## Section 30<h2>

Myelodysplastic Syndromes (MDS), Chronic Myeloproliferative Disorders (CMD), and Chronic Myelomonocytic Leukemia (CMML)

This section includes Myelodysplastic Syndromes (MDS), Chronic Myeloproliferative Disorders (CMD), and Chronic Myelomonocytic Leukemia (CMML). In the 3rd edition of the International Classification of Diseases for Oncology, the behavior code of myelodysplastic syndromes and chronic myeloproliferative disorders was changed from /1, borderline malignancy or low malignant potential, to /3, malignant primary site. These diagnoses became reportable for cases diagnosed in 2001+ when ICD-O-3 went into effect. CMML has been reportable for all years. CMML is included here and in the leukemia section.

Table 30.1

Myelodysplastic Syndromes, Chronic Myeloproliferative Disorders, and Chronic Myelomonocytic Leukemia

Counts, Percents and Age-Adjusted Incidence Rates<sup>a</sup> for the 17 SEER Geographic Areas by Subtype, 2002-2006

Site	Both Sexes			Males			Females		
	Count	Percent	Rate	Count	Percent	Rate	Count	Percent	Rate
Total	24,020	100.0%	6.7	13,052	100.0%	8.7	10,968	100.0%	5.3
Myelodysplastic Syndromes (MDS)	14,324	100.0%	4.0	7,863	100.0%	5.4	6,461	100.0%	3.1
Refractory anemia (RA), NOS	2,094	14.6%	0.6	1,084	13.8%	0.7	1,010	15.6%	0.5
RA with ringed sideroblasts	1,432	10.0%	0.4	807	10.3%	0.6	625	9.7%	0.3
RA with excess blasts (RAEB)	1,988	13.9%	0.6	1,198	15.2%	0.8	790	12.2%	0.4
RAEB in transformation	138	1.0%	0.0	71	0.9%	0.0	67	1.0%	0.0
Refractory cytopenia w/multilineage dysplasia	724	5.1%	0.2	458	5.8%	0.3	266	4.1%	0.1
Myelodysplastic syndrome with 5q deletion	241	1.7%	0.1	92	1.2%	0.1	149	2.3%	0.1
Therapy-related myelodysplastic syndrome	237	1.7%	0.1	105	1.3%	0.1	132	2.0%	0.1
Myelodysplastic syndrome, NOS	7,470	52.2%	2.1	4,048	51.5%	2.8	3,422	53.0%	1.6
Chronic Myeloproliferative Disorders (CMD)	8,370	100.0%	2.3	4,388	100.0%	2.7	3,982	100.0%	2.0
Polycythemia vera	3,481	41.6%	0.9	2,030	46.3%	1.2	1,451	36.4%	0.7
Chronic myeloproliferative disease, NOS	1,502	17.9%	0.4	783	17.8%	0.5	719	18.1%	0.4
Myelosclerosis with myeloid metaplasia	894	10.7%	0.2	523	11.9%	0.3	371	9.3%	0.2
Essential thrombocythemia	2,322	27.7%	0.6	956	21.8%	0.6	1,366	34.3%	0.7
Chronic neutrophilic leukemia	21	0.3%	0.0	-	-	-	-	-	-
Hypereosinophilic syndrome	150	1.8%	0.0	84	1.9%	0.0	66	1.7%	0.0
Chronic Myelomonocytic Leukemia (CMML)	1,326	100.0%	0.4	801	100.0%	0.6	525	100.0%	0.3

Source: SEER 17 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey,
Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana and New Jersey).

Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).

<sup>-</sup> Statistic not shown due to fewer than 16 cases during the time period.

Table 30.2 Myelodysplastic Syndromes, Chronic Myeloproliferative Disorders, and Chronic Myelomonocytic Leukemia

Age-Adjusted Incidence Rates a for the 17 SEER Geographic Areas by Age and Race, 2002-2006

