



Rapid Review of Rural Health Research Resources for the Five Leading Causes of Death



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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Introduction

The *Rapid Review of Rural Health Research and Resources* was prepared in order to accompany the December 12-13, 2017 convening, *What Works for Rural: From Research to Reality*, a workshop supported in partnership by the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration's Federal Office of Rural Health Policy (HRSA/FORHP), the National Network of Public Health Institutes, and the Georgia Health Policy Center (GHPC). The *Rapid Review* is a compilation of research and resources on the five leading causes of death in rural America gathered from online resources and limited to the years 2013 through 2017. The document is not intended to be a scientific statement of the evidence or to represent the state of the evidence. It is a work product for workshop attendees that represents a snapshot of research and resources for a specific point in time.

Why We Created the *Rapid Review*

Rural communities striving to efficiently and effectively make health improvements often adapt evidence-based and promising practices¹, however, more research is needed to better understand the impact of the rural setting on intervention design, delivery, and outcomes. The *Rapid Review* is for those working in rural public health who are interested in learning more about evidence, resources, and interventions that target the five leading causes of death in rural America (heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke).² The document also aims to illuminate gaps in rural-focused research and foster learning to assist in building an evidence base for rural best practices. It is also intended to support HRSA/FORHP's work with the National Governor's Association's *Improving Health in Rural America Learning Collaborative*.

How We Created the *Rapid Review*

CDC determined that the *Rapid Review* would be an excellent resource and collaborated with NNPHI and GHPC to identify the types of content to be included. GHPC conducted the internet search and developed a rough draft for NNPHI, FORHP, and CDC to review. CDC reviewed, edited, organized, and cleared the *Rapid Review*. GHPC, NNPHI, FORHP, and CDC will distribute the *Rapid Review* electronically to their respective networks.

Approach

The content of the *Rapid Review* was generated using a broad search that was intentionally structured to gather online research and resources that might not ordinarily be included in an academic evidence review, systematic review, or via other rigorous research methods. The five leading causes of rural death (listed above) were included in the search. Variations of disease and injury types also were searched. For example, in addition to "unintentional injury," the terms "motor vehicle accident," "drug overdose," "opioids," and "falls" were searched. For each topic, the terms "intervention" and "prevention" were searched in combination with the topic. For academic databases, "rural" was included in an additional title field. Searches were limited to interventions taking place in the United States and publications in the English language. The Google and Google Scholar searches were limited to the top 100 results as most searches returned tens and hundreds of thousands of results. Google and Google Scholar search items that were clearly not a rural intervention or prevention initiative were excluded. All results from all other databases were included. Due to the sheer volume of articles in the literature going back a number of years, the search was restricted to 2013 to 2017. Using this date range resulted in 107 health interventions of interest for inclusion.

¹ Anderson Smith, T., Foxworth Adimu, T., Phillips Martinez, A., Minyard, K., (2016). Selecting, Adapting, and Implementing Evidence-based Interventions in Rural Settings: An Analysis of 70 Community Example. *Journal of Health Care for the Poor and Underserved*, 27, 181-193.

² Moy, E., Garcia, M.C., Bastian, B., Rossen, L., Ingram, D., Faul, M. Iademarco, M. (2017). Leading Causes of Death in Nonmetropolitan and Metropolitan Areas — United States, 1999–2014. *MMWR Surveillance Summary*, 66(No. SS-1), 1–8. DOI: <http://dx.doi.org/10.15585/mmwr.ss6601a1>

GHPC undertook the compilation of the *Rapid Review* from October 23, 2017, to December 7, 2017, and used the following search engines and other sources. The descriptions of each source are taken directly from the websites.

- [CDC Community Guide](#) – The Guide to Community Preventive Services (The Community Guide) is a collection of evidence-based findings of the Community Preventive Services Task Force. It is a resource to help you select interventions to improve health and prevent disease in your state, community, community organization, business, healthcare organization, or school.
- [Google](#) – The popular search engine.
- [Google Scholar](#) – The academic search companion to Google.
- [New York Academy of Medicine Grey Literature Report](#) – The report is a publication produced by The New York Academy of Medicine between 1999 - 2016, alerting readers to new grey literature publications in health services research and selected urban health topics.
- [ProQuest Central](#) – ProQuest Central brings together many of the most used databases to create a comprehensive, diverse, and relevant multidisciplinary research database.
- [Rural Health Information Hub Models and Innovations](#) – The Rural Health Information Hub collects and shares stories about rural health programs and interventions. This collection includes approaches that have demonstrated success in research studies and program evaluations, as well as anecdotal accounts.
- [Rural Health Research Gateway](#) – The Rural Health Research Gateway provides easy and timely access to research conducted by the Rural Health Research Centers, funded by the Federal Office of Rural Health Policy.
- [What Works for Rural Health](#) – This report outlines key steps toward building healthy communities—rural, urban, and anywhere in between—along with some specific policies and programs that can improve health. Policies and programs that have been tested in rural communities are highlighted throughout the report.

The interventions included in this *Rapid Review* are presented in the tables that follow. The tables are organized by the five leading causes of death and their associated disease and injury types. Each table includes the title of the resource or intervention, the date the information was released (where available), a brief description of the resource or intervention and findings, along with a hyperlink for full access to the original resource. Please note that some resources are only available as an abstract, with access to the full article requiring a subscription (as indicated in the table).

CANCER

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
CANCER: CROSS-CUTTING				
A Pilot Videoconference Group Stress Management Program in Cancer Survivors: Lessons Learned	2016	The pilot program implemented a videoconference program to deliver a group cognitive-behavioral stress management intervention in order to attempt to improve access and overcome geographic barriers to participation.	Although participants reported that session content was well suited to addressing stress management concerns, and session facilitators were able to effectively teach program techniques (e.g. progressive muscle relaxation, cognitive-reframing), only modest improvements in perceived stress were seen.	https://www.ruralhealthinfo.org/resources/6921
Centers for Disease Control and Prevention: Community Preventive Services Task Force Findings for Cancer Prevention and Control	Accessed January 2018	Range of intervention approaches reviewed by the Community Preventive Services Task Force with summaries of the Task Force findings for each. Focus on screening approaches and supporting evidence for breast, colorectal, and cervical cancer interventions. Additional interventions focus on skin cancer prevention.	Each intervention contains a link to detailed findings on evidence of effectiveness.	https://www.thecommunityguide.org/content/task-force-findings-cancer-prevention-and-control
Closing Preventive Care Gaps in Underserved Areas	2017	Federally Qualified Health Centers (FQHCs) and an academic center partnered to adapt and implement an office-based intervention, building on existing primary care resources to decrease gaps in preventive care measures, including cancer screenings.	After intervention implementation, clinics saw a marked increase in use of various preventive care measures, including screenings for cancer, human immunodeficiency virus (HIV) and hepatitis C (HVC).	https://www.ruralhealthinfo.org/community-health/project-examples/949
Developing an eHealth Intervention For Cancer Symptom Management For Rural Residents	2016	Oncology Associated Symptoms and Individualized Strategies (OASIS) web-app was developed to provide tailored cancer symptom self-management support to rural patients with late-stage cancer diagnoses.	Study participants reported finding OASIS accessible, user friendly, easily navigated, and visually appealing. Future research is needed to evaluate the feasibility and acceptability as well as the efficacy of OASIS.	http://ascopubs.org/doi/abs/10.1200/jco.2016.34.26_suppl.207 (Subscription required for full article)
Digital Storytelling: A Tool For Health Promotion and Cancer Awareness in Rural Alaskan Communities	2015	The purpose of this study was to learn community members' perspectives about digital storytelling after viewing cancer-related digital story.	Viewers reported digital stories as an acceptable, emotionally engaging way to increase their cancer awareness and begin conversations. These conversations often served as a springboard for reflection, insight, and cancer prevention and risk-reduction activities.	http://www.tandfonline.com/doi/abs/10.3402/ijch.v74.28781

