

Health Care Administrative Costs in the United States and Canada, 2017

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Background: Before Canada's single-payer reform, its payment system, health costs, and number of health administrative personnel per capita resembled those of the United States. By 1999, administration accounted for 31% of U.S. health expenditures versus 16.7% in Canada. No recent comprehensive analyses of those costs are available.

Objective: To quantify 2017 spending for administration by insurers and providers.

Design: Analyses of government reports, accounting data that providers file with regulators, surveys of physicians, and census-collected data on employment in health care.

Setting: United States and Canada.

Measurements: Insurance overhead; administrative expenditures of hospitals, physicians, nursing homes, home care agencies, and hospices.

Results: U.S. insurers and providers spent \$812 billion on administration, amounting to \$2497 per capita (34.2% of national health expenditures) versus \$551 per capita (17.0%) in Canada: \$844 versus \$146 on insurers' overhead; \$933 versus \$196 for hospital administration; \$255 versus \$123 for nursing home,

home care, and hospice administration; and \$465 versus \$87 for physicians' insurance-related costs. Of the 3.2-percentage point increase in administration's share of U.S. health expenditures since 1999, 2.4 percentage points was due to growth in private insurers' overhead, mostly because of high overhead in their Medicare and Medicaid managed-care plans.

Limitations: Estimates exclude dentists, pharmacies, and some other providers; accounting categories for the 2 countries differ somewhat; and methodological changes probably resulted in an underestimate of administrative cost growth since 1999.

Conclusion: The gap in health administrative spending between the United States and Canada is large and widening, and it apparently reflects the inefficiencies of the U.S. private insurance-based, multipayer system. The prices that U.S. medical providers charge incorporate a hidden surcharge to cover their costly administrative burden.

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Fifty-seven years ago, an announcement of IBM's pilot installation of the first electronic health record (EHR), at Akron Children's Hospital, promised a breakthrough that would make hospitals more efficient and free doctors from paperwork, allowing them to "spend more of their time . . . [giving] direct and attentive care to patients" (1, 2). Since then, most hospitals and physicians have adopted EHRs and computerized billing, but physicians' paperwork (or keystroke) burden persists.

Around the same time, Canada and the United States embarked on a different experiment. Before the 1960s, the 2 nations had similar health care systems. Subsequently, Canada's provinces implemented single-payer programs that displaced private insurers, whereas the United States added new public coverage for seniors (Medicare) and some of the poor population (Medicaid), while leaving private insurers in place (Table 1).

In 1970, health spending as a share of gross domestic product (GDP) was virtually identical in the 2 nations: 6.2% in the United States and 6.4% in Canada (3). By 2017, U.S. costs, at 17.9% of GDP (4), far exceeded those in Canada (11.3%) (5)—a difference largely attributable to higher prices for care in the United States (6).

Many features of Canada's approach—for example, tighter control of drug prices, physicians' fees, hospital budgets, and investments in high-tech facilities—underlie the price disparities. In addition, older research suggests that excess administrative costs incurred by U.S. hospitals, physicians, and other providers act as a hidden surcharge that inflates their prices and fees (7-14).

Recent studies indicate that U.S. physicians' billing costs remain high (15-17), as does insurance overhead (18). However, no analyses since our 2003 study (12) have compared administrative costs in a broad range of medical settings in the United States and other nations. Here, we present comprehensive 2017 estimates of such costs in the United States and Canada.

METHODS

We sought data on administrative costs in insurance firms and government agencies that administer health care payment and in 4 clinical settings: hospitals, nursing homes, home care agencies and hospices, and physicians' practices. Data are for 2017, or the most recent available year.

For providers, we estimated administrative expenditures nationally by multiplying nationwide spending for each provider type by the percentage of revenues devoted to administration by such providers. Per capita estimates use population denominators from the U.S. Census Bureau (19) and Statistics Canada (20). Dollar

See also:

Web-Only
Supplement

Table 1. Health Care Coverage in Canada and the United States, by Type of Medical Service, 2017*

