Overview of Data Related to the Pediatric Medical Home

This summary outlines recent data specific to the pediatric population, and is organized by 2 main constructs (1) children and youth with special health care needs (CYSHCN) vs. non-CYSHCN, and (2) the Triple Aim (improved patient experience, increased quality, and decreased costs).

CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS

Much of the early work around the medical home focused on providing a medical home for CYSHCN. As such, there is a greater amount of data related to this population.

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Han B, Hao Y, Friedberg M. Evaluating the Impact of Parent-reported Medical Home Status on Children's Health Care Utilization, Expenditures, and Quality: A Difference-in-Differences Analysis with Casual Inference Methods. *Health Services Research*. 2016. Doi: 10.1111/1475-6773.12512	The study utilized data from the Medical Expenditure Panel Survey (MEPS) to examine how changes in parent-reported medical home status over a 2-year period affect children's health care utilization, expenditures and quality. Medical home was defined by using 22 MEPS questions, including asking whether a child has a usual source of care. In order to qualify as having a medical home, a child must have a usual source of care and no less than 75 points in four medical home domains (accessible	• Study found that having a medical home may lead to higher perceived quality of care for children.	• Losing medical home status may cause children to have more Emergency Department visits (seven more visits per year per 100 children). • No significant findings were discovered related to the relationship between utilization of medical home and health care costs.

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
	care, comprehensive care, family-centered care, and compassionate care).		
Raphael, L, Cooley, W, Vega, A, et al. Outcomes for Children with Chronic Conditions Associated with Parent- and Provider-reported Measures of the Medical Home. *J Health Care Poor Underserved*. 2015; 26(2):358 -376.	The study had two aims: 1) to assess the medical home experience of low-income children with chronic conditions, using questions from the National Survey of Children with Special Health Care needs (2005-2006), and 2) to determine associations with health care utilization, using a combination of parent-report, primary care practice self-assessment, and administrative claims data. The Medical Home Index was utilized as an instrument for practice self-assessment.		• Having a usual source of care was associated with a lower rate of documented Emergency Department visits and hospitalizations. • Overall Medical Home Index scores were not associated with health care utilization. • Higher organizational capacity scores on the Medical Home Index were associated with lower rates of Emergency Department encounters. • Higher quality chronic condition management scores on the Medical Home Index were associated with higher rates of Emergency Department encounters. The authors hypothesize that this may result because practices who are effective at chronic condition management may also attract more medically complex, high resource utilizing patients.
Matiz LA, Robbins-Milne L, Krause MC, Peretz PJ, Rausch JC. Evaluating the Impact of Information Technology Tools to	Study evaluating impact of information technology tools on outcomes of children diagnosed with asthma as		• Retrospective analysis of health care system utilization over a 3-year period showed a 17% decrease in emergency department utilization and 47%

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Support the Asthma Medical Home. *Clin Pediatr*. 2015. doi: 10.1177/0009922815596070	part of the launch of a patient-centered medical home model for patients with asthma. Specific changes to an electronic health record included modifications to notes, care plans and orders.		decrease in inpatient admissions.
Miller J, Nugent C, Russel L. Which components of medical homes reduce the time burden on families of children with special health care needs? *Health Services Research*. 2015; 50(3):440-460.	Study utilized data from the 2009-2010 National Survey of Children with Special Health Care needs to identify specific components of the medical home that reduce time burden for families of children with special health care needs. Study utilized the survey definition of medical home, including the following components: usual source of care; personal doctor or nurse; family-centered care; coordinated care; and obtaining needed referrals.	• Families whose child with special health care needs had a medical home had reduced odds of having a time burden of arranging/coordinating care, providing care, or both, for their child. • Medical homes were associated with 20% lower odds of spending more than 6 hours/week providing care at home to a child with special health care needs. • Family-centered care, care coordination, and no problem obtaining needed referrals were associated with reduced odds of time burden for families. • Having a usual source of care and having a personal doctor or nurse were not statistically significantly associated with time burden. • A rigorous test examining if all five components of a medical home needed to be in place before affecting time burden for families suggested that a complete medical home (all 5 components) provide "something above and beyond the individual components." Missing just one component of the medical home was	