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Empowering Promotores de Salud as Partners in Cancer Education and Research in Rural Southwest Kansas	2015	The purpose of this study was to describe community-based participatory processes used to develop promotore training on cancer research, and to assess the feasibility of training promotores from rural communities to disseminate cancer research information.	Compared to pretraining, after training, promotores were more likely to correctly define cancer, identify biopsies, describe cancer stages, and report ever having heard of cancer research studies. Completion rates of the training and willingness to participate in cancer research were high, supporting the feasibility of training promotores to deliver community-based education to promote cancer research participation.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4349504/
Evaluating the Efficacy of a Self-Guided Web-based CBT Intervention For Reducing Cancer-Distress: A Randomized Controlled Trial	2015	This study evaluated the efficacy of a self-guided Web-based cognitive behavior therapy (CBT) in improving cancer-related distress, health-related quality of life (HRQOL), and maladaptive coping, among people recently diagnosed with cancer.	The results provide preliminary support for the potential efficacy of a self-guided Web-based CBT program in improving aspects of HRQOL, cancer-related distress, and anxious preoccupation after cancer diagnosis.	https://link.springer.com/article/10.1007%2Fs00520-015-2867-6 (Subscription required for full article)
Kentucky Homeplace	2015	This case study describes Kentucky Homeplace, a community health worker initiative to address disparities in rural areas of Kentucky	From July 2001 to June 2016, over 152,262 rural residents were served. Preventive health strategies, screenings, educational services, and referrals are all offered at no charge to clients. The return on investment (ROI) is \$11.55 saved for every \$1 invested.	https://www.ruralhealthinfo.org/community-health/project-examples/785
National Cancer Institute: Research-Tested Intervention Programs	Accessed January 2018	A searchable database of cancer control interventions and program materials, designed to provide program planners and public health practitioners easy and immediate access to research-tested materials. Includes programs used in rural settings.	N/A	https://rtips.cancer.gov/rtips/index.do
Project ENABLE (Educate, Nurture, Advise Before Life Ends)	2017	Project ENABLE consists of: 1) an initial in-person palliative care consultation with a specialty-trained provider and 2) a semi-structured series of weekly, phone-delivered, nurse-led coaching sessions designed to help patients and their caregivers enhance their problem-solving, symptom management, and coping skills.	Patients and caregivers report lower rates of depression and burden along with higher quality of life.	https://www.ruralhealthinfo.org/community-health/project-examples/956
Rural Disparities in Cancer Care: A Review of Its	2016	A review of literature about the disparities in cancer care in rural Appalachia, specifically West Virginia.	Discusses suggestions for possible solutions to bridge the gap, such as tele-oncology, virtual tumor boards, patient support groups, and	https://www.ruralhealthinfo.org/resources/8540

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Implications and Possible Interventions			physician training programs. Includes data and statistics for rates of cancer and oncologist availability.	
The Effects of Coaching Patients to List Questions before Visiting Cancer Specialists: Retrospective Evaluation of Visit Preparation in a Rural, Underserved Setting	2017	A community-based organization implemented an evidence-based intervention to help rural cancer patients identify their questions and concerns before oncology visits.	Patients reported higher self-efficacy and lower anxiety. In addition, the intervention helped patients prepare for oncology visits.”	https://participatorymedicine.org/journal/evidence/research/2017/08/22/the-effects-of-coaching-patients-to-list-questions-before-visiting-cancer-specialists-retrospective-evaluation-of-visit-preparation-in-a-rural-underserved-setting/
CANCER: BREAST CANCER				
Alcohol Intake Among Breast Cancer Survivors: Change in Alcohol Use During a Weight Management Intervention	2016	The purpose of this study was to evaluate change in alcohol use during a weight loss intervention for obese, rural-dwelling breast cancer survivors.	Findings provide preliminary evidence that a weight loss intervention may address obesity and alcohol use risk factors for cancer recurrence.	http://cancer.jmir.org/2016/2/e15/
Effective Recruitment of Rural Breast Cancer Survivors into a Lifestyle Intervention	2015	Lifestyle interventions may be effective for enhancing quality of life and prognosis among breast cancer survivors, but expanding their reach to underserved rural communities presents some unique challenges. This paper describes the recruitment of rural breast cancer survivors into a randomized trial investigating the effects of an 18-month intensive lifestyle intervention.	Mailing a tailored study brochure with the opt-in postcard yielded the highest number of survivors who enrolled in the lifestyle intervention trial. Oncologist referrals yielded a small number of participants but had the highest enrollment rate, and thus appear to play an important role in motivating some patients.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4272910/
Patient-Centered Outcome Evaluation of the Rural Breast Cancer Survivors Intervention	2016	The Rural Breast Cancer Survivors (RBCS) Intervention is a survivorship education and support intervention designed for rural breast cancer survivors.	Education materials addressed quality of life concerns. Breast cancer survivors developed skills in communicating with their family and oncology team. Intervention nurses were identified as the most valuable aspect of the program	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4767615/
Reaching Rural Women: Breast Cancer Prevention Information Seeking Behaviors and Interest in Internet, Cell Phone, and Text Use	2013	The purpose of this study was to examine the breast cancer prevention information seeking behaviors among rural women, the prevalence of Internet, cell, and text use, and interest to receive breast cancer prevention information cell and text messages. While growing literature for breast cancer information sources supports	Overall, 87% used cell phones, 20% had an interest to receive cell phone breast cancer prevention messages, 47% used text messaging, 36% had an interest to receive text breast cancer prevention messages, and 3% had an interest to receive mammogram reminder text messages. Assessment of health information seeking behaviors may be	https://link.springer.com/article/10.1007%2Fs10900-012-9579-3 (Subscription required for full article)

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		the use of the Internet, little is known about breast cancer prevention information seeking behaviors among rural women and mobile technology.	important for community health educators to target populations for program development. Future research may identify additional socio-cultural differences.	
Weight Loss Maintenance Strategies Among Rural Breast Cancer Survivors: The Rural Women Connecting For Better Health Trial	2016	Obesity is a risk factor for breast cancer recurrence. Rural women have higher obesity rates compared with urban women and are in need of distance-based interventions that promote long-term weight loss.	<p>A lifestyle intervention, incorporating group phone-based support, improved the magnitude of weight loss maintained and increased the proportion of breast cancer survivors who maintained clinically significant reductions.</p> <p>Mean weight loss at 6 months was 14.0±5.1%. Participants in the group phone condition regained less weight (3.3±4.8 kg) compared with participants in the newsletter condition (4.9±4.8 kg; P = 0.03). At 18 months, 75.3% of participants in the group phone condition remained ≥5% below baseline weight compared with 57.8% in the newsletter condition. Incremental cost-effectiveness ratios were \$882 to keep one more person ≥5% below baseline weight.</p>	https://www.ncbi.nlm.nih.gov/pubmed/27581328
CANCER: CERVICAL CANCER				
Community-Based Screening for Cervical Cancer: A Feasibility Study of Rural Appalachian Women	2015	The study aimed to describe women's comfort levels and perceptions about their experience self-collecting cervico-vaginal swabs for HPV testing and to determine whether nurse-guided patient navigation increases the odds of women receiving a traditional Pap test after HPV screening; and to test the hypothesis that women testing positive for oncogenic HPV would be more likely to have a subsequent Pap test than those testing negative.	89% of participants indicated they would be more likely to self-collect a specimen for testing, on a regular basis, compared to Pap testing. 7.5% had a follow-up Pap test. Women receiving added nurse-guided navigation efforts were significantly less likely to have a subsequent test.	http://europepmc.org/articles/pmc4608378
Increasing Cervical Cancer Screening in the United States - Mexico Border Region	2014	The study discusses the effects of an intervention delivered by community health workers (CHWs), or Promotores de Salud, on cervical cancer screening rates in Hispanic women in the rural border area of New Mexico who had not had a Pap test within the past three years.	76.5% of women had a Pap test after the intervention. Women displayed increased knowledge about cervical cancer screening and about HPV.	http://onlinelibrary.wiley.com/doi/10.1111/jrh.12044/full (Subscription required for full article)

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Salud es Vida: Cervical Cancer Education	2017	The development of a lay health worker (promotora) curriculum that provides information on cervical cancer, HPV, and the HPV vaccine to Hispanic farmworker women living in rural southern Georgia.	Significant increases in post-test scores relating to cervical cancer knowledge and increases in positive self-efficacy among promotoras.	https://www.ruralhealthinfo.org/community-health/project-examples/879
Tele-medical Cervical Cancer Screening to Bridge Medicaid Service Care Gap for Rural Women	2013	The intervention provided complex specialty gynecological services using telemedicine technology to overcome geographic barriers to care.	The telemedicine intervention produced results comparable to traditional examinations. Between January 1, 2010 and June 21, 2011, the program scheduled 1,812 visits, involving 1,504 unduplicated patient referrals from 68 of Arkansas's 75 counties, and performed 1,298 telecolposcopic exams. It is cost-effective and well received by patients and can be used as a model for improving access to care among vulnerable populations.	http://online.liebertpub.com/doi/abs/10.1089/tmj.2012.0148 (Subscription required for full article)
CANCER: COLORECTAL CANCER				
A Media and Clinic Intervention to Increase Colorectal Cancer Screening in Ohio Appalachia	2015	The was a group-randomized trial of a county-level intervention among adults living in 12 Ohio Appalachian counties who received a media campaign and clinic intervention focused on either colorectal cancer (CRC) screening or fruits and vegetables.	The intervention was not effective in increasing CRC rates among Ohio Appalachian adults. Analysis of additional variables found that factors such as high perceived risk of CRC, willingness to have a CRC test if recommended by a doctor, doctor recommendation of a CRC screening test, and patient-physician communication about changes in bowel habits, family history of CRC, and eating fruits and vegetables were significant predictors of being within CRC screening guidelines	https://www.hindawi.com/journals/bmri/2015/943152/
A Randomized Controlled Trial to Improve Colon Cancer Screening in Rural Family Medicine: An Iowa Research Network (IRENE) Study	2013	This was a randomized controlled trial conducted to improve colorectal cancer (CRC) screening in 16 rural family physician offices using various methods to remind patients about upcoming screenings and provide educational materials.	CRC screening rates increased significantly among patients who were overdue for screening after they received mailed educational materials and a fecal test kit.	http://www.jabfm.org/content/26/5/486.full
Community Cancer Screening Program: Implementing Interventions to Address Disparities	2015	To help federally qualified health centers (FQHCs) increase colorectal cancer screening tests among their patients, the Cancer Coalition partnered with local public health agencies, hospitals, and medical specialists to identify and give referrals for average-risk patients aged 50 to 64, who	Results from the evaluation showed that of all the patients due for a colorectal screening test, 35% of those at the intervention clinics received a colonoscopy examination compared to only 7% of patients at non-participating clinics. Forty-three percent of patients at the intervention clinics were likely to be compliant	https://www.thecommunityguide.org/stories/community-cancer-screening-program-implementing-interventions-address-disparities