Health Care Subsector	Canada	United States†
Hospital care	Universal coverage for medically necessary services under a single public plan in each province; no copayments or deductibles. Exclusions include preferred hospital accommodations (e.g., a private room if not prescribed by a physician) for which many Canadians have employer-based private coverage. Government payments account for 88.7% of expenditures for hospital care.	Medicare: \$1316 deductible; copayments are \$329/d for days 61-90 and \$658/d for lifetime reserve days. Medicaid: 25 states require copayments, which vary by state; full coverage in other states. Private insurance: 17% of enrollees have full coverage after annual deductible‡ is met; 10% pay additional per diem charges (mean, \$257/d); and 73% pay additional copayments (mean, \$336/admission), coinsurance (mean, 19% of charges), or both. Government payments account for 49.9% of expenditures for hospital care.
Physician care	Universal coverage for medically necessary services under a single public plan in each province; no copayments or deductibles. Government payments account for 98.5% of expenditures for physician services.	Medicare: \$183 deductible; 20% coinsurance after deductible. Medicaid: 25 states require copayments, which vary by state; full coverage in other states. Private insurance: Varies greatly; 93% of enrollees have copayments or coinsurance for in-network care, with higher cost sharing or no coverage for out-of-network physicians. Annual deductible may also apply. Cost sharing for emergency department visits is often higher. Cost sharing for outpatient surgery is usually similar to that for hospitalization. Government payments account for 39.8% of expenditures for physician services.
Other outpatient services§	Varies by province; some means-tested public coverage. Covered by employer-based private insurance for many Canadians. Government payments account for 10.8% of "other professional" expenditures.	Medicare: No dental or eyeglass coverage (except after cataract surgery). Medicaid: Most states offer coverage to some groups, usually with copayments and/or restrictions. Private insurance: Often excluded from health insurance plans; may be covered in part under special dental or vision plans. Government payments account for 13.8% of dental expenditures.
Nursing home care	Varies by province; universal and full coverage (except for daily accommodation charge) in some provinces and means-tested eligibility in others. Government payments account for 69.4% of expenditures for nursing home care.	Medicare: Full coverage for 20 d (coverage requires a preceding 3-night hospitalization); \$164.50/d copayment for days 21-100; no coverage thereafter. Medicaid: Full coverage in 38 states and Washington, DC; 12 states require copayments for some patients. Private insurance: Long-term stays are rarely covered. Government payments account for 58.0% of expenditures for nursing home care; private health insurance accounts for 10.0%.
Home care	Varies by province; health services (but not assistance with household tasks) are often covered. Government payments account for 87% of expenditures for home care.	Medicare: Full coverage for homebound persons requiring intermittent skilled nursing or therapist services. Medicaid: Full coverage in most states, with limits on number of visits in many states; 10 states require copayments for some patients. Private insurance: Varies. Government payments account for 79.6% of expenditures for home care.
Prescription drugs	Universal public coverage for inpatient drugs. Outpatient drug coverage varies by province. Most provinces cover elderly and/or low-income persons. Some cover all outpatient medications for particular conditions (e.g., cancer). Many Canadians have employer-based private drug coverage. Government payments account for 35.7% of total outpatient prescription drug expenditures.	Medicare: Inpatient drugs covered as part of hospitalization. Subsidized outpatient drug coverage available through private Medicare Part D drug plans. Medicaid: Covered in all states; 36 states require copayments. Private insurance: Usually covered subject to deductible and copayment, which vary on the basis of "drug tier." Government payments account for 43.5% of total outpatient prescription drug expenditures.

* Data obtained from <http://files.kff.org/attachment/Report-Employer-Health-Benefits-Annual-Survey-2017>, www.kff.org/data-collection/medicaid-benefits-database, and the authors' analysis of official national health expenditure data for Canada (5) and the United States (4).

† Data for Medicare are for the traditional fee-for-service Medicare program; copayments and deductibles for enrollees in Medicare Advantage plans are generally lower, although network restrictions apply. Some Medicare enrollees purchase supplementary private "Medigap" coverage, which pays for copayments and deductibles. Some enrollees are covered by both Medicare and Medicaid. Data for Medicaid are for 2018. Data for U.S. private insurance are for employer-sponsored coverage.

‡ The mean general annual deductible for private, single coverage was \$1505.

§ Such as dental and vision.

estimates were adjusted to 2017 U.S. dollars by using purchasing power parities and (when needed) the Consumer Price Index.

Insurers' Overhead

We obtained data on expenditures for government administration of health programs and the net costs of health insurance (that is, private insurers' overhead, including profits) from the National Health Expenditure Accounts (NHEA) (4). For Canada, we used comparable data from the Canadian Institute for Health Information (CIHI) (5) and an insurance-industry trade association (21).

Administration's Share of Hospital Costs

For the United States, we calculated the percentage of each hospital's expenditures devoted to administration using fiscal year 2017 Medicare cost reports that 5526 hospitals submitted by 31 March 2019 (22).

Hospitals report costs in detailed categories, which we classified as "administrative," "clinical," or "mixed administrative and clinical" on the basis of Medicare's Provider Reimbursement Manual (23) and consultation with Medicare auditors and hospital financial officials. We excluded expenditures for research, teaching, and

a few miscellaneous items (such as gift shops). We apportioned costs for mixed categories, such as employee benefits, plant operations, and capital (including capital investments in information technology) between the “administrative” and “clinical” categories on the basis of each category's share of total operating expenses.

For Canada, CIHI provided custom tabulations of 2017–2018 cost data for 535 hospitals, which represents all Canadian hospitals except those in Quebec and Nunavut (which use separate reporting systems) and Saskatchewan (owing to CIHI's concerns about data quality); of these, 514 had sufficient data for analysis. Canadian cost-reporting categories were mapped to those in the United States. Details of this mapping and other methods appear in the **Supplement** (available at annals.org).

Administration's Share of Nursing Home Costs

For the United States, we analyzed Medicare cost reports for 12 838 nursing homes by using methods similar to those used for hospitals (**Supplement**). To assess whether the estimates derived from this data source were representative of nursing homes that do not participate in Medicare, we analyzed state-collected nursing home data from California (24, 25). For the 14.2% of California facilities reporting no Medicare days, mean administrative spending as a share of total spending was identical (to 3 decimal places) to that of Medicare-participating homes. These California data are not reported further.

For Canada, we analyzed provincial government tabulations of costs from long-term care facilities in Ontario for 2014–2015. Ontario, where 38.7% of Canadians reside, uses nursing home reporting categories (26) similar to those used by U.S. Medicare (**Supplement**). We also analyzed less detailed nationwide data (excluding Quebec) for 2008/2009–2013/2014 from a now-discontinued survey of “homes for the aged” that CIHI provided.

