20% of adults age 20 and over report no leisure-time physical activity
- 82% of adults have access to exercise opportunities
- 17% of adults report they are in poor or fair health
- 21% of adults report either binge drinking or heavy drinking in the last 30 days
- 13% of adults reported frequent physical distress with more than 14 days of poor physical health per month
- 17% of the Boone County population report food insecurity (lack adequate access to food)
- 8% reported limited access to healthy foods (being low-income and not living close to a grocery store)

The 2018 Explore MO Health data platform includes many community health indicators for county residents which highlight chronic disease risk factors (exploreMOhealth). According to Explore Mo Health, of Boone County residents:

- 86.8% have less than 5 servings of fruits and vegetables per day
- 37.1% do not have sidewalks in their neighborhood
- 14.7% do not consider their neighborhood to be extremely safe
- 8% are exposed to secondhand smoke at work

Although reported smoking rates for Boone County residents have varied between 18% and 21% over the last five years, and are consistently lower than Missouri smoking rates (County Health Rankings and Roadmaps, 2018), smoking remains an attributable cause of chronic disease illness and deaths. Figure 70 shows the estimated number of smoking-related deaths of Boone County and Missouri residents. Figure 71 shows the smoking-related deaths by race, highlighting the highest rates for smoking-related deaths in blacks in Boone County.

Figure 70: Rate of Estimated Smoking-Attributable Causes of Death, Boone County, Missouri, 2005-2015

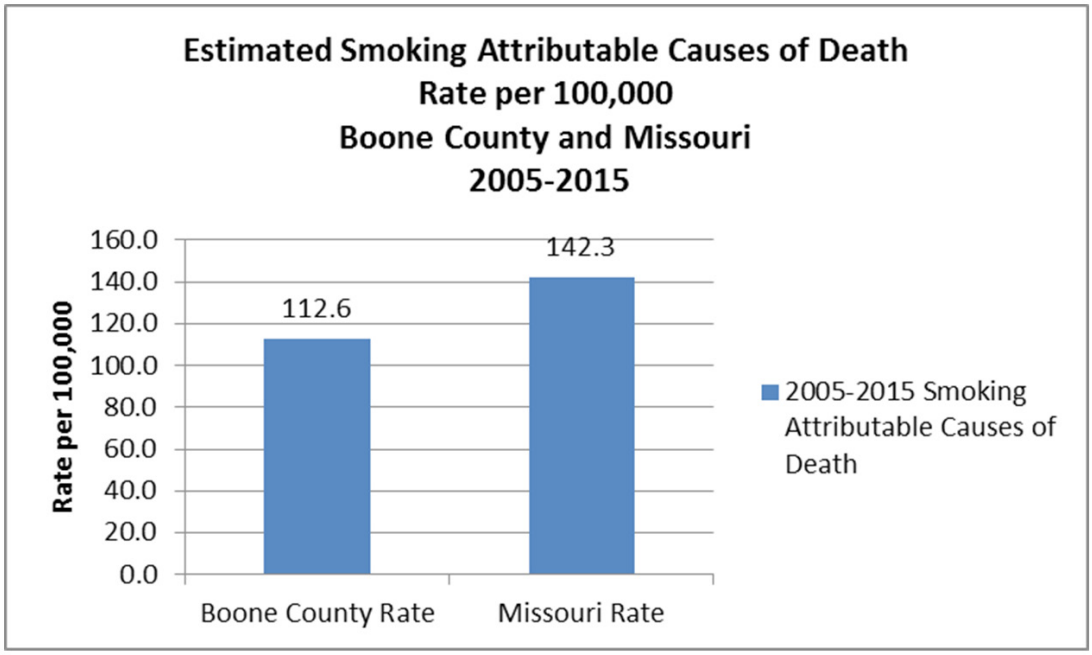
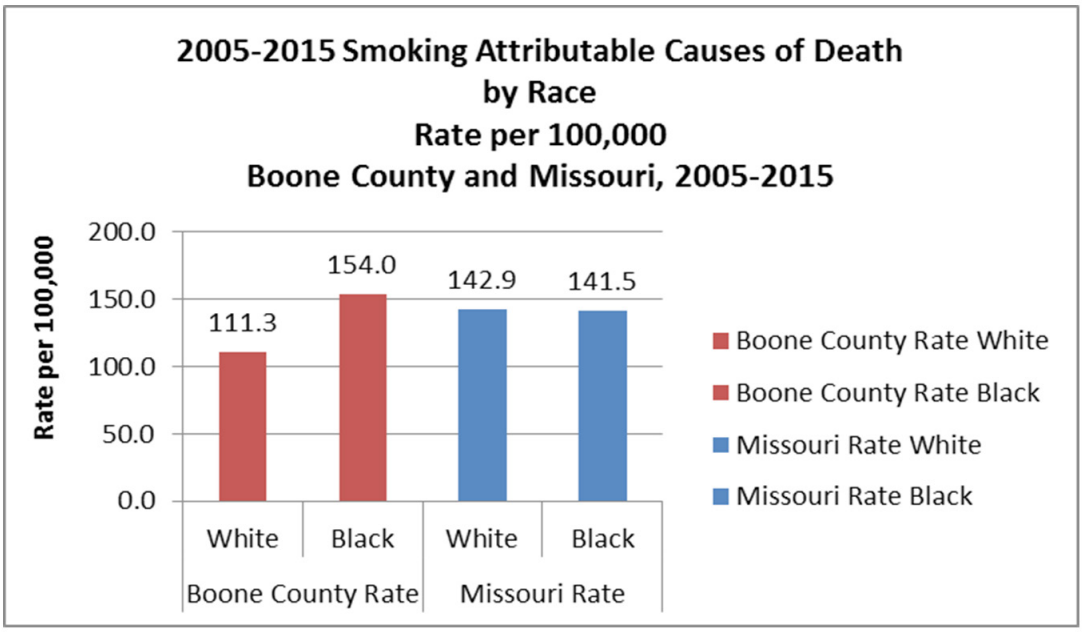


Figure 71: Rate of Estimated Smoking-Attributable Causes of Death, by Race, Boone County, Missouri, 2005-2015



MATERNAL AND CHILD HEALTH

Looking at the maternal and child health of a community is one of the most important ways to monitor the health of a vulnerable population: infants and children. Because maternal health is correlated with birth outcome, it is important to consider the health of the mother during pregnancy when looking at increased risk for both her and child.

The Missouri Department of Health and Senior Services provides rates for live births (fertility) and pregnancies (the summation of live births, induced abortions and fetal deaths) per 1,000 females. The rate for "all ages" is total live births or pregnancies per 1,000 females in age 15-44. Live birth and fetal death records are compiled from birth certificates and spontaneous fetal death reports which are filed by law with the Missouri Department of Health and Senior Services (MOPHIMS). Birth MICA provides data from live births, and is compiled from birth certificates filed with the Missouri Department of Health and Senior Services. These reports provide maternal and child data for a variety of characteristics.

Figure 72: Live Births, Boone County, 2012-2016

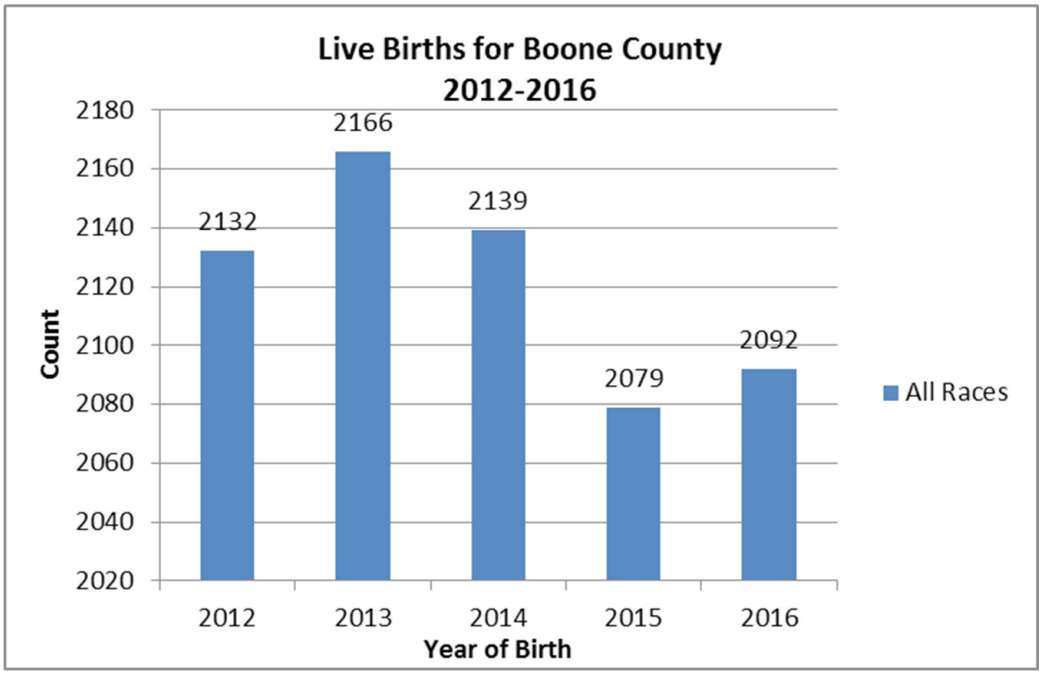
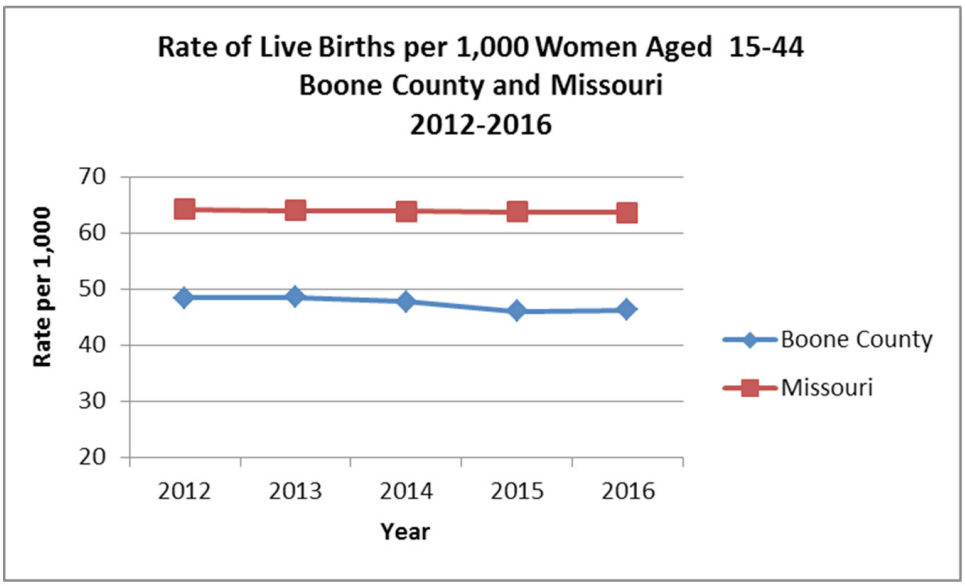


Figure 73: Rate of Live Births per 1,000 Women aged 15-44, Boone County, Missouri, 2012-2016



The overall rate of teen pregnancy (15-19 years) and birth rate is lower in Boone County than in Missouri. Significant disparities exist between black and white teens in Boone County. The pregnancy rate for a black teen is four times that of a white teen, and the birth rate is five times greater.

Figure 74: Teen Pregnancy and Birth Rate, Boone County, Missouri, 2012-2016

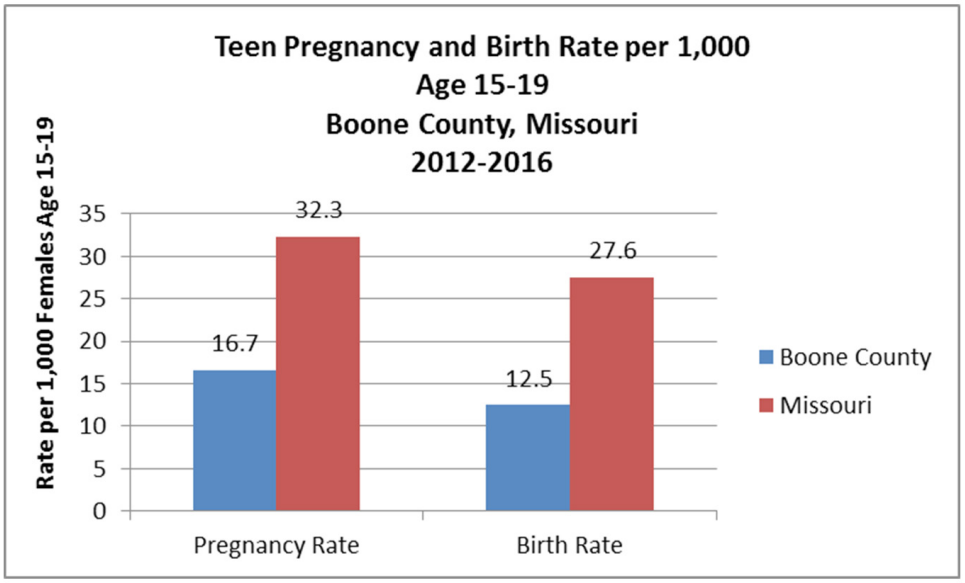
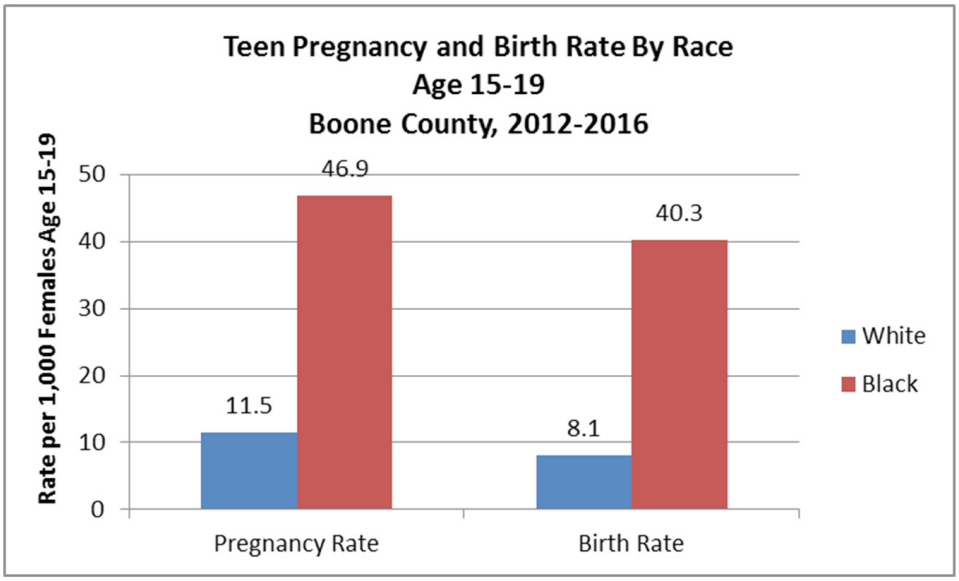


Figure 75: Teen Pregnancy and Birth Rate by Race, Boone County, 2012-2016



Pregnancy and Birth Characteristics

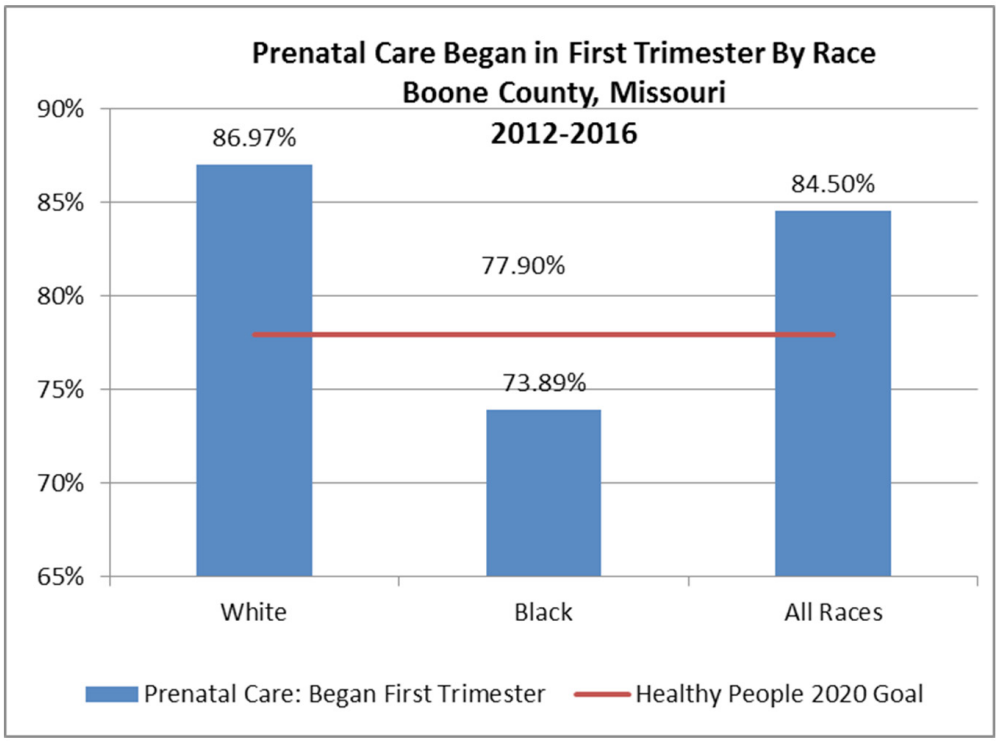
Figure 76 compares pregnancy and birth characteristics for babies born to Boone County and Missouri residents in 2016, during the same time period. More women began prenatal care in the first trimester in Boone County than in Missouri, and fewer Boone County women smoked during pregnancy.

Figure 76: Pregnancy and Birth Characteristics for Boone County and Missouri, 2016

	Boone County	Missouri
Babies born preterm (less than 37 completed weeks)	8.7%	10.2%
Very low birth rate (less than 1500 grams)	1%	1.5%
Low birth rate (less than 2500 grams)	7.5%	8.7%
Normal birth rate (2500-4499 grams)	91.2%	90.1%
High birth rate (greater than 4499 grams)	1.2%	1.2%
Education status: less than 12 years	7.3%	12.6%
Method of delivery: C-section	33.4%	30.2%
Twins or other multiple birth	4.2%	3.6%
Prenatal Care: Began first trimester	82.2%	73.6%
Prenatal Care: None	0.4%	1.3%
Smoked during pregnancy	10.9%	15.3%

Beginning prenatal care early influences maternal health and can affect pregnancy outcomes along with infant and child health (Healthy People 2020). Figure 77 shows the percentage of Boone County women, by race, who began prenatal care in the first trimester of pregnancy (four year average), with comparison to the Healthy People 2020 target of 77.90%.

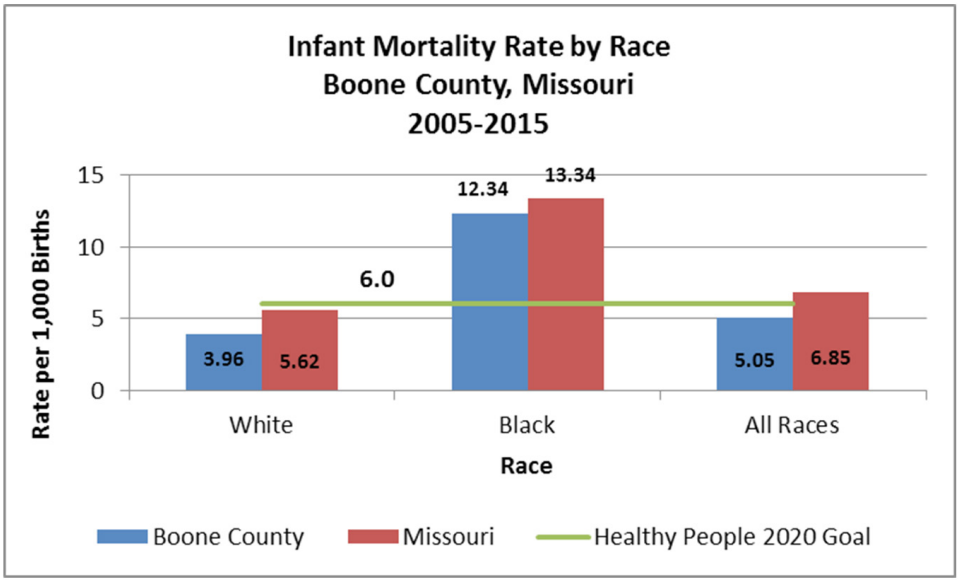
Figure 77: Percentage of Births with Prenatal Care Beginning in the First Trimester by Race, Boone County, 2012-2016



Infant Mortality

Infant mortality is the death of an infant before his or her first birthday. The infant mortality rate is the number of infant deaths for every 1,000 births. In 2015, the infant mortality rate in the United States was 5.9 deaths per 1,000 births (CDC National Center for Chronic Disease Prevention and Health Promotion). In Boone County, the infant mortality rate for the combined years of 2005-2015 was 5.05 for every 1,000 births, while the Missouri infant mortality rate during the same time period was 6.85 per 1,000. The Healthy People 2020 target is 6.0 deaths per 1,000 live births. Figure 78 breaks down both the Boone County and Missouri infant mortality rate by race, showing a disparity between races.

