

Supplemental Material

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Supplemental Table 1. ICD-9-CM diagnosis codes used to identify site-specific cancer cases from Medicare claims.

Cancer site	ICD-9-CM diagnosis codes
Lip, oral cavity, and pharynx	
Lip	140.XX
Tongue	141.XX
Salivary gland	142.XX
Mouth	143.XX-145.XX
Pharynx	146.XX-148.XX
Other and ill-defined sites within the lip, oral cavity, and pharynx	149.XX
Digestive system	
Esophagus	150.XX
Stomach	151.XX
Small intestine	152.XX
Colon/rectum	153.XX, 154.0, 154.1, 154.8
Anus	154.2, 154.3
Liver and intrahepatic bile duct	155.XX
Gallbladder and other biliary	156.XX
Pancreas	157.XX
Other and ill-defined sites within the digestive organs and peritoneum	158.XX (except for 158.8),159.XX
Respiratory system and intrathoracic organs	
Nasal cavity, middle ear, and sinus	160.XX
Larynx	161.XX
Lung/bronchus	162.XX (except for 162.0)
Trachea	162.0
Other and ill-defined sites within the respiratory system and intrathoracic organs	163.XX-165.XX (except for 163.9 and 164.1)
Bone and cartilage	170.XX
Skin/connective tissue (excludes non-melanoma skin cancer)	
Melanoma	172.XX
Connective & other soft tissue	171.XX
Kaposi sarcoma	176.XX
Breast	
Breast (female), malignant and <i>in situ</i>	174.XX, 233.0
Breast (male), malignant and <i>in situ</i>	175.XX, 233.0
Genitourinary	
Cervix uteri	180.XX
Corpus and uterus	179.XX, 182.XX
Placenta	181.XX
Ovary	183.0
Vagina	184.0
Vulva	184.1-184.4
Uterine adnexa, not including ovaries	183.2-183.9
Other and unspecified female genital organs	184.8-184.9

Prostate	185.XX
Testis	186.XX
Penis	187.1-187.4
Other and unspecified male genital organs	187.5-187.9
Bladder, malignant & <i>in situ</i>	188.XX, 233.7
Kidney and renal pelvis	189.0, 189.1
Ureter	189.2
Other and unspecified urinary organs	189.3-189.9
Other	
Eye	190.XX
Brain and other nervous system	191.XX-192.XX
Mesothelioma	158.8, 163.9, 164.1
Thyroid	193.XX
Other endocrine glands and structures	194.XX
Hematological	
Lymphoma: Hodgkin's disease	201.XX
Lymphoma: Non-Hodgkin lymphoma	200.XX, 202.XX excluding 202.4
Multiple myeloma	203.0
Leukemia	202.4, 204.XX-208.XX
Ill-defined and unspecified	195.XX-199.XX

Abbreviation: International Classification of Diseases, 9th revision, Clinical Modification, ICD-9-CM.

Supplemental Table 2. Administrative codes used to identify anemia treatment.

Anemia treatment	Codes
Epoetin alfa	USRDS summarized variables: epo, epoadmin, epodose, n_epo
Darbepoetin alfa	HCPCS: J0880, J0881, J0882, Q0137, Q4054
Iron	HCPCS: J1750, J1760, J1770, J1780, J1751, J1752, J2915, J2916, S0098, W0231, J1755, J1756, Q0138, Q0139
Blood transfusions	ICD-9-CM procedure codes: 99.03, 99.04 HCPCS: P9010, P9011, P9016, P9021, P9022, P9038, P9039, P9040, 36430

Supplemental Table 3. Administrative codes used to identify receipt of any chemotherapy from Medicare claims.

Medicare claims code type	Codes
ICD-9-CM diagnosis codes	V58.1, V66.2, V67.2
ICD-9-CM procedure codes	99.25
HCPCS	964xx, 965xx, C1167, C9127, C9205, C9213, C9214, C9215, C9257, C9414, C9415, C9418, C9420, C9421, C9425, C9427, C9431, C9432, C9440, J8520, J8521, J8530, J8560, J8565, J8610, J9000-J9999, G0355-G0362 (for 2005 only), Q0083-Q0085, Q2024, S0116, S1016
Revenue center codes	0331, 0332, 0335

Abbreviations: International Classification of Diseases, 9th revision, Clinical Modification, ICD-9-CM; Healthcare Common Procedure Coding System, HCPCS.

Supplemental Table 4. Distribution of site-specific cancer cases by year.*

Cancer Site	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Breast (female)	516	632	724	808	878	976	998	1067	1122	1183	1211	1240
Colon/rectum	629	763	843	913	1031	1087	1089	1200	1223	1219	1275	1298
Kidney/renal pelvis	331	449	501	585	716	825	928	1072	1148	1248	1333	1337
Leukemia	125	163	183	199	201	214	253	252	276	294	315	361
Lung/bronchus	504	612	696	760	799	847	899	896	947	933	981	970
Hodgkin lymphoma	12	10	14	25	29	35	38	36	36	47	42	50
Myeloma	177	197	223	239	242	271	263	263	301	316	308	331
NHL	142	188	194	206	237	282	314	345	387	385	388	404
Pancreas	86	107	125	108	132	146	181	165	180	187	210	206
Prostate	863	1050	1167	1283	1404	1501	1625	1694	1798	1896	1938	1908
Bladder	270	373	422	458	528	553	570	611	629	626	632	631
Other**	1276	1481	1662	1797	1969	2171	2334	2412	2551	2646	2702	2752
Multiple sites***	150	166	182	217	252	262	277	300	333	343	374	410
Total (including patients with missing ethnicity information)	5081	6191	6936	7598	8418	9170	9769	10,313	10,931	11,323	11,709	11,898
Total patients missing ethnicity	19	17	14	9	16	15	16	14	13	15	14	23
Total (excluding patients with missing ethnicity information)	5062	6174	6922	7589	8402	9155	9753	10,299	10,918	11,308	11,695	11,875

Abbreviation: Non-Hodgkin lymphoma, NHL.

*Cancer cases may be included in multiple years.

**Other cancers were defined as all other site-specific cancers not listed (e.g., cancers of the esophagus, stomach, liver, etc).

***Multiple sites indicates patients diagnosed with first cancer at ≥ 2 sites on the same date.

Supplemental Figure 1. Distribution of cancer diagnoses by first cancer site and year. Other cancers were defined as all other site-specific cancers not listed (e.g., cancers of the esophagus, stomach, liver, etc.). Multiple sites indicates patients diagnosed with first cancer at ≥ 2 sites on the same date. Abbreviation: non-Hodgkin lymphoma, NHL.

Supplemental Figure 2. Mean quarterly ESA use by drug type. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figures 3a-f. Quarterly trends in anemia management treatment by hematologic malignancy for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means. Abbreviation: non-Hodgkin lymphoma, NHL.