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
		were due for a screening test. Health navigators were hired to coordinate care for these patients.	with these U.S. Preventive Services Task Force recommendations for screenings compared to only 11% of patients at nonparticipating clinics.	
Cost Effectiveness of Lay Health Worker Delivered Interventions to Promote Colorectal Cancer Screening: A Randomized Trial	2016	The study aims to assess the cost effectiveness of lay health worker delivered interventions to increase colorectal cancer screening among low income Hispanics in Texas.	Lay health worker delivered interventions using small media and an interactive tablet delivered program were relatively expensive given the low impact on screening. Traditional small media print interventions, while more costly, can result in slightly higher screening rates.	http://healthcare-communications.imedpub.com/cost-effectiveness-of-lay-health-worker-delivered-interventions-to-promote-colorectal-cancer-screening-a-randomized-trial.php?aid=8314
Evaluation of a Home-Based Colorectal Cancer Screening Intervention in a Rural State	2013	Distance from health care facilities can be a barrier to colorectal cancer (CRC) screening, especially for colonoscopy. Alternatively, an improved at-home stool-based screening tool, the fecal immunochemical test (FIT), requires only a single sample and has a better sensitivity-specificity balance compared to traditional guaiac fecal occult blood tests. The objective of the study was to determine if FITs mailed to asymptomatic, average-risk patients overdue for screening resulted in higher screening rates versus mailing educational materials alone or no intervention (i.e., usual care).	Mailing FITs to average risk patients overdue for screening resulted in a significantly higher screening rate than educational materials alone or usual care, and may be of particular interest in rural areas.	http://onlinelibrary.wiley.com/doi/10.1111/jrh.12052/full (Subscription required for full article)
Evaluation of a patient navigation program to promote colorectal cancer screening in rural Georgia, USA.	2013	This study evaluated the effectiveness of a patient navigation program that addresses individual and systemic barriers to colorectal cancer screening for patients at rural, federally qualified community health centers (FQHCs).	Patients at intervention clinics were significantly more likely than patients at comparison clinics to undergo colonoscopy screening and be guideline-compliant on at least one CRC screening test.	http://psycnet.apa.org/record/2013-28022-019
Testing to Prevent Colon Cancer: Results from a Rural Community Intervention	2013	The purpose of this study was to develop and test a community-based participatory approach to increase colon cancer screening.	This community-based multicomponent intervention engaged hundreds of community members in wide dissemination aimed at increasing colorectal cancer screening. The study did not find any statistically significant differences, but the findings are consistent with an intervention-related increase in screening and provide preliminary evidence on the effectiveness of such interventions to improve colon cancer screening.	http://www.annfamned.org/content/11/6/500.full

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Using Practice Facilitation to Increase Rates of Colorectal Cancer Screening in Community Health Centers, North Carolina, 2012–2013: Feasibility, Facilitators, and Barriers	2017	Practice facilitation involves trained individuals working with practice staff to conduct quality improvement activities and support delivery of evidence-based clinical services. The study examined the feasibility of using practice facilitation to assist federally qualified health centers (FQHCs) to increase colorectal cancer screening rates in North Carolina.	Overall, the percentage of eligible patients with a documented colorectal cancer screening recommendation increased from 15% to 29%. The percentage of patients up to date with colorectal cancer screening rose from 23% to 34%.	https://www.cdc.gov/pcd/issues/2017/16_0454.htm
CANCER: LUNG CANCER				
A Rural Appalachian Faith-Placed Smoking Cessation Intervention	2015	Although health promotion programming in faith institutions is promising, most faith-based or placed health projects focus on diet, exercise, or cancer screening and many have been located in urban environments. The article describes a faith-oriented smoking cessation program in rural Appalachia, involving 590 smokers in 26 rural churches randomized to early and delayed intervention groups.	The article presents three main themes that account for participants' positive evaluation of the program; the program's ability to leverage social connections; the program's convenience orientation; and the program's financial support for smoking cessation.	http://link.springer.com/article/10.1007/s10943-014-9858-7 (Subscription required for full article)
Attitudes and Beliefs of Primary Care Providers in New Mexico About Lung Cancer Screening Using Low-Dose Computed Tomography	2015	The article provides the results of interview with primary care providers in New Mexico clinics to determine the awareness and attitudes of rural and urban primary health care providers in New Mexico (8 practicing in federally qualified health centers) who use low-dose computed tomography (LDCT) when screening high risk underserved minority populations for lung cancer.	Ten providers who were interviewed promoted smoking cessation, some screened with chest x-rays, and none screened with LDCT. The providers also expressed concerns over the lack of infrastructure to support high quality screenings, as well as concerns over access barriers and financial burdens for rural, underinsured populations.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4509091/
Levine Cancer Institute Launches Nation's First Mobile Lung CT Unit to Improve Care for Region's Underserved and Rural Patients	2017	Levine Cancer Institute launched the first mobile lung computed tomography (CT) unit designed to address lung cancer diagnosis, treatment, and survival disparities for rural populations across the Carolinas. The mobile lung unit is the first-of-its-kind to link rural populations to lung cancer education and treatment interventions through integrated mobile technology, traditional treatment facilities and medical staff.	N/A	https://www.prnewswire.com/news-releases/levine-cancer-institute-launches-nations-first-mobile-lung-ct-unit-to-improve-care-for-regions-underserved-and-rural-patients-300427353.html

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Rural Health Information Hub: Rural Tobacco Control and Prevention Toolkit	2017	<p>This toolkit provides evidence-based examples, promising models, best practices, and resources that your organization can use to implement programs for tobacco control and prevention.</p> <p>There are seven modules in this toolkit. Each module contains information and links to resources that can be used to design, implement, evaluate, sustain, and disseminate rural programs for tobacco control and prevention.</p>	<p>Module 2 describes 14 evidence-based and promising program models for tobacco prevention and control, organized by implementation setting.</p> <p>Module 3 provides examples of current 330A Outreach Authority grantees and other promising programs that developed a tobacco prevention or cessation program in a rural community are provided below.</p>	https://www.ruralhealthinfo.org/community-health/tobacco/3/program-clearinghouse
CANCER: ORAL CANCER				
Determinants of First-Time Cancer Examinations in a Rural Community: A Mechanism for Behavior Change	2015	After conducting a media campaign focusing on the importance of oral and pharyngeal cancer (OPC) examinations, the study assessed mechanisms of behavior change among individuals receiving an OPC examination for the first time.	<p>Greater exposure to media messages corresponded with heightened concern about OPC. Heightened concern, in turn, predicted receipt of a first-time OPC examination, but only among men.</p> <p>Improving the quality of media campaigns by engaging community stakeholders in selecting messages and delivery methods is a promising strategy in building public health interventions aimed at changing behaviors.</p>	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4463403/
CANCER: SKIN CANCER				
An Evaluation of UV-Monitoring Enhanced Skin Cancer Prevention Among Farm Youth in Rural Virginia	2015	The 5-week study assesses the effectiveness of a health promotion intervention including an ultraviolet (UV) monitoring device in decreasing UV exposure among youth.	Participants' knowledge of factors related to skin cancer, skin protection attitude, and likelihood of engaging in protection practices increased significantly. Female participants' positive tanning perception was reduced.	http://www.tandfonline.com/doi/abs/10.1080/19325037.2014.999966 (Subscription required for full article)

CHRONIC LOWER RESPIRATORY DISEASE

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
CHRONIC LOWER RESPIRATORY DISEASE: CROSS- CUTTING				
Granville Health System's Transitional Care Program	2017	The Transitional Care Program helps hospitals and ED patients schedule follow up appointments. In addition, the program provides home visits and safety checks.	From 2015-2016, the number of patients receiving home visits increased from 30 to 86. In addition, 2016 saw a \$73,595 reduction in inpatient readmissions and an \$11,500 reduction in self-pay readmissions of patients with high-risk diagnoses.	https://www.ruralhealthinfo.org/community-health/project-examples/951

