

SUPPLEMENTAL MATERIAL

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Table S1. Total annualized healthcare costs (95% CI) and CKD-related costs by resource for all analysis groups in total and among patients age 65 and older adjusted for age, sex and race/ethnicity. Comorbidity groups are not mutually exclusive.

	All Age Groups						Ages 65 and Older					
	Total Costs			CKD-Related Costs			Total Costs			CKD-Related Costs		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
All Patients												
Inpatient	\$2,195	\$2,045	\$2,346	\$30	\$15	\$45	\$3,470	\$3,161	\$3,778	\$57	\$47	\$66
Pharmacy	\$1,793	\$1,694	\$1,892	\$43	\$37	\$48	\$1,695	\$1,580	\$1,810	\$56	\$47	\$66
Outpatient	\$1,995	\$1,965	\$2,025	\$17	\$14	\$20	\$2,233	\$2,185	\$2,282	\$25	\$20	\$30
Emergency	\$463	\$437	\$488	\$1	\$0	\$2	\$675	\$624	\$726	\$2	\$0	\$4
Dialysis	\$142	\$114	\$171	\$142	\$114	\$171	\$182	\$135	\$229	\$182	\$135	\$229
Total	\$6,588	\$6,385	\$6,792	\$233	\$198	\$268	\$8,255	\$7,880	\$8,629	\$322	\$257	\$387
No CKD												
Inpatient	\$1,676	\$1,582	\$1,771	\$8	\$3	\$13	\$2,677	\$2,482	\$2,871	\$18	\$5	\$31
Pharmacy	\$1,683	\$1,606	\$1,760	\$24	\$23	\$26	\$1,548	\$1,459	\$1,638	\$36	\$34	\$37
Outpatient	\$1,889	\$1,867	\$1,912	\$1	\$0	\$1	\$2,119	\$2,083	\$2,154	\$1	\$0	\$2
Emergency	\$383	\$365	\$400	\$0	--	--	\$527	\$493	\$560	\$1	\$0	\$2
Dialysis	\$0	--	--	\$0	--	--	\$0	--	--	\$2	\$0	\$5
Total	\$5,631	\$5,497	\$5,768	\$33	\$28	\$40	\$6,871	\$6,632	\$7,112	\$58	\$43	\$72
All CKD												
Inpatient	\$5,249	\$4,654	\$5,844	\$161	\$81	\$241	\$5,294	\$4,673	\$5,916	\$146	\$56	\$236
Pharmacy	\$2,425	\$2,195	\$2,654	\$148	\$117	\$179	\$2,030	\$1,866	\$2,193	\$103	\$78	\$129
Outpatient	\$2,610	\$2,529	\$2,691	\$114	\$99	\$130	\$2,495	\$2,414	\$2,577	\$81	\$67	\$95
Emergency	\$941	\$855	\$1,027	\$4	\$0	\$9	\$1,018	\$918	\$1,117	\$5	\$0	\$10
Dialysis	\$976	\$810	\$1,141	\$976	\$810	\$1,141	\$597	\$464	\$730	\$597	\$464	\$730
Total	\$12,201	\$11,463	\$12,938	\$1,403	\$1,201	\$1,605	\$11,434	\$10,694	\$12,173	\$932	\$755	\$1,108
CKD Only												
Inpatient	\$2,583	\$2,097	\$3,069	\$47	\$4	\$91	\$2,708	\$2,170	\$3,246	\$42	\$0	\$92
Pharmacy	\$1,747	\$1,500	\$1,995	\$94	\$60	\$129	\$1,399	\$1,197	\$1,600	\$63	\$36	\$89
Outpatient	\$2,087	\$2,004	\$2,170	\$56	\$42	\$71	\$2,025	\$1,942	\$2,109	\$37	\$25	\$49
Emergency	\$592	\$506	\$679	\$2	\$0	\$4	\$666	\$560	\$772	\$2	\$0	\$5
Dialysis	\$364	\$222	\$506	\$364	\$222	\$506	\$166	\$65	\$268	\$166	\$65	\$268
Total	\$7,374	\$6,746	\$8,003	\$563	\$396	\$731	\$6,964	\$6,308	\$7,621	\$310	\$178	\$442
CKD & DM												
Inpatient	\$7,658	\$6,389	\$8,927	\$294	\$88	\$501	\$7,361	\$5,997	\$8,724	\$247	\$19	\$476
Pharmacy	\$3,316	\$2,883	\$3,749	\$220	\$158	\$282	\$2,816	\$2,480	\$3,152	\$150	\$99	\$201
Outpatient	\$3,230	\$3,053	\$3,406	\$208	\$171	\$246	\$2,983	\$2,811	\$3,154	\$148	\$114	\$183
Emergency	\$1,173	\$1,003	\$1,343	\$7	\$0	\$16	\$1,212	\$1,020	\$1,405	\$7	\$0	\$17
Dialysis	\$1,956	\$1,555	\$2,357	\$1,956	\$1,555	\$2,357	\$1,224	\$900	\$1,549	\$1,224	\$900	\$1,549
Total	\$17,333	\$15,752	\$18,914	\$2,685	\$2,196	\$3,176	\$15,596	\$13,982	\$17,210	\$1,776	\$1,349	\$2,206