Supplemental Figures 4a-f. Quarterly trends in anemia management treatment by common solid tumor for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figure 5. Mean quarterly iron use by iron formulation. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figures 6a-f. Quarterly trends in anemia management treatment by chemotherapy use for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa . Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figure 7a-f. Quarterly trends in anemia management treatment by age for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figures 8a-f. Quarterly trends in anemia management treatment by sex for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

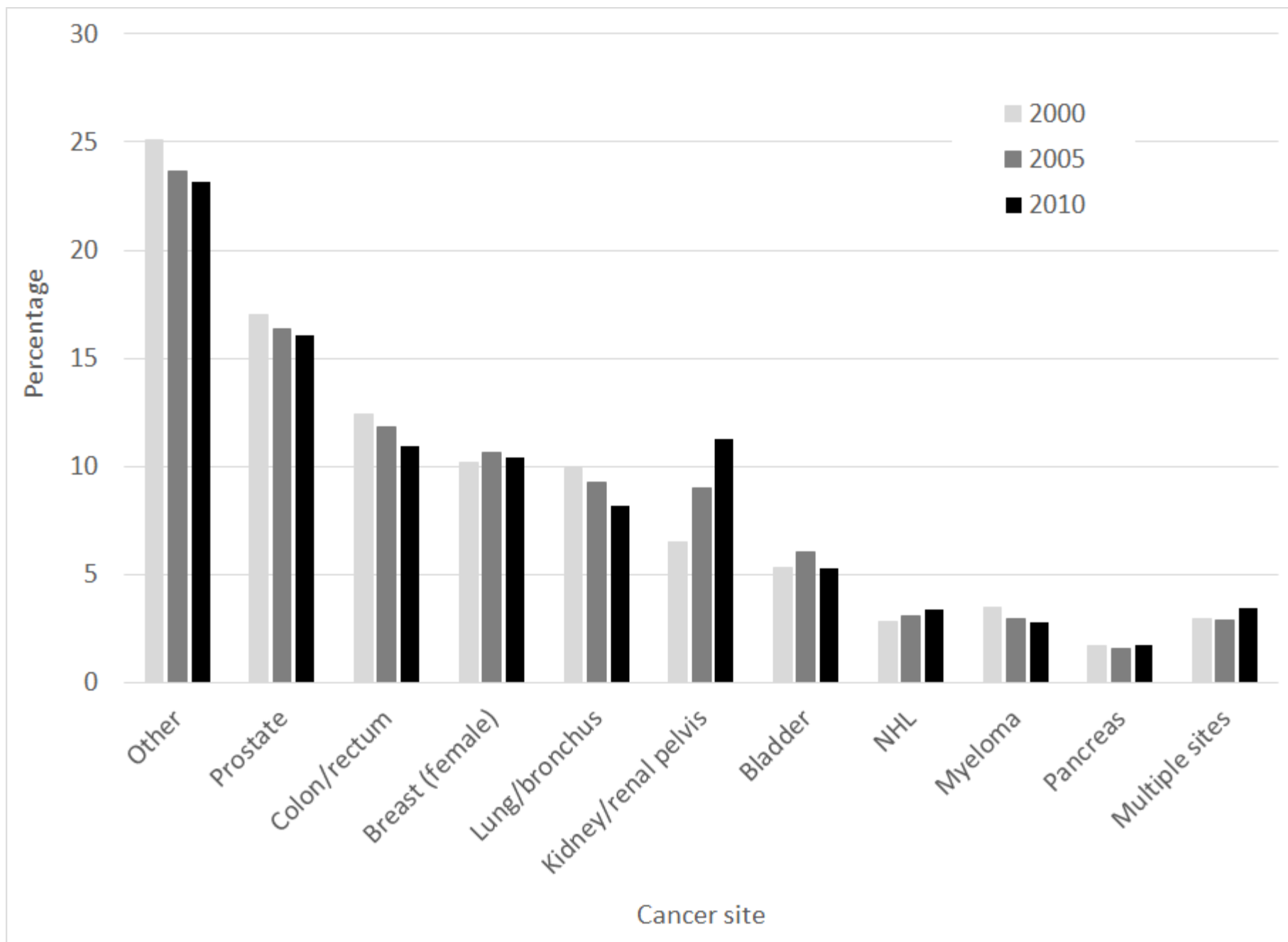
Supplemental Figures 9a-f. Quarterly trends in anemia management treatment by race for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figures 10a-f. Quarterly trends in anemia management treatment by ethnicity for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

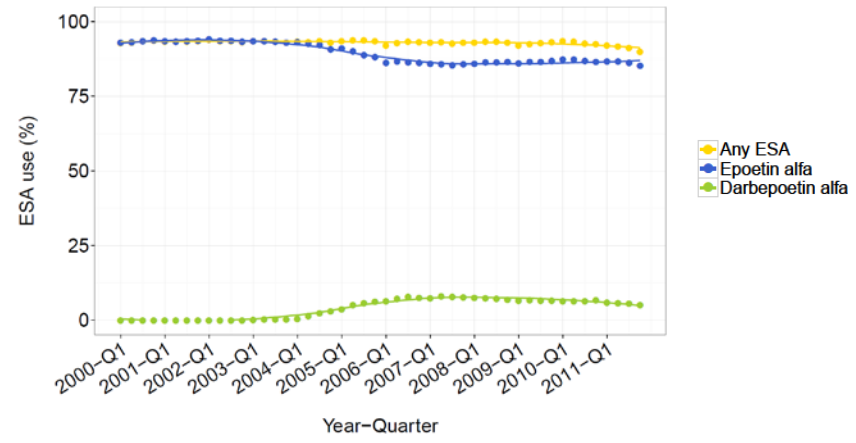
Supplemental Figures 11a-f. Quarterly trends in anemia management treatment by primary cause of ESRD for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

Supplemental Figures 12a-f. Quarterly trends in anemia management treatment by dialysis vintage for mean a) ESA use; b) iron use; c) blood transfusion use; d) EPO dose; e) iron dose; and f) hemoglobin levels. Patients treated at a hospital-based facility were excluded from the EPO dose calculation to remove the possibility of simultaneous treatment with EPO and darbepoetin alfa. Quarterly data points were adjusted for age, sex, race, ethnicity, cause of ESRD, and dialysis vintage. Trend lines represent smoothed conditional means.