Myeloxyalastic Syndromes (MDS)   Sy age   Ages <00		Both	Sexes	Mai	les	Females		
By age   Ages <40	Site	Rate	Count	Rate	Count	Rate	Count	
By age   Ages <40								
Ages								
Ages 40-49 Ages 50-59 Ages 50-59 Ages 70-79 Ages 80-69 Ages 80-69 Ages 80-79		0 0	254	0.0	100	0 0	1.65	
Ages 50-59	_							
Ages 60-69 Ages 70-79 Ages 70-79 Ages 80+ Ages 80- Ages 80+ Ages 80- Ages 8	_							
Ages 70-79	_							
Ages 80+	9						•	
By race All Races	9		,					
All Races	_	43.9	5,467	65.6	2,873	32.2	2,594	
White 4.1 12,204 5.6 6,799 3.1 5,405 Black 3.6 1,023 4.3 4.77 3.2 546 Asian/Pacific Islander 2.9 813 3.7 436 2.3 377 American Indian/Alaska Native <sup>b</sup> 2.3 41 2.6 20 2.3 21 Hispanic <sup>c</sup> 3.0 1,062 3.7 556 2.5 506  Chronic Myeloproliferative Disorders (CMD)  By age Ages <40 0.3 596 0.3 336 0.2 260 Ages 40-49 1.4 848 1.6 480 1.2 368 Ages 70-79 11.6 2,197 13.7 1,123 9.9 1,074 Ages 80+ 13.8 1,713 15.9 701 12.6 1,012 By race All Races 2.3 6,861 2.7 3,647 1.9 3,214 Black 2.2 709 2.6 351 2.0 358 Asian/Pacific Islander 1.7 532 1.8 260 1.6 272 American Indian/Alaska Native <sup>b</sup> 1.0 21 Hispanic <sup>c</sup> 1.7 532 1.8 260 1.6 272 American Indian/Alaska Native <sup>b</sup> 1.0 21 Ages 60-69 0.8 21 1.5 663 1.8 352 1.3 311  Chronic Myelomonocytic Leukemia (CMML) By age Ages (0-69 0.8 221 1.2 154 0.5 674 Ages 80-4 4.0 496 5.9 263 2.9 233 By race All Races 0.4 1,326 0.6 801 0.3 322 1.6 169 Ages 80+ 4.0 496 5.9 263 2.9 233 By race All Races 0.4 1,326 0.6 801 0.3 352 All Races 0.4 1,326 0.6 801 0.3 525 White 0.4 1,326 0.6 801 0.7 300 0.2 300 White 0.4 1,326 0.6 801 0.7 300 0.2 300 White 0.4 1,326 0.6 801 0.7 300 0.2 300 White	-							
Black								
Asian/Pacific Islander American Indian/Alaska Nativeb 2.9 813 3.7 436 2.3 377 American Indian/Alaska Nativeb 2.3 41 2.6 20 2.3 21 Hispanicc 3.0 1,062 3.7 556 2.5 506  Chronic Myeloproliferative Disorders (CMD)  By age Ages <40 0.3 596 0.3 336 0.2 260 Ages 40-49 1.4 848 1.6 480 1.2 368 Ages 50-59 2.9 1,326 3.6 799 2.2 527 Ages 60-69 6.3 1,690 7.5 949 5.2 741 Ages 70-79 11.6 2,197 13.7 1,123 9.9 1,074 Ages 80+ 13.8 1,713 15.9 701 12.6 1,012 By race All Races 2.3 8,370 2.7 4,388 2.0 3,982 White 2.3 6,861 2.7 3,647 1.9 3,214 Black 2.2 709 2.6 351 2.0 358 Asian/Pacific Islander 1.7 532 1.8 260 1.6 272 American Indian/Alaska Nativeb 1.0 21 Hispanicc 1.5 663 1.8 352 1.3 311  Chronic Myelomonocytic Leukemia (CMML) By age Ages <40 0.0 21 Ages 40-49 0.0 16 Ages 70-79 2.6 491 3.9 322 1.6 169 Ages 70-79 2.6 491 3.9 322 1.6 169 Ages 70-79 2.6 491 3.9 322 1.6 169 Ages 80+ 4.0 496 5.9 263 2.9 233 By race All Races 0.4 1,326 0.6 801 0.3 525 White 0.4 1,183 0.6 713 0.3 470 Black 0.3 69 0.4 39 0.2 30 Asian/Pacific Islander 0.2 62 0.4 43 0.1 119 American Indian/Alaska Nativeb								
American Indian/Alaska Native <sup>b</sup> 2.3 41 2.6 20 2.3 21 Hispanic <sup>c</sup> 3.0 1,062 3.7 556 2.5 506  Chronic Myeloproliferative Disorders (CMD)  By age  Ages <40 0.3 596 0.3 336 0.2 260 Ages 40-49 1.4 848 1.6 480 1.2 368 Ages 50-59 2.9 1,326 3.6 799 2.2 527 Ages 60-69 6.3 1,690 7.5 949 5.2 741 Ages 80+ 13.8 1,713 15.9 701 12.6 1,012  By race  All Races 2.3 8,370 2.7 4,388 2.0 3,982 White 2.3 6,861 2.7 3,647 1.9 3,214 Black 2.2 709 2.6 351 2.0 358 Asian/Pacific Islander 1.7 532 1.8 260 1.6 272 American Indian/Alaska Native <sup>b</sup> 1.0 21 Hispanic <sup>c</sup> 1.5 663 1.8 352 1.3 311  Chronic Myelomonocytic Leukemia (CMML)  By age Ages <40 0.0 21 Ages 40-49 0.0 16 Ages 50-59 0.2 81 0.2 43 0.2 38 Ages 60-69 0.8 221 1.2 154 0.5 67 Ages 70-79 2.6 491 3.9 322 1.6 169 Ages 80+ 4.0 496 5.9 263 2.9 233  By race  All Races 0.4 1,326 0.6 801 0.3 525 White 0.4 1,326 0.6 801 0.3 525 White 0.4 1,386 0.6 713 0.3 470 Black 0.3 69 0.4 39 0.2 30 Asian/Pacific Islander 0.2 62 0.4 43 0.1 19 American Indian/Alaska Native <sup>b</sup> American Indian/Alaska Native <sup>b</sup> 0.3 69 0.4 39 0.2 30 Asian/Pacific Islander 0.2 62 0.4 43 0.1 19 American Indian/Alaska Native <sup>b</sup>								