Table S1 (continued). Total annualized healthcare costs (95% CI) and CKD-related costs by resource for all analysis groups in total and among patients age 65 and older adjusted for age, sex and race/ethnicity. Comorbidity groups are not mutually exclusive.

	All Age Groups						Ages 65 and Older					
	Total Costs			CKD-Related Costs			Total Costs			CKD-Related Costs		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
CKD & CVD												
Inpatient	\$10,530	\$8,598	\$12,462	\$328	\$68	\$588	\$10,141	\$8,223	\$12,060	\$304	\$37	\$571
Pharmacy	\$3,325	\$2,619	\$4,030	\$214	\$133	\$295	\$2,791	\$2,441	\$3,141	\$154	\$85	\$222
Outpatient	\$3,535	\$3,300	\$3,769	\$196	\$149	\$243	\$3,311	\$3,083	\$3,539	\$151	\$107	\$194
Emergency	\$1,794	\$1,519	\$2,069	\$8	\$0	\$19	\$1,814	\$1,521	\$2,106	\$9	\$0	\$21
Dialysis	\$1,857	\$1,387	\$2,326	\$1,857	\$1,387	\$2,326	\$1,360	\$957	\$1,764	\$1,360	\$957	\$1,764
Total	\$21,041	\$18,683	\$23,398	\$2,603	\$2,014	\$3,190	\$19,417	\$17,170	\$21,664	\$1,978	\$1,447	\$2,507
CKD, DM & CVD												
Inpatient	\$13,278	\$10,028	\$16,527	\$483	\$0	\$969	\$12,637	\$9,191	\$16,084	\$438	\$0	\$941
Pharmacy	\$4,333	\$3,166	\$5,501	\$288	\$165	\$411	\$3,642	\$3,032	\$4,253	\$198	\$106	\$291
Outpatient	\$4,250	\$3,843	\$4,658	\$321	\$230	\$413	\$3,878	\$3,484	\$4,272	\$254	\$165	\$343
Emergency	\$2,046	\$1,592	\$2,500	\$13	\$0	\$35	\$2,022	\$1,534	\$2,510	\$13	\$0	\$38
Dialysis	\$3,143	\$2,251	\$4,035	\$3,143	\$2,251	\$4,035	\$2,368	\$1,590	\$3,146	\$2,368	\$1,590	\$3,146
Total	\$27,050	\$23,035	\$31,066	\$4,248	\$3,148	\$5,346	\$24,547	\$20,545	\$28,549	\$3,271	\$2,273	\$4,270
CKD & HF												
Inpatient	\$15,169	\$11,938	\$18,399	\$587	\$183	\$992	\$14,309	\$11,258	\$17,359	\$558	\$127	\$990
Pharmacy	\$3,859	\$3,098	\$4,620	\$213	\$113	\$313	\$3,452	\$2,869	\$4,035	\$159	\$84	\$234
Outpatient	\$3,921	\$3,615	\$4,226	\$261	\$196	\$327	\$3,627	\$3,326	\$3,927	\$196	\$138	\$254
Emergency	\$2,244	\$1,828	\$2,661	\$14	\$0	\$42	\$2,204	\$1,777	\$2,631	\$15	\$0	\$46
Dialysis	\$2,325	\$1,716	\$2,934	\$2,325	\$1,716	\$2,934	\$1,781	\$1,234	\$2,327	\$1,781	\$1,234	\$2,327
Total	\$27,518	\$23,825	\$31,211	\$3,400	\$2,609	\$4,192	\$25,373	\$21,901	\$28,843	\$2,709	\$1,965	\$3,453
CKD, DM & HF												
Inpatient	\$18,600	\$13,735	\$23,465	\$832	\$140	\$1,525	\$17,563	\$12,386	\$22,741	\$774	\$23	\$1,526
Pharmacy	\$4,784	\$3,721	\$5,848	\$268	\$117	\$419	\$4,356	\$3,235	\$5,476	\$191	\$89	\$293
Outpatient	\$4,734	\$4,219	\$5,249	\$417	\$298	\$536	\$4,313	\$3,802	\$4,824	\$327	\$215	\$439
Emergency	\$2,585	\$1,947	\$3,224	\$17	\$0	\$48	\$2,516	\$1,840	\$3,192	\$18	\$0	\$53
Dialysis	\$3,847	\$2,764	\$4,929	\$3,847	\$2,764	\$4,929	\$3,028	\$2,031	\$4,025	\$3,028	\$2,031	\$4,025
Total	\$34,550	\$28,886	\$40,215	\$5,381	\$3,995	\$6,766	\$31,776	\$25,870	\$37,682	\$4,338	\$3,018	\$5,658