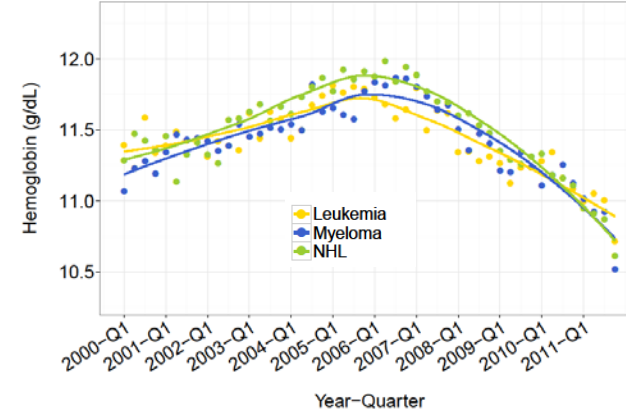
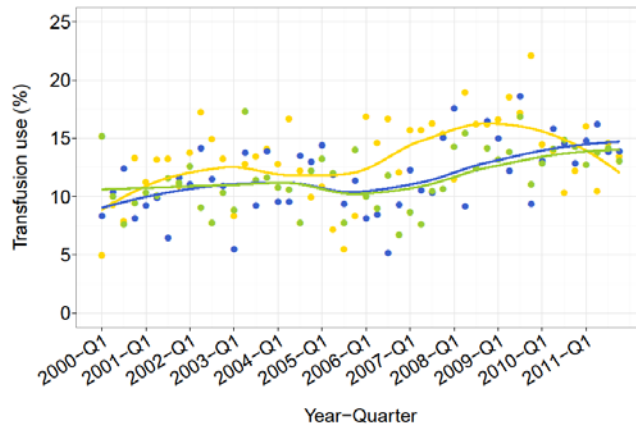
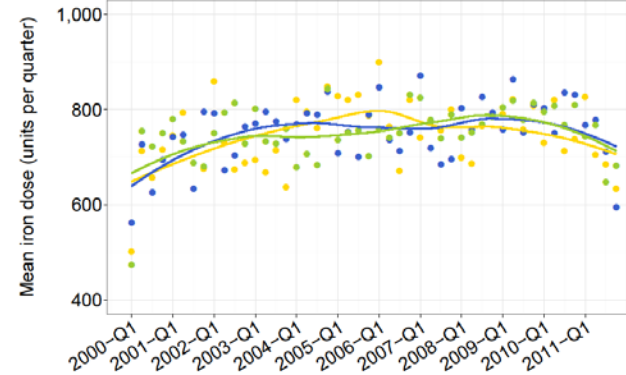
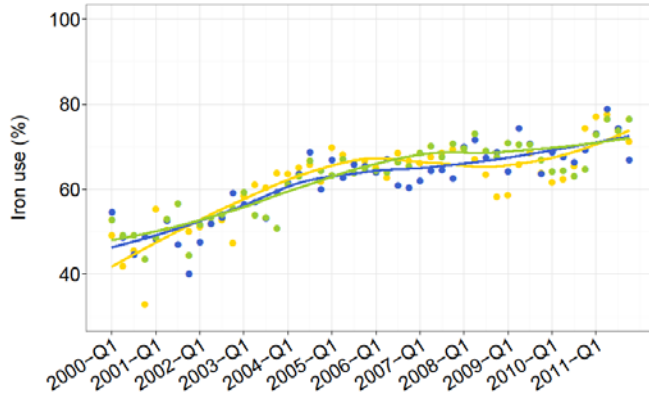
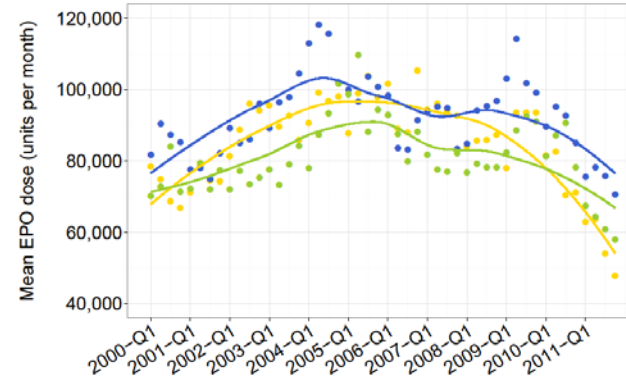
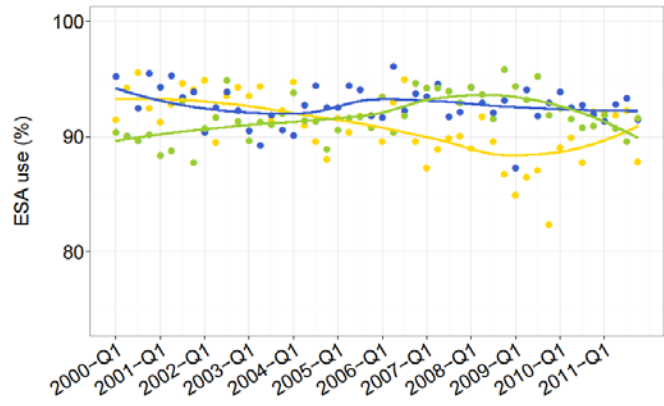
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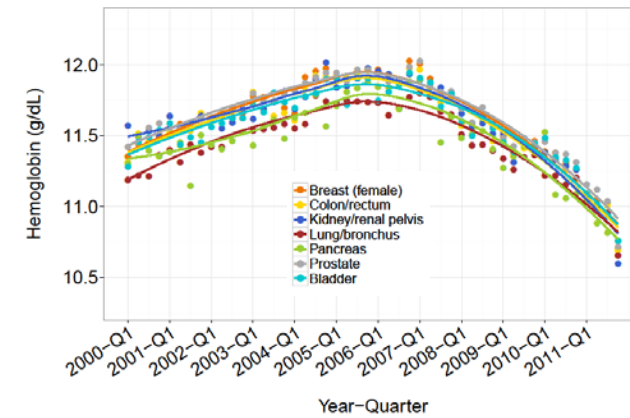
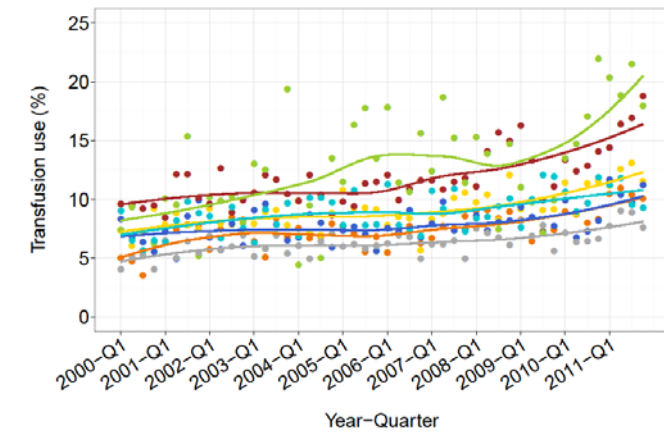
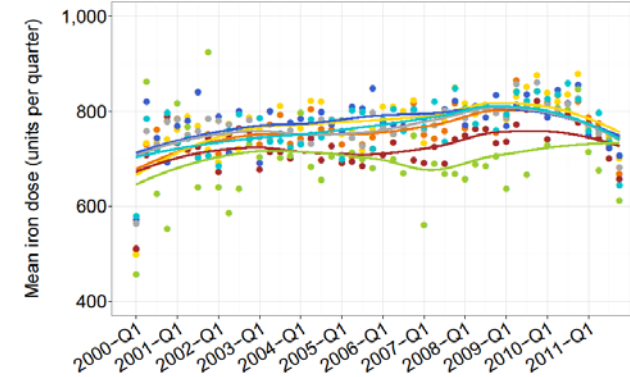