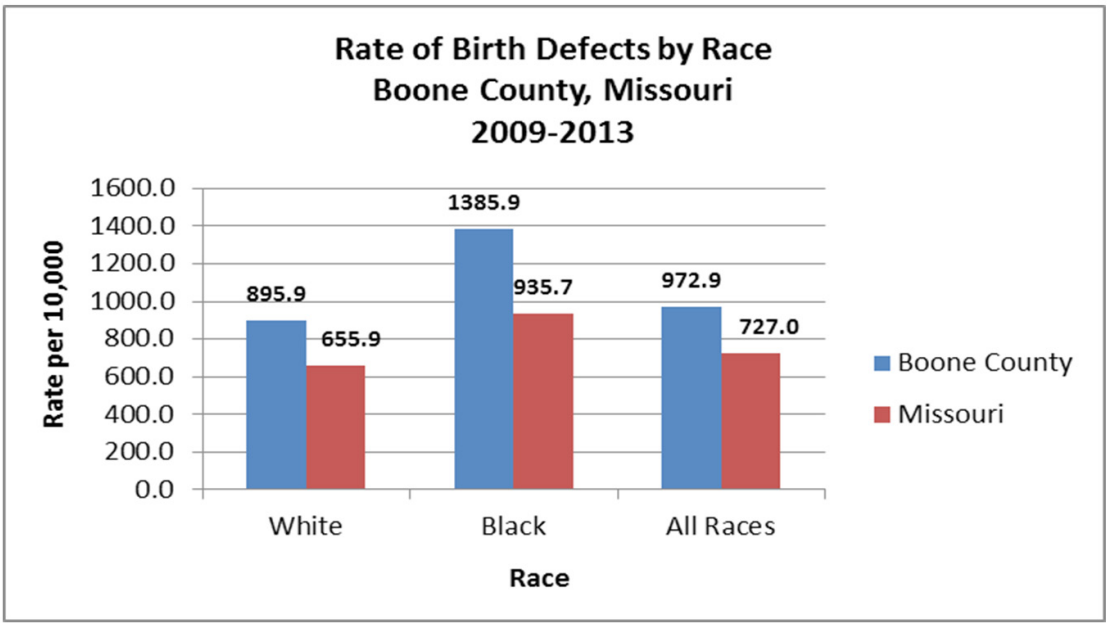
Figure 78: Infant Mortality Rate per 1,000 by Race, Boone County and Missouri, 2005-2015



Birth Defects

CDC reports that about one in every 33 babies is born with a birth defect (CDC National Center for Chronic Disease Prevention and Health Promotion). The birth defect rate reported by the Missouri Department of Health and Senior Services is the number of resident infants born, per 10,000, with birth defects diagnosed within the first year of life. Birth defects are defined as congenital defects of body structure or function, likely to result in mental or physical handicap or death (MOPHIMS, 2017). For the years 2009-2013, Boone County has a higher rate of birth defects than Missouri.

Figure 79: Rate of Birth Defects by Race, Boone County and Missouri, 2009-2013



CHRONIC DISEASE

According to CDC, chronic diseases are responsible for 7 of 10 deaths each year, and treating people with chronic disease accounts for most of our nation's health costs (CDC National Center for Chronic Disease Prevention and Health Promotion, 2017). Heart disease, stroke, cancer, diabetes, obesity, and arthritis are among the most common, costly, and preventable health problems. It is reported that almost half of all American adults have at least one chronic condition, and almost one of every three adults has multiple chronic conditions. ExploreMoHealth reported the following survey results of Boone County residents:

- 23.5% have been diagnosed with high blood pressure
- 35.8% have been diagnosed with high cholesterol
- 10.0% have been diagnosed with asthma
- 6.4% have been diagnosed with diabetes
- 9.5% have been diagnosed with cancer
- 18.9% have been diagnosed with arthritis

Emergency room visits, hospitalizations and deaths impact Boone County residents of all races, but have a higher impact on black residents. Figures 80, 81, and 82 show the rates of chronic disease emergency room visits, hospitalizations, and deaths by race. In Boone County, a black resident seeks medical care for diabetes at the emergency room 5.6 times more often, is hospitalized three times more often, and dies at a rate three times greater than a white resident. For hypertension, the black resident is admitted to the emergency room 5.5 times more often, is hospitalized 6.1 times more often and dies at a rate 4.5 times greater than a white Boone County resident. Also included are the asthma emergency room visit rates and hospitalization rates by race.

Figure 80: Boone County Chronic Disease Emergency Room Visits by Race, 2011-2015

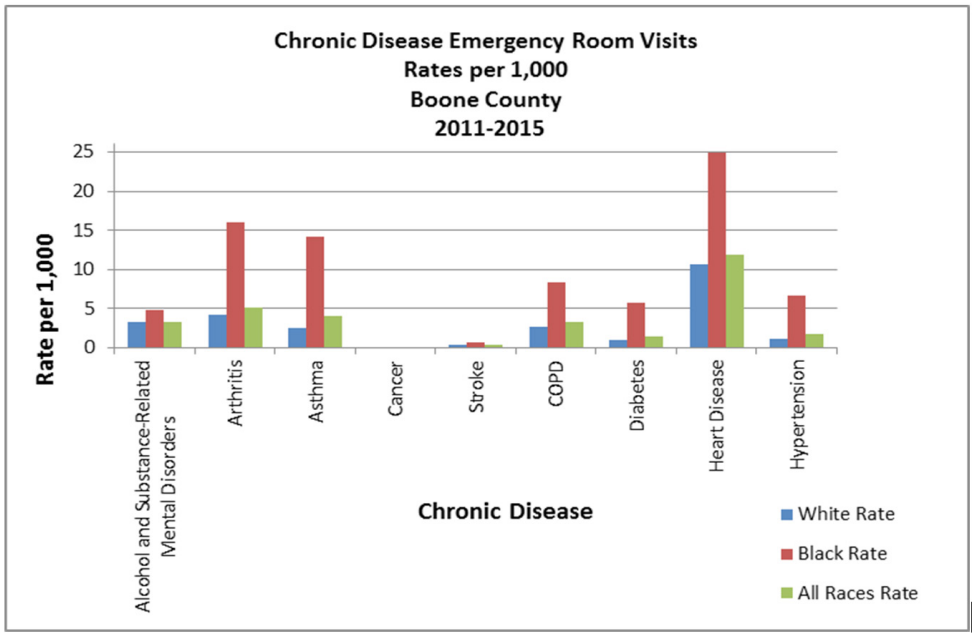


Figure 81: Boone County Chronic Disease Hospitalizations by Race, 2011-2015

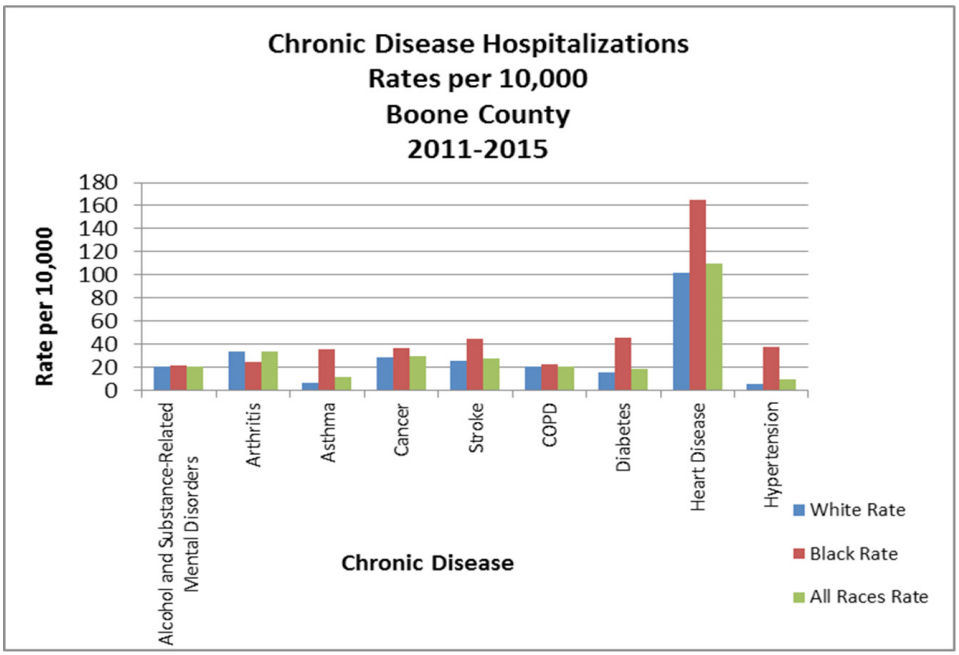
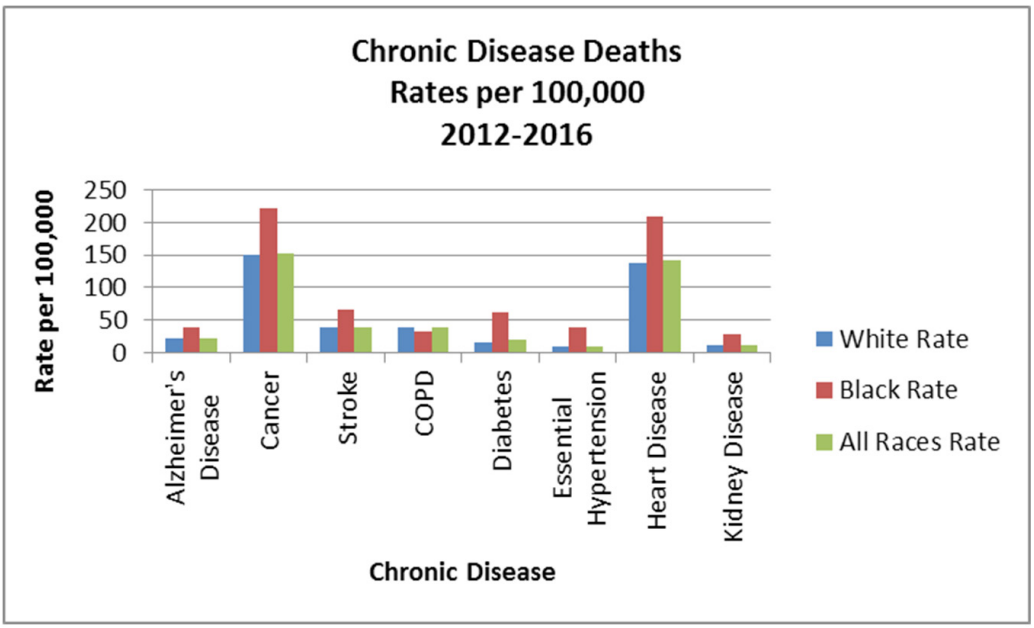


Figure 82: Boone County Chronic Disease Deaths by Race, 2012-2016



Asthma impacts one in every 13 people in the United States. In Missouri, in 2004 nearly 9.7% of residents had asthma. Symptoms include repeated episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing. The disease can be controlled by medicine and avoiding environmental triggers that can make it worse (CDC National Center for Chronic Disease Prevention and Health Promotion). Sometimes those with asthma cannot afford the medication or do not have the ability to remove those environmental triggers, making ER visits and hospitalizations more likely. Figures 83 and 84 look at the rates of ER visits and hospitalizations from asthma by age group and race in Boone County.

Figure 83: Asthma ER Visit Rates by Age Group and Race, Boone County, 2011-2015

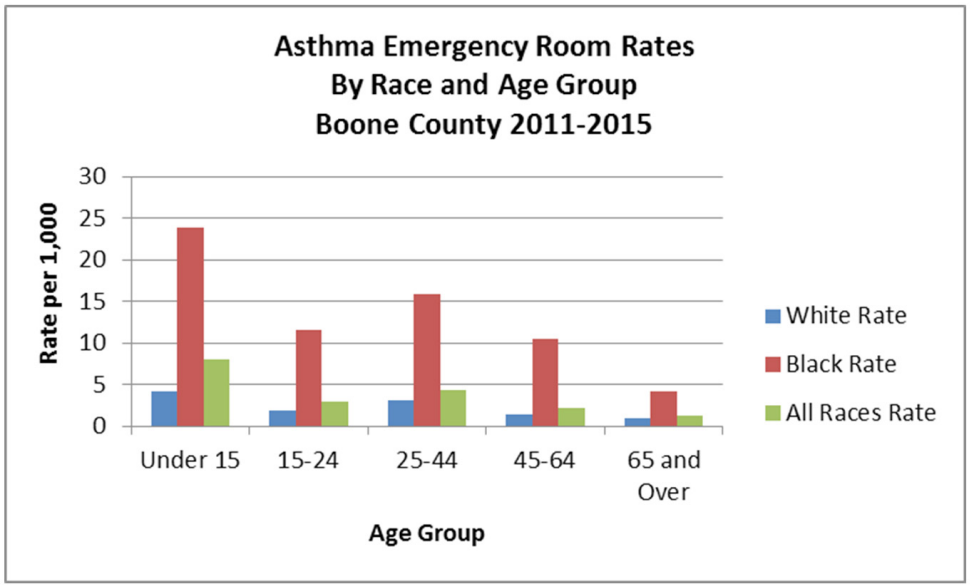
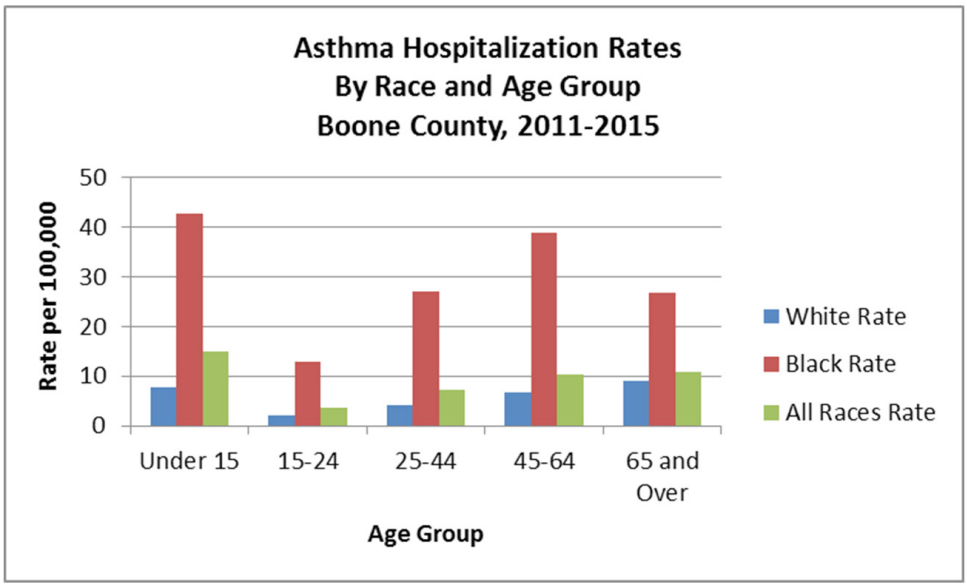


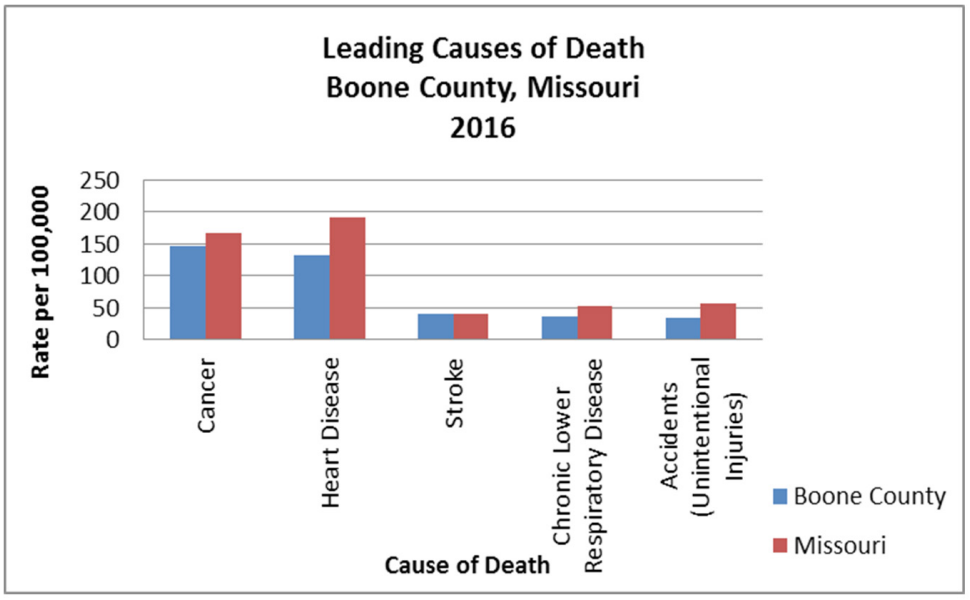
Figure 84: Asthma Hospitalization Rates by Age Group and Race, Boone County, 2011-2015



DEATH AND INJURY

The Missouri Public Health Information Management System (MOPHIMS) provides county level information on all deaths of Missouri residents, including leading causes by age group and race. In 2016, there were 1,039 deaths of Boone County residents (rate of 650.24 per 100,000). Leading causes of death are cancer, heart disease, stroke, chronic lower respiratory disease, and unintentional accidents. In Missouri, heart disease was the leading cause of death. Figure 85 shows the top five causes of death by rate for 2016 in Boone County and Missouri.

Figure 85: Leading Causes of Death, Boone County and Missouri, 2016



Figures 86 and 87 compare causes of death for Boone County residents by sex and by race, highlighting disparities between both males and females, and black and white residents.

Figure 86: Causes of Death, Boone County, by Sex, 2012-2016

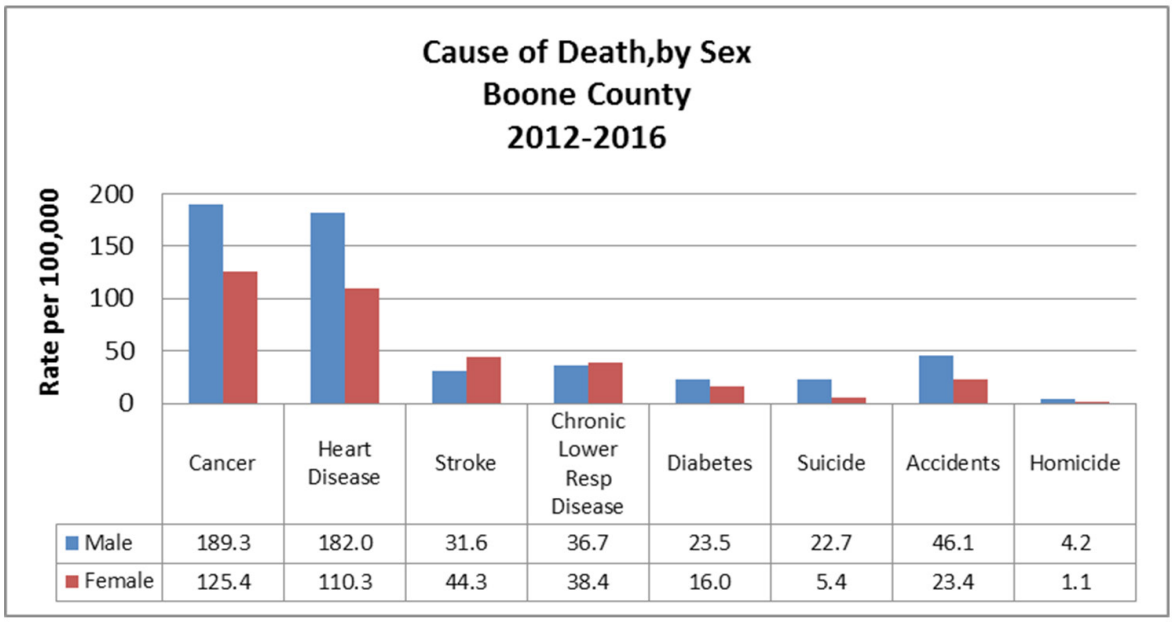
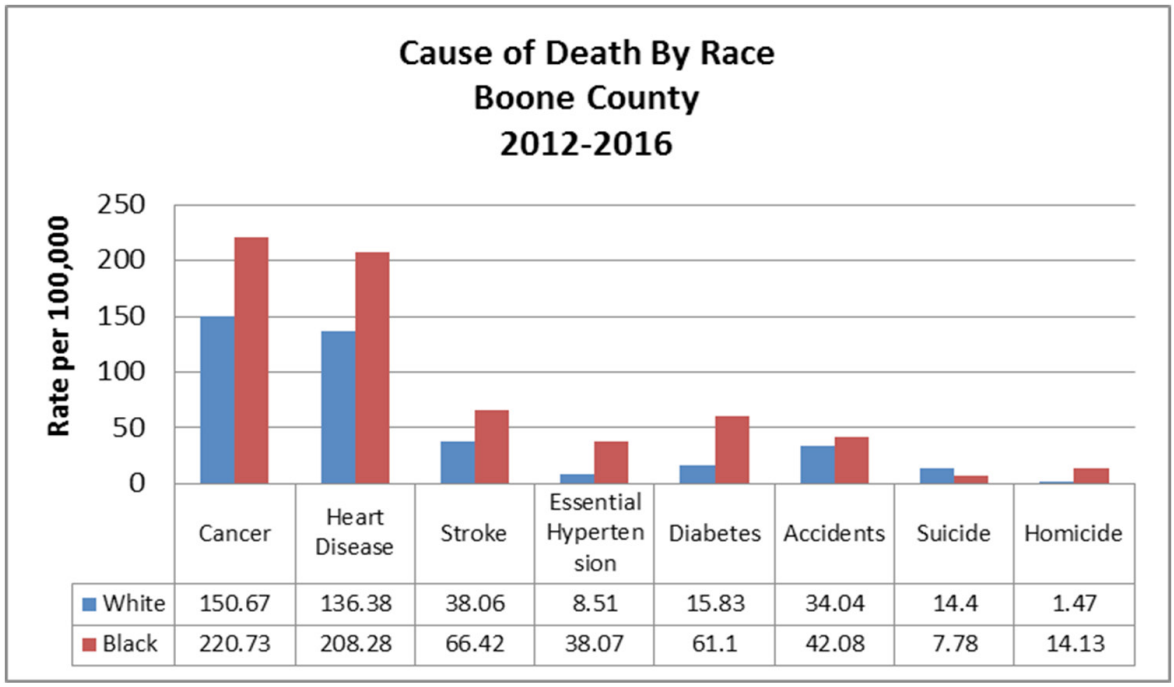


Figure 87: Causes of Death by Race, Boone County, 2012-2016



In 2016, 445 Boone County residents died as a result of heart disease and cancer, 236 from cancer and 209 from heart disease. These two causes account for 43% of the total deaths of Boone County residents in 2016. Figures 88 and 89 present ten year trends of heart disease and cancer by race. Years are grouped together to avoid unreliable rates.