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
New Mexico Mobile Screening Program for Miners	2017 (updated)	The New Mexico Mobile Screening Program for Miners screens miners for respiratory and other health conditions, provides self-management information, and makes follow-up calls three months after a miner's visit.	In a convenience-sample survey, 92% of miners reported their care as very good, while the other 8% reported it as good. Since 1989, the program has served 6,685 miners.	https://www.ruralhealthinfo.org/community-health/project-examples/939
CHRONIC LOWER RESPIRATORY: CHRONIC OBSTRUCTIVE PULMONARY DISEASE				
Decreasing Rate of Chronic Obstructive Pulmonary Disease (COPD) Readmission in A Rural Health Care Network in Upstate New York	2014	The intervention had multiple components including education regarding COPD management by using the American Lung Association COPD management plan and inhaler instruction handouts. It also included several different forms of follow-up, including phone calls from a respiratory therapist and evaluation for a home health care referral.	After analysis, the hospital found the readmission rate dropped from a baseline of 23.5% to 20.6%, 19.6% and 16.7% in each consecutive quarter. In addition, there was a successful decrease in the 30-day prehospitalization rate to less than the national average.	https://search.proquest.com/docview/1853738750?pq-origsite=gscholar (Subscription required for full article)
How Telemedicine is Transforming Treatment in Rural Communities	2016	Patients previously diagnosed with heart failure, diabetes, or COPD and who experienced frequent hospitalizations are monitored by telehealth at home between periodic visits from nursing staff.	This article provides useful examples of the impact of telemedicine.	https://www.beckershospitalreview.com/healthcare-information-technology/how-telemedicine-is-transforming-treatment-in-rural-communities.html
Implementation and Outcomes of a Community-Based Pulmonary Rehabilitation Program in Rural Appalachia	2017	Three rural health centers and a large referral hospital worked together to establish pulmonary rehabilitation services based on AACVPR guidelines. Each site hired at least 1 respiratory therapist.	During the first 20 months of the program, 195 persons with qualifying chronic lung diseases started the program. Of these, 111 completed the program. Mean improvements for all 6 measures were highly significant and compared favorably with published results from hospital-based programs. Of the 23 smokers, 5 quit by the end of the program. The addition of respiratory therapists to these primary care teams provides important collateral benefits for the evidence-based care of patients with chronic lung diseases.	http://journals.lww.com/jcjournal/Fulltext/2017/07000/Implementation_and_Outcomes_of_a_Community_Based.10.aspx
Taking Healthy Steps: Rationale, Design and Baseline Characteristics of a Randomized Trial of a Pedometer-Based Internet-Mediated	2014	This manuscript describes participant recruitment for a study that tests the effectiveness of Taking Healthy Steps, an Internet-mediated walking program for Veterans with COPD (half in study were rural living Veterans).	Veterans with COPD can be recruited to participate in an online walking program. The study successfully recruited a cohort of older Veterans with a significant level of disability including Veterans who live in rural areas using a remote national recruitment strategy. Baseline (enrollment) data	https://bmcpulmed.biomedcentral.com/articles/10.1186/1471-2466-14-12

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Walking Program in Veterans with Chronic Obstructive Pulmonary Disease			suggest that by using remote communication tools it is feasible to recruit often hard-to-reach individuals, including rural and remote residents.	

HEART DISEASE

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
HEART DISEASE				
A Church-Based Pilot Study Designed to Improve Dietary Quality for Rural, Lower Mississippi Delta, African American Adults	2015	Delta Body and Soul (DBS), for African American adults in the Lower Mississippi Delta (LMD) piloted a 6-month, church-based, behavioral intervention. DBS was designed to improve overall dietary quality in LMD African American adults. The intervention included six once monthly group-based educational sessions implemented by trained church members.	Participants were predominately female and overweight or obese. Retention rate was 79%. High adherence, defined as attendance at four or more educational sessions, was associated with dietary quality improvement and reduced blood glucose. Implementation of the pilot intervention was feasible and may result in dietary quality and clinical improvements.	http://link.springer.com/article/10.1007/s10943-014-9823-5 (Subscription required for full article)
Centers for Disease Control and Prevention: Community Preventive Services Task Force findings for Cardiovascular Disease: Interventions Engaging Community Health Workers	2015	The Community Preventive Services Task Force recommends interventions that engage community health workers (CHWs) to prevent cardiovascular disease (CVD) among clients at increased risk.	The Task Force finds strong evidence of effectiveness for interventions that engage CHWs in a team-based care model to improve blood pressure and cholesterol. They find sufficient evidence of effectiveness for interventions that engage CHW for health education, and as outreach, enrollment, and information agents to increase self-reported health behaviors (physical activity, healthful eating habits, and smoking cessation) in clients at increased risk for CVD. Economic evidence indicates these interventions are cost-effective. When interventions engaging CHWs are implemented in minority or underserved communities, they were shown to improve health, reduce health disparities, and enhance health equity.	https://www.thecommunityguide.org/findings/cardiovascular-disease-prevention-and-control-interventions-engaging-community-health

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Centers for Disease Control and Prevention: Community Preventive Services Task Force Findings for Cardiovascular Disease	Accessed January 2018	An alphabetical list of Cardiovascular Disease intervention approaches reviewed by the Community Preventive Services Task Force. The evidence review is not specific to a rural context.	Each intervention contains a link to detailed findings on evidence of effectiveness.	https://www.thecommunityguide.org/content/task-force-findings-cardiovascular-disease
Community-Wide Cardiovascular Disease Prevention Programs and Health Outcomes in a Rural County, 1970-2010	2015	The article documents health outcomes associated with an integrated, comprehensive cardiovascular risk reduction program in Franklin County, Maine, a low-income rural community.	Sustained, community-wide programs targeting cardiovascular risk factors and behavior changes to improve a Maine county's population health were associated with reductions in hospitalization and mortality rates over 40 years, compared with the rest of the state.	https://jamanetwork.com/journals/jama/fullarticle/2089352
Cooperative Strategies to Develop Effective Stroke and Heart Attack Awareness Messages in Rural American Indian Communities, 2009-2010	2013	During 2009 and 2010, the Montana Cardiovascular Health Program, in collaboration with two tribal health departments, developed and conducted culturally specific public awareness campaigns for signs and symptoms of heart attack and stroke via local media. Telephone surveys were conducted before and after each campaign to evaluate the effectiveness of the campaigns.	Knowledge of 3 or more heart attack warning signs and symptoms increased significantly on one reservation. On the second reservation, recognition of 2 or more stroke signs and symptoms increased, and the level of awareness remained at the same approximately 4 months after the high-intensity campaign advertisements ended. Intent to call 9-1-1 did not increase in the heart attack campaign but did improve in the stroke campaign for specific symptoms. Recall of media campaigns on both reservations increased significantly from baseline to post campaign for both media outlets (i.e., radio and newspaper).	https://www.ruralhealthinfo.org/resources/6218
Development of a Faith-Based Stress Management Intervention in a Rural African American Community	2015	Faith-based mental health interventions developed and implemented using a community-based participatory research approach hold promise for reaching rural African Americans and addressing health disparities. This article describes the development, challenges, and lessons learned from the Trinity Life Management, a faith-based stress management intervention in a rural African American faith community.	As a result of the community-based participatory research approach, the community identified the key concepts that should be included in a stress management intervention. The faith-based "Trinity Life Management" stress management intervention was developed collaboratively by a community advisory board and an academic research team. The intervention includes stress management techniques that incorporate Biblical principles and information about the stress–distress–depression continuum.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5366254/
Effectiveness of a Pharmacist-Led	2016	The Cardiovascular Risk Reduction Clinic in Perry County, Alabama, provides free	Pharmacist-led management of patients with cardiovascular risk factors significantly reduced	https://www.hindawi.com/journals/ijcd/2016/4304761/