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
		associated with increased odds of time burden.	
Christensen A, Zickafoose J, Natzke B, McMorrow S, Ireys H. Associations between practice-reported medical homeness and health care utilization among publicly insured children. *Academic Pediatrics*. 2015;15(3):267-274.	Study aimed to analyze the relationship between practice-reported medical homeness and health service utilization by children enrolled in Medicaid in 3 states. The study also aimed to examine if this utilization varied between children with special health care needs versus all other children. Medical homeness was assessed through the Medical Home Index (North Carolina), the Medical Home Index Revised Short Version (South Carolina), and the National Committee for Quality Assurance medical home self-assessment (Illinois). All states/practices were members of the Children's Health Insurance Reauthorization Program Demonstration Projects.		• For practices in Illinois, no statistically significant association was found between receipt of well child visits and medical homeness. • However, children receiving care with high medical homeness were less likely to have non-urgent, preventable, or avoidable Emergency Department visits than children in practices with low medical homeness and marginally less likely than children in practices with medium medical homeness. • For practices in North Carolina and South Carolina, no statistically significant association was found between receipt of well child visits and medical homeness.

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Boudreau A, Goodman E, Kurowski D, Perrin J, Cooley C. Care coordination and unmet specialty care among children with special health care needs. *Pediatrics*. 2014; 133(6): 1046 – 1053.	Study examines association of care coordination with family-perceived unmet specialty care needs for Children with special health care needs. Analysis conducted from 2009-2010 National Survey of Children with Special Health Care Needs. A child was determined to have effective care coordination if: 1. The family usually or always receives sufficient help coordinating care when needed 2. The parent/guardian was very satisfied with communication between the specialist/specialty program and the provider if needed Medical home status was determined by presence of the following: personal doctor or nurse; usual source for sick and well care; family-centered care;	• The presence of care coordination without and within a medical home was associated with decreased unmet specialty care needs (across all income levels). • Children whose care coordination was delivered within a medical home were significantly less likely by a third to have unmet specialty care needs, when compared to those receiving care coordination without a medical home.	

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
	problems getting needed referrals; effective care coordination.		
Knapp C, Chakravorty S, Madden V, et al. Association between medical home characteristics and staff professional experiences in pediatric practices. *Archives of Public Health.* 2014;72:36.	Study focuses on staff at 20 pediatric practices participating in the Florida Pediatric Medical Home Demonstration Project. Study measures how pediatric medical home transformation affect staff satisfaction and burnout across practices. Medical Home Index was utilized to measure medical home characteristics. Staff surveys were distributed to measure staff satisfaction and burnout. 31.3% of practice patients had special health care needs.	• Different medical home characteristics are associated differently with provider satisfaction and burnout. • Characteristics of individual staff, namely adaptive reserve, are more strongly associated with job satisfaction and burnout than medical home characteristics. • Increases in care coordination were associated with greater overall scores for job satisfaction while increases in community outreach were negatively associated with job satisfaction. • Increased chronic care management scores are associated with lower provider exhaustion while increased quality improvement scores are associated with greater odds of exhaustion. • Increased data management is associated with increased professional efficacy.	

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Mosquera R, Avritscher E, Samuels S, et al. Effect of an enhanced medical home on serious illness and cost of care among high-risk children with chronic illness: A randomized clinical trial. *JAMA*. 2014;312(4): 2640-2648.	Study conducted a randomized clinical trial to assess whether comprehensive care for high-risk children with chronic illness provided by an enhanced medical home would reduce serious illness, medical costs, or both, from a health system perspective. • Usual care was provided by primary care pediatrician in out-patient office settings; same day care was not always available. Chronic problems were treated at subspecialty clinics that were referred from the primary care pediatrician's office. • Comprehensive care was provided at a high-risk children's clinic through a medical home model. The clinic co-located primary and specialty care physicians and other clinical staff including social	• Access to care and parental satisfaction increased for the comprehensive care/medical home group.	• Comprehensive care, versus usual care, within a medical home decreased total hospital and clinic costs ($16, 523 vs $26,781 per child per year). • Comprehensive care, versus usual care, within a medical home reduced the rate of ED visits, hospitalizations, number of days in the hospital, ICU admissions, and days in the ICU.