Administration's Share of Home Care and Hospice Costs

The NHEA tabulates U.S. expenditures for home care and hospices in a single category; we could identify no reliable data apportioning expenditures between those 2 provider types. We analyzed Medicare cost reports submitted by 7509 home care agencies and 3107 freestanding hospices (27) and calculated a weighted mean of their administrative costs under the assumption that home care agencies accounted for 75%, and hospices for 25% of total expenditures in the NHEA's combined category (**Supplement**).

For Canada, CIHI provided us with data from its National Health Expenditure Database on government expenditures (including administrative expenditures) for home care in 5 provinces that account for more than two thirds of Canada's population. We assumed that per capita expenditures were similar in other provinces, and that the estimates for public-sector home care are representative of the relatively few freestanding hos-

pices (28) and the 13% of Canadian home care that is funded privately (3).

Physicians' Administrative Costs

No data on physicians' administrative costs are routinely collected in the United States or Canada. Hence, our main analysis uses data from a 2011 binational study of the time physicians and their office staff spent interacting with insurers in representative samples of physicians' practices (15). For each nation, we analyzed current census data on wage rates in physicians' offices to calculate the 2017 dollar value of this time, adjusted for differences in benefit costs, and calculated physicians' administrative costs as a percentage of their gross revenues (**Supplement**).

For comparisons between the 2 nations, we adjusted for the slightly higher number of physicians per capita in the United States. For a sensitivity analysis, we recalculated Canadian costs assuming that personnel (including physicians) were paid at the same rate as their U.S. counterparts (**Supplement**).

In addition, we assessed differences in total practice overhead in the United States and Canada in 2016–2017, on the basis of surveys by the Medical Group Management Association (MGMA DataDive: 2017 Cost and Revenue Data) and the Canadian Medical Association (CMA) (29).

Finally, to confirm the plausibility of our main U.S. estimate, we analyzed Medicare cost reports of Federally Qualified Health Centers, rural clinics, and dialysis centers—the types of providers that file such reports, and whose revenues are subsumed in a single NHEA category with physician services (methods and results are provided in the **Supplement**).

Total Health Care Administrative Costs

We totaled the administrative costs in each category to calculate the overall costs and costs per capita of health care administration in each country. We also performed a sensitivity analysis calculating health administrative costs in the United States per insured person (**Supplement**).

To assess administration's share of health care spending, we excluded from both the numerator and the denominator expenditure categories for which reliable administrative cost data were unavailable: dental services, other professional services, retail sales of medical products, public health, structures and equipment, research, and “other residential and personal care” in the United States. For Canada, the excluded categories were other professional services, drugs, public health, capital, research, and the share of “other” expenditures not accounted for by home care. These excluded categories accounted for 32.0% of national health expenditures in the United States and 38.8% in Canada.

Finally, as a robustness check, we analyzed U.S. and Canadian census data on the number of persons employed in health care settings. Because the 2 nations use identical occupation coding schemes, these personnel-based comparisons avoid distortions due to differences in accounting categories, wages, benefits, or prices of non-

labor inputs. We classified personnel as administrative or other on the basis of self-reported occupation, and calculated the number of administrative and total personnel per 10 000 population (Supplement). These estimates exclude persons employed as health insurers/brokers and in government health agencies, which the censuses do not enumerate separately from other insurance or government personnel.

We used SAS software, version 9.4, for analyses. The institutional review boards of the City University of New York and the University of Ottawa waived review of this research. A grant from the Open Society Foundations funded data purchases, but no other aspect of the research.

RESULTS

Table 2 summarizes our estimates of administration's share of expenditures in each health care sector in the United States and Canada, and Table 3 provides additional detail on expenditure amounts and data sources. Table 4 shows estimates of total and per capita expenditures, and projected savings if U.S. administrative costs were reduced to Canadian levels.

Insurers' Overhead

Insurers' overhead in the United States in 2017 totaled \$274.5 billion: \$844 per capita, 9.6% of total expenditures by insurers and other third-party payers, or 7.9% of national health expenditures. The \$274.5 billion in insurers' overhead encompasses \$45.0 billion in government expenditures to administer health programs and \$229.5 billion in private insurers' overhead and profits, an amount that includes private insurers' overhead for administering self-insured plans for employers as well as managed-care plans funded by the public Medicare and Medicaid programs. The Figure shows the growth of insurer's overhead since 1999.

Canadian expenditures to administer health programs totaled \$5.360 billion: \$146 per capita, 3.8% of expenditures by insurers and other third-party payers, or 2.8% of national health expenditures. This includes \$2.149 billion (\$59 per capita) in federal and provincial government spending to administer health programs (1.6% of total government expenditures for such programs) and \$3.210 billion for the overhead and profit of private insurers, who offer supplemental coverage; 12.7% of those insurers' premium revenues.

Administrative Costs in Hospitals

The mean share of total expenditures devoted to administration at U.S. hospitals was 26.6% (median, 25.6%; interquartile range [IQR], 21.6% to 30.6%)—a national total of \$303.5 billion, or \$933 per capita.

The mean share of total expenditures devoted to administration at Canadian hospitals was 13.1% (median, 13.0%; IQR, 10.0% to 15.4%)—a total of \$7.190 billion, or \$196 per capita.

Administrative Costs of Nursing Homes

Administration's mean share of total expenditures at U.S. nursing homes was 26.7% (median, 26.6%; IQR, 22.2% to 30.9%) (\$44.4 billion).