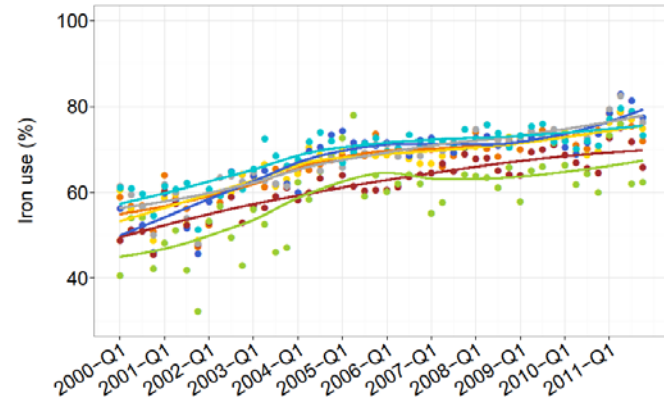
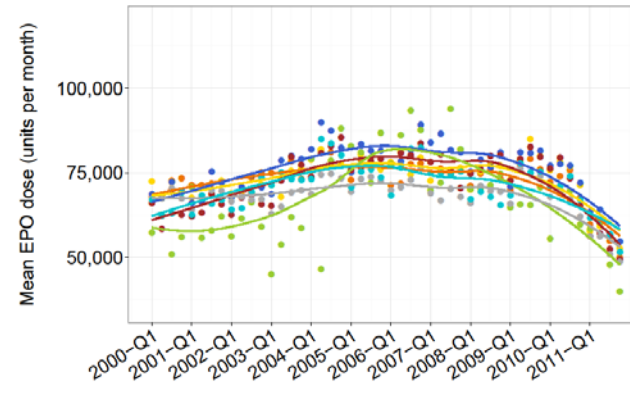
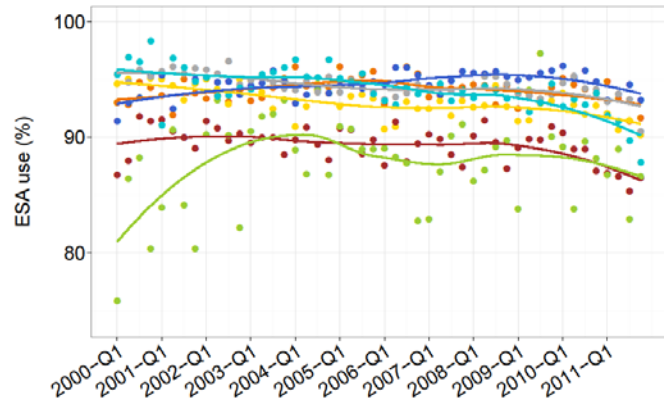
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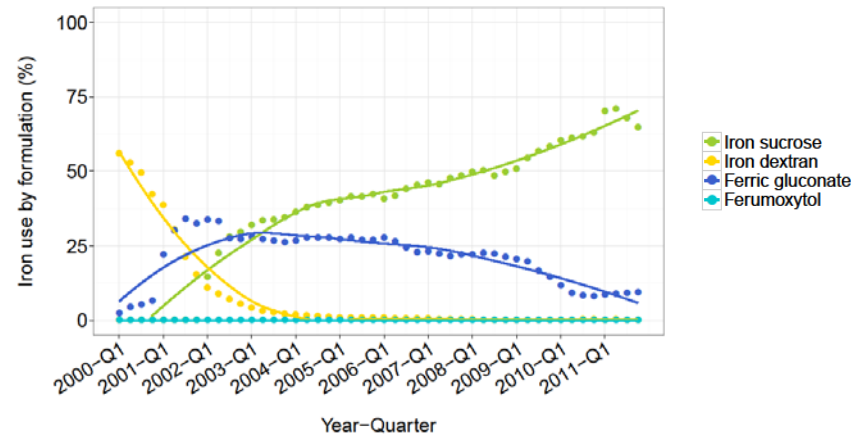
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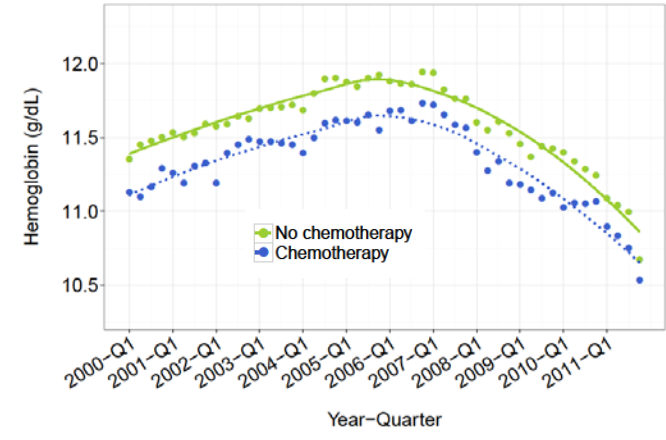
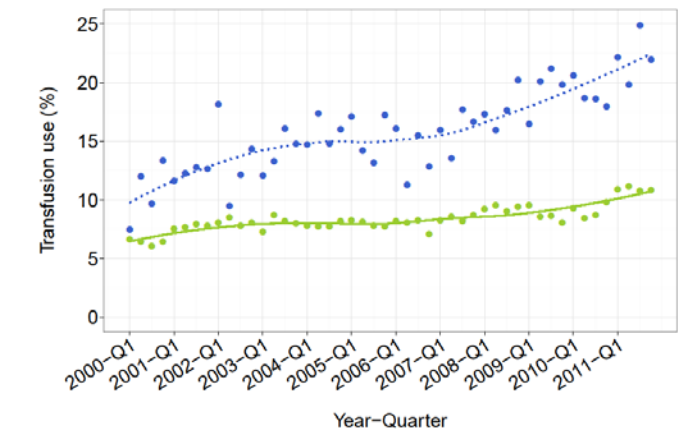
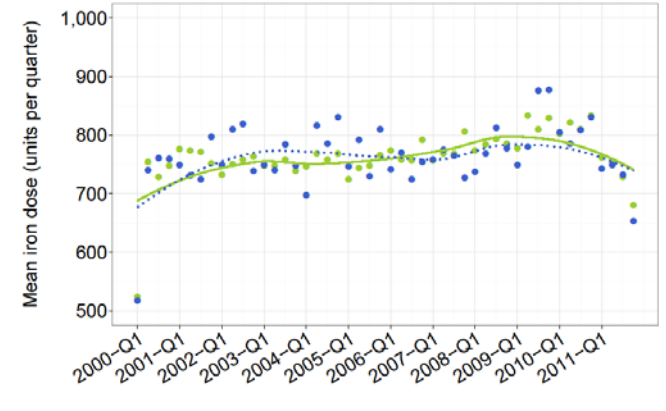