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	workers and dietitians. Same day appointments were available and parents could call primary care clinicians at all hours. A parent advisory board was implemented.		
Farmer J, Clark M, Mayfield W, et al. The relationship between the medical home and unmet needs for children with autism spectrum disorders. *Maternal and Child Health Journal.* 2014;18(3):672-680.	Study examined the relationship between having a medical home and children's unmet specialty care needs, specifically related to children with Autism Spectrum Disorder. Defined medical home using the components of the National Survey of Children with Special Health Care Needs, including the following: usual source of care; personal doctor or nurse; family-centered care; coordinated care; and obtaining needed referrals.	• Children with autism spectrum disorder who had a medical home had significantly fewer unmet specialty care needs than those without a medical home. • Parents who indicated lower rates of family-centered care reported higher rates of unmet specialty care needs for their child. • Children with a usual source of care only have more unmet needs than children with both a usual source of care and other medical home components.	

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Butcher J, Wolraich M, Gillaspy S, Martin V, Wild R. The impact of a medical home for children with developmental disability within a pediatric resident continuity clinic. *Journal of the Oklahoma State Medical Association*. 2014; 107(12):632-638.	Study examined the impact of the Oklahoma Family Support 360 program, a medical home program within a pediatric primary health care resident continuity clinic serving low-income families of children with development disabilities. Medical home was defined using the American Academy of Pediatrics definition, with key attributes including: accessibility; compassion; comprehension; family-centered; coordinated; culturally effective.	• Patient and family satisfaction with services received through the medical home were rated highly, particularly related to timeliness of service and less unmet medical needs. • Increases in patient and family satisfaction were associated with increased care coordination. • Assistance with identifying and accessing resources and helping with paperwork were two activities of the medical home that had the highest impact on quality of life. • Patient and family satisfaction with the primary care provider decreased, yet the overall rating remained at "very good."	• Results showed statistically significant decreases in emergency service use with medical home activities. • Findings showed significant increases in dental service use among children with a medical home. • Results also showed the rate of preventive service use decreased. • No significant change in hospitalization or inpatient care was found.
Hamilton L, Lerner C, Presson A, Klitzner T. Effects of a medical home program for children with special health care needs on parental perceptions of are in an ethnically diverse patient population. *Maternal Child Health J*. 2013; 17(3):463-469.	Evaluation of data from the Pediatric Medical Home Program at UCLA, which includes 41 medically complex, ethnically diverse children with special health care needs. The Medical Home Family Index was administered to 22 participating parents in	• A primary care model focused on providing intensive care coordination, using medical home principles, to low-income, ethnically diverse children with complex health care needs can produce positive parental experiences for patients and families, independent of primary language. • Utilization of the American Academy of Pediatrics' medical home model resulted in higher satisfaction scores among Spanish	

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	the family's primary language, and survey data were analyzed related to parental satisfaction.	speaking parents as compared to English speaking parents.	
Knapp C, Hinojosa M, Baron-Lee J, Fernandez-Baca D, Hinojosa R, Thompson L. Factors associated with a medical home among children with ADHD. *Maternal Child Health J*. 2012; 16(9):1771-1778.	Analysis of data from the 2007 National Survey of Children's Health and analysis of data related to the 5,495 children in the study whose parents indicated they currently had an ADHD diagnosis. A medical home was defined by the following five sub-components: having a personal doctor, having a usual source of care, receiving family-centered care, having no problem getting referrals, and having effective care coordination.	• Having a medical home was significantly associated with being less likely to have an unmet health need and having fewer missed school days but also being less likely to have received needed mental health care.	
Cohen E, Lacombe-Duncan A, Spalding K, et al. Integrated complex care coordination for children with medical complexity: A mixed-methods evaluation of tertiary care-community collaboration. *BMC Health Services Research.* 2012;12:366.	Research conducted in Canada looked at enhanced care coordination provided by a nurse practitioner who was affiliated with tertiary care center. Coordination took place within community-based	• Families and health care providers were highly satisfied, and self-reports of family-centeredness of care improved. • Parental quality of life did not significantly change over the course of the study. • Child quality of life improved between baseline and 6 months in several domains.	• Families experienced increase in short-term out-of- pocket costs initially (in the first 6 months) – likely due to recognition of unmet needs by nurse practitioner – but costs had decreased at 12 months.