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Cardiovascular Risk Reduction Clinic in Rural Perry County, Alabama		pharmacist-led services. Clinic goals include improving health outcomes and reducing cardiovascular risk factors.	blood pressure and allowed more patients to meet their hypertension treatment goals.	
Effects of a Home-Based Activation Intervention on Self-Management Adherence and Readmission in Rural Heart Failure Patients: the PATCH Randomized Controlled Trial	2016	Heart failure (HF) patients discharged from rural hospitals have higher 30-day readmission rates. Self-management (SM) reduces readmissions, but adherence to SM guidelines is low in the rural HF population. The authors tested a home-based intervention to enhance patient activation and lead to improved SM adherence.	The Patient AcTivated Care at Home (PATCH) intervention showed significantly greater improvement compared to usual care in patient-reported SM adherence: weighing themselves, following a low-sodium diet, taking prescribed medication, and exercising daily at 3 and 6 months after discharge. Groups did not differ in physical activity. The 30-day readmission rate was significantly higher in the intervention group than in the control group, with no differences at 90 or 180 days.	https://bmccardiovascdisord.biomedcentral.com/articles/10.1186/s12872-016-0339-7
HeartBeat Connections: A Rural Community of Solution for Cardiovascular Health	2013	HeartBeat Connections (HBC) uses Electronic Health Records (EHR) data to identify residents at high CVD risk in a rural community. Participants receive coaching from a registered dietitian or a registered nurse focused on lifestyle behavior changes and preventive medication initiation/titration.	Innovative population health approaches can use EHR data to address common barriers to CVD prevention and engage communities in addressing population health needs.	http://www.jabfm.org/content/26/3/299.full
Heartland OK, A Care Coordination Model in Oklahoma	2016	Heartland OK, which began in 5 rural counties, is a care coordination model that works to reduce heart disease and stroke risks for patients.	Within 90 days of being enrolled in the program, 25% of patients met their hypertension goals. Using an ROI calculation tool developed at the University of Kentucky, Heartland OK was found to save \$160 for every \$1 invested in it for an estimated 45% reduction in cardiovascular disease event admissions in the pilot counties' regional hospital.	https://www.ruralhealthinfo.org/community-health/project-examples/930
Impact of Pre-Hospital Electrocardiograms on Time to Treatment and One Year Outcome in a Rural Regional ST-Segment Elevation Myocardial Infarction Network	2016	Pre-hospital electrocardiograms (ECGs) are believed to reduce time to reperfusion in ST Segment Elevation Myocardial Infarction (STEMI) patients. Little is known of their impact on clinical outcomes in a rural setting. Geisinger regional STEMI network provides percutaneous coronary intervention care to over a 100-mile radius in rural central Pennsylvania.	In a rural regional STEMI network, pre-hospital ECGs decreased time from first medical contact to reperfusion by 50% and were associated with an excellent clinical outcome at 1 year.	http://onlinelibrary.wiley.com/doi/10.1002/ccd.26567/full (Subscription required for full article)

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Love Your Heart	2017	Love Your Heart trains local organizations to host community events about heart health.	Since 2015, the program has reached 196,124 participants through 267 programs held in 33 counties (24 of which are rural).	https://www.ruralhealthinfo.org/community-health/project-examples/964
Outcomes of a Clinic-Based Educational Intervention for Cardiovascular Disease Prevention by Race, Ethnicity, and Urban/Rural Status	2016	The authors assessed baseline knowledge gaps and efficacy of a survey-based educational intervention for heart disease.	Initial knowledge and awareness was low in all groups, especially for American Indian women. Awareness was overall highest for heart disease as the leading killer, but it was the lowest for taking appropriate action. For all women, knowledge of the major risk factors was low as was knowledge of their personal levels for risk factors. The intervention was effective (% knowledge gain) in all groups of women.	http://online.liebertpub.com/doi/abs/10.1089/jwh.2015.5387?journalCode=jwh (Subscription required for full article)
Prevalence of the American Heart Association's "Ideal Cardiovascular Health" Metrics in a Rural, Cross-sectional, Community-Based Study: The Heart of New Ulm Project	2013	The American Heart Association (AHA) recently created the construct of "ideal cardiovascular health" based on 7 cardiovascular health metrics to measure progress toward their 2020 Impact Goal. The present study applied this construct to assess the baseline cardiovascular health of a rural population targeted with a community-based cardiovascular disease prevention program.	The study indicated that baseline levels of ideal cardiovascular health in a rural population are low and approximately equivalent to those found in the American population at large, although more favorable than those found in an urban American community.	https://www.ruralhealthinfo.org/resources/9477
Prevention through Care Navigation Outreach Program	2015	Community Health Workers were utilized to create a system of coordinated care in the counties of Montrose, Ouray, and San Miguel.	1,192 people were screened for diabetes and cardiovascular disease. As a result, many at-risk patients lowered their cholesterol levels and blood pressure through this program.	https://www.ruralhealthinfo.org/community-health/project-examples/835
Program Evaluation of Remote Heart Failure Monitoring: Healthcare Utilization Analysis in a Rural Regional Medical Center	2015	"Care Beyond Walls and Wires," a wireless remote monitoring program to facilitate patient and care team co-management of heart failure (HF) patients, served by a rural regional medical center, provided the opportunity to evaluate the effects of this program on health care utilization.	HF patients enrolled in this program showed substantial and statistically significant reductions in health care utilization during the 6 months following enrollment, and these reductions were significantly greater compared with those who declined to participate but not when compared with a matched cohort.	http://online.liebertpub.com/doi/abs/10.1089/tmj.2014.0093
Promoting Heart Health Among Rural African Americans.	2017	The purpose of this study was to evaluate a culturally relevant cardiovascular health promotion intervention that could potentially reduce cardiovascular disease risk among a group of rural African American adults by improving intentions, attitudes, norms, and self-efficacy to increase produce consumption, reduce	The cardiovascular health promotion intervention had a positive influence on the intentions, attitudes, norms, and self-efficacy of rural African Americans to increase produce consumption and reduce dietary saturated fat. The intervention also enhanced participants' attitudes and self-efficacy regarding exercise.	http://journals.lww.com/jcnjournal/Abstract/publishahead/Promoting_Heart_Health_Among_Rural_African.99503.aspx (Subscription required for full article)

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		dietary saturated fat intake, and increase exercise.		
Providing Cardiology Care in Rural Areas Through Visiting Consultant Clinics	2016	Workforce experts predict a future shortage of cardiologists that is expected to impact rural areas more severely than urban areas. This study examines the impact of cardiology outreach in Iowa, a state with a large rural population, on participating cardiologists and on patient access.	Cardiologists in Iowa and adjoining states have expanded access to office-based cardiology care from 18 to 89 of the 99 counties in Iowa. In these 71 counties without a full-time cardiologist, visiting consultant clinics were shown to accommodate more than 50% of office visits in the patients' home county.	https://www.ahajournals.org/doi/10.1161/JAHA.115.002909
Roane County Hypertension Control	2017	Roane County Family Health Care (RCFHC) uses community-oriented, outcome- and team-based care to combat their rural community members' high rates of hypertension.	In 2014, RCFHC succeeded in achieving hypertension control rates in at least 70% of patients, and was named a 2014 Hypertension Control Champion by the U.S. Department of Health and Human Services.	https://www.ruralhealthinfo.org/community-health/project-examples/798
Rural Health Information Hub: Rural Obesity Prevention Toolkit	2017	This toolkit is designed to help a program to identify factors in the community that promote obesity, convene partners to help address those problems, and apply proven obesity prevention strategies. The toolkit is made up of seven modules. Each concentrates on different aspects of obesity prevention programs. Modules also include resources to use in developing programs.	Information on implementing programs in clinical, school, and community settings can be found in Module 5: Addressing Obesity. Module 7 contains examples of 330A Outreach Authority grantees and other organizations that have developed promising rural obesity programs.	https://www.ruralhealthinfo.org/community-health/obesity
Rural Health Information Hub: Rural Project Examples: Cardiovascular disease		Rural Health Information Hub compilation of rural cardiovascular interventions, organized by evidence-level.	Provides summary results for each intervention listed as well as a link to more information about each intervention.	https://www.ruralhealthinfo.org/community-health/project-examples/topics/cardiovascular-disease
Rural Promising Practice Issue Brief: Remote, Telephone-Based Delivery of Cardiac Rehabilitation	2016	To address the social, geographic, and financial barriers that prevent rural Veterans from accessing cardiac rehabilitation, the U.S. Department of Veterans Affairs (VA) Office of Rural Health supported a telephone-based rehab program that delivered in-home cardiac rehabilitation.	In this pilot program, rural patients who elected to use home-based rehabilitation reported higher satisfaction and attained higher rates of program completion, compared to those using on-site facilities. Costs for the two programs were comparable, as were health outcomes after 12 weeks.	https://www.ruralhealth.va.gov/docs/promise/ORH_Promising_Practice_Cardiac_Nov2016_5_08.pdf
Short-Term Effectiveness of a Lifestyle Intervention Program for Reducing	2014	The Complete Health Improvement Program (CHIP) is a community-based, comprehensive lifestyle modification	214 participants in CHIP collectively demonstrated significant reductions in body mass index, systolic and diastolic blood pressure, and fasting blood levels	https://www.hindawi.com/journals/apm/2014/798184/abs/