Table 2. Administration's Share of Expenditures in Each Health Care Sector in the United States and Canada, 2017

Category of Expenditure	Administration's Share of Expenditures for Sector, %	
	United States	Canada
Insurance overhead and government administration of health programs*	7.9	2.8
Hospitals	26.6	13.1
Nursing homes	26.7	16.375
Home care	39.6	13
Physicians and other clinical services	21.8	10.78
Total†	34.2	17.0

* Percentages for this category indicate the share of national health expenditures.

† Excludes spending categories for which no administrative expenditure figures were available (United States: dental services, other professional services, retail outlet sales of medical products, public health, structures and equipment, research, and other residential and personal care; Canada: other professional services, prescribed and nonprescribed drugs, public health, capital, research, and the half of "other" expenditures not accounted for by home care).

Ontario long-term care facilities devoted 15.7% of revenues to administration in 2014–2015. The older Canada-wide data on homes for the aged suggested slightly higher administrative costs of 17.1% in 2013–2014, a figure that was trending downward in the years since 2008–2009. Applying the mean of these 2 estimates (16.375%) to 2017 Canada-wide nursing home expenditures yielded an estimate that nursing home administration costs totaled \$3.526 billion.

Administrative Costs in Home Care Agencies and Hospices

Administration's mean share of total expenditures at U.S. home care agencies and hospices was 39.8% (median, 37.5; IQR, 27.7% to 50.1%) and 39.3% (median, 37.4%; IQR, 29.1% to 46.6%), respectively—a weighted mean of 39.645%, equivalent to \$38.46 billion nationally.

Canada-wide home care expenditures totaled \$7.486 billion, and providers' mean administrative costs were 13.0%, or \$0.973 billion.

Administrative Costs in Physicians' Offices

Table 5 shows the time per week that personnel in physicians' offices spent interacting with insurers (including 3.4 h/wk of physician time in the United States and 2.2 h/wk in Canada), and the annual value of that time. Overall, interacting with payers cost U.S. physician practices a mean of \$169 302 annually per physician and accounted for 21.8% of gross receipts, equivalent to \$151.2 billion nationally or \$465 per capita. The comparable estimates for Canada were \$36 825 per physicians, 10.78% of gross receipts, and \$87 per capita.

In the sensitivity analysis, applying U.S. compensation rates to Canadian doctors and their office staff raised the Canadian estimate to \$62 628 per physician, or \$129 per capita.

Table 3. Total and Administrative Expenditures According to Categories of Payer and Provider in the United States and Canada, 2017*

Expenditure Category	United States			Canada		
	Expenditures for Administration, US \$ (billion)	Overall Health Care Expenditures for Category, US \$ (billion)	Administration's Share of Expenditures in Category, %	Expenditures for Administration, US \$ (billion)	Overall Health Care Expenditures for Category, US \$ (billion)	Administration's Share of Expenditures in Category, %
Third-party payers						
Medicare traditional†	8.1 + 1.6‡ (4, 33)	400.4 (33)	2.0‡	2.1 (19)	135.0 (19)	1.6
Medicare Advantage	25.8 (4, 41)	209.7 (33)	12.3§	NA	NA	NA
Medicare Part D	10.3 (33, 41)	100.0 (33)	10.3	NA	NA	NA
Medicaid	63.6 (4)	600.1 (4)	10.6	NA	NA	NA
Other programs¶	21.0 (4)	380.2 (4)	5.5	NA	NA	NA
Private insurance**	144.1 (4)	1183.9 (4)	12.2	3.2 (20)	25.3 (20)	12.7
Subtotal	274.5 (4)	2870.1 (4)	9.6	5.4 (19)	142.1 (19)	3.8
Providers						
Hospitals	303.5	1143.0 (4)	26.6	7.2	55.0 (19)	13.1
Nursing homes	44.4	166.3 (4)	26.7	3.5	21.5 (19)	16.375
Home care	38.5	97.0 (4)	39.6	1.0	7.5 (19)	13.0
Physicians	151.2	694.3 (4)	21.8	3.2	29.6 (19)	10.8
Subtotal	537.6	2100.6 (4)	25.6	14.9	113.6 (19)	13.1
Categories for which administrative cost data are not available††	NA	1117.0 (4)	NA	NA	75.4 (19)	NA
Total	812.0	2375.1 (4)	34.2	20.2	119.0 (19)	17.0

NA = not available or not applicable.

* Numbers in parentheses indicate references that provide the source data. Estimates without an indicated source are based on authors' calculations presented in the text.

† Refers to both the traditional, fee-for-service Medicare program in the United States and to Canada's provincial health insurance programs, which are also known as *Medicare*.

‡ The 2018 Medicare Trustees' Report estimates spending to administer Medicare at \$8.1 billion. The National Health Expenditure Accounts estimate of Medicare administrative expenditures includes an additional \$1.6 billion in startup costs associated with accountable care organizations and quality improvement organization/peer review organization activity, as well as small adjustments for sequestration and expenditures in U.S. territories (Martin AB. Personal communication). Inclusion of these startup costs and adjustments would increase traditional Medicare's administrative expenditures to \$9.7 billion, 2.4% of traditional Medicare expenditures.

§ Estimate based on data from National Health Expenditure Accounts and 2018 Medicare Trustees' Report, which may introduce error because of methodological differences between the 2 sources. Estimates are higher in special studies by the Government Accountability Office and others (33-35).

|| Includes overhead costs for federal and state administration of Medicaid, as well as overhead of private Medicaid managed care plans.