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	medical home. Clinics were conducted weekly with a focus on care coordination, complex symptom management, and goal setting for medically complex children.		• Overall mean PMPM costs went from $1,429 to $369. • ER costs went from $23 to $15
Casey P, Lyle R, Bird R, et al. Effect of hospital-based comprehensive care clinic on health costs for Medicaid-insured medically complex children. *Arch Pediatr Adolesc Med.* 2011; 165(5): 392-398.	Study of Medicaid costs in tertiary care children's hospital in a rural state (Arkansas) pre-/post-implementation of coordinated care by multidisciplinary team for 225 medical complex children (at least 2 chronic medical conditions followed-up by at least 2 pediatric subspecialists).		• Mean annual cost PMPM decreased by $1766 for inpatient care and $6 for ED care. • Outpatient claims and prescriptions increased, but overall costs to Medicaid PMPM decreased by $1179.
Raphael J, Mei M, Brousseau D, Giordano T. Associations between quality of primary care and health care use among children with special health care needs *Arch Pediatr Adolesc Med.* 2011;165(5):399-404.	Results of a survey of 1591 parents of children with special health care needs to determine if parent reported quality of care (as defined by family-centeredness of care, timeliness of care, and realized access) was associated with subsequent health care use.		• Parent-reported low quality family centeredness of primary care was associated with higher rates of non-urgent emergency room visits for publically and privately insured children with special health care needs. • Low quality family centeredness was also associated with higher rates

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
			of hospitalizations among privately insured children.
Porterfield S, DeRigne L. Medical home and out-of-pocket medical costs for children with special health care needs. *Pediatrics*. 2011;128(5):893-900.	Using data from 2005 – 2006 National Survey of Children with Special Health Care Needs (n=31,808), this article aimed to find a relationship between out-of-pocket medical expenditures for children with special health care needs and presence of a medical home. Medical home is defined using the American Academy of Pediatrics definition as being accessible, family-centered, coordinated, comprehensive, continuous, compassionate, and culturally effective. Children included were covered by public health insurance (n=8633) and private health insurance (n= 23,175).		• In both publicly and privately insured children, families whose children had medical homes spent less (out-of-pocket) than families without a medical home (1.6% of income for private insurance, 1% of income for public insurance). • Children receiving care coordinated services were less likely to have out-of-pocket costs. If costs did appear, they were 32% lower for children with care coordinated services than those without. • Medical home presence was particularly important in lowering out of pocket costs for children with public insurance.
Dummond A, Looman w, Phillips A. Coping among parents of children with special health care needs with and without a health	Secondary analysis of National Survey of Children's Health (n=18,352) was conducted to explore the relationship between	• Children who received higher mean scores on the family centered care scale were more likely to have parents who were coping "well" or "somewhat well" with day-to-day demands of parenthood ($p<.001$)	