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Selected Chronic Disease Risk Factors in Individuals Living in Rural Appalachia: A Pilot Cohort Study		approach to health that has shown success in addressing chronic disease risk factors. This pilot study demonstrates the effectiveness of CHIP in an underserved, rural, and vulnerable Appalachian population.	of total cholesterol, low-density lipoprotein, and glucose.	
Stanford University Chronic Disease Self-Management Program	2017	The Chronic Disease Self-Management Program (CDSMP) is a 6-week workshop originally developed at Stanford University that has been studied and consistently found to be effective through 20+ years of research. The program has been implemented in many rural communities.	CDSMP participants showed significant improvements in the following health measures: Communication with their doctors, self-reported health, exercise, fatigue and health distress, disability and social role/activity limitations. Additionally, some studies demonstrated that participants spend fewer days in the hospital, which can result in health care cost savings. A national study found a \$364 net savings rate per person as a result of CDSMP services.	https://www.ruralhealthinfo.org/community-health/project-examples/734
The Empirical Foundations of Telemedicine Interventions for Chronic Disease Management	2014	This review examined evidence from the available literature on the impact of telemedicine for the management of three chronic diseases: congestive heart failure, stroke, and chronic obstructive pulmonary disease.	Findings included reductions in use of service with hospital admissions/readmissions, length of hospital stay, and emergency department visits typically declining. It is important that there often were reductions in mortality. Few studies reported neutral or mixed findings.	https://www.liebertpub.com/doi/abs/10.1089/tmj.2014.9981
Web-Based Interventions Alone or Supplemented with Peer-Led Support or Professional Email Counseling for Weight Loss and Weight Maintenance in Women from Rural Communities: Results of a Clinical Trial	2017	This trial compared the effectiveness of a web-based only intervention with web-based supplemented by peer-led discussion or professional email counseling across 3 phases to achieve weight loss and weight maintenance in women from underserved rural communities.	Web-based interventions assisted women from rural communities in achieving 6-month weight loss, with weight regain by half at 30 months. No group differences were potentially due to the robust nature of the web-based intervention.	https://www.hindawi.com/journals/job/2017/1602627/abs/

STROKE

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
STROKE				
A Rural Hospital's Journey to Becoming a Certified Acute Stroke-Ready Hospital	2017	The authors conducted a gap analysis to address current stroke care processes in a rural hospital in North Carolina. Chart audits were performed, and strategies to	ASRH certification was achieved. In addition, stroke care outcomes such as door-to-computed tomography results, door-to-international normalized ratio results, door teleneurology	http://www.intljourtranur.com/article/S0099-1767(16)30272-0/abstract

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
		meet the requirements for recognition as an Acute Stroke Ready Hospital (ASRH) were implemented. The ASRH guidelines guided the certification journey.	consultation, and door-to-needle time have improved.	(Subscription required for full article)
Addressing Rural Health Disparities Through Policy Change in the Stroke Belt of Lenoir County North Carolina	2016	A variety of stakeholders in Lenoir County, North Carolina, were surveyed and interviewed, ranking the winnability, defined as feasibility and acceptability, of each of the 24 Common Community Measures for Obesity Prevention recommended strategies based upon local culture, infrastructure, funding, and community support.	Policies to improve physical activity opportunities were deemed the most winnable, whereas policies that would limit advertisement of unhealthy food and beverages were deemed the least winnable. The most winnable food-related strategy identified was improving mechanisms to procure food from local farms. Stakeholders perceived the public as unfavorably disposed toward government mandates, taxes, and incentives.	https://journals.lww.com/jphmp/fulltext/2013/11000/Addressing_Rural_Health_Disparities_Through_Policy.2.aspx
Alabama Partnership for Telehealth	2017 (updated)	Alabama Partnership for TeleHealth (APT) is a nonprofit organization that promotes and supports new and existing telehealth programs across Alabama to increase access to healthcare via telehealth in the rural, underserved areas of the state.	Multiple health networks were established with corrections facilities, behavioral health facilities, hospitals, clinics, and schools in the areas of psychiatry, stroke, primary care, wound care, and pain management. APT collaborated with multiple partners in over 60 sites. Small rural hospitals were found to no longer need to hire a neurologist or other specialists to be on staff; rather they could contract with a specialist and connect with him/her remotely via telehealth to evaluate patients.	https://www.ruralhealthinfo.org/community-health/project-examples/793
Application of Emerging Technologies to Improve Access to Ischemic Stroke Care	2017	In this paper, the authors discuss the importance of emerging technologies—mobile stroke treatment units, telemedicine, and robotically assisted angiography—as future tools for expanding access to the diagnosis and treatment of acute ischemic stroke.	This study demonstrated that emerging technologies may significantly decrease access impediments for rural patients. Telemedicine has shown significant promise for improving access to acute ischemic stroke diagnosis and treatment for rural patients by leveraging high-quality videoconferencing and teleradiology technologies.	http://thejns.org/doi/full/10.3171/2017.1.FOCUS16520
Case Studies Demonstrating Stroke Telemedicine in the Rural Emergency Department	2017	This article presents case studies that demonstrate how emergency nurses in a rural setting can use technology to collaborate with specialists to evaluate and treat stroke patients.	Telemedicine facilitated delivery of specialized care to a wide population. Ninety-day stroke patient outcomes showed no difference between patients who received tissue-type plasminogen activator (rt-PA) at a community hospital with telemedicine consultation and patients who received rt-PA at a tertiary stroke center. Both patients and health care providers expressed high satisfaction levels with telestroke consultations in this case study.	http://www.intljourtranur.com/article/S0099-1767(16)30258-6/abstract (Subscription required for full article)

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
Community Health Coaches for Successful Care Transitions in South Carolina	2017 (Updated)	The Health Coach Project of Oconee Memorial Hospital in South Carolina was developed to help reduce hospital readmissions. The target population was patients over the age of 65 with diabetes, congestive heart failure, or other heart disease who were recently discharged to home health. The program recruited and trained community members to act as Health Coaches.	62 patients were served by the initial project. Participants in the Health Coach program demonstrated abilities to: monitor and track their chronic health conditions of diabetes, heart failure, or cardiovascular disease; make lifestyle changes related to these conditions; reduce fall risk factors; and access assistance from health care and community agencies.	https://www.ruralhealthinfo.org/community-health/project-examples/375
Expanding Collaborative Technologies in Rural Veteran Health Care Using Telerobotic Stroke Therapy Delivery and Monitoring Systems	2015	Rural, veteran stroke survivors were provided a telerobotic device to support therapeutic rehabilitation.	Patients reported positive experiences with the robotic stroke therapy and monitoring system. Patients responded both to the physical impact of the intervention, as well as the indirect benefits such as an improvement in mood.	http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7210472 (Subscription required for full article)
Healthy People: Healthy Communities	2017 (updated)	Registered nurses served as case managers and followed up with service recommendations for clients in several Kentucky counties. This intervention was intended to provide lifestyle adjustment education to achieve program goals.	Results from the original grant cycle include: a decrease in stroke risk, a drop in prevalence of heart disease from 2011 to 2014, increase in screening cholesterol levels, and 94% of individuals who had not been screened in the previous five years getting their blood pressure checked. The projected 5 year medical savings expenditures were \$6,869,264, or a return on investment of \$18.68 per dollar spent.	https://www.ruralhealthinfo.org/community-health/project-examples/823
Heart-Healthy Lenoir: A Research-Based Project in Eastern North Carolina	2016	A community-based research project in rural, eastern North Carolina was designed to develop and test better ways to tackle cardiovascular disease from prevention to treatment.	The program enrolled roughly 650 community members.	https://www.ruralhealthinfo.org/community-health/project-examples/769
Heartland OK, A Care Coordination Model in Oklahoma	2016	Heartland OK, which began in 5 rural counties, is a care coordination model that works to reduce heart disease and stroke risks for patients.	Within 90 days of being enrolled in the program, 25% of patients met their hypertension goals. Using an ROI calculation tool developed at the University of Kentucky, Heartland OK was found to save \$160 for every \$1 invested in it for an estimated 45% reduction in cardiovascular disease event admissions in the pilot counties' regional hospital.	https://www.ruralhealthinfo.org/community-health/project-examples/930
Implementation of Transcranial Doppler Ultrasonography Screening and Primary	2014	Transcranial Doppler (TCD) ultrasonography identifies children with sickle cell disease (SCD) at increased risk of stroke. In this article, the authors report	A total of 195 patients were included in the evaluation of standard of care (SOC) screening, with overall 41% of these patients achieving SOC. There	http://onlinelibrary.wiley.com/doi/10.1002/pbc.25306/abstract