¶ Includes the Veterans Health Administration; Department of Defense; Indian Health Services; general assistance; maternal/child health programs; vocational rehabilitation programs; Substance Abuse and Mental Health Services Administration; school health; worksite health care; workers' compensation; other private programs; and other federal, state, and local programs.

** Includes employers' self-insured plans in the United States.

†† Categories excluded for the United States are dental services, other professional services, retail sales of medical products, public health, structures and equipment, research, and "other residential and personal care." Those excluded for Canada are dental and other professional services, prescription and nonprescription drugs, public health, capital, research, and the share of "other" expenditures not attributable to home care.

The U.S.-Canada difference of \$132 477 per doctor (or \$106 675 at U.S. compensation rates) is equivalent to \$118.354 billion nationwide (\$95.268 billion at U.S. compensation rates). After adjustment for the small differences in physician supply in the 2 nations, the excess administrative spending in U.S. doctors' offices represents \$364 (or \$293) per capita.

The MGMA and CMA surveys also indicate that U.S. physician overhead is approximately double that in Canada, although the estimates include expenditures for non-billing-related items, such as malpractice insurance, that are generally costlier in the United States. Mean overhead was 54.7% in U.S. surgical practices, 56.3% in nonsurgical practices, and 56.9% in multispecialty practices (overall mean, 56.0%), amounts consistent with a recent report on dermatology practices (30). Canadian physicians report that overhead accounts for a mean of 24.7% of total revenues. The percentage dif-

ference is equivalent to about \$188 000 annually per physician (adjusted for differences in physician compensation but not other cost differences).

Total Costs of Health Care Administration

Health care administrative costs in the United States in 2017 totaled \$812.0 billion, \$2497 per capita (\$2696 per insured person), or 34.2% of total spending in the categories for which data are available. The comparable estimates for Canada are \$551 per capita (\$593, assuming U.S. wage rates in doctors' offices), or 17.0% of expenditures. The difference amounts to over \$1900 per capita (or over \$2100 per insured person), equivalent to more than \$600 billion in excess administrative spending in the United States.

In the United States, 531.2 persons per 10 000 population worked in health care delivery settings, including 129.7 per 10 000 population in administrative

occupations. The comparable figures for Canada were 458.9 per 10 000 population overall, and 88.9 per 10 000 population in administration. The 40.8 per 10 000 population difference in administrative personnel accounted for 56% of the difference in the delivery system workforce, suggesting that administrative work accounts for a substantial share of differences in provider costs (and prices).

DISCUSSION

Administration accounts for one third of United States health care expenditures, twice the amount in Canada. The gap in dollars per capita is even larger: a greater than 4-fold disparity.

Five decades ago, when the 2 nations' payment strategies first diverged, their health care systems deployed similar numbers of administrative personnel: 43.8 persons per 10 000 population in the United States versus 40.8 persons per 10 000 population in Canada (9). In the interim, virtually all billing has been computerized and EHRs have become commonplace, but the promised breakthrough in administrative efficiency has not materialized. In 1983, administration accounted for 22% of U.S. health spending (versus 13.8% in Canada) (7), rising to 31.0% (versus 16.7%) in 1999 (12) and, as we report, 34.2% (versus 17.0%) in 2017. Expressed in per capita 2017 dollars, U.S. administrative costs increased from \$818 in 1983 to \$2497 in 2017.

Since 1999, administration's share of U.S. hospital budgets has increased from 24.3% (12) to 26.6%, accounting for a 1.2-percentage point increase in administration's share of overall health expenditures. Although administrative spending in physicians' practices and nursing homes increased in absolute terms, it fell slightly as a share of total health spending.

Insurance overhead accounted for most of the 3.2-percentage point growth in administration's share of overall expenditures, rising 2.4 percentage points from 5.5% to 7.9% of total health spending. Virtually all of the increase in overhead was attributable to private insurers, although the share of Americans covered by commercial (that is, non-Medicare, non-Medicaid) plans changed little. Commercial plans' overhead surged from

11.0% of premiums in 1999 to 14.4% in 2003, coincident with the conversion of several large Blue Cross plans to for-profit status and a spate of insurer mergers (31). Subsequently, commercial plans' overhead fell back to about 12%, the historical average.

However, private insurers expanded their role as subcontractors administering Medicaid- and Medicare-managed care plans, pushing up overhead in those programs (Figure). States have shifted most Medicaid recipients into private managed care plans whose overhead is more than twice that of publicly administered Medicaid (32). Similarly, the overhead of private Medicare Advantage plans, which now cover about one third of Medicare enrollees, is 6-fold higher than that of traditional Medicare (12.3% versus 2.0%), a difference of about \$1155 per enrollee (\$1360 versus \$205) (4, 33). Special studies using claims data and plans' filings with regulators have found even higher overhead in Medicare Advantage—as much as \$1608 per enrollee (34–36).

Private insurers' overhead is also high in Canada and elsewhere: for example, 26.4% in the United Kingdom, 12.4% in Switzerland, 20.9% in Germany, and 17.8% in Sweden (3). But such insurers play a far larger role in the United States; among wealthy nations, total insurance overhead is proportional to the extent of private insurers' involvement (37).