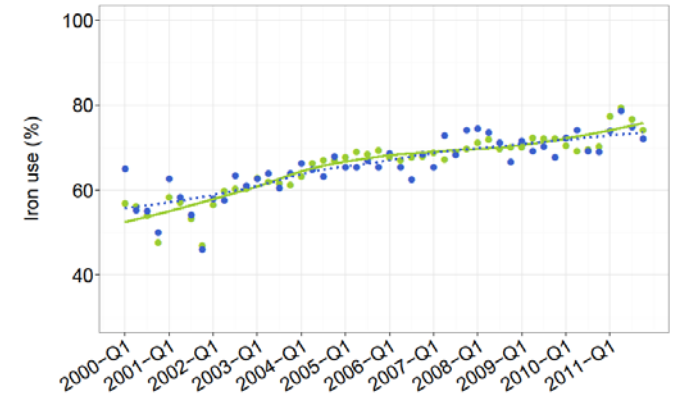
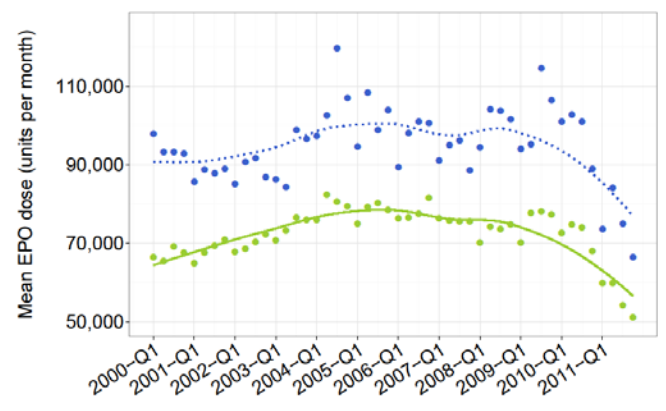
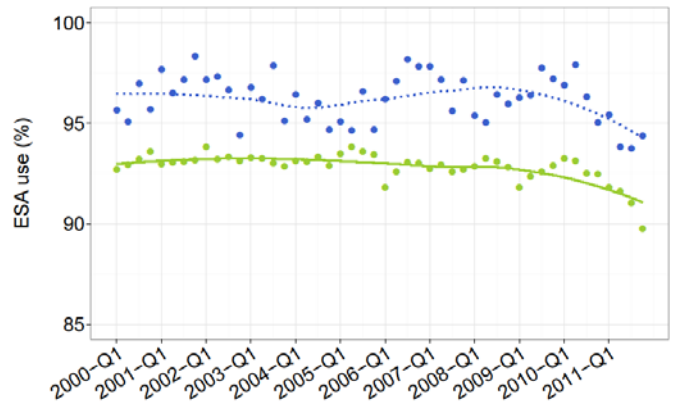
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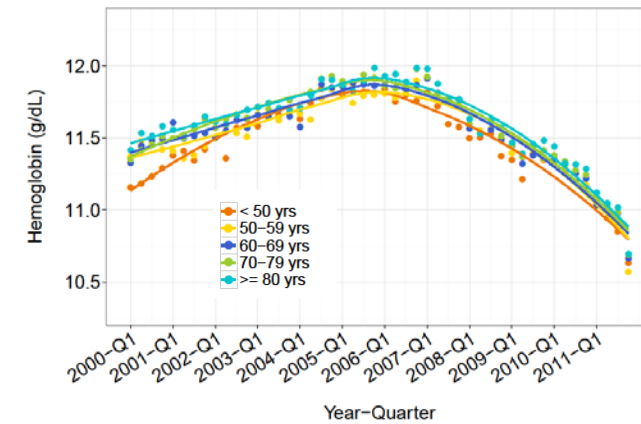
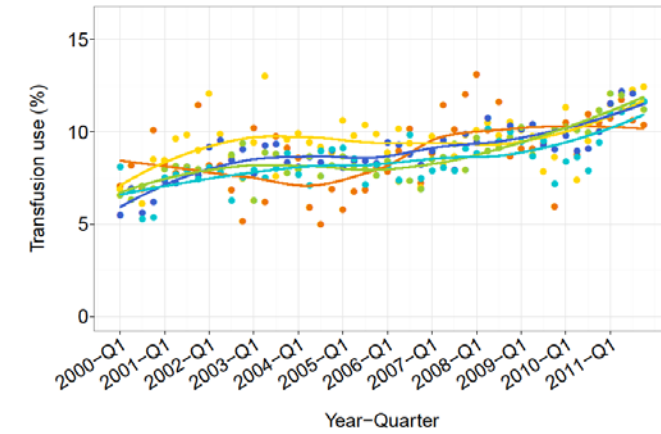
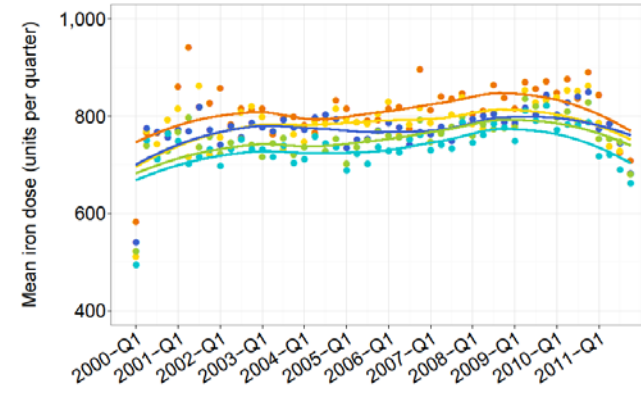
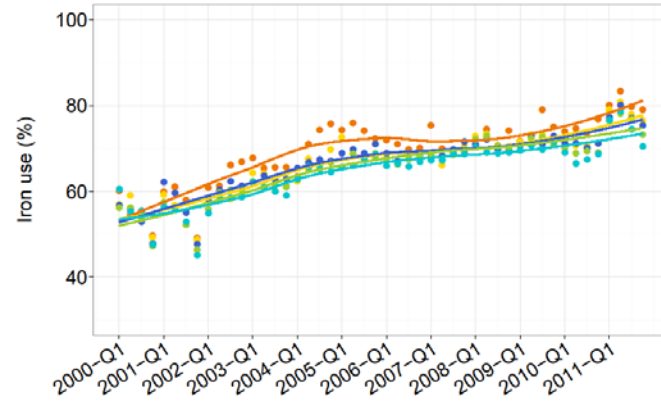
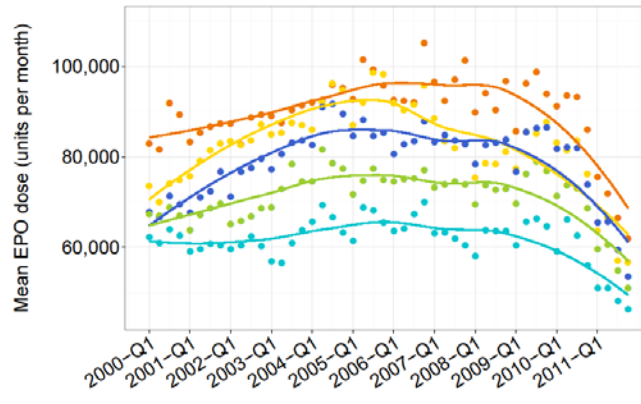
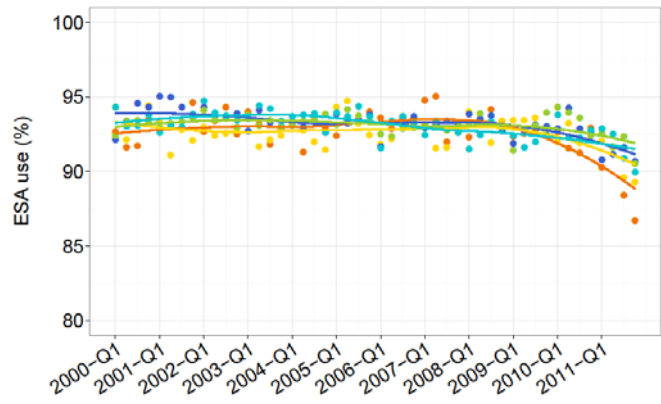
