

Saultz JW, Lochner J. Interpersonal continuity of care and care outcomes. *Ann Fam Med.* 2005;3:159-166.

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Supplemental Table 3. Summary of Studies Examining Interpersonal Continuity and Cost

Study	Study Method	Setting	Cost Measured	Cost Improved?	Findings	Overall Quality of Evidence
Weiss & Bluestein, 1996 ⁴⁵	Retrospective cohort	Survey of 12,677 Medicare beneficiaries	1. Hospitalization rate 2. Medicare part A and B costs	1. + 2. +	Longer duration relationship with physician correlates with decreased hospitalization and with significantly lower Medicare part A and B costs.	9.5
Christakis et al, 2001 ⁵³	Retrospective cohort	Analysis of claims data from 46,097 pediatric patients in Seattle, Wash	1. Risk of hospitalization 2. Emergency department visit	1. + 2. +	Children with the highest physician continuity were least likely to be hospitalized and least likely to visit the emergency department.	9.5
Christakis et al, 1999 ⁶⁷	Retrospective cohort	785 Medicaid children with a least 4 outpatient visits to Seattle Children's Medical Center	1. Emergency department utilization	1. +	Compared with the lowest tertile of physician continuity, those in the middle third had 30% fewer emergency department visits and those in the highest tertile had 35% fewer emergency department visits	9
Cornelius, 1997 ⁶⁵	Retrospective cohort	National Medical Care Expenditure Survey of 36,400 Americans, oversampling African Americans, Latinos, and the poor	1. Total health care cost	1. +		9

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Study	Study Method	Setting	Cost Measured	Cost Improved?	Findings	Overall Quality of Evidence
Wasson et al, 1984 ³³	Clinical trial	Randomly assigned 776 men > 55 y at a Veterans Administration clinic to either a continuity clinic or an outpatient clinic without continuity	1. Emergency hospitalization rate 2. Hospital length of stay 3. ICU days 4. Outpatient ECG and chest x-ray utilization	1. + 2. + 3. + 4. +	For 18-month period, patients in continuity group had better continuity of care, fewer emergency hospitalizations, shorter lengths of hospital stay, fewer ICU days, and fewer ECGs and chest radiographs	9
Gill et al, 2000 ⁶⁸	Correlation	11,474 Delaware Medicaid enrollees aged 0 to 64 y	1. Emergency department visits	1. +	Higher physician continuity was associated with significantly fewer emergency department visits	8.5
Mainous & Gill, 1998 ⁴⁸	Retrospective cohort	Analysis of claims data for 13,495 Delaware Medicaid patients	1. Hospitalization rate in patients with high physician vs low physician/high site continuity	1. +	Physician continuity associated with significantly lower likelihood of hospitalization than was low physician/high site continuity only	8
Gill & Mainous, 1998 ⁴⁷	Retrospective cohort	Analysis of claims data for 13,495 Delaware Medicaid patients	1. Hospitalization for all conditions and ambulatory-sensitive conditions	1. +	Physician continuity was associated with significantly decreased likelihood of hospitalization	7.5
Raddish et al, 1999 ⁶⁶	Prospective cohort	12,997 patients with arthritis, asthma, epigastric pain/peptic ulcer, hypertension, or otitis media in 6 American HMOs observed for 1 year	1. Outpatient visits 2. Hospitalization 3. Medication prescriptions	1. + 2. + 3. +	Utilization of all resources increased significantly as the number of physicians seeing the patient increased	7
Sweeney & Gray, 1995 ⁴²	Case control	110 British general practice patients who did not receive continuity of care case-matched to a control group with continuity	1. Emergency department visits 2. Difficult office visits 3. Appointment no-shows	1. + 2. + 3. +	Poor continuity patients were more likely to have emergency department visits, difficult consultations, and appointment no-shows	7