Figure 88: Deaths Due to Cancer by Race, Boone County, 2007-2016

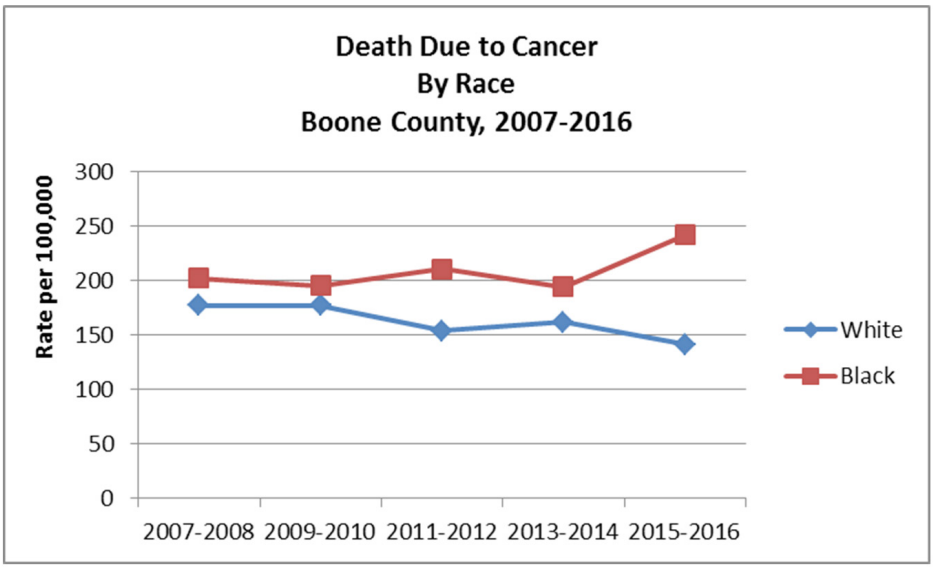


Figure 89: Deaths Due to Heart Disease by Race, Boone County, 2007-2016

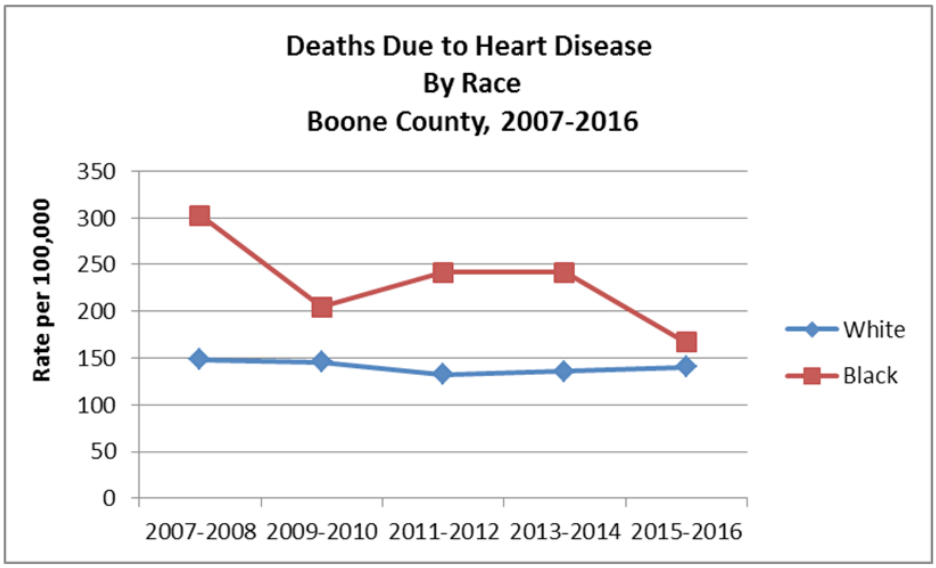


Figure 90: Deaths Due to Selected Cancers, Boone County, 2002-2016

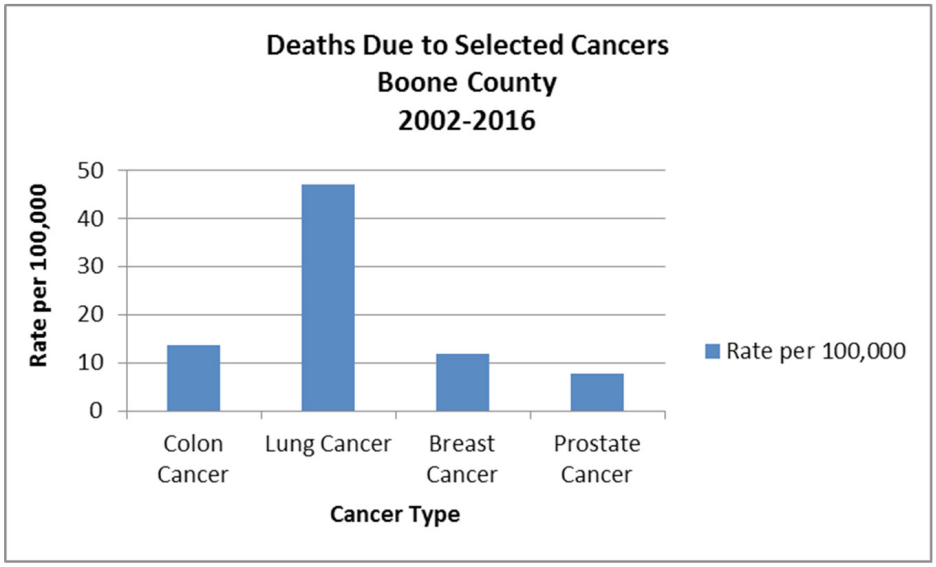
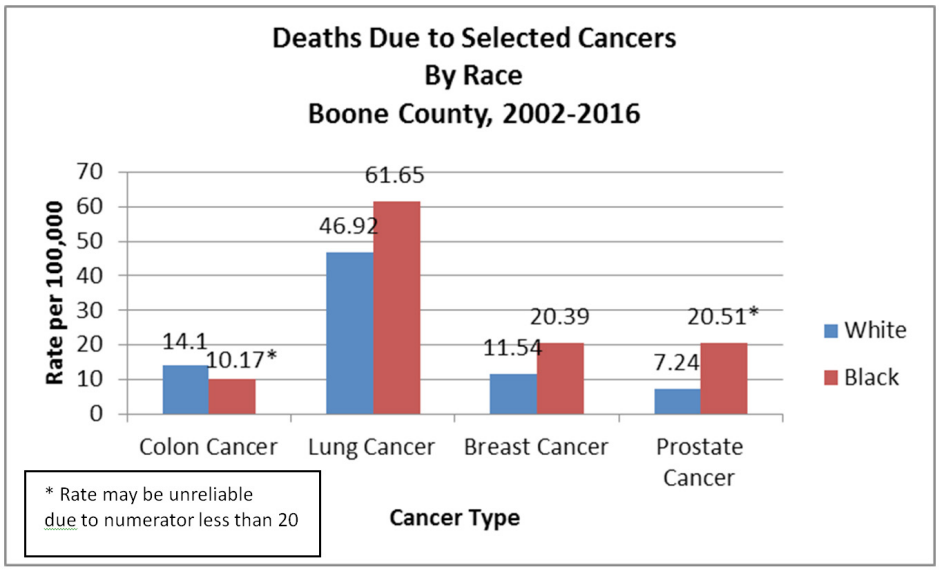
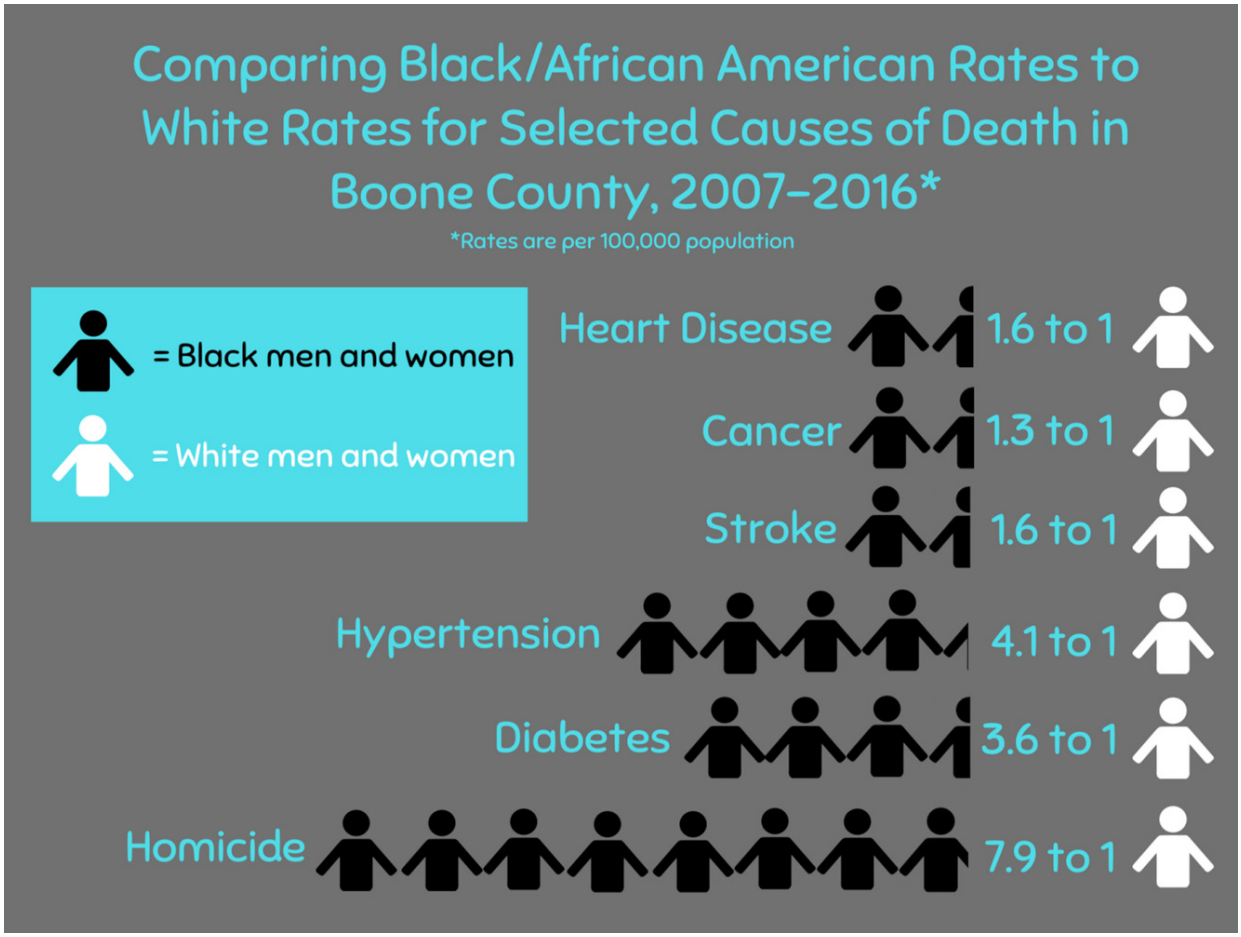


Figure 91: Deaths Due to Selected Cancers by Race, Boone County, 2002-2016



Disparities in causes of death have been noted between black and white Boone County residents. In Boone County, black residents have higher rates of death than white residents for three of the four leading causes of cancers. The disparity is greater for prostate cancer, with black men dying at a rate three times higher than white men. Figure 92 highlights some of these disparities.

Figure 92: Ratios of Rates for Selected Causes of Death by Race, Boone County, 2007-2016



Unintentional injuries are the fifth leading cause of death of Boone County residents. In 2016, 57 Boone County residents and 3,610 Missouri residents died from accidents. During 2015, 12,594 Boone County residents were injured, which resulted in visits to hospitals and emergency rooms (MOPHIMS, 2017). Figure 93 shows injury data for 2015 by category.

Figure 93: Boone County Resident Injuries, 2015

Injury	2015 Count	2015 Rate per 100,000 Residents
Fall/Jump	3,762	2,318.04
Struck By/Against	1,774	1,008.37
Motor Vehicle Traffic (traffic ways)	1,400	749.25
Pedestrian vs. Motor Vehicle	47	24.74
Bicyclist vs. Motor Vehicle	28	15.11
Cut/Pierce	958	538.35
Over Exertion	764	450.60
Weather/Wildlife	627	368.33
Motor Vehicle-non traffic (parking lots, driveways)	324	192.03
Poison/Overdose	242	142.43
Drugs/Alcohol	209	121.92
Fire/Burn	199	113.55
Machinery	59	31.51
Firearm	52	25.29
Abuse/Neglect/Rape	30	18.13

Motor vehicle crashes are one of the leading causes of accidental deaths. While motor vehicle crashes have many contributing circumstances including speed, alcohol and drugs, and weather; distracted/inattentive driving is a growing trend leading to crashes, injuries, and deaths. From 2013 through 2017, there were five deaths that occurred in Boone County due to distracted/inattentive driving, and 566 personal injuries. Overall during this time period, 1,627 crashes were attributed to this cause, accounting for 10.9% of all of the accidents investigated (STARS).

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Community Themes and Strengths Assessment

Public Health
Prevent. Promote. Protect.
Columbia/Boone County
Public Health & Human Services

Boone County, Missouri

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EXECUTIVE SUMMARY

The Community Themes and Strengths Assessment (CTSA) is one of four assessments in Phase Three of the MAPP process. The CTSA focuses on gathering the thoughts, opinions, and perceptions of community members in order to understand which issues are important to the community.

The CTSA planning period was conducted between September 2017 and April 2018. A diverse group of community public health system stakeholders provided input and guidance during the planning and implementation of this assessment. The CTSA used three methods of data collection to gather community input: community survey, focus groups, and photovoice. A community survey was distributed from December 2017 to March 2018. Members of the Live Well Boone County Partnership assisted with the facilitation of thirteen focus groups from February to March 2018. The Photovoice project was completed by teens participating in the Teen Outreach Prevention (TOP) program. Upon completion of data collection, preliminary results were presented to members of Steering Committee.

OUR PROCESS: SURVEY

The CTSA planning period began in June 2017 with an internal review of the 2013 CTSA limitations and the development of a tentative timeline for the survey and focus groups.

Surveys are a traditional approach to gathering community input, as they are a useful method for reaching large numbers of people and capturing measurable data. However, the survey methodology has some limitations. Surveys do not allow for in-depth feedback on issues and hard-to-reach populations often do not respond. Survey formats can include written, telephone, or in-person. For the purposes of this assessment, the community health survey was available in written format, both electronically and on paper.

The project lead for LWBC met with agencies in Boone County who were known to have used the 2013 Community Health Assessment to inform their agency planning processes. Input received from these agencies helped to inform the design of the community survey.

In September a community partner organization, Build This Town Campaign for the Agriculture Park, began a similar process for a community food assessment. In an effort to reduce survey fatigue and increase the survey distribution, a decision was made to collaborate. The MAPP Core Plus Team developed the survey questions for the community health assessment and combined them with the questions from Build This Town for its community food assessment. The community health assessment survey questions were reviewed by partner agencies who use the data, as well as PHHS staff for health literacy compliance. A copy of the survey is included as ***Appendix A***.

The Boone County Community Health Survey was distributed from December 2017 through March 2018. The survey was available electronically on SurveyMonkey.com. Live Well Boone County Community Health Partnership members shared the electronic link with their email contact lists and constituents. Paper copies were available at the PHHS office, and were distributed to all focus group participants and partner agencies at their request. Additional distribution methods include: Facebook, Twitter, City of Columbia City Source newsletter, Columbia Public Schools' digital flyer system, and the University of Missouri campus employee and student email system. PHHS and Build This Town staff captured survey distribution efforts on a shared Google sheet for coordination of efforts. Survey marketing was strongest during the month of February, when college students were not on break and no other community surveys were known to be taking place.

OVERALL SURVEY RESULTS

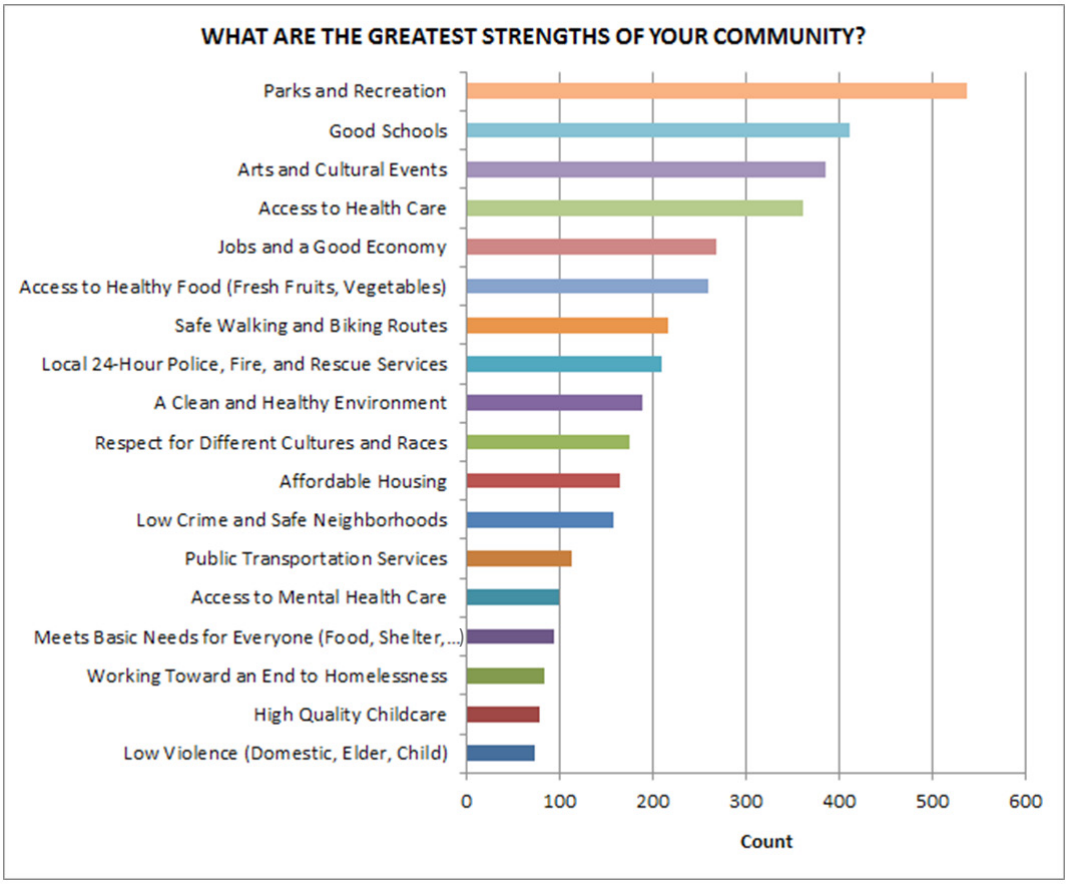
Participants who, based on their response to "What is your community", lived outside of Boone County were discarded prior to survey analysis. Also discarded were surveys that did not answer that question. After these surveys were removed, 1,415 surveys remained. Responses informing the Build This Town food assessment were not analyzed as part of this assessment. Microsoft Excel and Epi Info were used to analyze the data.

Seven questions were asked on the survey to measure the health of our community.