Tables S2A. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD only.

	<u>G3a (n=7,783)</u>			<u>G3b (n=1,919)</u>			<u>G4 (n=263)</u>			<u>G5 (n=305)</u>		
	<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>	
Inpatient	\$2,126	\$1,789	\$2,464	\$3,298	\$2,599	\$3,998	\$4,448	\$2,537	\$6,358	\$8,303	\$6,547	\$10,060
Pharmacy	\$1,406	\$1,235	\$1,578	\$1,787	\$1,431	\$2,144	\$3,052	\$2,079	\$4,024	\$9,179	\$8,285	\$10,074
Outpatient	\$1,929	\$1,868	\$1,989	\$2,087	\$1,961	\$2,214	\$2,518	\$2,173	\$2,863	\$5,815	\$5,498	\$6,132
Emergency	\$551	\$491	\$611	\$622	\$497	\$747	\$763	\$422	\$1,103	\$1,343	\$1,030	\$1,657
Dialysis	-\$1	-\$100	\$97	\$16	-\$189	\$220	\$284	-\$275	\$843	\$12,081	\$11,567	\$12,595
Total	\$6,011	\$5,574	\$6,447	\$7,811	\$6,906	\$8,715	\$11,064	\$8,593	\$13,534	\$36,722	\$34,450	\$38,993

Tables S2B. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD and DM.

	<u>G3a (n=4,320)</u>			<u>G3b (n=2,152)</u>			<u>G4 (n=668)</u>			<u>G5 (=575)</u>		
	<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>		<u>Mean</u>	<u>95% CI</u>	
Inpatient	\$4,712	\$3,809	\$5,616	\$7,685	\$6,393	\$8,977	\$16,082	\$13,666	\$18,499	\$19,494	\$16,952	\$22,035
Pharmacy	\$2,619	\$2,311	\$2,927	\$3,084	\$2,643	\$3,525	\$4,033	\$3,209	\$4,858	\$8,491	\$7,624	\$9,358
Outpatient	\$2,532	\$2,398	\$2,666	\$2,993	\$2,802	\$3,185	\$4,061	\$3,702	\$4,419	\$8,299	\$7,922	\$8,676
Emergency	\$928	\$807	\$1,049	\$1,226	\$1,053	\$1,399	\$1,739	\$1,415	\$2,062	\$2,117	\$1,777	\$2,458
Dialysis	-\$9	-\$294	\$277	\$86	-\$323	\$494	\$1,104	\$341	\$1,868	\$24,452	\$23,649	\$25,255
Total	\$10,783	\$9,657	\$11,908	\$15,075	\$13,464	\$16,684	\$27,020	\$24,009	\$30,030	\$62,853	\$59,686	\$66,020

Table S2C. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD and CVD.

	G3a (2,594)			G3b (n=1,373)			G4 (n=420)			G5 (n=321)		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
Inpatient	\$7,247	\$5,877	\$8,618	\$11,117	\$9,160	\$13,074	\$20,844	\$17,119	\$24,570	\$21,164	\$17,132	\$25,195
Pharmacy	\$2,370	\$1,869	\$2,870	\$3,133	\$2,418	\$3,848	\$4,212	\$2,851	\$5,572	\$10,720	\$9,248	\$12,193
Outpatient	\$2,979	\$2,801	\$3,158	\$3,285	\$3,030	\$3,540	\$4,439	\$3,954	\$4,924	\$7,920	\$7,395	\$8,445
Emergency	\$1,598	\$1,403	\$1,793	\$1,782	\$1,503	\$2,061	\$2,322	\$1,791	\$2,852	\$2,745	\$2,170	\$3,319
Dialysis	\$5	-\$328	\$339	\$71	-\$405	\$547	\$1,381	\$476	\$2,287	\$25,095	\$24,115	\$26,075
Total	\$14,200	\$12,528	\$15,873	\$19,388	\$17,000	\$21,777	\$33,198	\$28,653	\$37,744	\$67,644	\$62,725	\$72,563

Table S2D. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD, DM and CVD.