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care home. 2011; 26(4):266-275.	child and household factors and parental coping among children with special health care needs living with and without a medical home. Medical home is defined using the American Academy of Pediatrics definition: accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.	• The proportion of parents "not coping well" decreased as satisfaction with communication among health care providers increased.	
Klitzner T, Rabbitt L, Chang R. Benefits of care coordination for children with complex disease: A pilot medical home project in a resident teaching clinic. *J Pediatr*. 2010;156(6):1006-1010.	Study examined encounter data on 30 medically complex patients in a resident education/pediatric continuity clinic at UCLA. Patients were provided with enhanced care coordination via a "health navigator", which was an administrative level employee who spoke the family's native language and helped clients navigate the health care system.		• Reduction in ED visits seen post-intervention. • The following showed no difference in the year following enrollment: number of scheduled outpatient visits, urgent care visits, hospital admissions, average hospital days, and average length of hospital stay.
McAllister J, Sherrieb K, Cooley W. Improvement in	Study describes ten practice teams that were	• Practices were successful in increasing their scores on the Medical Home Index, which	• Decrease in separate hospitalizations

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
the family-centered medical home enhances outcomes for children and youth with special healthcare needs. *J Ambulatory Care Manage*. 2009; 32(3):188-196.	selected to take part in a quality improvement learning collaborative related to family-centered, quality care processes, and office efficiencies for children and youth with special health care needs.	resulted in significant clinical, functional, satisfaction, and utilization outcomes for 82 families of children and youth with special health care needs who used the practices during the 3 years of the project. Improvements were seen in the following outcome measures: • Seen by PCP in last year • Seen by specialists in past year • Absent school days • Parental worry about child's health • Parental view of child's health • Have a written care plan • Family feedback sought used	• Decrease in number of hospital nights
Cooley W, McAllister J, Sherrieb K, Kuhlthau K. Improved outcomes associated with medical home implementation in pediatric primary care. *Pediatrics*. 2009;124(1):358 – 356.	Study analyzed utilization data of medical home practices for 42 children with 6 chronic conditions.		• Higher medical home scores, specifically related to organizational capacity, care coordination, and chronic condition management were associated with significantly fewer hospitalizations. • Medical home composite scores were not significantly correlated with emergency department visit rates. However, visit rates significantly decreased with an increase in the scores for chronic condition management and care coordination specifically.

Reference	Background	Quality, Patient Experience and/or Health Outcomes	Health Care Cost and Acute Care Service Outcomes
			• Higher chronic condition management scores were associated with lower emergency department use.
Strickland b, Singh G, Kogan M, Mann M, van Dyck P, Newacheck P. Access to the medical home: New findings from the 2005 – 2006 National Survey of Children With Special Health Care Needs. *Pediatrics* 2009; 123(6); 2008 – 2504.	Study outlines results from the National Survey of Children with Special Health Care needs, specifically data related to parental perception of medical home access. Medical home is defined by five components: having a usual source of care, having a personal doctor or nurse, receiving all needed referrals for specialty care, receiving help as needed in coordinating health-related care, and receiving family-centered care.		• 11.7% of children without medical home reported having foregone or delayed care, vs. 4.1% of children with a medical home. • Parents of children with a medical home reported modest but significant decrease in likelihood of missing > 10 days of school. • 7.7% of parents of children without a medical home reported to have unmet needs for family support services, vs. 1.3% of children with a medical home. • 22.5% parents of children living without a medical home reported unmet health care needs vs. 8.1% of children with a medical home.
Gordon J, Colby H, Bartelt T, Jablonski D, Krauthoefer M, Havens P. A tertiary care-primary care	Study conducted at Medical College of Wisconsin and Children's Hospital of Wisconsin.	• No formal investigation of the impact of the intervention on quality of life or satisfaction was done, but anecdotal reports indicated a high level of family satisfaction.	• 50% decrease in hospital days