1. What are the greatest strengths of your community?
2. For children ages birth to five (0-5) years old, what are the most important issues in your community?
3. For children and youth ages six to eighteen (6-18) years old, what are the most important issues in your community?
4. For adults ages nineteen to sixty-four (19-64) years old, what are the most important issues in your community?
5. For adults ages sixty-five and older (65+), what are the most important issues in your community?
6. What would most improve the quality of life in your community?
7. How satisfied are you with the following factors that affect the quality of life in the community where you live?
    a. Education
    b. Health
    c. Employment/economic opportunity
    d. Environment (consider air, water, trash)
    e. Resident engagement (consider volunteerism, community organizations, and activities)
    f. Affordable housing
    g. Safety
    h. Overall

Results are listed in Figures 1-14:

Figure 1:



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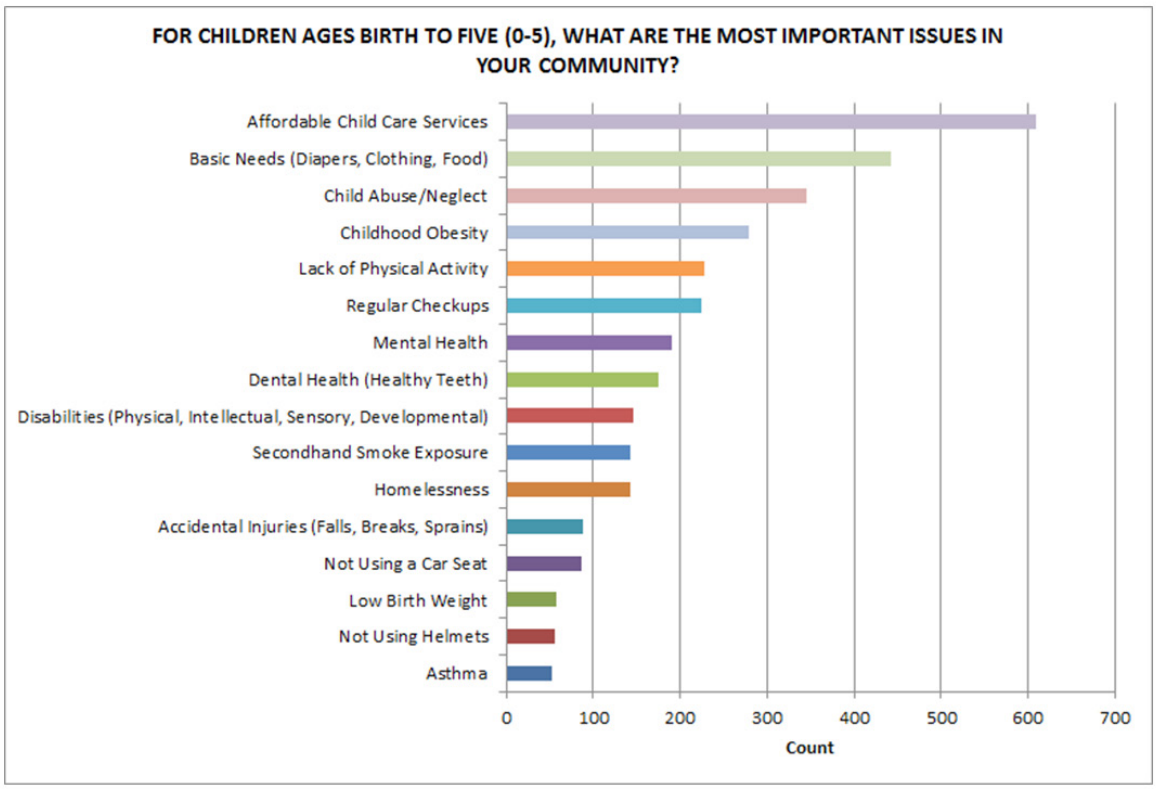

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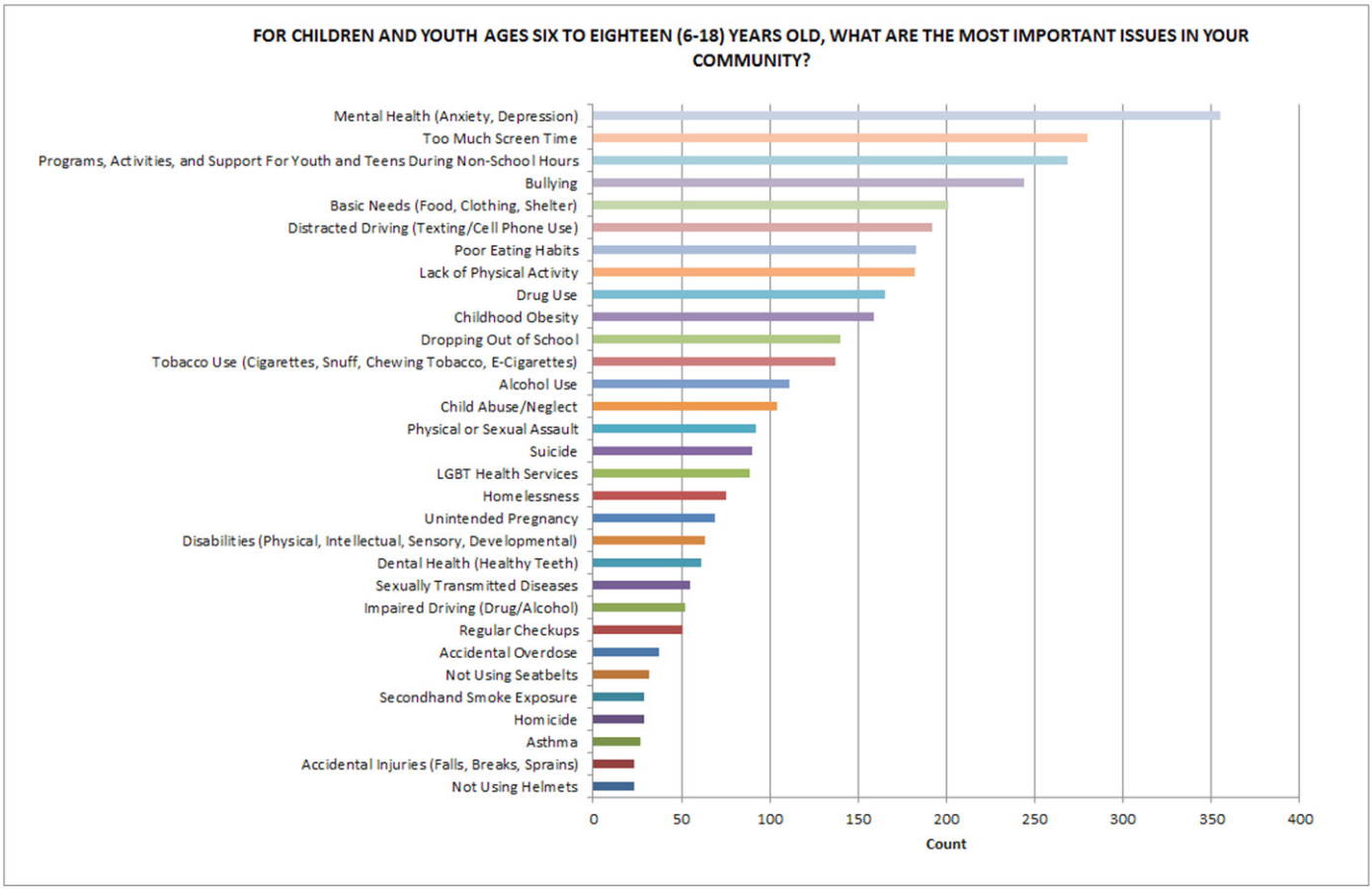

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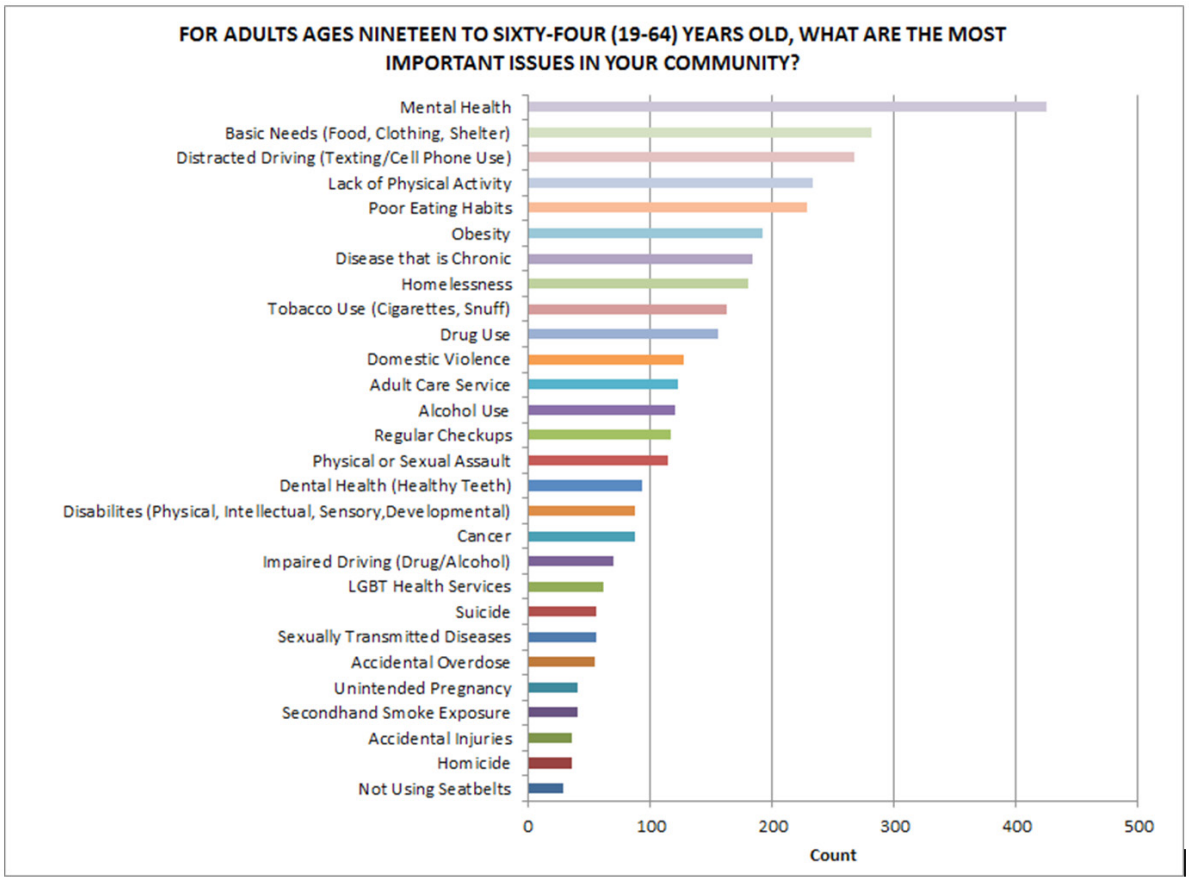

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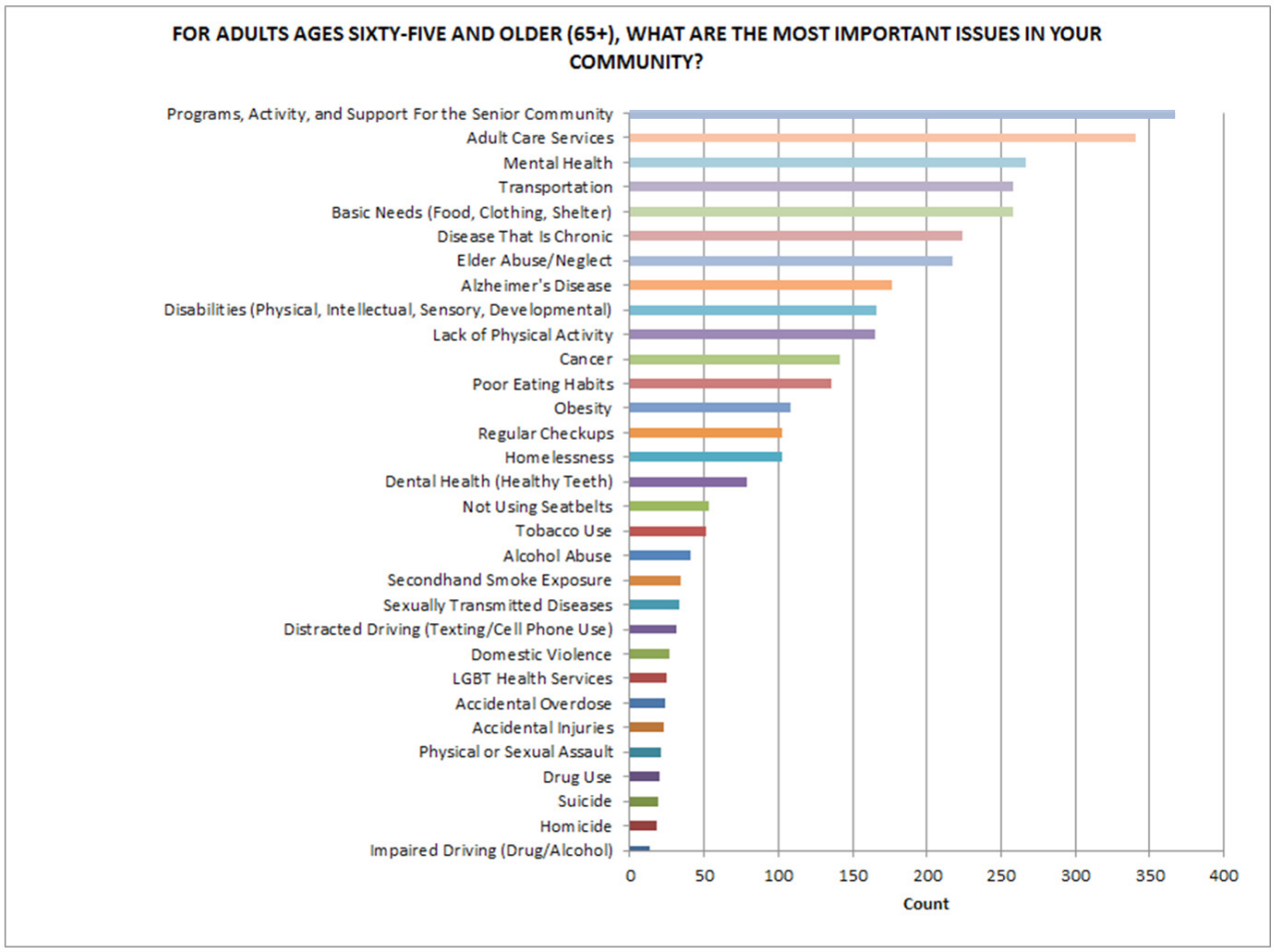

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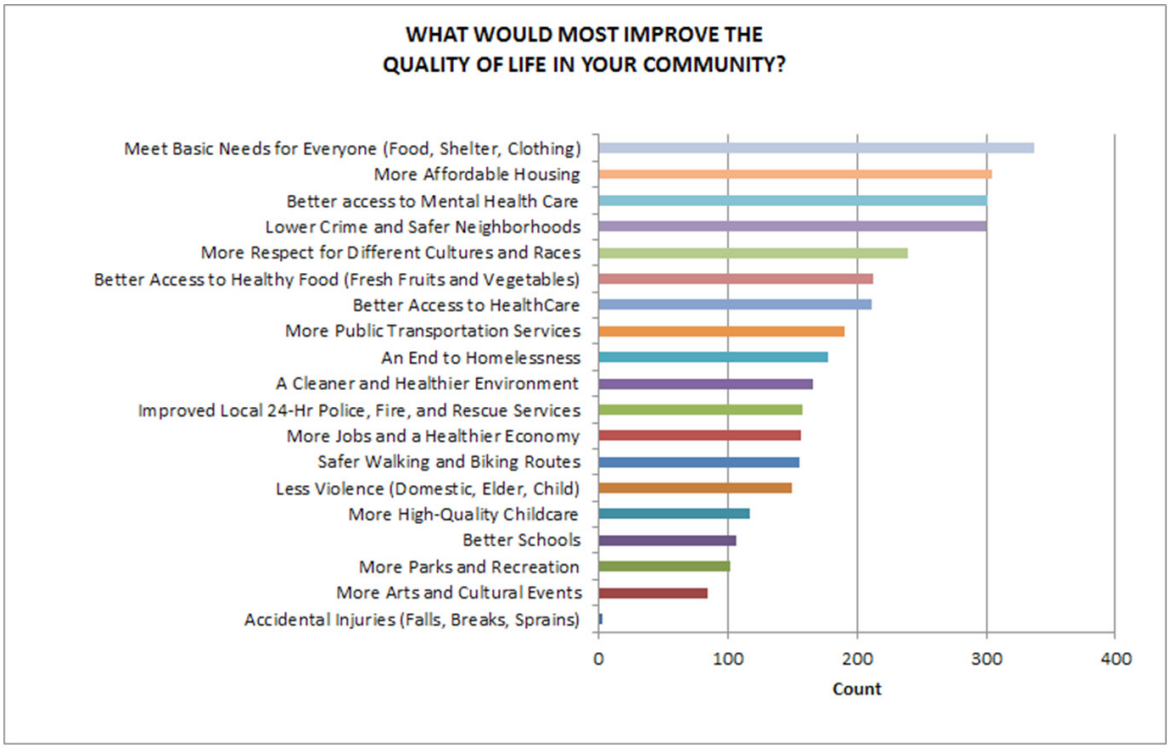

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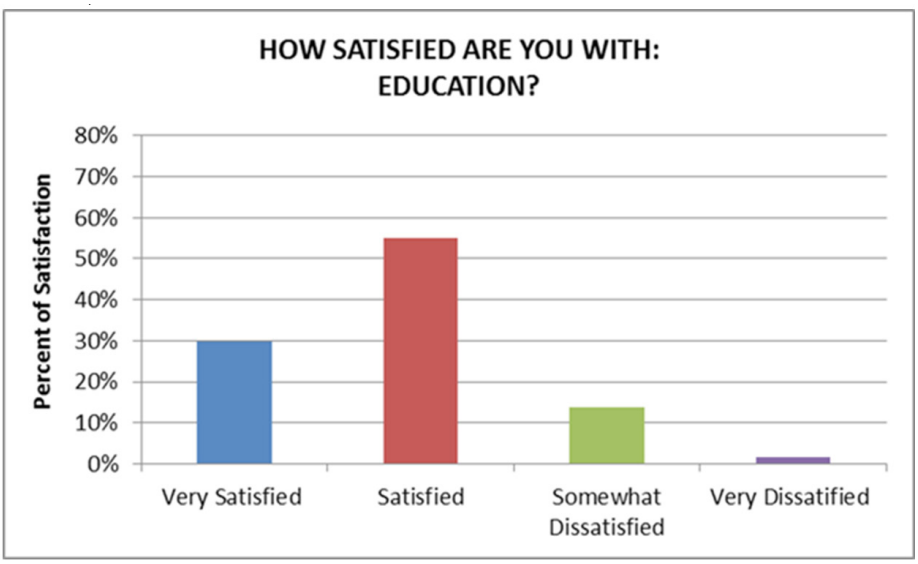

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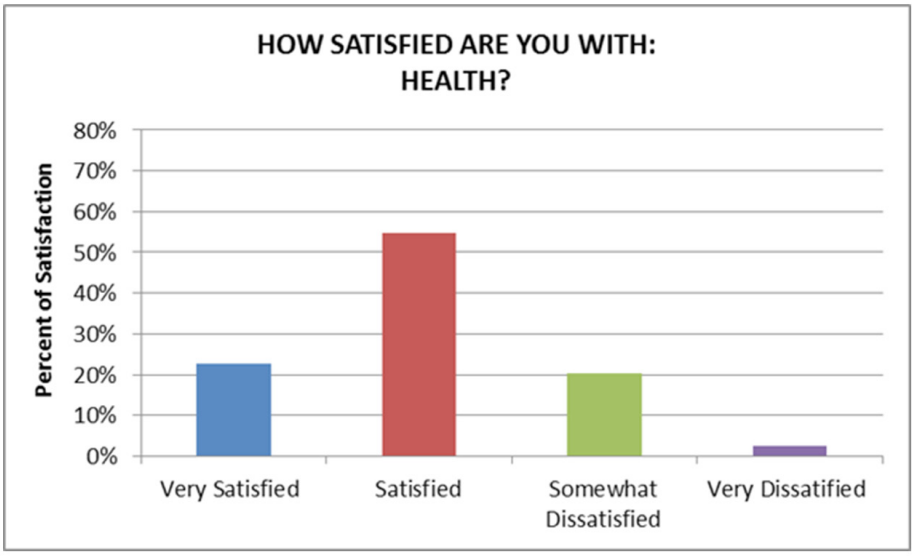

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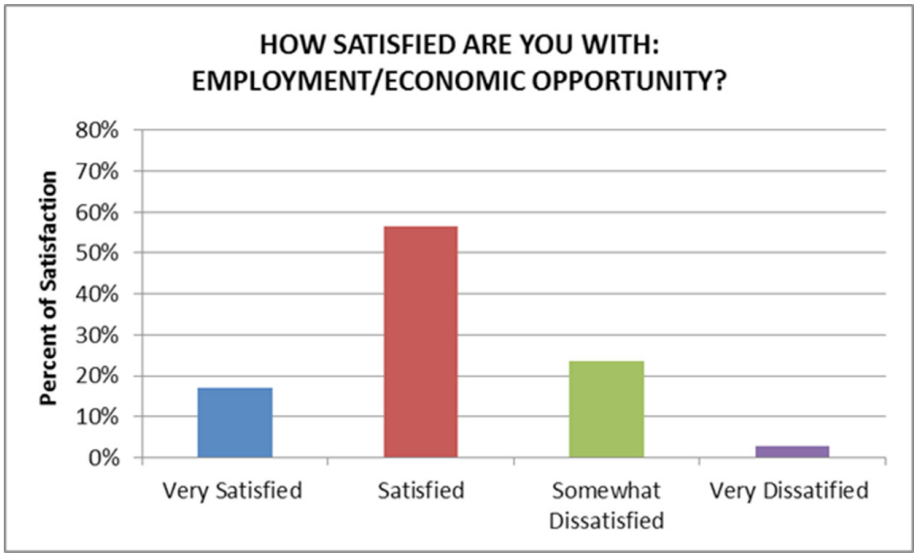