Interacting with multiple insurers with varying fee schedules, deductibles, prior-approval requirements, formularies and referral networks (and the flux of patients among insurers) also drives up U.S. physicians' overhead costs, and hence the fees they must charge. In Canada, physicians send bills to a single insurer, all hospitals and physicians are “in-network,” one formulary applies to all patients, prior-authorization requirements are rare, and copayments and deductibles are proscribed.

Canada's hospital payment system is also simple. Most hospitals are paid lump-sum “global” budgets to cover all operating costs, with separate grants for new capital investments. This payment strategy eliminates most billing and the need to attribute costs to individual patients. (The term “global budgets” has also been applied to Maryland's hospital payment system. How-

Table 4. Health Administrative Costs in the United States and Canada, 2017*

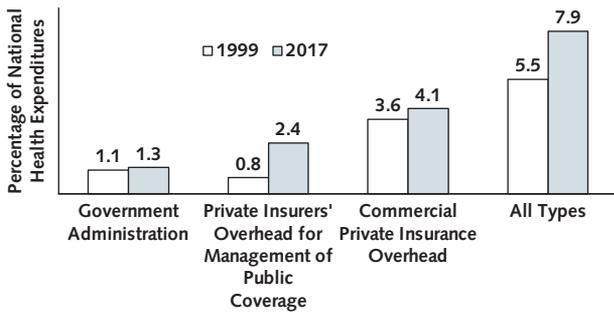
Category of Expenditure	U.S. Spending	Spending per Capita		Projected Savings If U.S. Administrative Costs Were Reduced to Canadian Levels
		United States	Canada	
Insurance overhead and government administration of health programs	274.5	844	146	227.026
Hospital administration	303.5	933	196	239.780
Nursing home administration	44.4	137	96	13.153
Home care administration	38.5	118	27	29.835
Physicians' costs for interacting with payers	151.2	465	87 (129)†	118.354† (95.268)‡†
Total	812.0	2497	551 (593)†	628.148 (605.062)‡†

* Values are in U.S. dollars (billions).

† Adjusted for differences in the number of physicians per capita.

‡ Assumes payment of Canadian physicians and office staff at U.S. rates.

Figure. Private insurers' overhead and government administration as a percentage of national health expenditures, United States, 1999 and 2017.



Estimates are the authors' calculations based on data from reference 4.

ever, unlike Canadian hospitals, Maryland's continue to bill on a per-patient basis—although total revenues are capped. Hospital administrative costs in Maryland are similar to those in other states [Himmelstein DU. Unpublished data]). The Canadian approach also minimizes incentives for upcoding, revenue-cycle management, and other financial exertions, which have intensified in the United States. These, along with the added administrative costs (about \$200 per enrollee) associated with accountable care organizations (38), may explain the recent upswing in hospitals' administrative costs. Whereas hospital administrative costs are lowest in Canada and Scotland, whose single-payer systems fund hospitals through global budgets (14), European nations with multiple, stringently regulated nonprofit insurers that pay uniform rates also have somewhat lower hospital administrative costs than the United States.

Several caveats apply to our estimates. Official cost-reporting categories for the United States and Canada differ, although we took pains to align them. We drew some data elements from Ontario, and much of our Canadian data exclude Quebec and Nunavut. Although health expenditures in Nunavut differ from those elsewhere in Canada, fewer than 40 000 people live there. In Ontario and Quebec, per capita expenditures overall and for most categories (including insurance overhead) mirror those in Canada as a whole (39).

The range of services offered in hospitals and outpatient settings in the United States and Canada differ. Although such differences shift administrative costs among provider categories, they should not greatly affect national totals.

Our estimates of physicians' overhead carry the greatest uncertainty and require cautious interpretation. Neither nation collects official data on physicians' overhead, forcing us to rely on surveys that are subject to recall and sampling bias. Our main estimates use a 2011 survey on physician and staff time spent interacting with insurers; the 2017 MGMA and CMA surveys suggest that we may have underestimated the U.S.–Canada difference. Our U.S. estimate is congruent with an older analysis of billing-related costs in California (10), and a 2018 study of billing costs at an efficient academic practice (16). Primary care physicians there spent 4.7 h/wk (1.3 h/wk more than the figure we used) on billing, and billing costs totaled \$99 000 annually per physician, a figure that excludes costs for credentialing, addressing formulary issues, and nursing personnel's time on payment-related activities. These excluded categories accounted for \$57 480 of our per-U.S. doctor estimate of \$169 302.

Wages are slightly lower in Canada, which affects comparisons of per capita spending but not of administration's share of expenditures. We could find no data on administrative spending in such health sectors as dentistry and pharmacies that collectively account for a substantial portion of health expenditures. Nor could we assess institutional providers' expenditures for advertising, lobbying, political contributions, or profits (which do not appear in Medicare cost reports), the costs of collecting taxes to fund health care, or the value of patients' time spent on paperwork. Hence, our dollar estimates understate total administrative costs in both nations. In addition, some administrative work is subsumed in categories we classified as "clinical"—for example, some clinicians' regulatory compliance and quality-reporting efforts (40), and social workers' payment-related activities. Conversely, administrative personnel often make important clinical contributions.

