This appendix is supplemental to a Commonwealth Fund issue brief, Meredith B. Rosenthal et al., *Realizing the Potential of Accountable Care in Medicaid* (Commonwealth Fund, Apr. 2023), available at https://www.commonwealthfund.org/publications/issue-briefs/2023/apr/realizing-potential-accountable-care-medicaid.

APPENDIX

Annotated List of Medicaid Accountable Care Organization (ACO) Evaluations

Citation	States included	Study design	Control group (y/n)?	Outcomes	Findings
Jason Kroening-Roché et al., "Integrating Behavioral Health Under an ACO Global Budget: Barriers and Progress in Oregon," *American Journal of Managed Care* 23, no. 9 (Sept. 2017): e303–e309.	Oregon	Qualitative	No	Barriers, facilitators	Obstacles to ACO integration included mechanisms for aligning financial incentives, concerns about cost predictions, and billing problems. States can support integrated care by providing upfront resources and promoting alternative payment models.
Katherine D. Vickery et al., "Changes in Quality of Life Among Enrollees in Hennepin Health: A Medicaid Expansion ACO," *Medical Care Research and Review* 77, no. 1 (Feb. 2020): 60–73.	Minnesota	Qualitative	No	Health outcomes	Medicaid enrollees with multiple coexisting health conditions, especially behavioral health conditions, experienced improvement in their quality of life during enrollment in Hennepin Health. Patients who received routine primary care from a trusted provider and regularly used mental health care reported more improvement. Support from extended care team members was also associated with improved quality of life.
Aaron Truchil et al., "Lessons from the Camden Coalition of Healthcare Providers' First Medicaid Shared Savings Performance Evaluation," *Population Health Management* 21, no. 4 (Aug. 2018): 278–84.	New Jersey	Other with no control	No	Cost	Overall, the Camden Coalition yielded less cost savings than predicted.
Kelly J. Kelleher et al., "Cost Saving and Quality of Care in a Pediatric Accountable Care Organization," *Pediatrics* 135, no. 3 (Mar. 2015): e582–e589.	Ohio	Other controlled study	Yes	Cost, quality of care	The Partners for Kids ACO was associated with slower cost growth over time relative to fee-for-service and managed care, with no decrease in quality of care.
Julia Browne et al., "Addressing Social Determinants of Health Identified by Systematic Screening in a Medicaid Accountable Care Organization: A Qualitative Study," *Journal of Primary Care & Community Health* 12, no. 2150132721993651 (Jan.–Dec. 2021).	Massachusetts	Qualitative	No	Equity	Facilitators to addressing social determinants of health in MassHealth ACOs included updated resource lists, leadership buy-in, partnerships with community-based organizations, and patient trust. Barriers included lack of time and resources, as well as staff concerns that they would identify needs that could not be met.
Bill J. Wright et al., "Oregon's Coordinated Care Organization Experiment: Are Members' Experiences of Care Actually Changing?," *Journal for Healthcare Quality* 41, no. 4 (July/Aug. 2019): e38–e46.	Oregon	Other controlled study	Yes	Quality of care, utilization, health outcomes	ACOs were associated with better access to care, better quality of care, and improved connections to primary care physicians.
Linh N. Bui et al., "Coordinated Care Organizations and Mortality Among Low-Income Infants in Oregon," *Health Services Research* 54, no. 6 (Dec. 2019): 1193–1202.	Oregon	Difference-in-difference	Yes	Health outcomes	ACOs were associated with a reduction in mortality in the first year of life among infants enrolled in Medicaid.
Ronald Stock et al., "Physicians' Early Perspectives on Oregon's Coordinated Care Organizations," *Healthcare* 4, no. 2 (June 2016): 92–97.	Oregon	Qualitative	No	Physicians' quality of life	ACOs can impact physicians' professional and personal lives. Workforce considerations, including professional satisfaction, are important elements of ACO implementation.
Jangho Yoon et al., "Can Accountable Care Divert the Sources of Hospitalization?," *American Journal of Managed Care* 25, no. 10 (Oct. 2019): e296–e303.	Oregon	Difference-in-difference	Yes	Quality of care, utilization	ACOs led to reductions in hospital admissions, especially preventable admissions, among female Medicaid beneficiaries of reproductive age in Oregon.
K. John McConnell et al., "Oregon's Medicaid Reform and Transition to Global Budgets Were Associated with Reductions in Expenditures," *Health Affairs* 36, no. 3 (Mar. 2017): 451–59.	Oregon	Difference-in-difference	Yes	Quality of care, utilization, cost	ACOs were associated with reduced expenditures, reductions in avoidable emergency department (ED) visits, and improvement in some measures of appropriateness of care. However, ACOs also had the unintended effect of reducing visits to primary care physicians.