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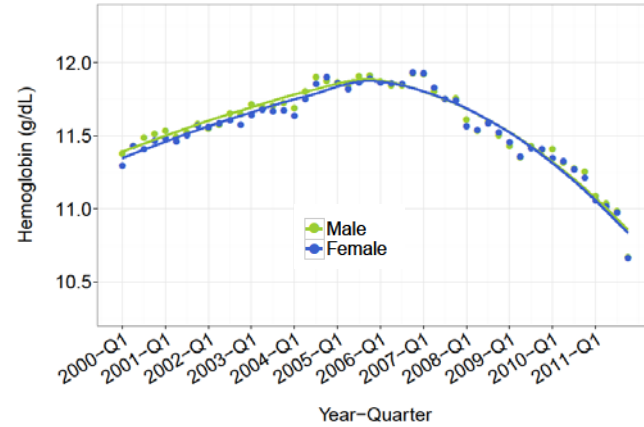
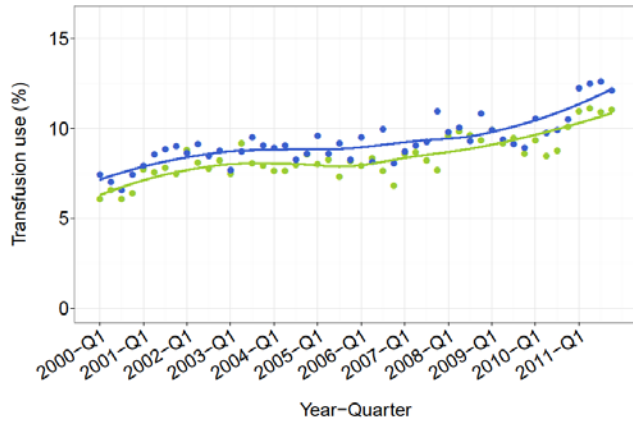
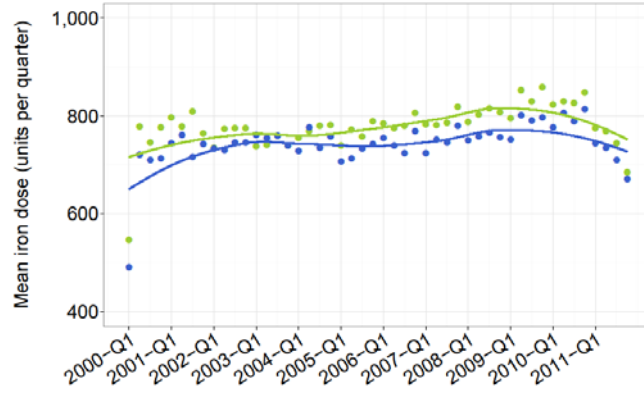
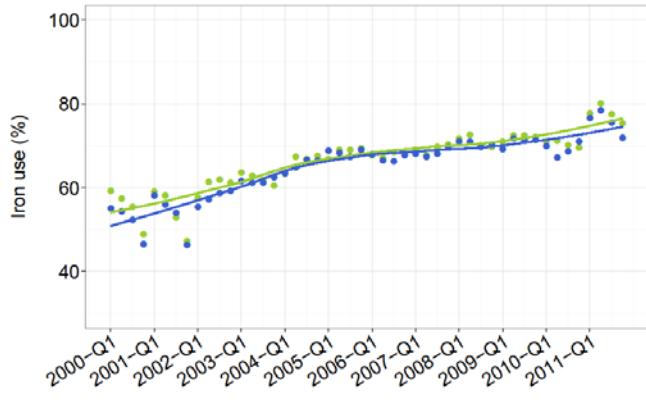
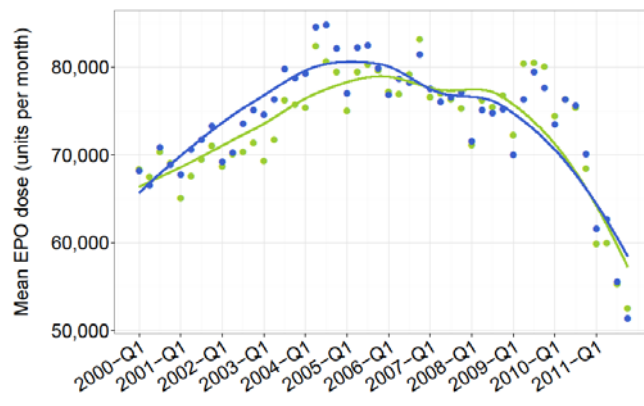
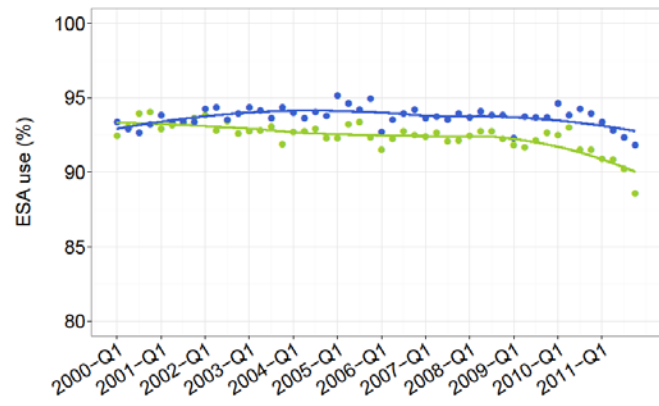
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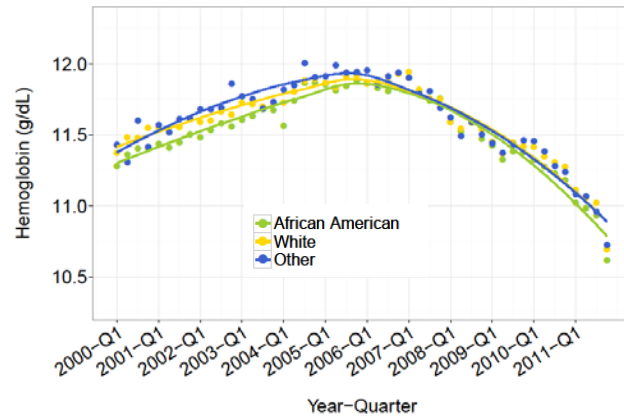
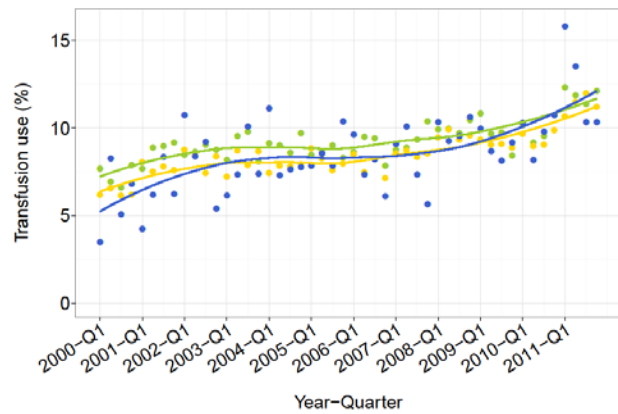
