	Mayo 1			Mayo 2			Combined (Mayo 1 & Mayo 2)		
	Other	Other	Other	Other	MN	All locations	Other	MN	All locations
Probands	118	118	118	125	100	225	243	187	**430**
FDRs	327	327	327	295	265	560	622	557	**1179**

Supplemental Table 1. Full cohort summary, probands and first-degree relatives by time period and location

Abbreviations: MGUS, monoclonal gammopathy of undetermined significance; MM, multiple myeloma; SMM, smoldering multiple myeloma. Values are counts. Other=Proband resided outside of Minnesota at diagnosis. MN=Proband resided in Minnesota at diagnosis. All locations=Minnesota and all other locations.

Mayo 1=participants recruited from Vachon et al. 2009, 2005-2009.

Mayo 2=participants recruited from 2009-2015

Supplemental Table 2. Minnesota Region: Demographic characteristics of Myeloma (MM/SMM) probands and their first degree relatives		
Characteristics	Probands (n=187)	First-degree relatives of probands (n=557)
Sex		
Male	108 (57.8)	236 (42.4)
Female	79 (42.2)	321 (57.6)
Age category (years)		
<40	3 (1.6)	---
40-49	14 (7.5)	126 (22.6)
50-59	51 (27.3)	148 (26.6)
60-69	67 (35.8)	138 (24.8)
70-79	43 (23.0)	101 (18.1)
80+	9 (4.8)	44 (7.9)
Relationship to proband		
Parent	-	52 (9.3)
Sibling	-	367 (65.9)
Child	-	138 (24.8)
Abbreviations: MM, multiple myeloma; SMM, smoldering multiple myeloma; FDRs, first degree relatives. Values reported are n (%).		

Supplemental Table 3. Demographic characteristics of Myeloma (MM /SMM) probands and First-degree relatives (all locations)

Characteristics	Mayo 1[1]		Mayo 2	
	Probands n=205	First-degree relatives n=619	Probands n=225	First-degree relatives n=560
Sex				
Male	107 (52.2)	249 (40.2)	134 (59.6)	238 (42.5)
Female	98 (47.8)	370 (59.8)	91 (40.4)	322 (57.5)
Age (years)				
18-39	6 (2.9)		3 (1.3)	
40-49	24 (11.7)	202 (32.6)	16 (7.1)	115 (20.5)
50-59	62 (30.2)	132 (21.3)	73 (32.4)	148 (26.4)
60-69	71 (34.6)	139 (22.5)	79 (35.1)	153 (27.3)
70-79	37 (18.0)	89 (14.4)	47 (20.9)	92 (16.4)
80+	5 (2.4)	57 (9.2)	7 (3.1)	52 (9.3)
Relationship to proband				
Parent	-	87 (14.1)	-	52 (9.3)
Sibling	-	366 (59.1)	-	375 (67.0)
Child	-	166 (26.8)	-	133 (23.8)

Abbreviations: MM, multiple myeloma; SMM, smoldering multiple myeloma. Values reported are n (%).
[1]Samples from 2009 Cohort: Vachon CM, et al.

Supplemental Table 4. Prevalence of MGUS in first-degree relatives of Myeloma probands (MM/SMM) compared with Olmsted County residents. (Mayo 1 compared to Mayo 2 and Olmsted County)

| Age (years) | Mayo 1[1] | | | Mayo 2 | | | Olmsted County | | |
| | First-degree relatives of probands | | | First-degree relatives of probands | | | | | |
	Total (n=619)	Total with MGUS (n=39)	Prevalence (95% CI)	Total (n=560)	Total with MGUS (n=36)	Prevalence (95% CI)	Total (n= 21463)	Total with MGUS (n=694)	Prevalence (95% CI)
40-49	202	3	1.5 (0.3,4.3)	115	3	2.6 (0.5,7.6)			
50-59	132	5	3.8 (1.2,8.8)	148	6	4.1 (1.5,8.8)	8373	141	1.7 (1.4,2.0)
60-69	139	11	7.9 (4.0,14.2)	153	10	6.5 (3.1,12.0)	6019	178	3.0 (2.5,3.4)
70-79	89	14	15.7 (8.6,26.4)	92	8	8.7 (3.8,17.1)	4508	205	4.6 (4.0,5.2)
80+	57	6	10.5 (3.9,22.9)	52	9	17.3 (7.9,32.9)	2563	170	6.6 (5.7,7.7)
Total, adjusted (40+)	619	39	6.1 (4.1,8.0)	560	36	5.8 (3.7,7.8)			
Total, adjusted (50+)	417	36	8.5 (5.7,11.4)	445	33	7.3 (4.7,9.8)	21463	694	3.2 (3.0,3.5)

Abbreviations: MGUS, monoclonal gammopathy of undetermined significance; MM, multiple myeloma; SMM, smoldering multiple myeloma; 95% CI, 95% confidence interval. Rates for MGUS determined by serum protein electrophoresis with immunofixation for confirmation.
Adjusted=Age and sex adjusted to 2000 US total population.
[1]Samples from 2009 Cohort: Vachon CM, et al.

	First-degree relatives of probands			Olmsted County		
Age (years)	**Total** (n=557)	**Total with MGUS** (n=43)	**Prevalence** **(95% CI)**	**Total** (n=21463)	**Total with MGUS** (n=694)	**Prevalence** **(95% CI)**
40-49	126 (22.6)	1 (2.3)	0.8 (0.0,4.4)	-	-	-
50-59	148 (26.6)	6 (14.0)	4.1 (1.5,8.8)	8373 (39.0)	141 (20.3)	1.7 (1.4,2.0)
60-69	138 (24.8)	13 (30.2)	9.4 (5.0,16.1)	6019 (28.0)	178 (25.6)	3.0 (2.5,3.4)
70-79	101 (18.1)	16 (37.2)	15.8 (9.1,25.7)	4508 (21.0)	205 (29.5)	4.6 (4.0,5.2)
80+	44 (7.9)	7 (16.2)	15.9 (6.4,32.8)	2563 (11.9)	170 (24.5)	6.6 (5.7,7.7)
Total, adjusted *(Ages 40+)*	557 (100)	43 (100)	6.6 (4.5,8.6)	-	-	-
Total, adjusted *(Ages 50+)*	431 (77.4)	42 (97.7)	9.6 (6.6,12.5)	21463 (100)	694 (100)	3.2 (3.0,3.5)

Supplemental Table 5. Minnesota Region: Prevalence of MGUS in first-degree relatives of Myeloma (MM / SMM) probands compared with Olmsted County residents

Abbreviations: MGUS, monoclonal gammopathy of undetermined significance; MM, multiple myeloma; SMM, smoldering multiple myeloma; 95% CI, 95% confidence interval. Values reported are n (%). Rates for MGUS determined by serum protein electrophoresis with immunofixation for confirmation. Adjusted=age and sex adjusted to 2000 US total population.

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