Citation	States included	Study design	Control group (y/n)?	Outcomes	Findings
Rani George et al., "Early Lessons and Strategies from Statewide Efforts to Integrate Community Health Workers into Medicaid," *Journal of Health Care for the Poor and Underserved* 31, no. 2 (2020): 845–58.	Oregon	Qualitative	No	Utilization, barriers, facilitators	Integrating community health workers can help with navigating health systems and social service resources, patient education, and patient engagement. Barriers include unclear role definitions and lack of financial support.
Martha L. Meyer and Adam Atherly, "Effect of a Medicaid Accountable Care Collaborative on 30-Day Hospital Readmission Rates," *Population Health Management* 24, no. 2 (Apr. 2021): 190–97.	Colorado	Difference-in-difference	Yes	Quality of care, utilization	ACOs were associated with a significant reduction in 30-day readmissions among ACO Medicaid patients, particularly after childbirth.
Eric W. Christensen and Nathaniel R. Payne, "Pediatric Inpatient Readmissions in an Accountable Care Organization," *Journal of Pediatrics* 170 (Mar. 2016): 113–19.	Minnesota	Other controlled study	Yes	Quality of care, utilization, cost	Continuous attribution to an ACO for more than two years was associated with a relative reduction in 30-day pediatric readmissions due to reduced readmissions to hospitals other than the discharging hospitals. No significant change was found in the same-hospital readmission rate. Continuous attribution was also associated with a reduction in readmission days.
Rachel Mosher Henke et al., "Medicaid Accountable Care Organizations and Childbirth Outcomes," *Medical Care Research and Review* 77, no. 6 (Dec. 2020): 559–73.	Colorado, New Jersey, Oregon	Other controlled study	Yes	Quality of care, cost, health outcomes	ACOs were associated with reduced hospital costs per birth and decreased C-section rates.
Melinda M. Davis et al., "Key Collaborative Factors When Medicaid Accountable Care Organizations Work with Primary Care Clinics to Improve Colorectal Cancer Screening: Relationships, Data, and Quality Improvement Infrastructure," *Preventing Chronic Disease* 16 (Aug. 2019): e107.	Oregon	Qualitative	No	Quality of care	Partnership, performance data, and quality improvement infrastructure emerged as facilitators for improving colorectal screening. Unintended consequences included the potential exclusion of smaller clinics, teaching to the test (i.e., excessive focus on the domains that were tracked and rewarded to the exclusion of other priorities), and measure fatigue.
S. Marie Harvey et al., "Coordinated Care Organizations: Neonatal and Infant Outcomes in Oregon," *Medical Care Research and Review* 76, no. 5 (Oct. 2019): 627–42.	Oregon	Difference-in-difference	Yes	Health outcomes, equity	ACOs were associated with reduced rates of low birth weight and other adverse neonatal outcomes. Significant improvements in neonatal outcomes were observed only among mothers who were non-Hispanic (of any race) or who lived in urban areas.
K. John McConnell et al., "Oregon's Emphasis on Equity Shows Signs of Early Success for Black and American Indian Medicaid Enrollees," *Health Affairs* 37, no. 3 (Mar. 2018): 386–93.	Oregon	Difference-in-difference	Yes	Quality of care, utilization, equity	ACOs were associated with reductions in disparities in primary care visits and white-Black differences in access to care. There was no change in emergency department use.
Ifeoma Muoto et al., "Oregon's Coordinated Care Organizations Increased Timely Prenatal Care Initiation and Decreased Disparities," *Health Affairs* 35, no. 9 (Sept. 2016): 1625–32.	Oregon	Difference-in-difference	Yes	Quality of care, utilization, equity	ACOs were associated with increases in early prenatal care initiation and reductions in disparities across insurance types.
Katherine D. Vickery et al., "Integrated, Accountable Care for Medicaid Expansion Enrollees: A Comparative Evaluation of Hennepin Health," *Medical Care Research and Review* 77, no. 1 (Feb. 2020): 46–59.	Minnesota	Other with no control	No	Utilization	Overall, implementation of the Hennepin Health ACO caused a decrease in primary care and emergency department visits and an increase in dental visits. For patients who utilized the most care in the first year, there was also a subsequent decrease in inpatient utilization.
Paula H. Song et al., "How Does Being Part of a Pediatric Accountable Care Organization Impact Health Service Use for Children with Disabilities?," *Health Services Research* 54, no. 5 (Oct. 2019: 1007–15.	Ohio	Difference-in-difference	Yes	Utilization, quality of care	The Partners for Kids ACO was associated with increased utilization of adolescent preventive services and decreased utilization of ADHD (attention deficit hyperactivity disorder) medication and home health services.

Note: Continuous attribution to an ACO is defined as receiving the plurality of one's primary care in an ACO during a two-year period.