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Stroke Prevention in Urban and Rural Sickle Cell Disease Populations		the results describing the implementation of TCD screening and primary stroke prevention in both urban and rural clinical practices.	was no difference in SOC between the two clinics (35% urban and 47.4% rural). While implementation of primary stroke prevention in rural patients was difficult, the study suggests that rural TCD screening is feasible and can achieve SOC equal to that in an urban setting. This suggests that barriers exist in provided primary stroke prevention to all patients.	(Subscription required for full article)
Improving Access to Stroke Care in the Rural Setting: The Journey to Acute Stroke Ready Designation in North Carolina	2017	A multidisciplinary team of ED clinicians, hospital leadership, and community participants was formed to develop a structured care algorithm and intensive process improvement initiatives to guide the Acute Stroke Ready Hospital application process.	In the 7 months since implementation, door-to-laboratory results have improved by an average of 12 minutes, door-to-computed tomography interpretation has improved by 3 minutes, time to intravenous thrombolytics has improved to less than 60 minutes, and patient transfer within 2 hours of arrival has also improved. ED provider average response time has been reduced by 5 minutes, and time to neurology via telemedicine has been reduced by almost 10 minutes.	http://www.jenonline.org/article/S0099-1767(16)30255-0/abstract (Subscription required for full article)
Intermountain Healthcare in Utah develops strategy for Telehealth services	2017 (updated)	The Intermountain Telehealth Services strategy provides consultation and emergency medical help electronically for patients and clinicians in both urban and remote areas. It also connects patients in EDs to neurologists and provides real-time evaluations and consults to providers who are on-site with the patient.	Mortality rates and length of hospital stays have decreased, and patient retention has increased.	https://www.ruralhealthinfo.org/community-health/project-examples/925
Lone Star Stroke (LSS) Research Consortium in Texas: Addressing Cardiovascular Disease	2017	The V-STOP intervention consisted of 6 weekly sessions of self-management classes and clinic visits delivered via videoconferencing, with one or two individual telephone counseling sessions.	Participants' mean satisfaction scores were 4.7 out of 5, indicating very high approval of the program. Attendance was 87 percent, almost twice as high as at an equivalent in-person program. Access was improved as participants saved, on average, 160 km by traveling to a community center instead of the main Veterans' Administration facility. Stroke risk knowledge and self-management behaviors such as communication with health care providers significantly improved from baseline.	http://lonestarstroke.com/research-2/v-stop-ii/
Telestroke Centers as an Option for Addressing Geographical Disparities	2015	Telestroke centers can increase access to proper and timely diagnosis and treatment of stroke, especially for rural populations,	Results indicate that in 2013, approximately half of the South Carolina population did not have access to a primary stroke center within a 30-minute drive of	https://www.ruralhealthinfo.org/resources/8567

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
in Access to Stroke Care in South Carolina, 2013		thereby reducing disability and death. Census tract information was used to map primary stroke centers geographically and to identify areas that would benefit from additional access to medical care via telestroke centers (health care facilities that provide information on stroke care from a distance).	their home, and 30% did not have access within 60 minutes. Increasing access to prompt evaluation, diagnosis, and treatment of stroke and improving long-term quality of life requires the addition of telestroke centers in areas without primary stroke centers and examination of the effects of these centers on stroke incidence and mortality in South Carolina.	
Telestroke: An Approach to the Shortage of Neurologists in Rural Areas	2016	The primary hypothesis of this study was how the use of telestroke in rural health facilities can increase quality outcomes of stroke intervention in hospital emergency rooms if neurologists are not available. The method for this study was a qualitative study using literature review.	Telestroke can provide swift, lifesaving treatment and has afforded patients the ability to be treated in an efficient manner in rural areas where neurologists may not always be available. This study found that telestroke in rural areas has increased the ability to treat patients by being able to access a neurologist for assistance in evaluating the patient to determine if administering lifesaving in treatments were needed.	http://mds.marshall.edu/cgi/viewcontent.cgi?article=1152&context=mgmt_faculty
The Empirical Foundations of Telemedicine Interventions for Chronic Disease Management	2014	This review examined evidence from the available literature on the impact of telemedicine for the management of three chronic diseases: congestive heart failure, stroke, and chronic obstructive pulmonary disease.	Findings included reductions in use of service with hospital admissions/readmissions, length of hospital stay, and emergency department visits typically declining. It is important that there often were reductions in mortality. Few studies reported neutral or mixed findings.	https://www.ruralhealthinfo.org/resources/5597 Article: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4148063/
University of Mississippi Medical Center, Center for Telehealth: Improving Care for Underserved Areas	2017 updated	The University of Mississippi Medical Center created the Center for Telehealth to deliver quality specialty services through telehealth video conferencing and remote monitoring tools to the underserved areas of Mississippi.	The Center for Telehealth is now in over 200 clinical sites in 69 of the 82 counties across Mississippi, and has reached over 500,000 patients. They offer expert advice in over 5 specialties to rural hospitals and clinics. The program has been successfully implemented throughout many of the state's rural hospitals and has reduced transfers and geographic barriers for patients.	https://www.ruralhealthinfo.org/community-health/project-examples/245

UNINTENTIONAL INJURY

TITLE	DATE	DESCRIPTION	FINDINGS	LINK
UNINTENTIONAL INJURY: CROSS-CUTTING				
Outer Cape Health Services Community Resource Navigator Program	2016	The Community Resource Navigator Program works with local social services and town agencies, faith-based institutions, hospitals, the criminal justice system, and others to identify and connect clients to needed services.	Review of this program identified that clients are gaining access to the care they were once lacking. The program was found to also help community partners and stakeholders work together to reduce the impact of risks associated with behavioral health symptoms, substance use disorder, and social determinants of health.	https://www.ruralhealthinfo.org/community-health/project-examples/911
UNINTENTIONAL INJURY: DRUG OVERDOSE/OPIOIDS				
Addiction Recovery Mobile Outreach Team (ARMOT)	2015	ARMOT provides 1) case management and recovery support services to individuals with substance use disorders and 2) education and support to rural hospital staff, patients, and their loved ones.	In the first 18 months of its grant cycle, ARMOT made 254 referrals.	https://www.ruralhealthinfo.org/community-health/project-examples/940
Agency for Healthcare Research and Quality: Implementing Medication-Assisted Treatment (MAT) for Opioid Use Disorder in Rural Primary Care: Environmental Scan Volume 1	Accessed January 2018	Toolkit that includes 250 tools and resources to help overcome barriers and support implementation MAT in rural areas.	Details challenges and barriers to implementing MAT for opioid use disorder in a primary care setting, such as healthcare policy, workforce, and financing, among others.	https://integrationacademy.ahrq.gov/sites/default/files/MAT_for_OUD_Environmental_Scan_Volume_1_1.pdf
American Hospital Association Toolkit: Stem the Tide: Addressing the Opioid Epidemic	2017	The American Hospital Association created this toolkit to provide resources to hospitals and health systems to share with clinicians and patients and to use to enhance partnerships within their communities.	Presents a report on various methods hospitals and health systems can use to address the opioid epidemic. Discusses non-opioid pain management, prescribing practices, and treatment for substance use disorders, among other topics. Highlights several rural programs in the Case Examples sections.	http://www.aha.org/content/17/opioid-toolkit.pdf
Can We Build an Efficient Response to the Prescription Drug Abuse Epidemic? Assessing the Cost Effectiveness of Universal Prevention in the PROSPER Trial	2014	The study explores the performance of evidence-based-preventive-interventions (EBPIs) to reduce nonmedical prescription opioid use.	Universal school-based EBPIs may efficiently reduce nonmedical prescription opioid use. Further, family-based programs may be used to enhance the cost-effectiveness of school-based programs.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4131945/

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Caring for Pregnant Opioid Abusers in Vermont: A Potential Model for Non-Urban Areas	2015	This review discusses how the authors managed the challenges of developing a comprehensive program for treatment of opioid dependence during pregnancy. In addition, the authors outline their approach for facilitating the development of community-based programs to help these patients and families in rural regions of Vermont.	The authors found that integration and coordination of services that promote maternal recovery and ability to parent are key requirements for treatment of opioid dependence during pregnancy. Close relationships between the tertiary care center, local hospitals, community health care infrastructure, and legislators bolstered their efforts. In addition, appreciation for the severity and importance of the opioid-dependence problem in Vermont among health care providers and state legislators was found to be paramount for their success in developing a state-wide treatment program.	http://www.sciencedirect.com/science/article/pii/S0091743515002315 (Subscription required for full article)
Disparity in Naloxone Administration by Emergency Medical Service Providers and the Burden of Drug Overdose in US Rural Communities	2015	The authors measured the association between naloxone administration and emergency services certification level, age, gender, geographic location, and patient primary symptom.	The authors determined factors that may affect naloxone administration in drug overdoses, including the certification level of emergency medical technicians (EMTs). Naloxone was less often administered by EMT-basics, who are more common in rural areas. At the time of publication, most states followed the scope-of-practice model, which prohibited naloxone administration by basic EMTs.	http://ajph.aphapublications.org/doi/full/10.2105/AJPH.2014.302520 (Subscription required for full article)
Integrated Chronic Pain Treatment and Training Program	Accessed January 2018	The Integrated Chronic Pain Treatment and Training Program (ICPTTP) was created in order to stabilize and streamline chronic pain management in primary care clinics. Multidisciplinary care teams provided medication management and behavioral health services as well as trained primary care providers in chronic pain management. Care teams educated patients and suggested alternative pain treatments such as physical therapy and acupuncture.	The ICPTTP has reduced patients' average daily morphine equivalent dose, and 25% of program participants have stopped taking opioids altogether.	https://www.ruralhealthinfo.org/community-health/project-examples/968
MaineGeneral Harm Reduction Program	2016	The MaineGeneral Harm Reduction Program provides community education and training on accessing and administering naloxone and accessing substance use treatment for healthcare staff and first responders in rural Kennebec and Somerset counties. The program also provides referrals to treatment.	During the grant period, MaineGeneral trained 45 deputies and 246 healthcare staff and educated 60 community members. In addition, 91 patients were referred and/or received a kit or other services.	https://www.ruralhealthinfo.org/community-health/project-examples/966