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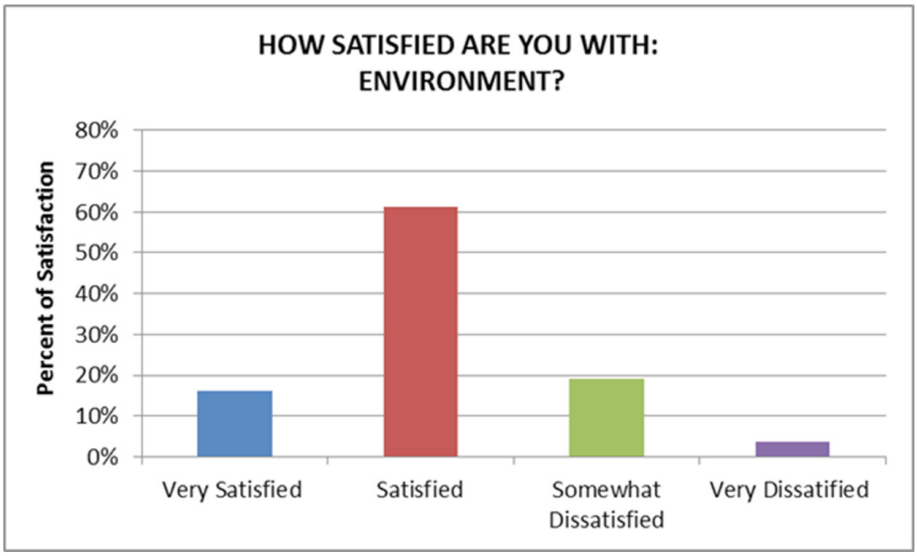

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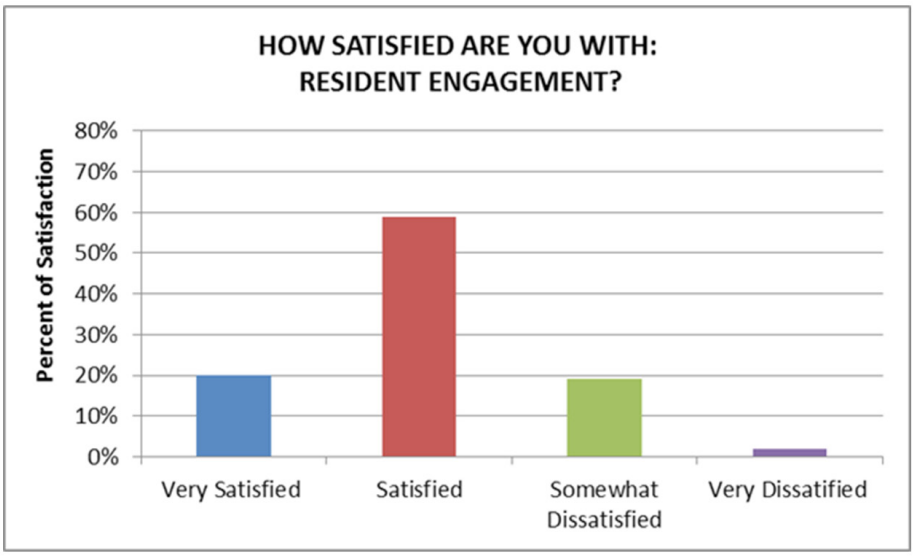

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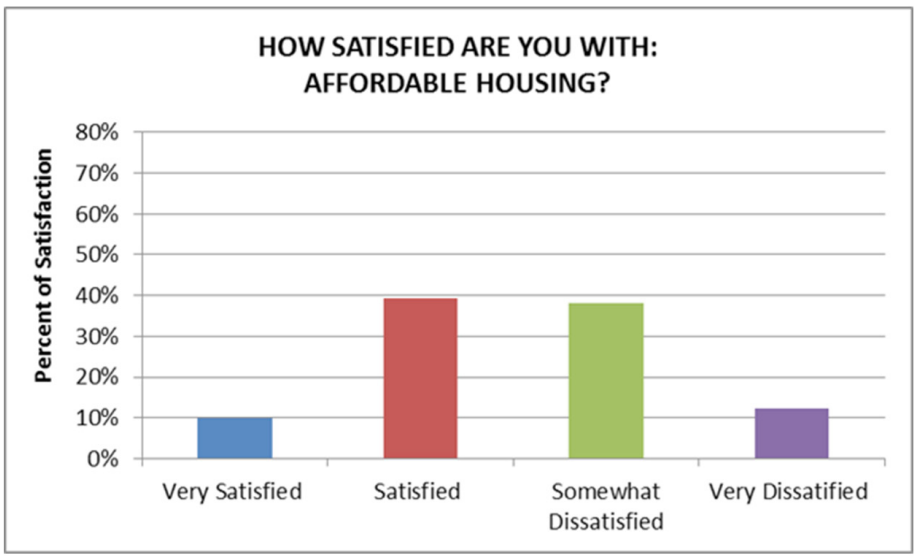

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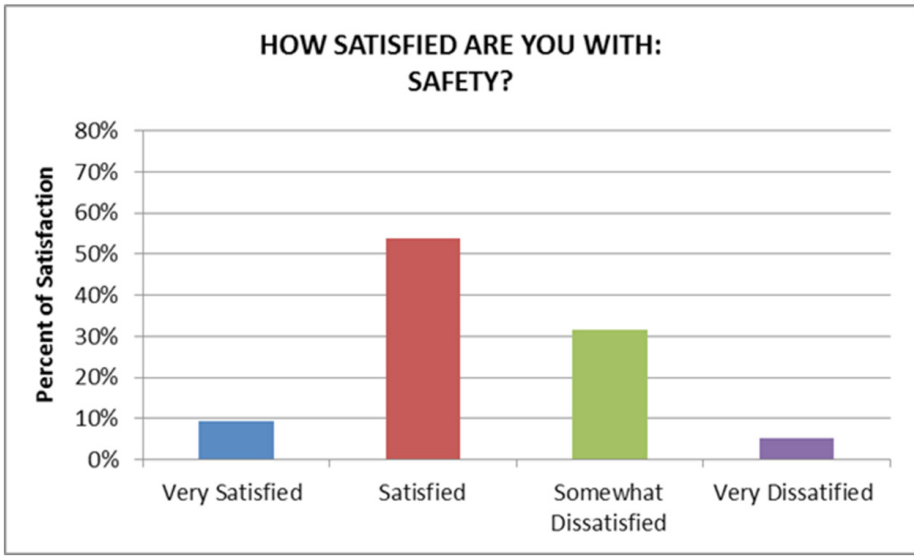

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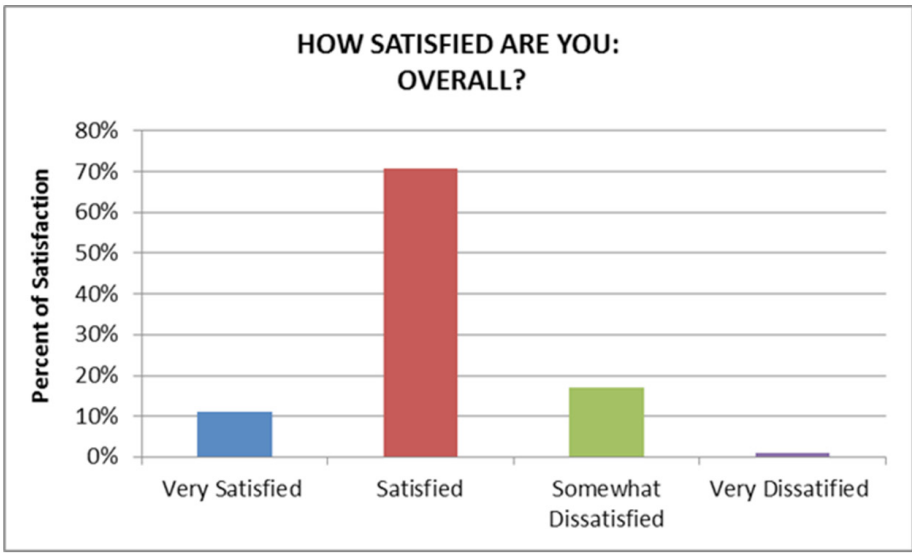
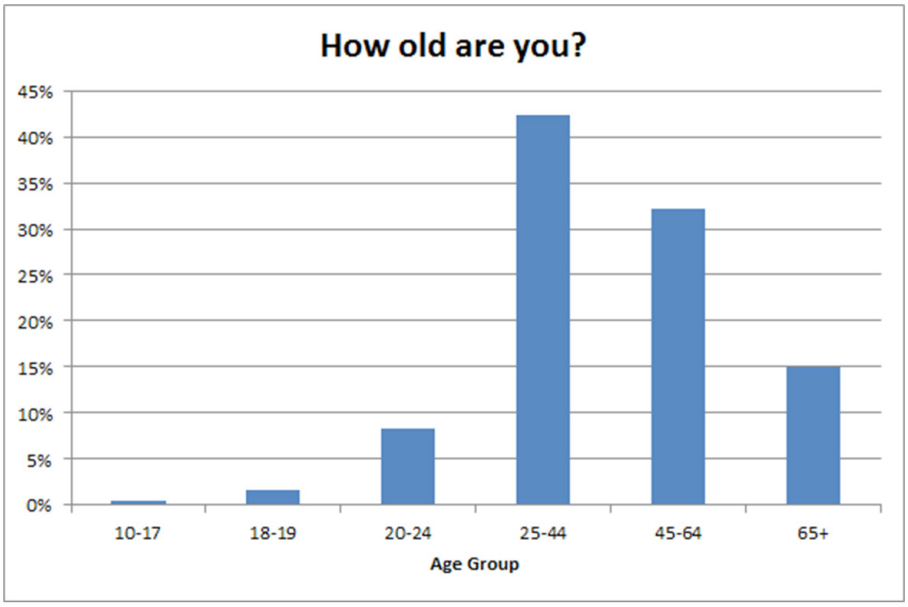


Ten demographic questions were asked on the survey.

1. What is your zip code?
2. How old are you?
3. What is your gender?
4. With which race do you most identify?
5. Are you Hispanic or Latino?
6. What is your country of birth?
7. What is your highest level of education?
8. Household income (yearly)
9. How many people in the following age groups are supported by the household income from the previous question?
    a. Children under 18
    b. Adults 18 to 64
    c. Adults 65 and older
10. What is your community?

Some of the demographic results are in Figures 15- 20. Country of birth, education level, zip codes, and the number of household members were collected for potential use in future analyses.

Figure 15:



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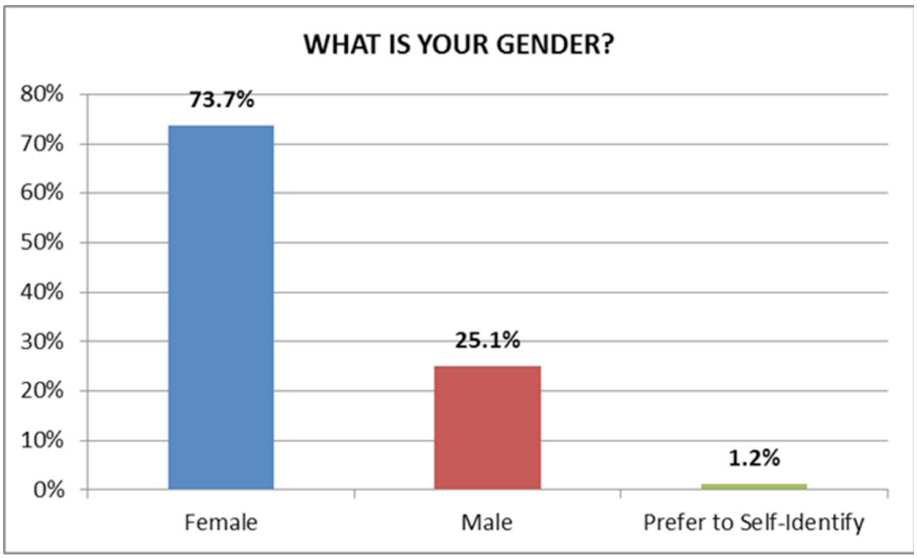

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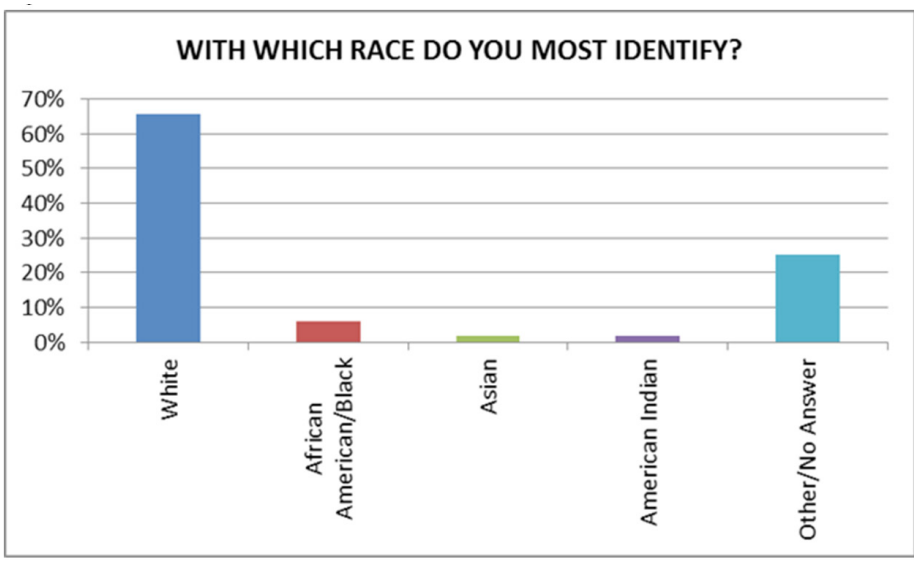

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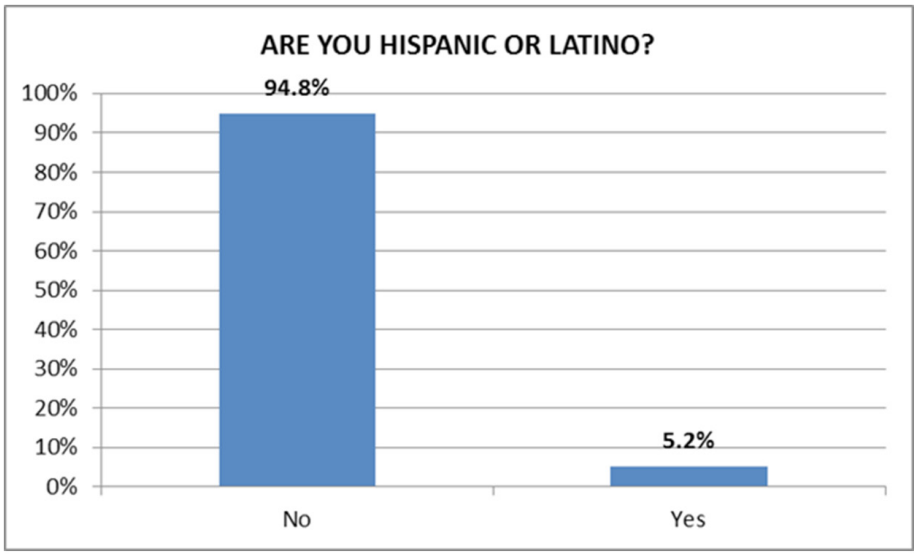

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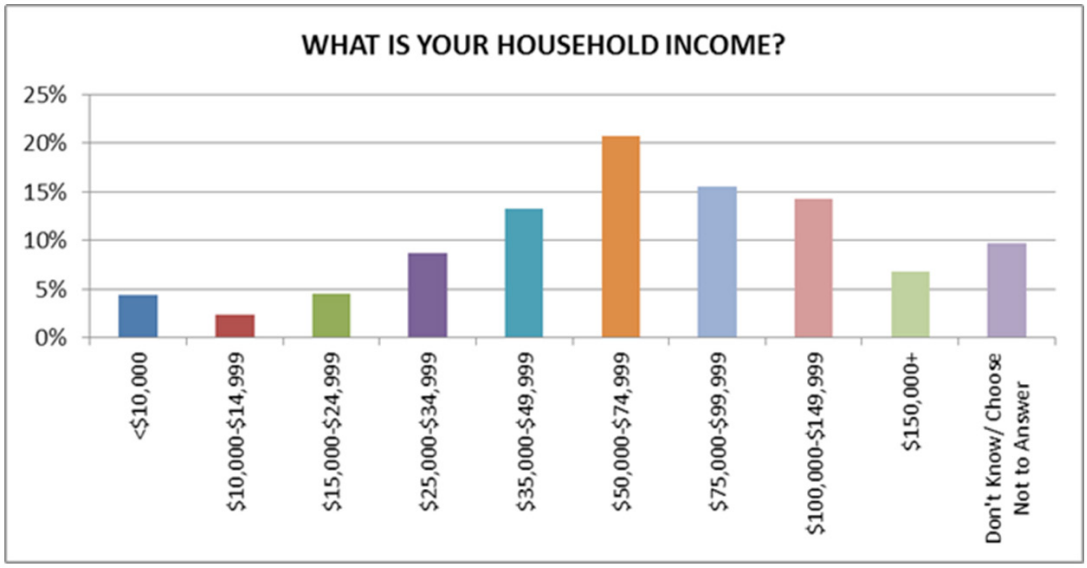

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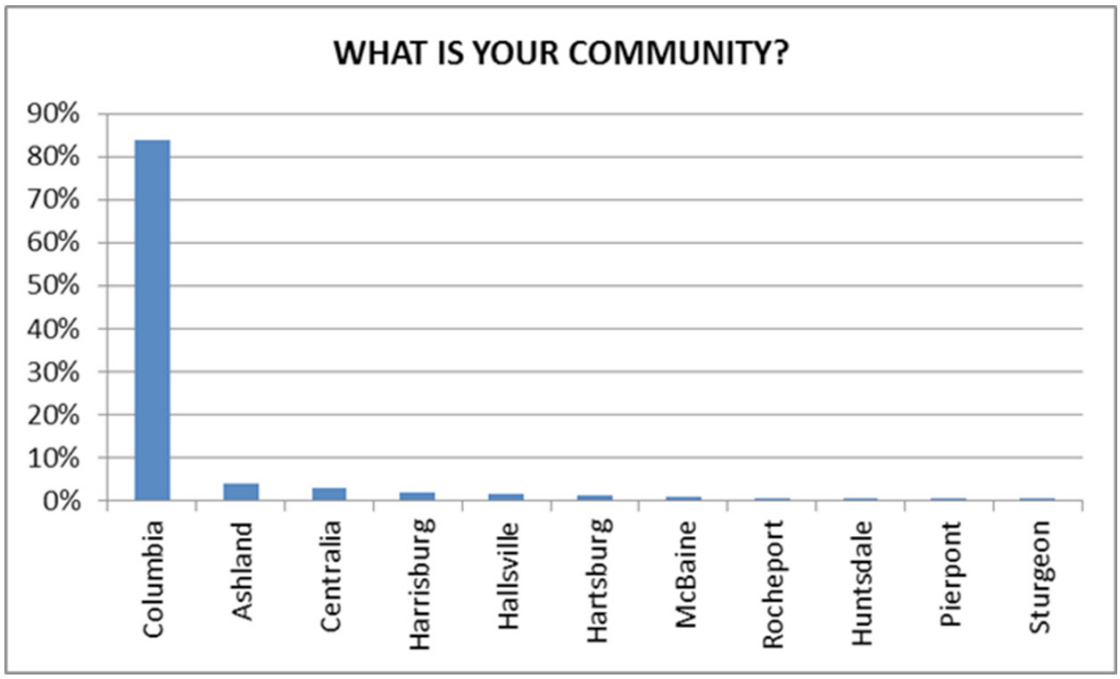

WHAT IS YOUR COMMUNITY?
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Columbia
Ashland
Centralia
Harrisburg
Hallsville
Hartsburg
McBaine
Rocheport
Huntsdale
Pierpont
Sturgeon

OUR PROCESS: FOCUS GROUPS

A focus group is a small group of participants, usually 10-15, that responds to a set number of questions. Questions are open ended, leading to group discussion on topics of importance. Participants react to ideas together and can build off of each other's comments. Only a small number of people can participate in focus groups. There is a risk of the group atmosphere hindering honest opinions. This methodology is a good complement to the data acquired from the community survey.

The Steering Committee voted to adopt the same three questions that were asked in 2013, with the third question edited to reflect the updated vision statement. Steering Committee reviewed the groups that were under-represented in 2013 and decided to take the discussion to a Steering Committee task force. Ultimately, the design of the focus groups was completed after a series of Steering Committee meetings, task force meetings, and Core Plus meetings. Ten focus groups were planned, with three of them publicized to the general public and seven publicized to groups who frequented the focus group location. Three focus groups that were open to the general public were held in Columbia, Ashland, and Centralia. Recruitment efforts for the focus groups included email and social media. Seven focus groups that were open to consumers of the location included: Oak Towers, Family Health Center, Columbia Public Schools, Centro Latino, Services for Independent Living, LGBTQ Resource Center, and Turning Point. Recruitment efforts for these seven locations included social media, email, and personal invitation. During this same period, three focus groups were planned as part of a complementary process occurring in other areas of PHHS. The three focus groups were with maternal health mothers, child health parent, and maternal child health providers, in addition to Live Well by Faith program participants.. These three focus groups included the three questions from this assessment, thereby increasing the number of respondents.