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Study	Study Method	Setting	Cost Measured	Cost Improved?	Findings	Overall Quality of Evidence
Alpert et al, 1976 ²⁹ Alpert et al, 1968 ²²	Clinical trial	Randomly assigned 931 low-income children in 750 Boston families to receive care in a comprehensive pediatric clinic, a no-contact control group, or a control group that was interviewed along with the experimental group every 6 mo	1. Rate of hospitalization 2. Laboratory and x-ray utilization 3. Surgical procedures 4. Illness visits 5. Appointment no-shows	1. + 2. + 3. + 4. + 5. +	Children in the experimental group were hospitalized less often, had fewer laboratory and x-ray tests, and required fewer surgical procedures and illness visits, although these rates were not analyzed for statistical significance. Continuity of care not measured in either group	7
Heagarty et al, 1970 ⁶²	Clinical trial	750 families in an emergency clinic were randomly assigned to receive care in a comprehensive family care program designed to provide continuity of care to 1 of 2 control groups	1. Laboratory and x-ray utilization and costs 2. Drug costs	1. + 2. +	Laboratory and x-ray studies were used less frequently and laboratory and drug charges were lower for patients receiving care in comprehensive clinic	7
Alpert, 1964 ⁶¹	Case control	129 families who had failed to show for an office appointment in a comprehensive pediatric clinic were compared with a control group of families who had kept appointments	1. Appointment no-shows	1. +	Appointment no-shows were more common when personal physician care was not provided and when patients felt they did not have a regular physician they could talk to	6.5
Hennelly & Boxerman, 1979 ⁶³	Prospective cohort	1,410 cases with major illness episodes not requiring hospitalization who could identify a regular physician	1. Outpatient visit frequency	1. +	Number of visits correlates with method of payment, severity of illness, and whether the patient was referred for care. Patients who saw 1 physician for the illness episode had fewer visits than those who saw more than 1	5.5

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Study	Study Method	Setting	Cost Measured	Cost Improved?	Findings	Overall Quality of Evidence
Becker et al, 1974 ^{26,27}	Clinical trial	Randomly assigned 125 low-income pediatric patients to either a clinic with continuity or a walk-in clinic	1. Appointment no-shows	1. +	Patients receiving care in the continuity clinic had lower clinic no-show rates. Continuity of care not measured in either group	5.5
Hjortdahl & Borchgrevink, 1991 ⁶⁴	Correlation	30 consecutive patients seen in each of 133 Norwegian general practices	1. Time required for visit 2. Utilization of laboratory tests 3. Referrals 4. Medication prescriptions	1. + 2. + 3. - * 4. - *	Previous knowledge of patients was associated with decrease time required for visit and with lower use of laboratory tests. Referrals and prescriptions were used more often when previous knowledge was present	5
Meredith et al, 2001 ⁶⁹	Prospective cohort	1,204 American patients with depression in 46 managed care practices	1. Study examined whether continuity of care increased or decreased in response when stricter managed care utilization rules were instituted	1. +	Utilization restrictions tended to increase physician continuity with the primary care physician	5
Phillips & Shear, 1984 ³⁴	Correlation	46 hypertension patients receiving care in either a family practice or specialty clinic in California	1. Hospitalization 2. Number of office visits	1. - 2. -	No significant association was found between sequential physician continuity and the frequency of hospitalization or ambulatory visits	4
Rowley et al, 1995 ⁴⁰	Clinical trial	Randomly assigned 405 pregnant Australian women to receive care from a continuity clinic staffed by 6 midwives and 409 women to a university teaching clinic without continuity	1. Antenatal hospitalization of mom 2. Newborn ICU admission of infant 3. Inpatient cost per delivery	1. - 2. - 3. +	No difference in antenatal or newborn admission rate was found. Total cost for intrapartum care was 4.5% lower in midwife continuity group, but there were also fewer complicated deliveries in this group. Continuity of care not measured in either group	3.5

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Study	Study Method	Setting	Cost Measured	Cost Improved?	Findings	Overall Quality of Evidence
Smith, 1995 ⁴¹	Prospective cohort	Analysis before and after a VA internal medicine clinic was reorganized into ambulatory teams	1. Readmission within 10 d after hospital discharge 2. Length of office visit	1. + 2. +	Readmission decreased by 28% as physician continuity improved after reorganization. Length of office visit decreased by 9.5%	2.5

ICU = intensive care unit, ECG = electrocardiogram; VA = Veterans Administration.

+ = Cost significantly lower with continuity.

- = Cost not significantly lower with continuity.

-* = Cost significantly higher with continuity.