Hispanic (CMD) By age Ages <40			813					
Chronic Myeloproliferative Disorders (CMD)  By age  Ages <40	American Indian/Alaska Native <sup>b</sup>	2.3	41	2.6	20	2.3	21	
By age Ages <40	Hispanic <sup>c</sup>	3.0	1,062	3.7	556	2.5	506	
By age Ages <40	Chronic Myeloproliferative Disorders	(CMD)						
Ages          40 Ages          40-49         1.4 848         1.6 480         1.2 368           Ages 50-59         2.9 1,326         3.6 799         2.2 527           Ages 60-69         6.3 1,690         7.5 949         5.2 741           Ages 70-79         11.6 2,197         13.7 1,123         9.9 1,074           Ages 80+         13.8 1,713         15.9 701         12.6 1,012           By race         All Races         2.3 8,370         2.7 4,388         2.0 3,982           All Races         2.3 6,861         2.7 3,647         1.9 3,214           Black         2.2 709         2.6 351         2.0 358           Asian/Pacific Islander         1.7 532         1.8 260         1.6 272           American Indian/Alaska Nativeb         1.0 21            Hispanic C         1.5 663         1.8 352         1.3 311           Chronic Myelomonocytic Leukemia (CMML)         England CMML)         England CMML)           By age         Ages <0		, - ,						
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Ages 60-69 6.3 1,690 7.5 949 5.2 741 Ages 70-79 11.6 2,197 13.7 1,123 9.9 1,074 Ages 80+ 13.8 1,713 15.9 701 12.6 1,012 By race All Races 2.3 8,370 2.7 4,388 2.0 3,982 White 2.3 6,861 2.7 3,647 1.9 3,214 Black 2.2 709 2.6 351 2.0 358 Asian/Pacific Islander 1.7 532 1.8 260 1.6 272 American Indian/Alaska Native <sup>b</sup> 1.0 21 Hispanic <sup>c</sup> 1.5 663 1.8 352 1.3 311  Chronic Myelomonocytic Leukemia (CMML) By age Ages <40 0.0 21 Ages 40-49 0.0 16 Ages 50-59 0.2 81 0.2 43 0.2 38 Ages 60-69 0.8 221 1.2 154 0.5 67 Ages 70-79 2.6 491 3.9 322 1.6 169 Ages 80+ 4.0 496 5.9 263 2.9 233  By race All Races 0.4 1,326 0.6 801 0.3 525 White 0.4 1,183 0.6 713 0.3 470 Black 0.3 69 0.4 39 0.2 30 Asian/Pacific Islander 0.2 62 0.4 43 0.1 19 American Indian/Alaska Native <sup>b</sup>	_							
Ages 70-79	_							
Ages 80+ 13.8 1,713 15.9 701 12.6 1,012 By race All Races All Races White 2.3 6,861 2.7 4,388 2.0 3,982 White 2.3 6,861 2.7 3,647 1.9 3,214 Black Asian/Pacific Islander 1.7 532 1.8 260 1.6 272 American Indian/Alaska Native <sup>b</sup> 1.0 21								
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White 0.4 1,183 0.6 713 0.3 470 Black 0.3 69 0.4 39 0.2 30 Asian/Pacific Islander 0.2 62 0.4 43 0.1 19 American Indian/Alaska Native <sup>b</sup>	By race							
Black       0.3       69       0.4       39       0.2       30         Asian/Pacific Islander       0.2       62       0.4       43       0.1       19         American Indian/Alaska Native <sup>b</sup> -       -       -       -       -       -       -       -	All Races	0.4	1,326	0.6	801	0.3	525	
Asian/Pacific Islander 0.2 62 0.4 43 0.1 19 American Indian/Alaska Native <sup>b</sup>	White	0.4	1,183	0.6	713	0.3	470	
American Indian/Alaska Native <sup>b</sup>	Black	0.3	69	0.4	39	0.2	30	
	Asian/Pacific Islander	0.2	62	0.4	43	0.1	19	
	American Indian/Alaska Native <sup>b</sup>	_	_	_	_	_	_	
	Hispanic <sup>c</sup>	0.3	90	0.4	59	0.2	31	

Source: SEER 17 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA,

Kentucky, Louisiana and New Jersey).
Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).
Incidence data for American Indian/Alaska Native are based on the CHSDA(Contract Health b Service Delivery Area) counties.

Hispanics are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.

Statistic not shown due to fewer than 16 cases during the time period.