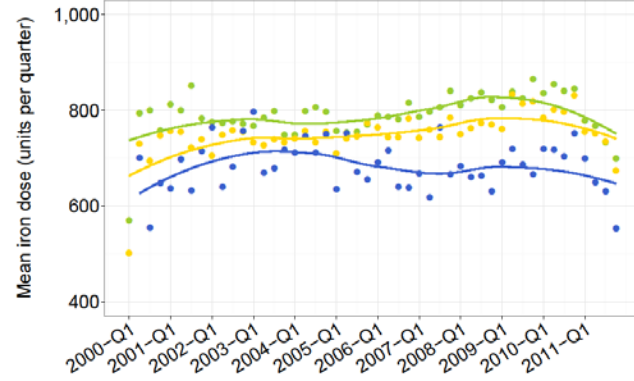
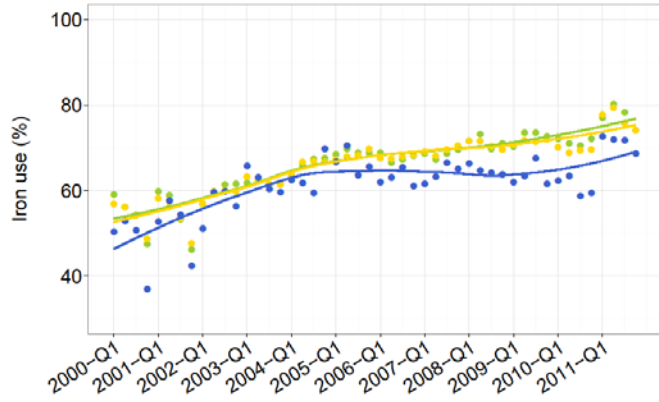
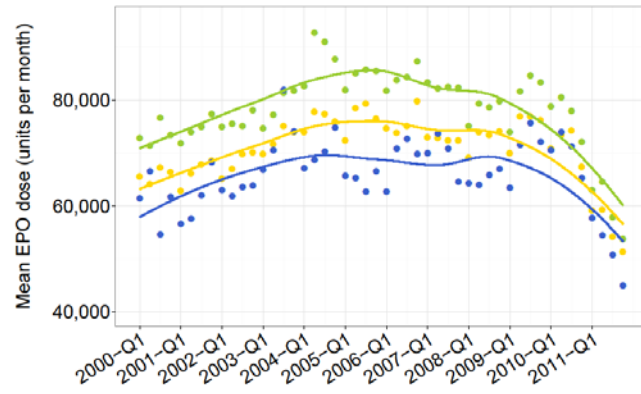
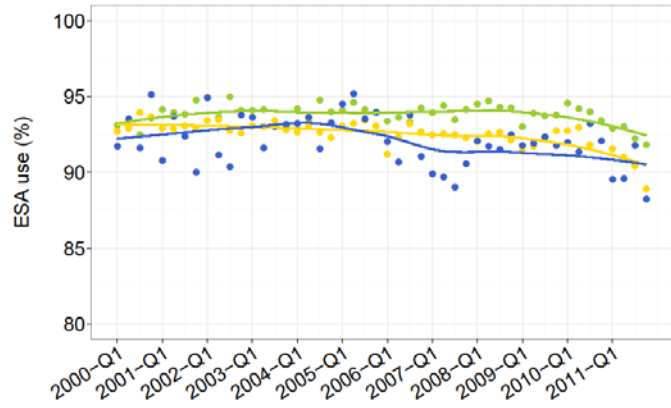
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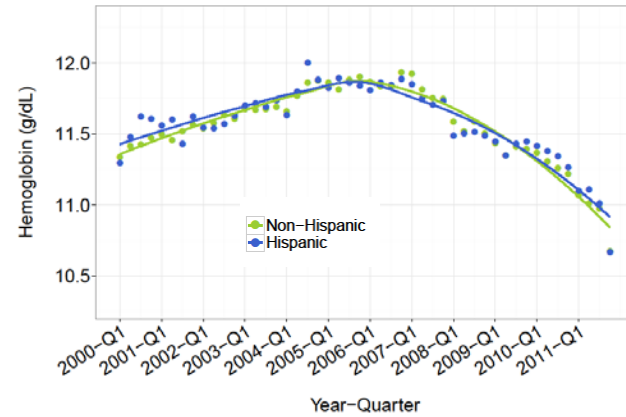
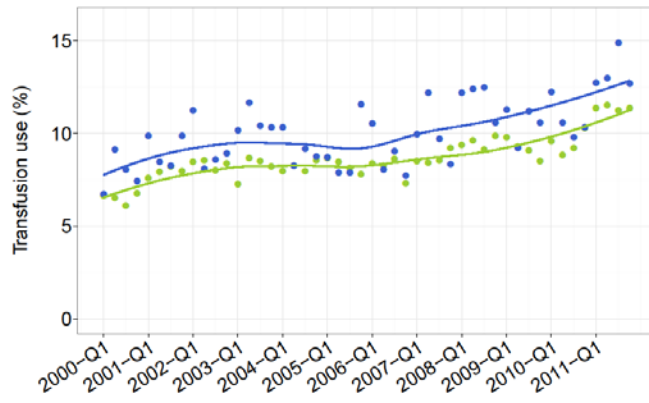
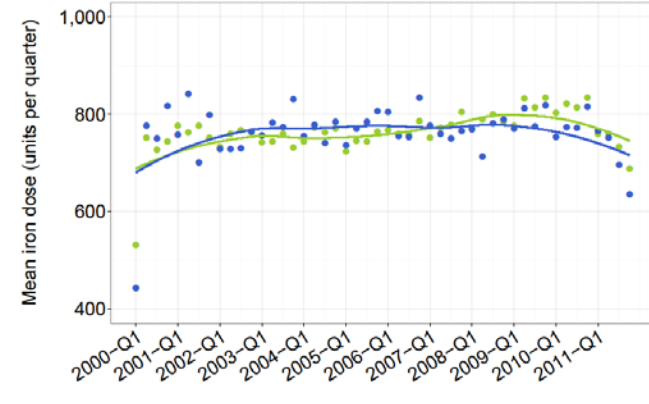
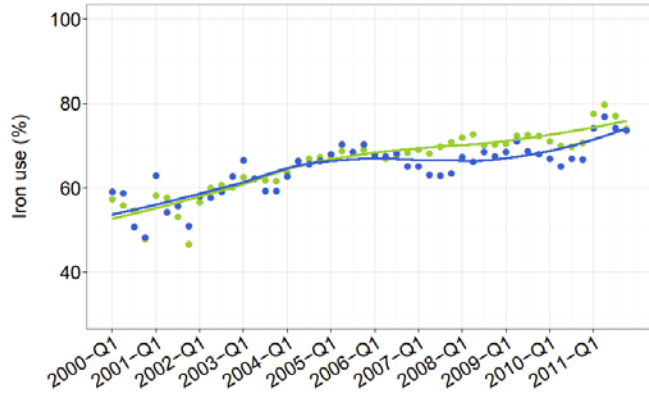
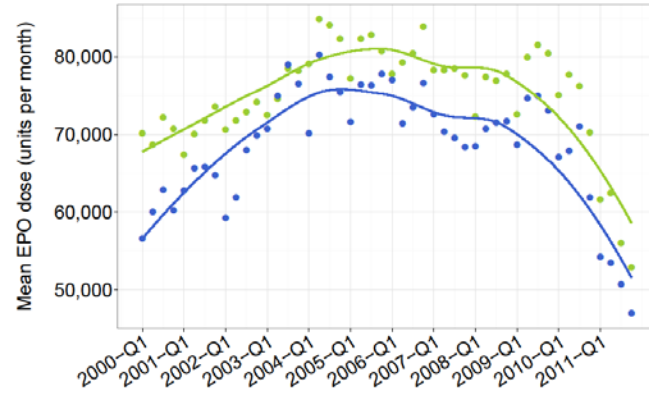