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Migrant Clinicians Network: Addressing the Opioid Epidemic in Rural Washington and Idaho	2016	This newsletter article discusses how six rural health clinics representing over 20 sites are working to make sure their policies, workflow, and clinical visits are all aligned and implemented to address the opioid crisis.	The project approaches the problem in part through guided self-assessments and shared learning opportunities, during which the clinics can dive into the project's six building blocks for safe, team-based opioid prescribing in primary care.	http://www.migrantclinician.org/files/MCN%20Streamline%20Fall%202016.pdf
National Academy for State Health Policy: Intervention, Treatment, and Prevention Strategies to Address Opioid Use Disorders in Rural Areas	2016	A guide designed to assist state Medicaid directors, healthcare providers, and other stakeholders who work to reduce opioid use disorder. The guide includes descriptions of successful state initiatives implemented to reduce deaths due to overdose, and improve access to quality care for rural, low-income individuals experiencing opioid addiction. Provides an infographic displaying the prevalence and increase of substance abuse disorder in the U.S.	N/A	http://nashp.org/intervention-treatment-and-prevention-strategies-to-address-opioid-use-disorders-in-rural-areas/
Nevada Rural Opioid Overdose Reversal (NROOR) Program	2015	The Nevada Rural Opioid Overdose Reversal (NROOR) Program, led by a critical access hospital, furnishes naloxone and provides education on prescription opioid use and overdose.	In total, 117 EMTs were trained on the administration of naloxone. After reaching out and collecting data on the number of naloxone administration and opioid overdose reversals, researchers learned that only a small proportion of the naloxone provided had been used. Researchers continue to investigate the gap between the data on the need for the reversal medication and the real-world demand for naloxone.	https://www.ruralhealthinfo.org/community-health/project-examples/937
Opioid-Associated Outbreaks: Preparation & Prevention Lessons from the Indiana HIV/HCV Outbreak among People Who Inject Drugs	2014	In response to an HIV and hepatitis C (HCV) outbreak, Indiana declared a public health emergency and authorized an emergency needle exchange program.	The article presents possible lessons for local health departments that could help prevent opioid-associated infectious disease outbreaks including increasing or initiating prevention education, passing Good Samaritan-type laws, setting-up syringe distribution and disposal programs and addressing stigma.	http://nacchopreparedness.org/opioid-associated-outbreaks-preparation-prevention-lessons-from-the-indiana-hivhcv-outbreak-among-people-who-inject-drugs/
Project Renew	2015	Project Renew trains and certifies first responders, healthcare staff, and laypeople in naloxone administration.	Project Renew has saved 10 lives since its inception. The program has also faced barriers including the cost and training involved. In addition, rough terrain is a barrier not only for first responders attempting to reach victims but also for people getting to different communities to provide training.	https://www.ruralhealthinfo.org/community-health/project-examples/962

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Rural Health Information Hub: Rural Prevention and Treatment of Substance Abuse Toolkit	Accessed January 2018	<p>This toolkit provides evidence-based examples, promising models, program best practices, and resources that can be used to implement substance abuse prevention and treatment programs.</p> <p>There are seven modules in this toolkit. Each module contains resources and information that can be used to develop, implement, evaluate, and sustain rural programs to prevent and treat substance abuse.</p>	<p>Programs featured in the toolkit are interviewed to provide insights about their work and guidance for other rural communities interested in undertaking a similar project.</p> <p>Module 2 provides several examples of evidence-based and promising substance use disorder program models including:</p> <ul style="list-style-type: none"> -Medication Assisted Treatment Models -Behavioral Therapy Models -Harm Reduction Models -Care Delivery Models -Peer-based Recovery Support Models -Prevention Models 	https://www.ruralhealthinfo.org/community-health/substance-abuse
Rural Opioid Prevention and Treatment Strategies: The Experience in Four States	2017	Based on interviews with key stakeholders in Indiana, North Carolina, Vermont, and Washington State, this qualitative study explores promising state and community strategies to tackle the opioid crisis in rural communities and identifies rural challenges to the provision of opioid use disorder (OUD) prevention, treatment, and recovery services.	The results of the interviews identified several promising strategies for OUD prevention and treatment that are relevant to rural areas, including engaging broad-based coalitions, expanding access to medication-assisted treatment, and developing models to support recovery and relapse in rural communities.	https://digitalcommons.usm.maine.edu/behavioral_health/27/
SLV N.E.E.D.: Naloxone Education Empowerment Distribution Program	Accessed January 2018	The Naloxone Education Empowerment Distribution (NEED) project works to train, certify, and provide community members with necessary education and skills to successfully administer naloxone.	Nearly all first responders in the San Luis Valley area are now trained to administer naloxone, participating pharmacies keep adequate naloxone stock, and ongoing service region dialogue to address opioid use disorder.	https://www.ruralhealthinfo.org/community-health/project-examples/899
The Dawn Center Intensive Outpatient Program	2017	The Dawn Center offers an outpatient program for patients with substance use disorders.	158 people have received Intensive Outpatient Program services, and 376 have received medication-assisted-treatment. In addition, patients can receive counseling and treatment closer to home while becoming a part of the local recovery community.	https://www.ruralhealthinfo.org/community-health/project-examples/908
The Health Wagon: A Telehealth Resource in a Rural Wilderness	2017	The article presents a profile of the Health Wagon, a mobile health service that has been serving rural Virginia for more than 30 years. The services provided include, telehealth for opioid use and suicide. Initially providing care out of the back of a Volkswagen, this service has expanded to	N/A	https://mhealthintelligence.com/news/the-health-wagon-a-telehealth-resource-in-a-rural-wilderness

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		providing care using Remote Area Medical vehicles, telehealth, health devices, and drones. The area served has high rates of chronic disease, opioid use disorder, and suicide while providing Appalachia millions of dollars of healthcare each year.		
UNINTENTIONAL INJURY: FALLS				
Adoption of a Tai Chi Intervention, Tai Ji Quan: Moving for Better Balance, for Fall Prevention by Rural Faith-Based Organizations, 2013–2014	2016	The Tai Ji Quan: Moving for Better Balance (TJQMBB) tai chi exercise program is an evidence-based, community-delivered, fall-prevention intervention for older adults. The intervention recruited faith-based organizations (FBOs) and exercise instructors in 7 West Virginia counties. Two forums were held with stakeholders to identify barriers and facilitators to program adoption. The analysis calculated separate adoption rates for organizations and exercise instructors.	It took up to 3 months to recruit each FBO with an adoption rate of 94%. 19 of 22 trained exercise instructors started classes, an instructor adoption rate of 86%. Key issues regarding adoption were the age requirement for participants, trust, education, and competing priorities.	https://www.cdc.gov/pcd/issues/2016/16_0083.htm
Right Side UP Fall Prevention	2015	The Right Side Up program was implemented in rural Otter Tail County (MN) to address the prevention and management of falls and risk for falls through in-home assessments given by interdisciplinary healthcare professionals and students.	Short-term outcomes revealed 100% of participants found the visit and recommendations for falls prevention to be helpful, and 78% implemented these recommendations.	https://www.ruralhealthinfo.org/community-health/project-examples/782
University of Illinois at Chicago Institute for Health Research and Policy: Fit & Strong!	2017	An 8-week physical activity, behavior change, and falls prevention program geared to older adults with osteoarthritis.	Participants gained confidence with increased exercise, lessened stiffness, improved joint pain, and improved lower extremity strength and mobility.	https://www.ruralhealthinfo.org/community-health/project-examples/726
UNINTENTIONAL INJURY: MOTOR VEHICLES				
The Community Guide: Tightening the Belt: Increasing Occupant Restraint Use on the Hopi Reservation	2015	The Hopi Tribe in Arizona used grant funds to develop two motor vehicle injury strategies recommended by the Community Preventive Services Task Force.	Over the four years of the program, the Hopi Tribal Motor Vehicle Injury Prevention Program increased both safety belt and child safety seat use. More than 800 child safety seats (including booster seats) have been given away. Within three years, child safety use increased from 22% to 29%.	https://www.thecommunityguide.org/sites/default/files/assets/SafetyBelt-AZ.pdf
Tribal Motor Vehicle Injury Prevention Programs for Reducing	2014	The CDC Injury Center funded four tribes to implement effective motor vehicle	Over the course of the program driver seat belt use increased between 38% and 315%; child safety seat use increased between 45% and 85%; injury crashes	https://www.cdc.gov/motorvehiclesafety/native/best_practices_guide.html

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Disparities in Motor Vehicle-Related Injuries		safety strategies, tailored to their populations.	decreased; sobriety checkpoints increased; and DUI arrests increased. Findings documented in the MMWR article; lessons learned from this and other tribal road safety programs resulted in a best practices manual. Roadway to Safer Tribal Communities Toolkit developed containing a variety of useful resources.	