Citation	States included	Study design	Control group (y/n)?	Outcomes	Findings
Paula H. Song et al., "The Effect of an Accountable Care Organization on Dental Care for Children with Disabilities," *Journal of Public Health Dentistry* 80, no. 3 (Summer 2020): 244–49.	Ohio	Difference-in-difference	Yes	Utilization, quality of care	While preventive dental visits increased among ACO-enrolled children relative to non-ACO children, overall dental utilization did not increase among ACO-enrolled children with disabilities.
Elizabeth D. Allen et al., "Quality Improvement–Driven Reduction in Countywide Medicaid Acute Asthma Health Care Utilization," *Academic Pediatrics* 19, no. 2 (Mar. 2019): 216–26.	Ohio	Other controlled study	Yes	Utilization	While the Partners for Kids ACO was associated with a reduction in utilization of emergency departments (ED) for asthma, inpatient utilization did not change.
Melinda M. Davis et al., "Does a Transition to Accountable Care in Medicaid Shift the Modality of Colorectal Cancer Testing?," *BMC Health Services Research* 19, no. 1 (Jan. 21, 2019): 54.	Oregon	Other with no control	No	Utilization, quality of care	Colorectal cancer testing did not increase in the first two years following the transition to ACOs in 2012, but it did increase in 2014. That increase was largely driven by increases in fecal occult blood tests and fecal immunochemical tests (as opposed to colonoscopies).
Lisa P. Oakley et al., "Oregon's Coordinated Care Organizations and Their Effect on Prenatal Care Utilization Among Medicaid Enrollees," *Maternal and Child Health Journal* 21, no. 9 (Sept. 2017): 1784–89.	Oregon	Difference-in-difference	Yes	Utilization, quality of care	The ACO model caused a significant increase in receipt of timely prenatal care for Medicaid enrollees.
Eric W. Christensen and Nathaniel R. Payne, "Effect of Attribution Length on the Use and Cost of Health Care for a Pediatric Medicaid Accountable Care Organization," *JAMA Pediatrics* 170, no. 2 (Feb. 2016): 148–54.	Minnesota	Other with no control	No	Utilization, cost, quality of care	Continuous attribution to an ACO for greater than two years among the pediatric Medicaid population was associated with a decrease in inpatient days and increases in the number of physician and/or nurse practitioner visits, emergency department (ED) visits, and use of pharmaceuticals, which reduced costs.
K. John McConnell et al., "Early Performance in Medicaid Accountable Care Organizations: A Comparison of Oregon and Colorado," *JAMA Internal Medicine* 177, no. 4 (Apr. 2017): 538–45.	Colorado, Oregon	Other with no control	No	Utilization, cost, quality of care	After two years, Oregon's and Colorado's Medicaid ACO models exhibited similar performance on spending measures. Oregon's model was associated with larger improvements than Colorado's program on several measures of utilization and quality, but Colorado's model showed greater reductions in inpatient days.
Sharon Silow-Carroll, Jennifer N. Edwards, and Diana Rodin, *How Colorado, Minnesota, and Vermont Are Reforming Care Delivery and Payment to Improve Health and Lower Costs* (Commonwealth Fund, Mar. 2013).	Colorado, Minnesota, Vermont	Case report/ series	NA	NA	Facilitators include regional or local flexibility; standardized measures; investment in robust data collection; resource leveraging across departments; identification and education of stakeholder leaders; broader service integration; acknowledgment of the long-term nature of savings; and integration of reforms across state programs, Medicare, and commercial insurers.
Jennifer N. Edwards, *Health Care Payment and Delivery Reform in Minnesota Medicaid* (Commonwealth Fund, Mar. 2013).	Minnesota	Case report/ series	NA	NA	States promoted systemwide transformation by aligning goals, measures, and incentives across Medicaid initiatives, state programs, and with Medicare and commercial insurers; encouraging providers to invest in the organization and delivery of coordinated care; and removing silos in the health care system by bringing together all providers that serve a population and giving them incentives to collaborate.
Diana Rodin and Sharon Silow-Carroll, *Medicaid Payment and Delivery Reform in Colorado: ACOs at the Regional Level* (Commonwealth Fund, Mar. 2013).	Colorado	Case report/ series	NA	NA	ACOs were associated with reduced use of acute care, better control of chronic conditions, and lower total cost among enrollees.
Lynn A. Blewett, Donna Spencer, and Peter Huckfeldt, "*Minnesota Integrated Health Partnership Demonstration: Implementation of a Medicaid ACO Model*," *Journal of Health Politics, Policy and Law* 42, no. 6 (Dec. 2017): 1127–42.	Minnesota	Case report/ series	NA	NA	Factors associated with the early success of ACOs include a focus on data analytics and population health, inclusion of behavioral health services, and partnerships with community providers. The large, integrated delivery systems participating in the Minnesota program likely have greater capacity than other provider types to coordinate care across settings.

Notes: Continuous attribution to an ACO is defined as receiving the plurality of one's primary care in an ACO during a two-year period. NA = not applicable.