Whenever possible, focus groups were held in public locations with ample parking, close to public transportation, ADA accessible, and had appropriate space for children. Focus group participants were provided a meal, child care during the focus group, and a $25 gift card to a local business. In order to plan for child care and dietary needs, participants were asked to RSVP. The number of participants was capped at 15 for each session. Focus groups were scheduled during breakfast, lunch, and dinner based upon the needs of the group. Each group had thirty minutes for the meal and 90 minutes for discussion. At each focus group, a PHHS staff member opened with an introduction and an explanation of the MAPP process. Ground rules were agreed upon for each session and posted in the room for participants to reference. Participants were asked to review and sign a consent to participate before beginning the discussion ***(Appendix B)***. The consent was read aloud in English at some of the locations and read in Spanish at Centro Latino. Each focus group was audio recorded; an improvement identified after a process evaluation of the 2013 Community Health Assessment.

Three questions were asked at each focus group.

1. When thinking about health, what are the greatest strengths in our community?
2. What are the most important health related issues in our community?
3. What would help us become a caring and inclusive community where everyone can achieve their optimum well-being?

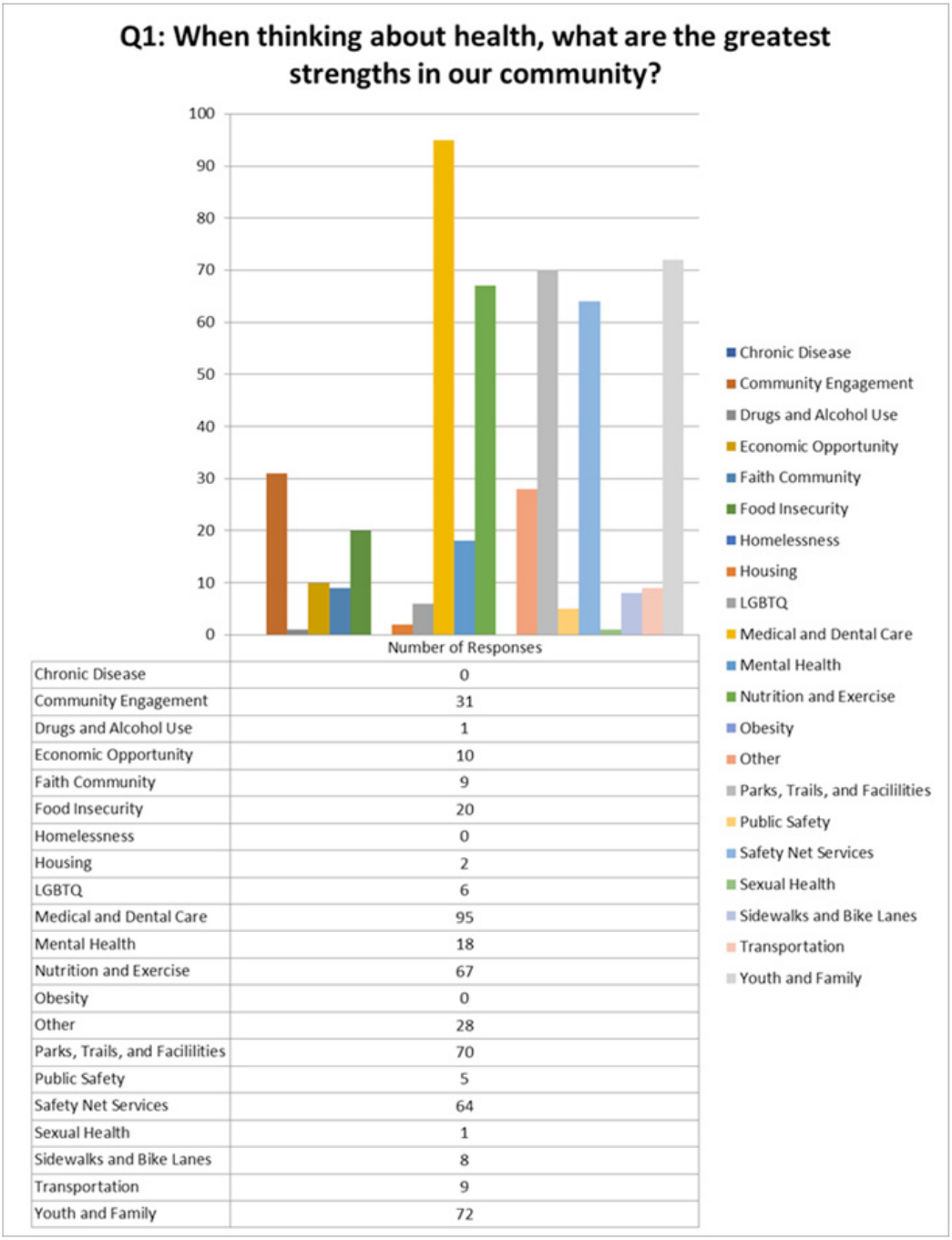
Each question was presented to the group, followed by three minutes of "brain writing" and 17 minutes of discussion ***(Appendix C)***. Each focus group had a facilitator and a recorder. Members of Steering Committee and PHHS staff volunteered to serve as facilitators and/or recorders. Facilitation training was provided by an external consultant. The role of the facilitator is to guide the discussion ***(Appendix D)***. The recorder captured the discussion answers on a flip chart. Audio recordings captured the conversations for data analysis purposes. At the focus group conclusion, participants were asked to complete an evaluation ***(Appendix E)***, a demographic questionnaire ***(Appendix F)***, and the community health survey ***(Appendix A)***.

FOCUS GROUP RESULTS

As mentioned above, focus group responses were collected on flip chart paper during the discussion as well as audio recorded. The audio recordings were transcribed and then transferred to Microsoft Excel.

Themes in the focus groups were found by examining the words in the comments (i.e., the thoughts and suggestions from the focus group members written down by the recorder). The themes were found by finding comments that shared similar words and did not include words that were common in other themes. For example, if a comment stated, “we should have more parks and trails”, it would be classified with other comments like “our parks and trails are great” rather than comments like “we have access to lots of specialists in the hospital system”. Final themes were: chronic disease, community engagement, drugs and alcohol uses, economic opportunity, faith community, food insecurity, homelessness, housing, LGBTQ, medical and dental care, mental health, nutrition and exercise, obesity, other, parks/trails/facilities, public safety, safety net services, sexual health, sidewalks and bike lanes, transportation, and youth and family.

Figure 21:



	Number of Responses
Chronic Disease	0
Community Engagement	31
Drugs and Alcohol Use	1
Economic Opportunity	10
Faith Community	9
Food Insecurity	20
Homelessness	0
Housing	2
LGBTQ	6
Medical and Dental Care	95
Mental Health	18
Nutrition and Exercise	67
Obesity	0
Other	28
Parks, Trails, and Facililities	70
Public Safety	5
Safety Net Services	64
Sexual Health	1
Sidewalks and Bike Lanes	8
Transportation	9
Youth and Family	72

Top Five Responses with example comments
Q1: When thinking about health what are the greatest strengths in our community?

Medical and Dental Care:
Access to care, access to medical facilities, access to specialized care, dental emergency department referral program, connected provider community, Family Health Center, multiple urgent care clinics.

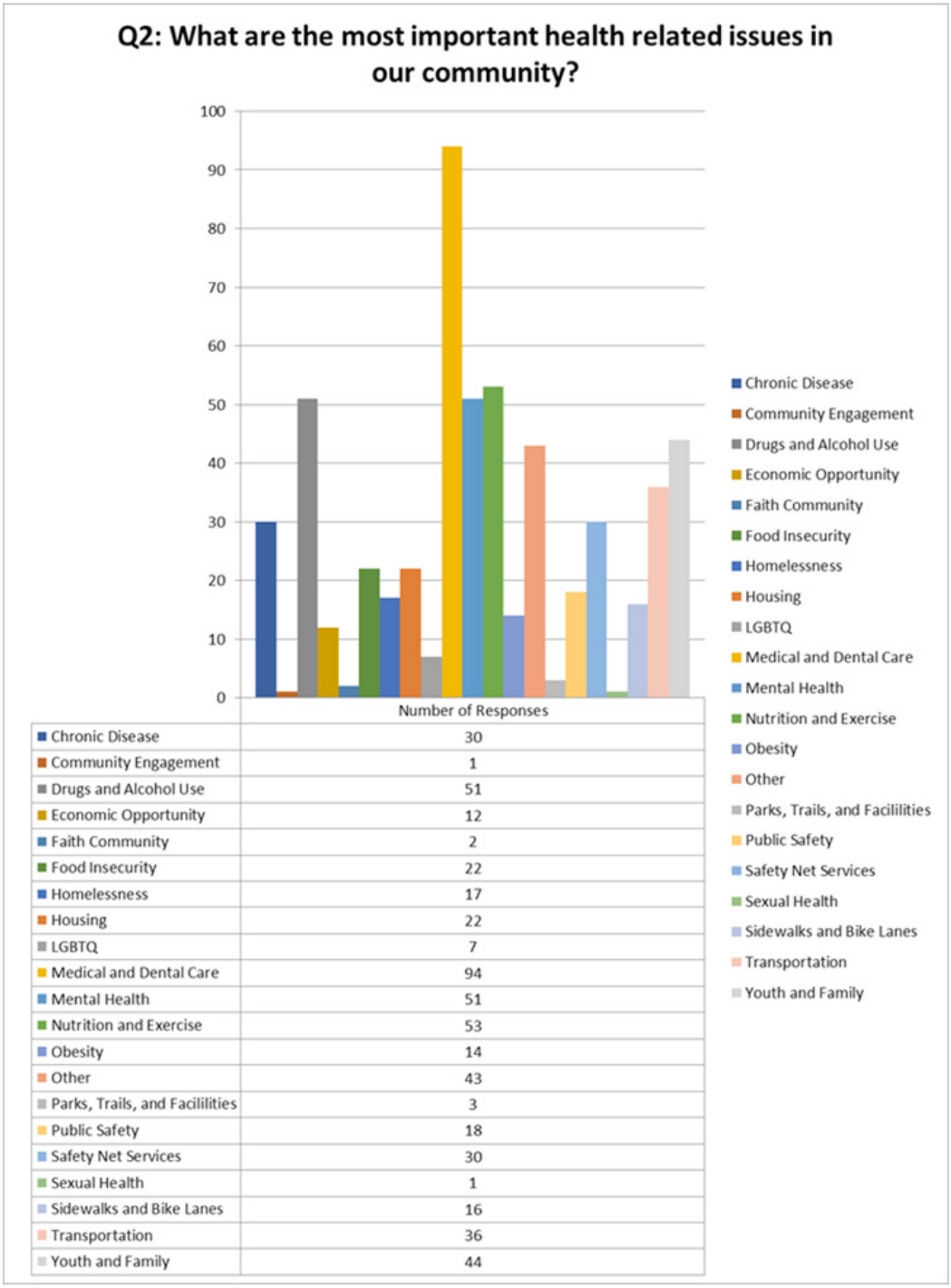
Youth and Family:
After school programs, library, Big Brothers/Big Sisters, Optimist Club, Parents as Teachers, YMCA, Youth Empowerment Zone, sports, Fun Fest, Headstart.

Parks, Trails and Facilities:
Available green spaces, trail system, ARC, dog parks, good facilities and paths for exercise and walking, Parklets, multiple parks, YMCA, Centralia Recreation Center.

Nutrition and Exercise:
Learning Garden, farm fresh food, community gardens, farmers markets, fresh fruits and vegetables in schools, outdoor activities, walkable communities, lots of sport options.

Safety Net Services:
Free health screenings, homeless support, access to healthcare for uninsured (MedZou, Family Health Center), Assistance League, Services for Independent Living, Senior Centers, nursing homes, community partnerships and referrals.

Figure 22:



Chronic Disease	30
Community Engagement	1
Drugs and Alcohol Use	51
Economic Opportunity	12
Faith Community	2
Food Insecurity	22
Homelessness	17
Housing	22
LGBTQ	7
Medical and Dental Care	94
Mental Health	51
Nutrition and Exercise	53
Obesity	14
Other	43
Parks, Trails, and Facililities	3
Public Safety	18
Safety Net Services	30
Sexual Health	1
Sidewalks and Bike Lanes	16
Transportation	36
Youth and Family	44

Top Five Responses with example comments
Q2: What are the most important health related issues in our community?

Medical and Dental Care:
Access to insurance, dental care, high health costs, limited services in the rural area, lack of Spanish speaking providers, lack of Medicaid expansion, disconnect between doctors' recommendations and public assistance programs, flu.

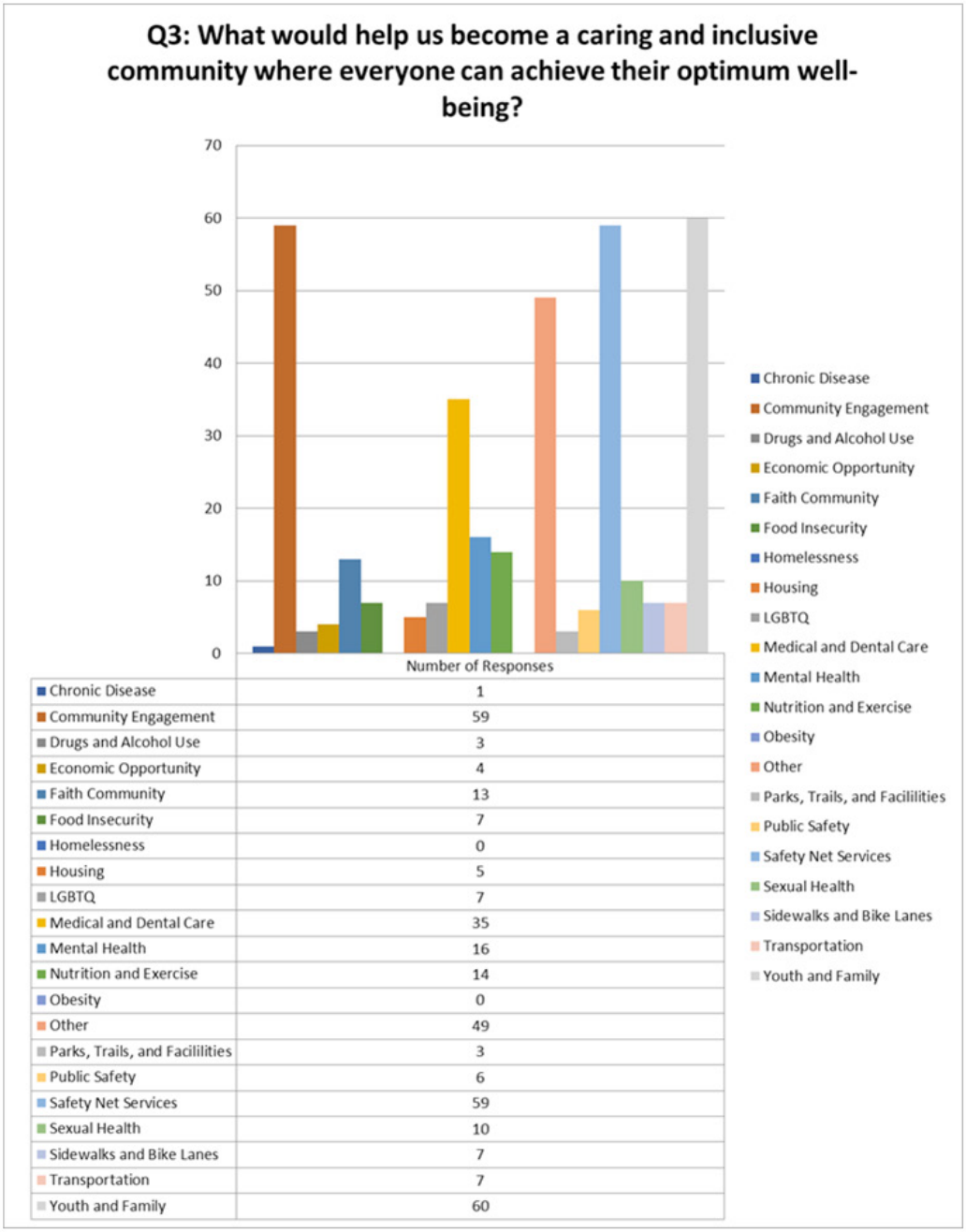
Nutrition and Exercise:
Poor nutrition, too much fast food, limited hours for Farmers Markets, lack of reduced cost/no cost physical activity programs, soda cheaper than water, inactive lifestyle.

Drugs and Alcohol Use:
Drugs, addiction, liquor stores in low income areas, lack of treatment options for uninsured, excessive alcohol use, teens using drugs and alcohol, opiate use.

Mental Health:
Mental health needs for all ages, not enough crisis mental health services, lack of education for parents whose children have mental health needs, suicide, lack of mental health options for uninsured.

Youth and Family:
Lack of affordable childcare, family instability, bullying, activities for non-athletic youth, excessive screen time, parental neglect.

Figure 23:



	Number of Responses
Chronic Disease	1
Community Engagement	59
Drugs and Alcohol Use	3
Economic Opportunity	4
Faith Community	13
Food Insecurity	7
Homelessness	0
Housing	5
LGBTQ	7
Medical and Dental Care	35
Mental Health	16
Nutrition and Exercise	14
Obesity	0
Other	49
Parks, Trails, and Facililities	3
Public Safety	6
Safety Net Services	59
Sexual Health	10
Sidewalks and Bike Lanes	7
Transportation	7
Youth and Family	60

Top Five Responses with example comments
Q3: What would help us become a caring and inclusive community where everyone can achieve their optimum well-being?

Youth and Family:
Parenting classes are needed, more programs for teenagers, more affordable daycare options, more volunteer opportunities for families, life skills for teens and parents, more opportunities for kids who aren't athletes, more access to early learning programs.

Safety Net Services:
Housing and programs for the homeless, fewer restrictions on social services, more funding for agencies to increase the help they give, universal health care.

Community Engagement:
More community activities, more opportunities to learn about other cultures, more volunteer opportunities, more focus groups and community discussions, learning to respectively dialogue, check on your neighbors and friends.

Other - response numbers for individual topics are low, examples include:
Smoke free restaurants, mutual respect, more accessibility for those with disabilities.

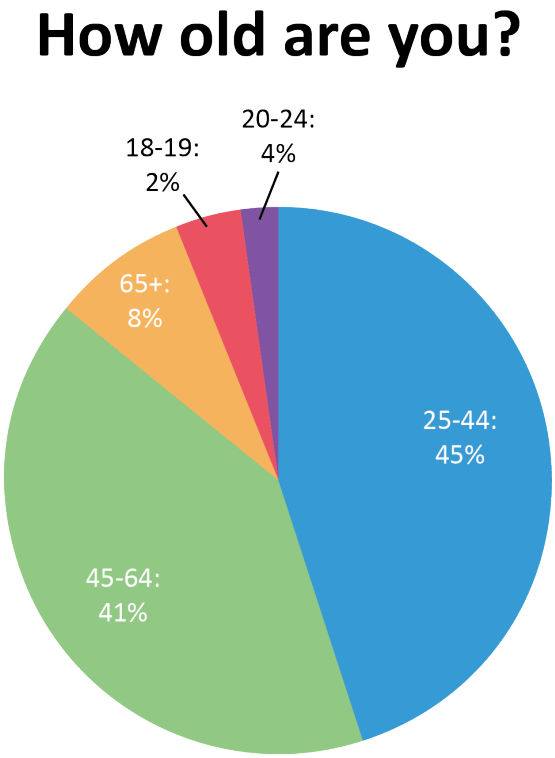
Medical and Dental Care:
More options for dental care, health education, connection between mental health and physical health, 24/7 non-emergency care, increase collaborations between medical specialties, affordable mental health care.