	G3a (n=1,057)			G3b (n=709)			G4 (n=280)			G5 (n=234)		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
Inpatient	\$8,483	\$6,059	\$10,907	\$12,940	\$9,887	\$15,994	\$24,172	\$19,072	\$29,273	\$22,968	\$17,602	\$28,335
Pharmacy	\$3,390	\$2,519	\$4,261	\$3,774	\$2,677	\$4,872	\$4,772	\$2,939	\$6,605	\$9,763	\$7,834	\$11,691
Outpatient	\$3,465	\$3,140	\$3,791	\$3,645	\$3,235	\$4,056	\$4,833	\$4,147	\$5,518	\$8,932	\$8,211	\$9,653
Emergency	\$1,817	\$1,478	\$2,155	\$2,052	\$1,625	\$2,479	\$2,340	\$1,627	\$3,052	\$2,712	\$1,962	\$3,462
Dialysis	\$58	-\$607	\$723	\$59	-\$778	\$898	\$1,786	\$386	\$3,185	\$28,027	\$26,554	\$29,499
Total	\$17,213	\$14,219	\$20,208	\$22,471	\$18,698	\$26,245	\$37,903	\$31,601	\$44,205	\$72,402	\$65,771	\$79,032

Table S2E. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD and HF.

	G3a (n=1,477)			G3b (n=1,163)			G4 (n=446)			G5 (n=252)		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
Inpatient	\$10,692	\$8,212	\$13,172	\$14,697	\$11,813	\$17,581	\$24,712	\$19,734	\$29,690	\$26,856	\$20,690	\$33,022
Pharmacy	\$3,383	\$2,799	\$3,967	\$3,906	\$3,226	\$4,585	\$4,271	\$3,098	\$5,443	\$5,724	\$4,271	\$7,176
Outpatient	\$3,210	\$2,956	\$3,465	\$3,506	\$3,210	\$3,801	\$4,753	\$4,243	\$5,263	\$8,555	\$7,922	\$9,187
Emergency	\$1,956	\$1,636	\$2,276	\$2,083	\$1,712	\$2,455	\$3,115	\$2,474	\$3,757	\$3,147	\$2,352	\$3,942
Dialysis	-\$10	-\$477	\$459	\$104	-\$440	\$648	\$1,078	\$139	\$2,017	\$28,577	\$27,414	\$29,740
Total	\$19,231	\$16,397	\$22,066	\$24,296	\$20,999	\$27,592	\$37,929	\$32,238	\$43,619	\$72,858	\$65,810	\$79,906

Table S2F. Annualized healthcare care costs in total (95% confidence intervals) and by eGFR category and by resource adjusted for age, sex, and race/ethnicity among patients with CKD, DM and HF.

	G3a (n=649)			G3b (n=591)			G4 (n=286)			G5 (n=193)		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
Inpatient	\$11,569	\$7,611	\$15,527	\$17,484	\$13,255	\$21,713	\$29,173	\$22,678	\$35,668	\$30,060	\$22,605	\$37,515
Pharmacy	\$3,973	\$3,107	\$4,838	\$5,123	\$4,198	\$6,047	\$4,974	\$3,554	\$6,394	\$6,204	\$4,574	\$7,834
Outpatient	\$3,728	\$3,276	\$4,180	\$4,001	\$3,518	\$4,484	\$5,277	\$4,535	\$6,018	\$9,572	\$8,720	\$10,423
Emergency	\$2,242	\$1,723	\$2,762	\$2,527	\$1,971	\$3,082	\$3,231	\$2,378	\$4,084	\$2,966	\$1,987	\$3,945
Dialysis	\$82	-\$799	\$963	\$100	-\$841	\$1,041	\$1,400	-\$46	\$2,846	\$31,678	\$30,019	\$33,338
Total	\$21,594	\$16,986	\$26,202	\$29,234	\$24,310	\$34,159	\$44,054	\$36,492	\$51,617	\$80,480	\$71,800	\$89,160