Most of the data sources and methods used in the current analysis duplicate those used in our earlier studies, allowing confident estimation of time trends. However, the current analysis uses national and Califor-

Table 5. Time Spent Interacting With Payers by Personnel in Physicians' Offices and Dollar Value of That Time in the United States and Canada, 2017*

Personnel	United States		Canada	
	Hours per Week, n	Annual Value, US \$	Hours per Week, n	Annual Value, US \$
Physicians	3.4	57 147	2.2	16 126
Nursing staff	20.6	36 256	2.5	4003
Clerical staff	53.1	66 038	15.9	15 629
Administrators	3.14	9861	0.47	1068
Total (all personnel)	80.2	169 302	21.1	36 825

* Estimates of time spent are from reference 15. See the text and the Supplement (available at Annals.org) for methods used to calculate annual values.

nia data on nursing homes, whereas the 2003 study used only California data. More important, our estimates of physicians' administrative expenses rely on different surveys than our earlier analyses. Whereas the U.S.-Canada difference in 2017 was virtually identical to the figure we computed for 1999 (about 11% of gross revenues), the current estimates for both nations are about 5 percentage points lower; this probably reflects changes in methods rather than real declines. Moreover, the 2011 survey used for our 2017 estimate predated the widespread adoption of value-based payment strategies that have increased providers' administrative costs (38). Finally, we could not locate 2017 data on employers' expenditures to administer health benefits, which accounted for 5.4% of U.S. health administrative expenditures in 1999. Consequently, our 2017 figures probably underestimate administrative expenditures in 2017, and especially the growth of such expenditures since 1999.

Despite these imprecisions, the U.S.-Canada disparity in administration is clearly large and growing. Discussions of health reform in the United States should consider whether \$812 billion devoted annually to health administration is money well spent.

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References

1. IBM. Press release. 18 February 1962. Accessed at www.scribd.com/doc/81639384/Press-Release-February-18-1962 on 10 March 2019.
2. 1961 electronic medical records. Accessed at www.youtube.com/watch?v=t-aiKllc6uk on 10 March 2019.
3. Organisation for Economic Co-operation and Development. OECD.Stat. Health Status. Accessed at stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT#_ga=2.58772717.1967780804.1559662921-67629007.1559050606 on 5 June 2019.
4. Centers for Medicare & Medicaid Services. National Health Expenditure Accounts (historical). Accessed at www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/national-healthexpenddata/nationalhealthaccountshistorical.html on 12 March 2019.
5. Canadian Institute for Health Information. National health expenditure trends, 1975 to 2018: data tables—series A. Accessed at www.cihi.ca/sites/default/files/document/nhex-series-a-2018-en.xlsx on 11 March 2019.
6. Anderson GF, Hussey P, Petrosyan V. It's still the prices, stupid: why the US spends so much on health care, and a tribute to Uwe Reinhardt. *Health Aff (Millwood)*. 2019;38:87-95. [PMID: 30615520] doi:10.1377/hlthaff.2018.05144
7. Himmelstein DU, Woolhandler S. Cost without benefit. Administrative waste in U.S. health care. *N Engl J Med*. 1986;314:441-5. [PMID: 3080679]
8. Woolhandler S, Himmelstein DU. The deteriorating administrative efficiency of the U.S. health care system. *N Engl J Med*. 1991;324:1253-8. [PMID: 1901623]
9. Himmelstein DU, Lewontin JP, Woolhandler S. Who administers? Who cares? Medical administrative and clinical employment in the United States and Canada. *Am J Public Health*. 1996;86:172-8. [PMID: 8633732]
10. Kahn JG, Kronick R, Kreger M, et al. The cost of health insurance administration in California: estimates for insurers, physicians, and hospitals. *Health Aff (Millwood)*. 2005;24:1629-39. [PMID: 16284038]
11. Sakowski JA, Kahn JG, Kronick RG, et al. Peering into the black box: billing and insurance activities in a medical group. *Health Aff (Millwood)*. 2009;28:w544-54. [PMID: 19443478] doi:10.1377/hlthaff.28.4.w544
12. Woolhandler S, Campbell T, Himmelstein DU. Costs of health care administration in the United States and Canada. *N Engl J Med*. 2003;349:768-75. [PMID: 12930930]
13. Pozen A, Cutler DM. Medical spending differences in the United States and Canada: the role of prices, procedures, and administrative expenses. *Inquiry*. 2010;47:124-34. [PMID: 20812461]
14. Himmelstein DU, Jun M, Busse R, et al. A comparison of hospital administrative costs in eight nations: US costs exceed all others by far. *Health Aff (Millwood)*. 2014;33:1586-94. [PMID: 25201663] doi:10.1377/hlthaff.2013.1327
15. Morra D, Nicholson S, Levinson W, et al. US physician practices versus Canadians: spending nearly four times as much money interacting with payers. *Health Aff (Millwood)*. 2011;30:1443-50. [PMID: 21813866] doi:10.1377/hlthaff.2010.0893
16. Tseng P, Kaplan RS, Richman BD, et al. Administrative costs associated with physician billing and insurance-related activities at an academic health care system. *JAMA*. 2018;319:691-7. [PMID: 29466590] doi:10.1001/jama.2017.19148
17. Blanchfield BB, Heffernan JL, Osgood B, et al. Saving billions of dollars—and physicians' time—by streamlining billing practices. *Health Aff (Millwood)*. 2010;29:1248-54. [PMID: 20430822] doi:10.1377/hlthaff.2009.0075
18. Papanicolaos I, Woskie LR, Jha AK. Health care spending in the United States and other high-income countries. *JAMA*. 2018;319:1024-39. [PMID: 29536101] doi:10.1001/jama.2018.1150
19. U.S. Census Bureau. Annual estimates of the resident population: April 1, 2010 to July 1, 2018. Accessed at https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2018_PEPANNRES&src=pt on 27 May 2019.