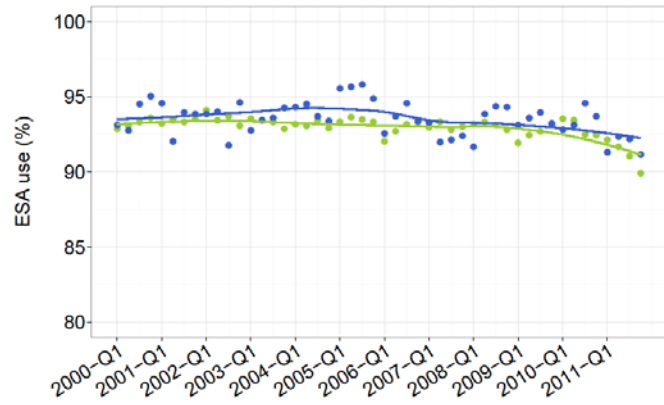
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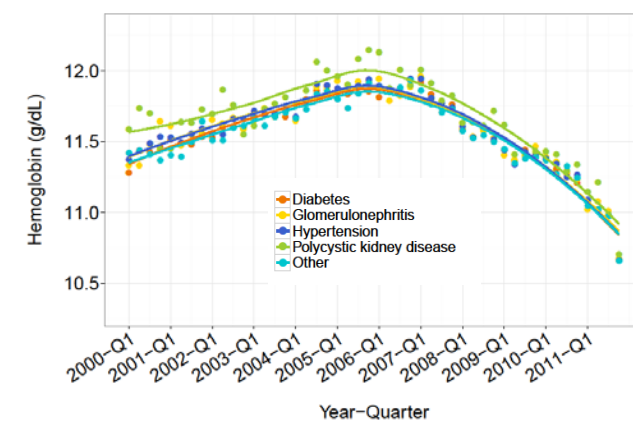
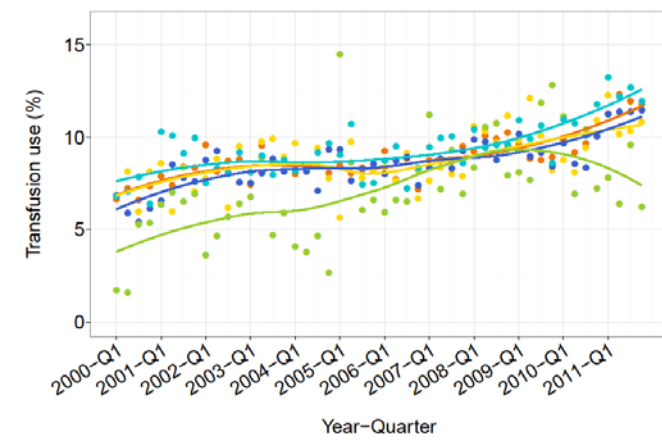
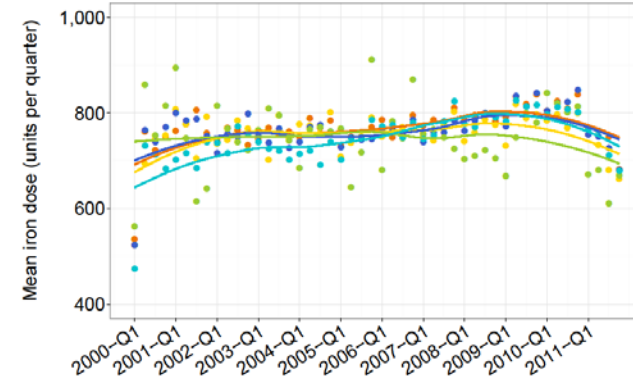
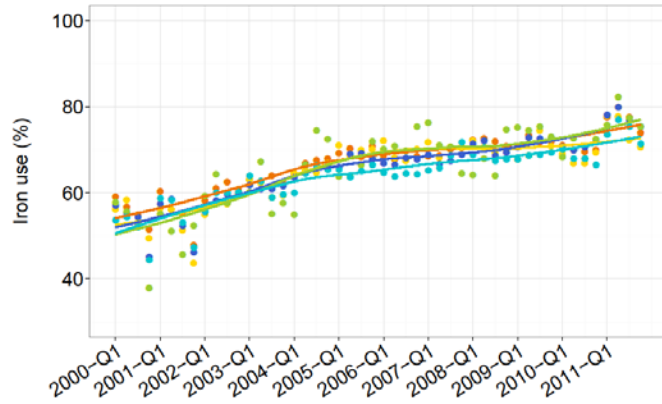
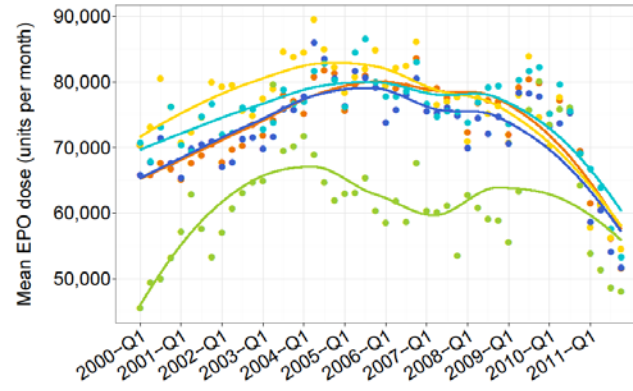
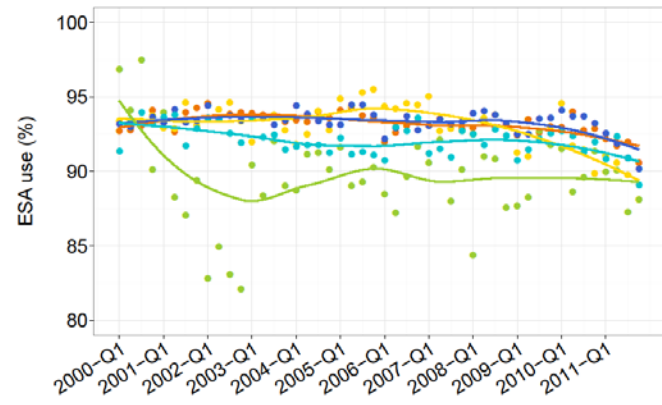
SFigure 9.



SFigure 10.



SFigure 11.



SFigure 12.