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partnership model for medically complex and fragile children and youth with special health care needs. *Arch Pediatr Adolesc Med*. 2007;161(1):937-944.	Established a special needs program where 227 medically complex children (seeing 5 of more subspecialists and with 3 or more involved organ systems) received enhanced care coordination from a single point of contact, but specifically (1) partnership between family and PCP, (2) familiarity with the child's condition, (3) close involvement during hospitalization, (4) proactive outpatient care.		• $10.7 million decrease in tertiary care center payments
Benedict R. Quality Medical Homes: Meeting Children's Needs for Therapeutic and Supportive Services. *Pediatrics*. 2007; 121(1)e127-134.	Study aimed to determine whether among children with special health care needs, the quality of a medical home is associated with access to therapeutic and supportive services. Based on the National Survey of Children with Special Health Care Needs. Study included only those children who required supportive (n=23,376) or therapeutic (n= 15,793) services.	• Children with high-quality medical homes were less likely to have unmet needs for therapeutic (64%) and supportive (70%) services than children whose medical homes didn't have all of the medical home criteria. • Percent of children with unmet needs were consistently higher for children whose families reported more characteristics of the medical home missing.	

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	Medical homes were defined as being preventative, accessible, continuous, comprehensive, coordinated, culturally sensitive, and family-oriented.		
Lewis C, Robertson A, Phelps S. Unmet dental care needs among children with special health care needs: Implications for the medical home. *Pediatrics*. 2005;116(3):e426-432.	Using data from the National Survey of Children with Special Health Care Needs, this study examined if presence of a medical home was associated with a child needing dental care, receiving dental care, and if the child needed care and did not receive it. n=38,866. The Medical Home is not defined, however it specified that medical homes provide children with special health care needs with access to regular, ongoing, comprehensive care. Comprehensive care is defined as "encompassing acute and chronic medical care, preventive care, subspecialty medical care, and surgical care."	• Having a regular doctor or nurse who knew the child/children best was associated with significantly less unmet health care needs (even after controlling for other factors such as income, insurance, etc.). This implies that children with a medical home may have less unmet health care needs, particularly dental.	

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Palfrey J, Sofis L, Davidson E, Liu J, Freeman L, Ganz, M. The pediatric alliance for coordinated care: Evaluation of a medical home model. *Pediatrics*. 2004;113(5 Suppl): 1507-1516	Study examined an intervention in 6 pediatric practices in Boston, who identified their medically complex children and provided a designated PNP case manager, development of an individualized health plan for each patient and continuing education for health care professionals.	• Increase in parent satisfaction.	• Decrease in parents missing >20 work days (26% baseline vs. 14.1%) • Decrease in hospitalizations (58% baseline vs. 43.2%) • No change was seen in the report of missed days of school or emergency department visits.

CHILDREN AND YOUTH WITHOUT SPECIAL HEALTH CARE NEEDS

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Christensen EW, Payne NR. Effect of Attribution Length on the Use and Cost of Health Care for a Pediatric Medicaid Accountable Care Organization. *JAMA Pediatr*. 2015; doi:10.1001/jamapediatrics.2015.3446	Study examined the assumption that children who received their primary care at a facility within the Children's Hospitals and Clinics of Minnesota pediatric Medicaid ACO would have better consistency and coordination of care thus decreased use of high cost services.		• Consistent primary care within the ACO for more than 2 years was associated with a 40.6% decrease in inpatient days and an increase of 23.3% in outpatient office visits; 5.8% in emergency department visits; and 15.3% in use of pharmaceuticals. • Increased length of time receiving care in the ACO was associated with decreased annual costs; the above changes in use of health care services resulted in a cost reduction of 15.7%.
Coller RJ, Klitzner TS, Saenz AA, et al. The Medical Home and Hospital Readmissions. *Pediatrics*. 2015;136(6): e1550-e1560.	Study tests the hypothesis that patients with medical homes are less likely to have early postdischarge hospital or emergency department visits. The prospective study cohort includes 701 randomly selected patients during an acute hospitalization at a children's hospital during 2012-2014.		• Lacking a usual source for sick and well care was significantly associated with readmissions. • Lack of parent confidence was associated with readmissions and emergency department visits.