20. **Statistics Canada.** Canada at a Glance 2018: Population. Accessed at www150.statcan.gc.ca/n1/pub/12-581-x/2018000/pop-eng.htm on 6 April 2019.
21. **Canadian Life and Health Insurance Association.** Canadian life and health insurance facts: 2018 edition. Accessed at <http://clhia.uberflip.com/i/1030763-canadian-life-and-health-insurance-facts-2018/1?> on 13 March 2019.
22. **Centers for Medicare & Medicaid Services.** Cost reports by fiscal year: 2017 hospital-2010. Accessed at <http://downloads.cms.gov/Files/hcris/HOSP10FY2017.zip> on 13 March 2019.
23. **Centers for Medicare & Medicaid Services.** Provider Reimbursement Manual. Part II: Chapter 4. Accessed at www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/P152_40.zip on 16 March 2019.
24. **California Office of Statewide Health Planning and Development.** Documentation long-term care facility annual financial data. Accessed at <https://data.chhs.ca.gov/dataset/long-term-care-facility-disclosure-report-data/resource/5d8c2a00-88b4-43cb-8f16-b4a72e35212c> on 16 March 2019.
25. **California Office of Statewide Health Planning and Development.** 2017 selected file—long-term care annual financial data—(October 2018 extract). Accessed at https://data.chhs.ca.gov/dataset/70fcfed4-c9b8-4c13-8c5f-06591261cba4/resource/36611790-dd00-4cbf-879b-eaabc2e5d0cd/download/lafd_2017_sub_initial_forweb.xlsx on 30 November 2018.
26. **Ontario healthcare reporting standards: OHRS version 9.1, 2014/2015.** Ministry of Health and Long Term Care, Health Data Branch, Data Standards Unit. Toronto: April, 2014.
27. **Centers for Medicare & Medicaid Services.** Hospice 14 data files. Accessed at <http://downloads.cms.gov/Files/hcris/HOSPC14-ALL-YEARS.zip> on 2 December 2018.
28. **Canadian Institute for Health Information.** Access to Palliative Care in Canada. Accessed at www.cihi.ca/sites/default/files/document/access-palliative-care-2018-en-web.pdf on 5 July 2019.
29. **Canadian Medical Association.** Search CMA Physician Workforce Survey. Accessed at <https://surveys.cma.ca> on 18 March 2019.
30. **Konda S, Francis J, Motaparthy K, et al; Group for Research of Corporatization and Private Equity in Dermatology.** Future considerations for clinical dermatology in the setting of 21st century American policy reform: Corporatization and the rise of private equity in dermatology. *J Am Acad Dermatol.* 2019;81:287-96.e8. [PMID: 30296541] doi:10.1016/j.jaad.2018.09.052
31. **Grossman JM, Ginsburg PB.** As the health insurance underwriting cycle turns: what next? *Health Aff (Millwood).* 2004;23:91-102. [PMID: 15584102]
32. **Palmer JD, Pettit CT, McCulla IM.** Medicaid managed care financial results 2018. Milliman Research Report, May, 2018. Accessed at <https://www.milliman.com/uploadedFiles/insight/2018/Medicaid-managed-care-financial-results-2017.pdf> on 11 June 2019.
33. **Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds.** 2018 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. Accessed at www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/downloads/tr2018.pdf on 11 June 2019.
34. **Jacobson G, Fehr R, Cox C, Neuman T.** Financial performance of Medicare Advantage, individual, and group health insurance markets. Accessed at www.kff.org/report-section/financial-performance-of-medicare-advantage-individual-and-group-health-insurance-markets-issue-brief on 2 December 2019.
35. **U.S. Government Accountability Office.** Medicare Advantage: 2011 profits similar to projections for most plans, but higher for plans with specific eligibility requirements. GAO-14-148: 19 December 2013. Accessed at www.gao.gov/products/GAO-14-148 on 3 March 2019.
36. **Curto V, Einav L, Finkelstein A, et al.** Health care spending and utilization in public and private Medicare. *Am Econ J Appl Econ.* 2019;11:302-32. [PMID: 31131073] doi:10.1257/app.20170295
37. **Hagenaars LL, Klazinga NS, Mueller M, et al.** How and why do countries differ in their governance and financing-related administrative expenditure in health care? An analysis of OECD countries by health care system typology. *Int J Health Plann Manage.* 2018;33:e263-78. [PMID: 29024036] doi:10.1002/hpm.2458
38. **Medicare Payment Advisory Commission.** Report to the Congress: Medicare and the health care delivery system. June 2018. Accessed at http://medpac.gov/docs/default-source/reports/jun18_medpacreporttocongress_sec.pdf on 5 July 2019.
39. **Canadian Institute for Health Information.** National health expenditure trends, 1975 to 2018: data tables—series D1. Accessed at www.cihi.ca/sites/default/files/document/nhex-series-d1-2018-en.xlsx on 30 October 2019.
40. **American Hospital Association.** Regulatory overload: assessing the regulatory burden on health systems, hospitals and post-acute care providers. Accessed at www.aha.org/system/files/2018-02/regulatory-overload-report.pdf on 27 June 2019.
41. **Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds.** 2019 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. Accessed at www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/TR2019.pdf on 2 December 2019.

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