Figure 24: Focus Group Demographics

Focus Group Demographics	
Focus Group Site	Number Attending
Ashland	13
Oak Towers	15
Family Health Center	12
Centralia	14
Columbia	14
Centro Latino	18
Turning Point	9
Columbia Public Schools	13
LGBTQ Student Center	8
Services for Independent Living	8
Maternal Health (Mothers)	7
Child Health (Parents)	5
Maternal Child Health Providers	6
Live Well by Faith	11
Total	**153**

***Note** Demographic information was not collected on all participants nor was the collected information complete in all cases. These discrepancies account for the total number of responses below < 153. Demographic calculations are based upon 116 responses.*

Figure 25:



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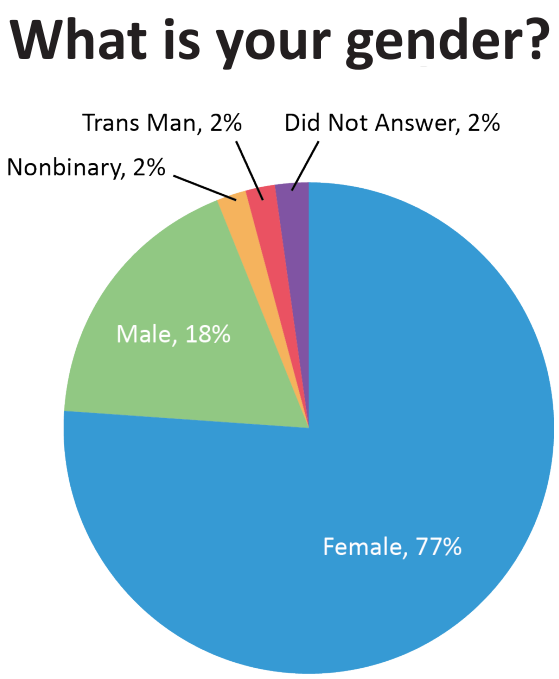


Figure 27:

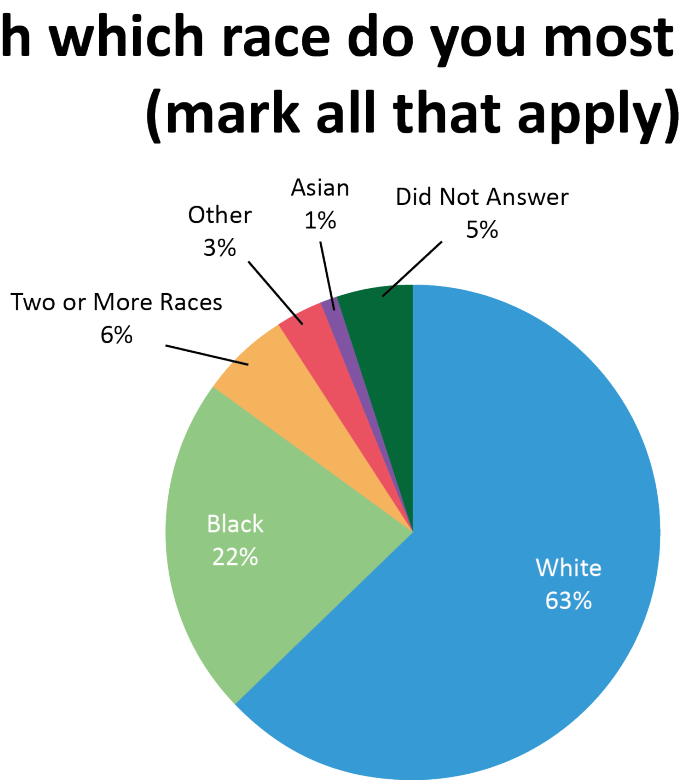
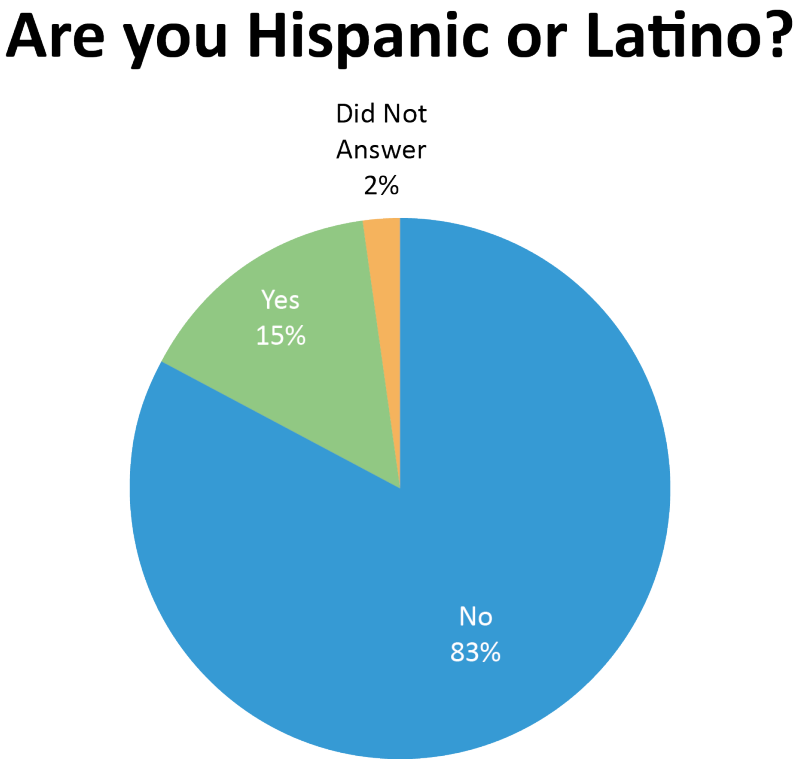


Figure 28:



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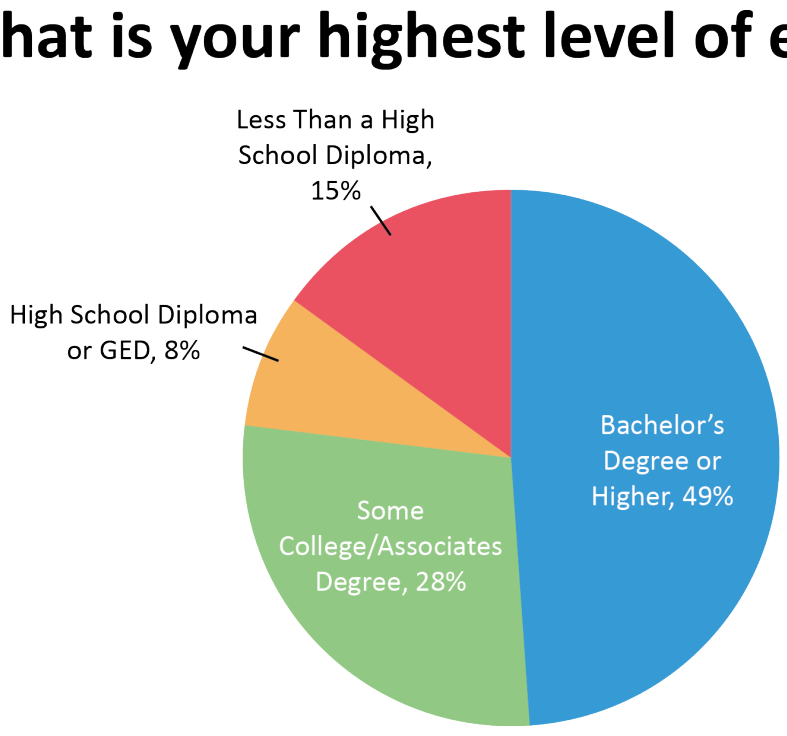

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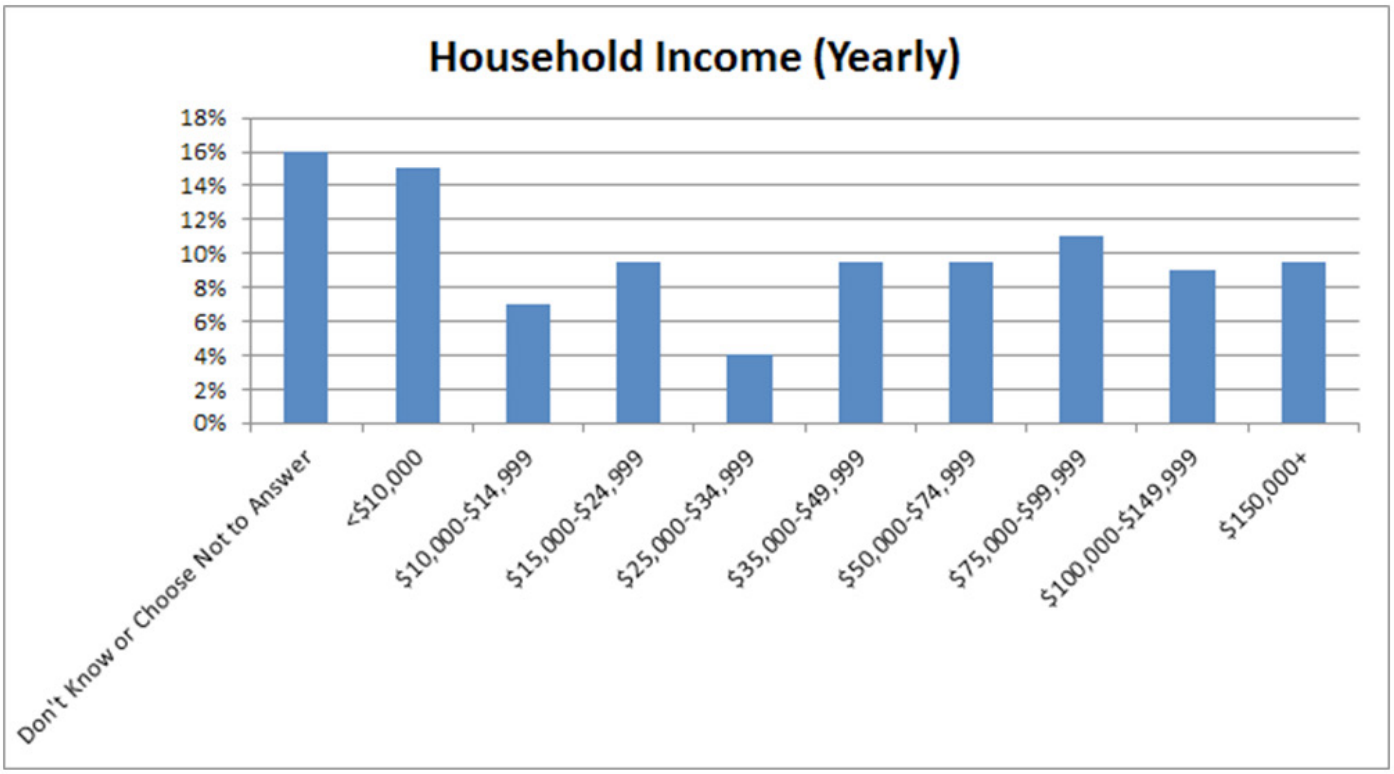

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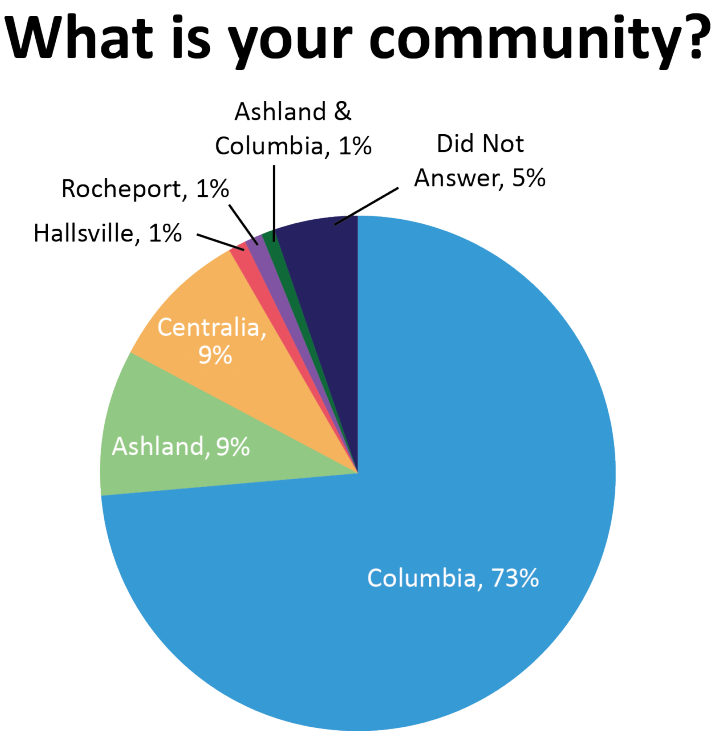

OUR PROCESS: PHOTOVOICE

It was noted during the 2013 CHA process that the youth of our community were not well represented in the assessment process. In an effort to include youth feedback, a Photovoice project with the Teen Outreach Prevention (TOP) program was conducted. Participating teens defined their community as their school, town, and family members. In group discussions, they brainstormed health issues in their communities. A total of 55 students participated in group discussions and 14 students participated in the photo-taking aspect of the project. The complete Photovoice report, Health Issues Through the Eyes of Boone County, Missouri Teens, can be found on PHHS website *www.como.gov/health*.

Results

Students identified 22 various health issues in their communities they considered problematic. Ten issues were captured in photos and stories ***(Appendix G)***. The most commonly identified issues were tobacco use, drug use, littering, poverty and homelessness, bullying, mental health, violence, STDs, alcohol use, and obesity.

Dissemination of Community Themes and Strengths Results

The high school students involved in the Photovoice project showcased their pictures with a public viewing at a local restaurant. Results from Photovoice, the community survey, and focus groups were presented to the Steering Committee, Live Well Boone County Partnership, and the community at large ***(Appendix H)***.

Focus group and survey results were shared with members of Steering Committee in May 2018 and were incorporated into the data shared at the Community Forums as part of the MAPP Phase 4 process. Results are also made available as part of the 2018 Community Health Assessment publication.

Limitations

Multiple limitations were identified with the community survey. Two questions had a possible response omitted from the electronic survey yet included in the paper survey. Survey respondents who did not identify a Boone County zip code or community were eliminated from the survey sample. The wording of the survey questions may have led some respondents to think the questions were only for certain age groups to answer. The survey was only available in English.

The focus groups were challenging to schedule within a short time frame. Focus groups were only available in English. A community partner assisted with Spanish language translation at one focus group. Focus groups were held in locations that allowed for wheelchair accessibility, however, respondents were not asked if they needed ADA accommodations when they RSVP'd for the focus group. Asking this question at the time of RSVP would allow for additional accommodations, such as those for participants with visual or auditory

impairments. The focus groups that were held as part of a complementary process collected different demographic data from the remaining ten focus groups. Not all focus group participants RSVP'd for the event, making it challenging to plan for food and incentives.

Evaluations

The primary source for process evaluation included written evaluations at the conclusion of each meeting. Feedback from meeting evaluations is reviewed at monthly Core Plus meetings for on-going process improvements.

Focus group participants received evaluations at the conclusion of the meetings. Evaluation results were used for process improvement.

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APPENDICES

APPENDIX A:
2018 Community Health Survey

Community Health Survey 2018

The purpose of this assessment project is to better understand community health and the food environment in Boone County.

You are invited to participate in this survey because you are a member of this community!

Please note:

- Your participation in this project is voluntary. You may choose not to participate.
- If you decide to participate in this project, you may withdraw at any time.
- If you decide not to participate in this project or if you withdraw from participating at any time, you will not be penalized.
- Your responses will be confidential.
- If you complete the survey we will ask for your email address only to provide information and/or incentives. You may choose not to provide your email address without being penalized.

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BUILD THIS TOWN CAMPAIGN FOR THE AGRICULTURE PARK

Selecting "agree" indicates that:
you have read the above information; you voluntarily agree to participate; you are at least 18 years of age or have parental consent

O **Agree**

Selecting "disagree" indicates that you decline participation.

O **Disagree**

Signature:_____ Date: _____

**If respondent is under the age of 18, please include the signature of a legal guardian:

**Signature:_____ Date: _____

Please include your contact information if you would like to be contacted with updates, attend events, or attend focus groups:

Name: _____ **Email/phone:**_____

O **Updates** O **Events** O **Focus groups**

If you have any questions about the project, please contact Rebecca Roesslet at rebecca.roesslet@como.gov OR Heather Gillich at heather.gillich@gmail.com.

1. What are the **greatest strengths** of your community? Please select three (3).

- O High quality childcare
- O Jobs and a good economy
- O Access to health care
- O Affordable housing
- O Low crime and safe neighborhoods
- O Safe walking and biking routes
- O Low violence (domestic, elder, child)
- O Access to mental health care
- O Public transportation services
- O Working toward an end to homelessness
- O Arts and cultural events
- O A clean and healthy environment
- O Respect for different cultures and races
- O Local 24-hour police, fire, and rescue services
- O Meets basic needs for everyone (food, shelter, clothing)
- O Parks and recreation
- O Access to healthy food (fresh fruits, vegetables)
- O Good schools
- O Other_____

2. **For children ages birth to five (0-5) years old,** what are the most important issues in your community? Please select three (3) areas where your community should focus.

- O Homelessness
- O Child abuse/neglect
- O Accidental injuries (falls, breaks, sprains)
- O Childhood obesity
- O Dental health (healthy teeth)
- O Disabilities (physical, intellectual, sensory, developmental)
- O Lack of physical activity
- O Not using helmets
- O Affordable child care services
- O Asthma
- O Secondhand smoke exposure
- O Regular checkups
- O Basic needs (diapers, clothing, food)
- O Mental health
- O Low birth weight
- O Not using a car seat
- O Other_____

3. **For children and youth ages six to eighteen (6-18) years old**, what are the most important issues in your community? Please select three (3) areas where your community should focus.

- O Homicide
- O Lack of physical activity
- O Childhood obesity
- O Basic needs (food, clothing, shelter)
- O Asthma
- O Accidental overdose
- O Sexually transmitted diseases
- O Not using seatbelts
- O Alcohol use
- O Suicide
- O Other _____
- O Dropping out of school
- O Physical or sexual assault
- O Not using helmets
- O Unintended pregnancy
- O Bullying
- O Disabilities (physical, intellectual, sensory, developmental)
- O Drug use
- O Dental health (healthy teeth)
- O Distracted driving (texting/cell phone use)
- O Homelessness
- O Accidental injuries (falls, breaks, sprains)
- O Too much screen time
- O Tobacco use (cigarettes, snuff, chewing tobacco, e-cigarettes)
- O LGBT health services
- O Child abuse/neglect
- O Regular checkups
- O Programs, activities, and support for youth and teens during non-school hours
- O Mental health (anxiety, depression)
- O Impaired driving (drug/alcohol)
- O Secondhand smoke exposure
- O Poor eating habits

4. **For adults ages nineteen to sixty-four (19-64) years old,** what are the most important issues in your community? Please select three (3) areas where your community should focus.

- O Adult care service
- O Physical or sexual assault
- O Domestic violence
- O Homicide
- O Unintended pregnancy
- O Drug use
- O LGBT health services
- O Alcohol use
- O Basic needs (food, clothing, shelter)
- O Other_____
- O Tobacco use (cigarettes, snuff, chewing tobacco, e-cigarettes)
- O Mental health
- O Regular checkups
- O Accidental overdose
- O Cancer
- O Distracted driving (texting/cell phone use)
- O Obesity
- O Suicide
- O Not using seatbelts
- O Disabilities (physical, intellectual, sensory, developmental)
- O Sexually transmitted diseases
- O Homelessness
- O Impaired driving (drug/alcohol)
- O Secondhand smoke exposure
- O Disease that is chronic (doesn't go away, such as heart disease or diabetes)
- O Accidental injuries (falls, breaks, sprains)
- O Lack of physical activity
- O Dental health (healthy teeth)
- O Poor eating habits

5. **For adults ages sixty-five and older (65+),** what are the most important issues in your community? Please select three (3) areas where your community should focus.

- O Mental health
- O Alzheimer's disease
- O Accidental overdose
- O Obesity
- O Adult care services
- O Alcohol abuse
- O Poor eating habits
- O Homelessness
- O Transportation
- O Physical or sexual assault
- O Disease that is chronic (doesn't go away, such as heart disease or diabetes)
- O Other_____
- O Tobacco use (cigarettes, snuff, chewing tobacco, e-cigarettes)
- O Lack of physical activity
- O Programs, activity and support for the senior community
- O Cancer
- O Domestic violence
- O Not using seatbelts
- O LGBT health services
- O Homicide
- O Elder abuse/neglect
- O Suicide
- O Secondhand smoke exposure
- O Basic needs (food, clothing, shelter)
- O Drug use
- O Sexually transmitted diseases
- O Distracted driving (texting/cell phone use)
- O Impaired driving (drug/alcohol)
- O Dental health (healthy teeth)
- O Accidental injuries (falls, breaks, sprains)
- O Regular checkups
- O Disabilities (physical, intellectual, sensory, developmental)

6. What would **most improve** the quality of life in your community? Please select three (3) areas where your community should focus.

- O Better access to healthcare
- O Improved local 24-hr police, fire, and rescue services
- O More high-quality childcare
- O More arts and cultural events
- O More affordable housing
- O Better schools
- O Other _____
- O More public transportation services
- O An end to homelessness
- O A cleaner and healthier environment
- O More parks and recreation
- O Better access to mental health care
- O Safer walking and biking routes
- O Accidental injuries (falls, breaks, sprains)
- O Better access to healthy food (fresh fruits and vegetables)
- O Meet basic needs for everyone (food shelter, clothing)
- O Less violence (domestic, elder, child)
- O Lower crime and safer neighborhoods
- O More respect for different cultures and races
- O More jobs and a healthier economy

Health	O	O	O	O
Employment/Economic Opportunity	O	O	O	O
Environment (consider air, water, trash)	O	O	O	O
Resident engagement (consider volunteerism, community organizations, and activities)	O	O	O	O
Affordable housing	O	O	O	O
Safety	O	O	O	O
Overall	O	O	O	O

8. How satisfied are you with…	Very Satisfied	Satisfied	Somewhat dissatisfied	Very dissatisfied
The overall quality of the food sold in COLUMBIA?	O	O	O	O
The selection of foods available in COLUMBIA?	O	O	O	O
The availability of healthy food in COLUMBIA?	O	O	O	O
Overall, the price of food available in COLUMBIA?	O	O	O	O

9. Are you the main food shopper or decision maker for your household with regards to food purchases?

O YES O NO

(Please skip to Question 15 if you answered "NO" to Question 9)

10. Please tell us how often you obtain food at each of the following:

	2 or more times a day	Daily	2 or more times a week	Weekly	Every 2 weeks	Monthly	A few times a year	Never
Corner store or convenience store?	O	O	O	O	O	O	O	O
Supermarket or grocery store?	O	O	O	O	O	O	O	O
Warehouse store (ex. Sam's Club)?	O	O	O	O	O	O	O	O
Farmer's market or farm stand?	O	O	O	O	O	O	O	O
Carry-out shop? (ex. Pizza, Chinese food, chicken box)	O	O	O	O	O	O	O	O
Fast-food restaurant? (ex. McDonalds)	O	O	O	O	O	O	O	O
Sit-down restaurant, including buffet?	O	O	O	O	O	O	O	O
Food pantry?	O	O	O	O	O	O	O	O
Directly from farm or garden?	O	O	O	O	O	O	O	O
Subscription service? (ie Blue Apron)	O	O	O	O	O	O	O	O

11. How easy is it for you to get to the supermarket or grocery store?

◯ Very easy ◯ Fairly easy ◯ Fairly difficult ◯ Very difficult ◯ Don't know /not sure

If "fairly difficult" or "very difficult," why is it difficult to get to the supermarket or grocery store?