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Friedberg M, Rosenthal M, Werner R, et al. Effects of a medical home and shared savings intervention on quality and utilization of care. *JAMA Intern Med.* 2015;175(8):1362-1368.	Study measures associations between participation in the Northeastern Pennsylvania Chronic Care Initiative and changes in quality and utilization of care. The study included 27 volunteering small primary care practice sites, including pediatrics.	Participation in the pilot was statistically significantly associated with higher performance on measures of quality of care and screening related to chronic conditions.	• Pilot participation was statistically significantly associated with lower rates of all-cause hospitalization, all-cause emergency department visits, ambulatory care–sensitive emergency department visits, and ambulatory visits to specialists and with higher rates of ambulatory primary care visits.
Friedberg M, Schneider E, Rosenthal M, et al. Association between participation in a multipayer medical home intervention and changes in quality, utilization, and costs of care. *JAMA.* 2014;311(8):815-825.	Study measures associations between participation in the Southeastern Pennsylvania Chronic Care Initiative and changes in quality, utilization, and costs of care. Thirty-two primary care practices voluntarily participated in the pilot, including 7 pediatric practices.	Pilot participation was associated with statistically significantly greater performance improvement, relative to comparison practices, on 1 of 11 investigated quality measures.	• Pilot participation was not associated with statistically significant changes in utilization of hospital, emergency department, or ambulatory care services or costs of care.

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Tom J, Mangione-Smith R, Grossman D, Solomon C, Tseng C. Well-child care visits and risk of ambulatory care-sensitive hospitalizations. *Am J Mang Care.* 2013; 19(5):354-360.	Study analyzed claims and administrative data for 20,065 children 2 months to 3.5 years of age enrolled in Group Health Cooperative.		• Children with lower well-child visit adherence had increased hazard ratio of 1.4-2.0 for ambulatory care-sensitive hospitalization. • Children with ≥ 1 chronic disease with lower well-child visit adherence also had an increased hazard ratio of 1.2-3.2 for ambulatory care-sensitive hospitalization. • Children with low well-child visit adherence might represent a subset of patients who might benefit from case management intervention.
Margolius F. Less tinkering, more transforming: How to build successful patient-centered medical homes. *JAMA Internal Medicine.* 2013;173(18);1702-1703.	Study outlines PCMH studies that took place in Los Angeles, CA and Anchorage, AK.	• Improved care delivery (empanelment, team-based care, open access) • Improved patient/provider satisfaction • Increased access to care	• 50% reduction in ED visits and hospitalizations in the Anchorage study. • Rates of ED visits and hospitalizations increased for patients at the intervention site in the Los Angeles study.

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
Aysola J, Bitton A, Zaslavsky A, Ayanian J. Quality and equity of primary care with patient-centered medical homes: Results from a National Survey. *Medical Care*. 2013;51(1):68-77.	Study used national survey to see if PCMH reduces disparities in the quality of primary care in children (based on AAP definition of the medical home include in the National Survey for Children's Health dataset) 2007-2008 data. Based the quality of primary care on 10 quality indicators which included preventative medical services, dental services, unmet medical needs, mental health services, developmental screening, tetanus booster, vaccinations, HPV information (for girls).	• Quality of care differed significantly between children with and without a MH for 7/10 of the quality measures examined. • Children with a medical home had significant lower rates of unmet health care needs (P<.001, reduction by 75% as compared to children without). This was true among all racial/ethnic groups as well. • Children with asthma had fewer missed schools days when they had a medical home as compared to those who did not.	
Cox J, Buman M, Woods E, Famakinwa O, Harris S. Evaluation of raising adolescent families together program: a medical home for adolescent mothers and their children. *Am J Public Health*. 2012; 102(10):1879-1885.	Study of a teen-tot medical home model program located in a large primary care practice that is hospital based. 181 eligible adolescent	• Family-centered medical home model was effective in engaging adolescent parents and their children in a wide range of medical and social services. ○ Saw higher rates of childhood immunization (above national, state, and local benchmarks).	

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	mothers were enrolled.	○ Rates of well-child care were higher than rates reported for adolescent parent clinics and improved over time. ○ Rates of DMPA use were higher which led to reduced repeat pregnancy rates.	
Long W, Auchner H, Sege R, Cabral H, Garg A. The value of the medical home for children without special health care needs. *Pediatrics*. 2012; 129(1):87-98.	Analysis of data from the 2003 National Survey of Children's Health and analysis of data related to the 70,007 children who did not have special health care needs and had a personal doctor or nurse.	• Parents of children who had a medical home were more local to assess their child's health as excellent/very good. • Children with medical homes had significantly greater odds of health promotion activities such as: being read to daily, getting sufficient sleep daily, always using a helmet and watching < 2 hours of screen time daily.	• Children with a medical home were more likely to have preventive health visits, less outpatient sick visits, and less ED sick visits. (These results were robust ~30%.)
DeVries A, Li C, Sridhar G, Hummel J, Bredbart S, Barron J. Impact of medical homes On quality, healthcare utilization, and costs. *The American Journal of Managed Care*. 2012;18(9):534-544.	The main objective of this study was to compare PCMH practices during their pre-recognition phase with non-PCMH practices to assess important quality differences in healthcare delivery and costs that may already be evident during the transformative baseline period. The study examined 10	• Significantly larger portion of PCMH treated pediatric patients had pharmacy benefits through their health insurance than non-PCMH patients ($p<0.001$). • Antibiotic use was significantly lower for pediatric patients in the PCMH group when compared to non PCMH group ($p=.001$).	• Both pediatric and adult patients had significantly fewer ED and hospitalization visits in PCMH cohort ($p<0.001$). • In pediatric patients, PMPM medical costs for PCMH treated patients were lower than those of non PCMH patients (6.8% vs. 12.7% adjusted for risk).

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
	PCMH practices (n=31,032) and 202 non-PCMH practices (n=350,015), of which the pediatric population in PCMH practices was 14,434, and in non-PCMH practices 77,810.		
Raskas R, Latts L, Hummel J, Wenners D, Levine H, Nussbaum S. Early results show WellPoint's Patient-Centered Medical Home pilots have met some goals for costs, utilization, and quality. *Health Affairs*. 2012; 31(9);2002-2009.	Article outlines results from 3 WellPoint pilot studies in CO, NH, and NY.	New York results details a few pediatric-specific findings: • Rates of inappropriate use of antibiotics for pediatric patients was lower in the PCMH practices compared to control practices (27.5% vs. 35.4%).	• Patients in PCMH had fewer ER visits (17% fewer for children). • Risk adjusted total PMPM costs for PCMH population was lower than costs for patients in control population (8.5% lower for children).
Romaire M, Bell J. The medical home, preventive screenings, and counseling for children: Evidence from the Medical Expenditure Panel Survey. *Acad Pediatr*. 2010;10(5):338-345.	Cross-Sectional data analysis of Medical Expenditure Panel Survey (2004-2006), n=21,055 children aged 0-17. Look to estimate prevalence of medical homes (MH) for all US children, examine association between having a MH and receipt of age-appropriate, health related screenings and anticipatory guidance. MH is defined by a	• 49% of children have MH (when defined source of care defined as person or facility), 19% have MH (when source defined as a person). • Children with MH and source of care as person or facility are more likely to have height/weight/blood pressure checked and report receipt of anticipatory guidance topics when compared to children without a MH. • Children with MH and source of care as person or facility had increased odds of receiving at least 1 screening in the last year.	

Reference	Background	Increased Quality and/or Patient Experience and Improved Health Outcomes	Health Care Cost and Acute Care Service Outcomes
	usual source of care that is accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective		
Smith P, Santoli J, Chu S, Ochoa D, Rodewald L. The association between having a medical home and vaccination coverage among children eligible for the vaccines for children program. *Pediatrics* 2005; 116 (130); 2004 – 1058.	Article outlines results of National Immunization Survey, surveying a total of 24,514 children between 19 and 35 months to evaluate Vaccines for Children (VFC) program eligibility and medical home access Medical home was defined using AAP definition as being accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.	• VFC eligible children with medical homes had significantly higher vaccination coverage rate than those that were VFC eligible but did not have a medical home.	