_____

12. What is the name of the location where you obtain most of your food, and what is its approximate address?

(ie Gerbes on Paris) _____

13. How do you select the place where you obtain your food?

Please rank the following from 1 - 4, with 1 being most important:

Location	Availability of products	Price	Services offered on site

	YES	NO
14. Are there certain foods that you would like to obtain but you cannot find in COLUMBIA? Please list them here: _____	O	O
15. Would you be interested in growing some of your own food in a garden? Please explain why or why not: _____	O	O
16. Do you participate in a community garden or garden at home? Please explain why or why not: _____	O	O
17. Would you buy food that was grown in Boone County at a farmers' market? Please explain why or why not: _____	O	O

18. How often do you (or a household member) cook meals at home?

○ Daily ○ Several times/week ○ Weekly ○ Monthly ○ A few times per year ○ Never

19. How many servings of fruits and vegetables do you usually eat each day?_____servings each day
(a serving is about 1 cup, or roughly the amount that would fit into the palm of your hand)

20. Is there anything that you would like to change about the way that you eat?
_____

21. Do you agree, disagree or have no opinion to the statement: "In general, a person's health is related to what they eat"?

○ Strongly Agree ○ Somewhat Agree ○ Somewhat Disagree ○ Strongly Disagree ○ Don't know / no opinion

22. What is your zip code?	_____			
23. How old are you?	_____			
24. What is your gender?	O Male	O Female	O _____	
25. With which race do you most identify? (mark all that apply)	O African American /Black	O Asian	O American Indian	
	O White	O Native Hawaiian & Other Pacific Islander		
	O Alaskan Native	O Other_____		
26. Are you Hispanic or Latino?	O YES	O NO		
27. What is the country of your birth?	_____			
28. What is your highest level of education?	O Less than high school diploma	O High school diploma or GED		
	O Some college or associate's degree	O Bachelor's degree or higher		
29. Household income (yearly)	O <$10,000	O $10,000-14,999	O $15,000-24,999	
	O $25,000-34,999	O $35,000-49,999	O $50,000-74,999	
O Don't know or choose not to answer	O $75,000-99,999	O $100,000-149,999	O $150,000+	
30. Home many people in the following age groups are supported by the household income from the previous question?	Children under 18 _____	Adults 18 to 64	Adults 65 and older	
31. What is your community?	O Ashland	O Hallsville	O Huntsdale	O Rocheport
	O Centralia	O Harrisburg	O McBaine	O Sturgeon
	O Columbia	O Hartsburg	O Pierpont	O Other: _____

APPENDIX B:
Focus Group Consent Form

Consent to Participate in Focus Group

You have been invited to participate in a focus group sponsored by the Columbia/Boone County Department of Public Health and Human Services. This information will help us to develop new programs and services, and will be included in our Boone County Community Strengths and Needs Assessment. Additionally, we will share the information with community partners and the general public. You can choose whether or not to participate in the focus group and stop at any time. Although the focus group will be tape recorded, your responses will remain anonymous and no names will be mentioned in the report. In respect for each other, we ask that only one individual speak at a time in the group and that responses made by all participants be kept confidential.

I understand this information and agree to participate fully under the conditions stated above:

Print name:_____

Signed:_____

Date: _____

Public Health
Prevent. Promote. Protect.
Columbia/Boone County
Public Health & Human Services

APPENDIX C:
Focus Group Questions

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BOONE COUNTY

Vision Statement

A caring and inclusive community where everyone can achieve their optimum well-being

Focus Group Discussion Questions

1. When thinking about health, what are the greatest strengths in our community?

2. What are the most important health related issues in our community?

3. What would help us become a caring and inclusive community where everyone can achieve their optimum well-being?

APPENDIX D:
Focus Group Facilitator's Agenda

Vision Statement:

A caring and inclusive community where everyone can achieve their optimum well-being

Facilitator's Agenda

I. Welcome- (5 min)- Rebecca
   a. Welcome everyone to the focus group
   b. Introduce facilitator, recorder, and other support staff
   c. Locations of restrooms and child care space

II. Community Themes & Strengths Assessment Focus Group: Purpose, Process (5 min)- Rebecca
   a. Health Dept. support staff will give a brief overview of the MAPP process, where are we now in the cycle. Attendees have the handout in their packet
   b. Support staff will review the release of information, the audio recording, the demographic questions, and the paper copy of the survey

III. Introductions (10 min) - **Facilitator takes over**

   a. Participant introductions- name, how long you've lived in Boone County and why you decided to come to this focus group
   b. Ground rules- these will be listed on a flip chart, group can review and add more if desired

IV. Discussion Questions: three questions (60 minutes)- Facilitator
   a. Brainwriting for each question-3 min
   b. Discussion for each question-17 min

V. Next Steps (5min)- Rebecca
   Community Forum will be held in late May- Early June, will release preliminary info then

VI. Evaluation and Close (5 min)

APPENDIX E:
Focus Group Evaluation Questions

Focus Group Evaluation Questions

Rate the extent to which you agree with the following statements.	Strongly Disagree	Disagree	Agree	Strongly Agree
I understand why my participation in today's focus group was important.				
Participating in today's focus group was a good use of my time.				
My facilitator created a safe environment for sharing my ideas.				
My facilitator ensured all voices were heard.				
I believe that diverse community perspectives were represented.				
I believe the health topics identified reflect the health needs of my community.				
I understand how information collected during today's event will be used.				
The focus group process was well organized.				

Please answer the following questions.
What did you like most about today's event?
What do you think could have been improved?
Additional comments:

APPENDIX F:
Focus Group Demographics Questionnaire

Instructions: Please answer the following questions. Your responses will help us to better serve our community.

Demographics

1. What is your zip code? _____
2. How old are you?_____
3. What is your gender? _____
4. With which race do you most identify? (mark all that apply)
    - African American/Black
    - Asian
    - American Indian
    - White
    - Native Hawaiian & Other Pacific Islander
    - Alaskan Native
    - Other_____
5. Are you Hispanic or Latino?
    - Yes
    - No
6. What is the country of your birth?_____
7. What is the primary language spoken at home? (mark all that apply)
    - English
    - Spanish
    - Arabic
    - Other_____
8. What is your highest level of education?
    - Less than high school diploma
    - High school diploma or GED
    - Some college or associate's degree
    - Bachelor's degree or higher

9. Household income (yearly)

o <$10,000 o $10,000-14,999 o $15,000-24,999

o $25,000-34,999 o $35,000-49,999 o $50,000-74,999

o $75,000-99,999 o $100,000-149,999 o $150,000+

o Don't know or choose not to answer

10. How many people in the following age groups are supported by the household income from the previous question?

_____ Children under 18

_____ Adults 18 to 64

_____Adults 65 and older

11. What is your community?

- o Ashland
- o Centralia
- o Columbia
- o Hallsville
- o Harrisburg
- o Hartsburg
- o Huntsdale
- o McBaine
- o Pierpont
- o Rocheport
- o Sturgeon
- o Other_____

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APPENDIX G:
Photovoice Booklet

HEALTH ISSUES THROUGH THE EYES OF BOONE COUNTY, MISSOURI TEENS

Acknowledgements

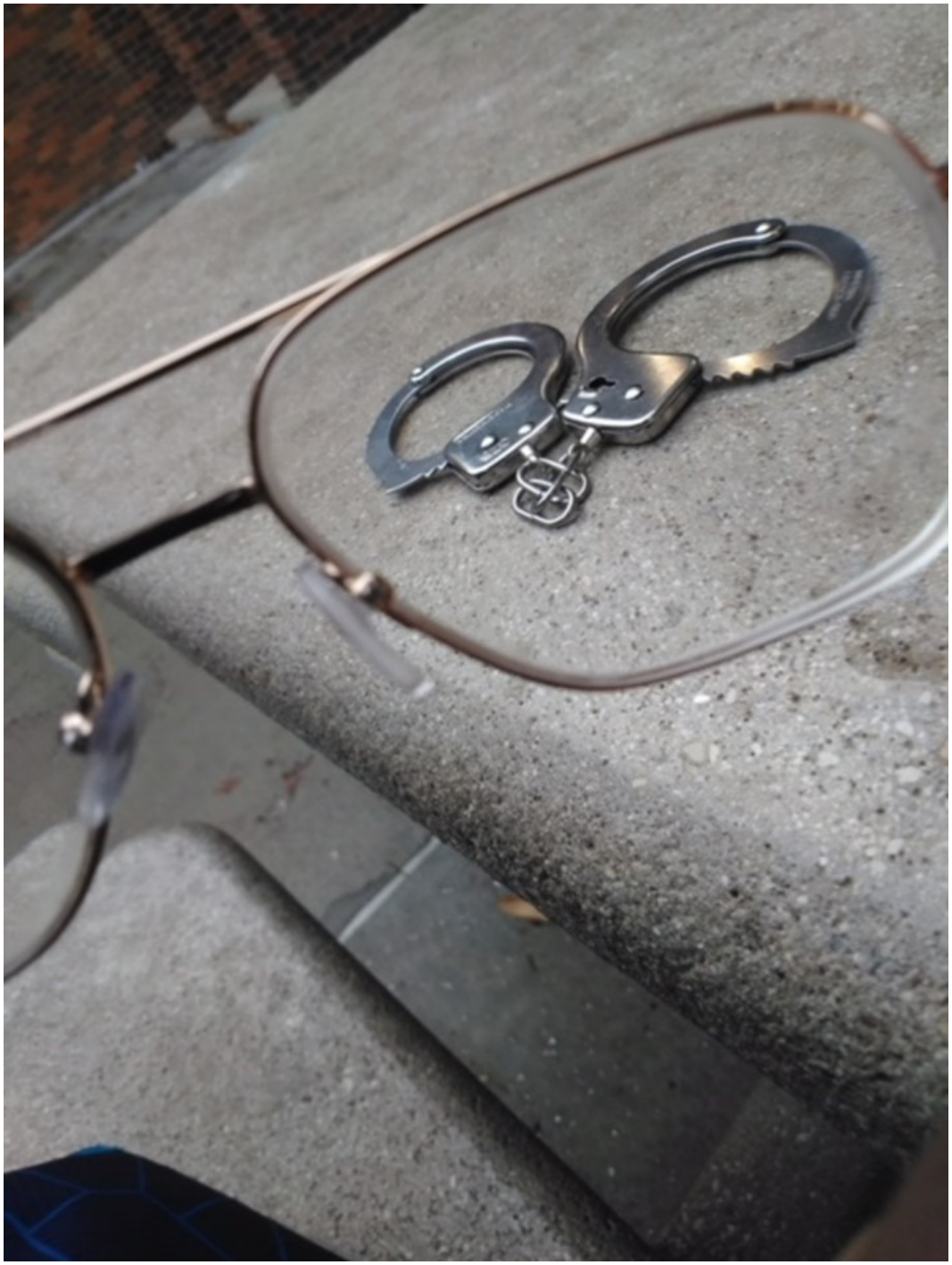
Special thanks to the following individuals and organizations whose insight and support made this project possible:

Clara Umbe, CHES, MPH
Columbia/Boone County Department of Public Health & Human Services

Sarah Varvaro, MPH
Columbia/Boone County Department of Public Health & Human Services

Michelle Shikles, CHES, MPH
Columbia/Boone County Department of Public Health & Human Services

TOBACCO



Are you looking clearly?

Cigarettes need to be seen for what they really are, handcuffs. Once you start smoking, nicotine handcuffs your brain. It becomes an addiction. Nicotine handcuffs your body. It can take your teeth, gums, and lungs. It can even take your life. You just need to decide, do you really want to be imprisoned? — Martha, age 15

Cigarettes are a way to commit suicide. Sometimes most people do it to try to stop an issue or they are going through problems. But the cigarette you light one after another won't help you!! — Daphrose, age 16

Photo by: Jillian, age 17

You can fit more money in your back pocket without a chew hole. Chewing tobacco is expensive, and it would be better to save the money for college instead. This puts a label on you. Once people see that you have a chew hole in your jeans pocket, they automatically know that you're a chewer.

— Caption by Sturgeon Teen Outreach Program

Photo by: Jillian, age 17

This shows a tower of diseases waiting to happen. Chewing tobacco rots your teeth and gives you bad breath. But there is extreme peer pressure on guys here who don't chew. Guys who decide not to chew get called names and made fun of. They may even feel left out if they don't chew. Let your dreams be bigger than your Copenhagen mountain.

— Caption by Sturgeon Teen Outreach Program

I took this picture as chewing tobacco can leave people with many health problems, for example cancer or it rots out their teeth.

— Angela, age 17

DRUGS

&

ALCOHOL

Life is like a highway. It breaks off and goes different directions that lead to other places. When you use drugs in a way that causes harm to yourself, it's like you're in traffic or a road is blocked off. It stops you from going to your next destination. — Abraham, age 15

Photo by Annie, age 18

Drugs and alcohol can make life half empty. They can also lead to addiction, especially since addiction runs in families. Being an alcoholic can make you separate from your family members or lose loved ones. But you can't help someone who doesn't want it.

— Caption by Sturgeon Teen Outreach Program

The Eyes of the Drunk

Teens these days are irresponsible. Not thinking ahead before taking an action, therefore, having many consequences. This image shows how the eyes of drunk teens are functioning after drinking. Just looking at the picture, you can just imagine all the trouble that being intoxicated can cause. — Gloria, age 15

The line of shame

This line demonstrates how teens are supposed to walk (on the line). The glasses I am wearing are making me see how it looks like to be intoxicated. They are called Alcohol Impairment Stimulation Goggles. These glasses allow me to feel how it's like for drunk people to walk in a straight line when asked by a police officer. So when walking on this line, you can feel the shame and stupidity that some drunks experience.

— Gloria, age 15

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POVERTY

Some people in Boone County are not able to afford the expensive college & university tuition, which causes high stress on the families.
— Sidni, age 17

LITTERING

&

RECYCLE

Yes, the trash can is there for us to use. Some people would still liter if it's a 2 to 3 seconds walk. Can we change our actions today?

— Daphrose, age 16

Just like you would see a “wet floor” sign, you follow it so you won’t get hurt. You should also follow the trash can and clean after yourself.

— Daphrose, age 16

People in this world refuse to recycle, but what they really need to do is think outside the trash and reduce by using the recycling bin that's what it's there for. — Daphrose, age 16

Recycle...Don't be trash!

Littering causes environmental issues.

– Micah, age 17

MENTAL HEALTH

I took this picture because sometimes you feel like you've fallen apart but with the help of others, you can come together again.

— Samyia, age 16

It is important to communicate when needed, because without communication others can get depressed, self conscious, and develop social issues. — Saveena, age 15

Going through depression feels like going through a long hallway that will never end. Sometimes it may seem like no one understands.

—Jayden, age 16

Depression affects 3.1 million adolescents, just in America. Without having a friend or anyone to talk to can make you feel alone in the world and cause anxiety and depression. If you see someone who looks like they need a friend, be it. —Jayden, age 16

BULLYING

School is the place you should feel safe in. You should be able to learn new things and enjoy your day. School is the place you should use to get away from your problems elsewhere. In 2016, 22% of children ages 12-18 said they had been bullied. How can kids escape their lives outside of school while they're having the same ones inside of school? We need to come together to stop bullying. Let's start in the schools.

— Samyia, age 16

Bullies make our world upside down, but when you have a friend it changes us all. Make a difference. — Althea, age 16

ENVIRONMENTAL ISSUES

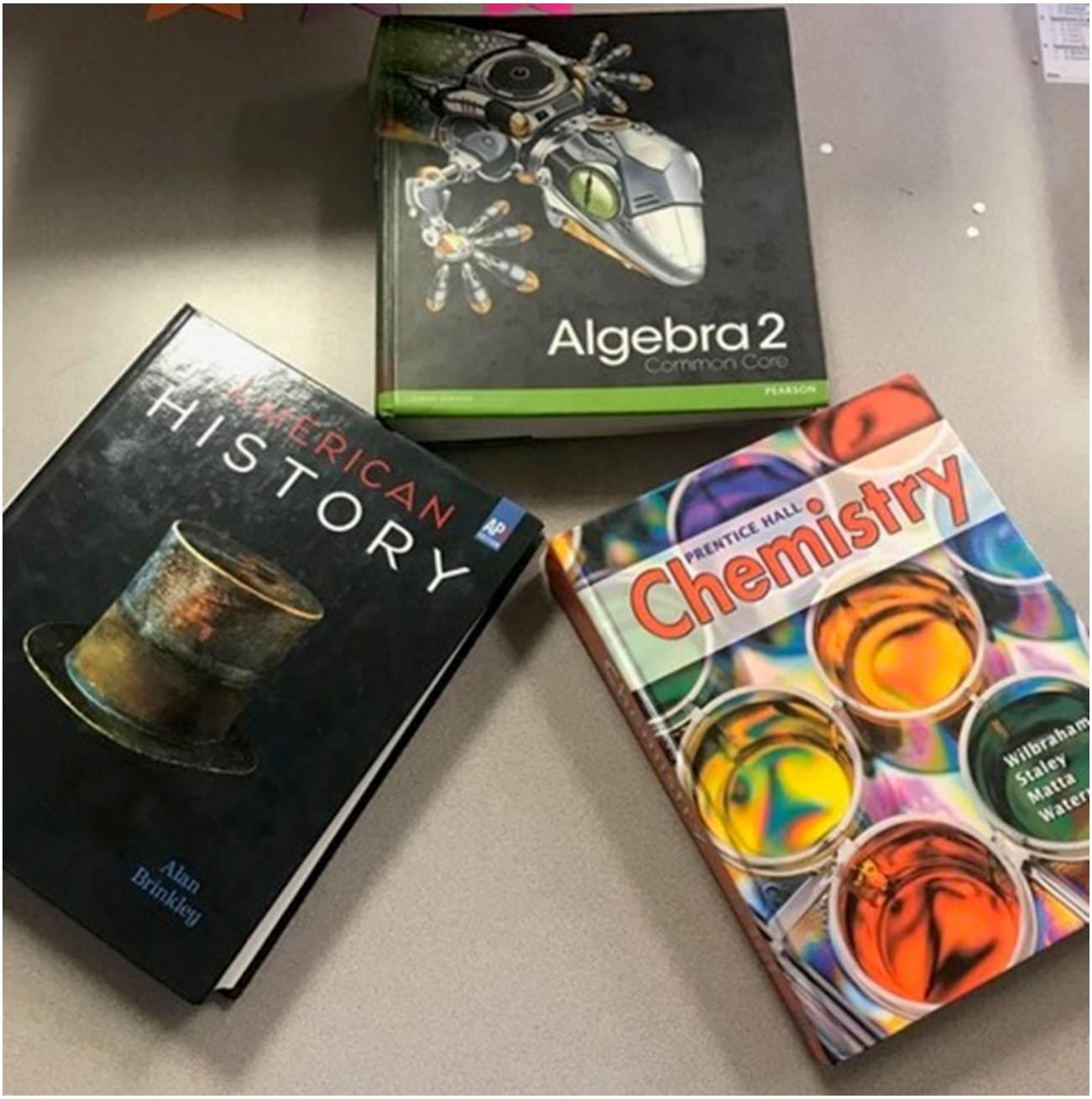
Our society's environment looks sad. Communities should gather to rejuvenate our gardens and make our buildings look nice.

— Saveena, age 15

When our environment is clean you feel happy, motivated, and healthy, don't you? I do! — Daphrose, age 16

You see the sun? If we keep the pollution in the air, sooner or later we won't be able to see it. — Sidni, age 17

SOCIAL MEDIA



Constant use of social media during and away from school can lead to lack of skills in various subjects. — Bryon, age 18

Constant use of social media can lead to missing many opportunities when it comes to getting into the college you want to attend.

— Bryon, age 18

FLU

Everyday, germs pass through students. Schools fail to provide proper sanitary resources in classrooms, hallways, and other common areas in the school. When people are sick, they do not take care of the germs they give off. When someone sick reaches for this handle, there is a chance they could get someone else sick. — Saveena, age 15

APPENDIX H:
Photovoice Press Release

Columbia/Boone County, MO
Public Health & Human Services
1005 W. Worley St., Columbia, MO 65203

FOR IMMEDIATE RELEASE

May 4, 2018

CONTACT: Eric Stann
Public Health and Human Services
Community Relations Specialist
(573) 874-7632
Eric.Stann@CoMo.gov

Local high school students in Teen Outreach Program showcase pictures of community health issues

(COLUMBIA, MO) - Local high school students involved in Boone County's Teen Outreach Program (TOP) will showcase pictures that focus on community health issues on Monday, May 7.

The pictures, encapsulated within a project called Photovoice, provide a way for these students to express their opinions of community health issues through photos and captions. Their pictures will be on display at Shakespeare's Pizza South, 3911 Peachtree Drive, from 6 to 8 p.m. Residents are welcome to attend.

Students from Battle High School, Rock Bridge High School, Hickman High School, Douglass High School and Sturgeon High School participated in different areas of Photovoice, including topic discussions, photo taking and creating captions.

"Photovoice is a wonderful opportunity for these local teens to have their voices heard about various community health issues," Public Health Promotion Supervisor Michelle Shikles said. "We encourage dialogue about any health issues that they may be interested in."

TOP is a national evidence-based youth development program focusing on values, relationships, communication, influence, goal-setting, decision-making, human development and sexuality, and community service learning. The Columbia/Boone County Public Health and Human Services Department partners with the Youth Community Coalition to implement the program locally.

Location: 3911 Peachtree Drive

City of Columbia Vision
Columbia is the best place for everyone to live, work, learn and play.

City of Columbia Mission
To serve the public through democratic, transparent and efficient government.

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