Women's Health Initiative
Clinical Trial and Observational Study

Semi-Annual Progress Report
February 1, 1999 to August 25, 1999

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WHI Semi-Annual Progress Report

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Executive Summary

This report, summarizing data accumulated through August 25, 1999, presents the current status of the three clinical trial components and the observational study of the Women's Health Initiative (WHI). With recruitment of 68,000 women in the clinical trial completed, the primary areas for this report are related to adherence to the interventions, participation in follow-up data collection and outcomes. Follow-up activities for the 93,726 women in the Observational Study component are progressing in parallel.

The Hormone Replacement Therapy (HRT) component completed accrual with 27,348 women randomized, including nearly 40% who had previously experienced a hysterectomy. The average follow-up on these women is approximately 2.5 years. The proportion of women who have stopped intervention has been larger than projected in the first two years (10% per year). Subsequent drop-out rates, now with estimates available through the fifth year, have been close to design assumptions (5-7% per year). Multivariate analyses reveal that racial and ethnic minorities and women experiencing symptoms associated with hormone use (vaginal bleeding and breast tenderness) are consistently at higher risk of poor adherence throughout follow-up. Symptom reporting is stable after the second year, with 5% of women with a uterus reporting bleeding and 3% of women in both arms reporting breast changes. Analyses of a small sample of blood specimens, shown here combined across treatment arms, exhibit changes consistent in direction with reports of other randomized studies of hormone use (e.g., reductions in LDL and total cholesterol, increases in HDL and triglycerides). As expected from observational data, we note a small increase in bone mineral density at years 1 and 3, particularly in the spine. Vital status is known within the last 18 months for all but 244 women (1%) but we lack recent follow-up on 2.3%. Event rates for the primary outcome of CHD are currently 70% of design assumptions. These results for recruitment, adherence, and overall incidence rates give revised power estimates for the estrogen and estrogen/progestin comparisons of 63% and 76%, respectively, for detecting a 21% reduction in CHD, assuming an average of 8.5 years of follow-up.

Recruitment into the Dietary Modification (DM) component finished with 48,837 women randomized (102% of goal). The intervention, delivered in group sessions over a one year period, is nearly complete for all DM women, as the minimum follow-up is now 12 months. The current focus is on the quarterly maintenance sessions and options for boosting adherence. The difference between the Intervention and Control arms in FFQ percent energy from fat (C-I) is 11%, 10%, 9.6% and 8.4% at years 1,2,3 and 4, respectively. The corresponding design assumptions for the C-I comparisons were 13% at year 1, diminishing by 0.25% per year. Multivariate analyses indicate that participation in the intervention and maintenance sessions as originally conceived is a consistent positive predictor of adherence. Women over age 70, racial or ethnic minorities, women with higher baseline body mass index, and women gaining weight during follow-up tend to have lower C-I values. Analyses of a small sample of blood specimens show decreases in LDL and total cholesterol, even though the results presented are pooled across intervention and control groups. Vital status is known within the last 18 months for all but 452 women (0.9%). Observed breast cancer and colorectal cancer incidence rates are currently approaching the design values (70% to 100%). Using the observed values of these key parameters, the projected power for detecting a 14% reduction in breast cancer incidence is 63%, assuming a decline in C-I to 8% and an average of 8.5 years of follow-up.

Randomizations into the Calcium and Vitamin D (CaD) component, designed to occur at a CT participant's first annual follow-up visit, have reached 35,638 and are expected to continue for a few more months. Current projections suggest a final CaD sample size of 36,000 to 37,000. Adherence to CaD supplements, though still lower than desirable, have shown significant improvement over the last six months. Some of this improvement is related to the availability of an alternate (swallowable) formulation. Multivariate analyses suggest that older women and women already participating in the HRT trial component are more likely to be adherent. Racial and ethnic minorities and unmarried women are less likely to be adherent. Analyses of bone density measures show small increases between the measures obtained at the first and third annual visit at all three skeletal sites. Hip fracture incidence rates are currently much lower than projected suggesting a strong healthy volunteer effect. With these updated parameter values and 7.5 years of follow-up, the power to detect a 27% reduction in hip fracture rates is 75%. The power for combined fractures remains high (above 99%).

The observational study (OS) component enrolled 93,726 women. Annual mailed follow-up is progressing with response rates of 92-96% in follow-up years one and two. Descriptive results of the analysis of blood specimens obtained in the OS-Measurement Precision Study are shown. Vital status is known within the last 36 months for all but 487 women (0.5%). Outcomes rates for all major health events reported by OS women are presented by age and race.

The timeliness and completeness of local outcomes processing has been a major emphasis in the past year. Substantial improvement has again been made in reducing the backlog and in processing new reported events in a timely way. The recent focus has been on completing the documentation of deaths and in assuring up-to-date information on vital status. A summary of locally and centrally adjudicated outcomes and the corresponding agreement rate are also provided.

The two branches of the Performance Monitoring Committee, targeting problems in adherence and outcomes, have been diligent in identifying clinical centers experiencing difficulties and offering their assistance through phone contacts and a small number of visits. These efforts, as well as initiatives from advisory committees, the CT adherence task force and the regional groups, aim to improve our performance in the areas designated to be of highest priority for study integrity.

1. Preliminary Remarks

This report documents study activities of the Women's Health Initiative (WHI) Clinical Trial (CT) and Observational Study (OS) during the period February 1 to August 25, 1999 as well as the cumulative experience. Topics include CaD recruitment, follow-up, intervention monitoring, safety, outcomes, study power, and specialized scientific efforts. Updates are provided for each study component separately.

During this period, major milestones, emphases, and changes have included:

- Concerted efforts to enhance the DM intervention with a motivational interviewing component and additional training of nutritionists.
- Continued improvement in timeliness of outcomes ascertainment.
- Continued recruitment into the CaD trial including randomizations through the second year of follow-up.
- Completion of database migration from a DOS to a Windows platform. The upgrade assures Y2K compliance and includes a new email system which allows staff and investigators to access their email from any PC that has internet capabilities.
- Successful completion of the first CT "vital status sweep".
- Implementation of procedures for preliminary and final report of death.
- Completion of the first round of the OS Blood Competition.
- Attention to adherence as a continuing concern, including intensive work by the PMC to review CC performance and provide assistance to improve adherence and retention and formation of a CT Adherence Task Force.
- Establishment of a Genetics and Biomarkers Taskforce to make recommendations about technical, ethical, and scientific aspects of performing these tests in WHI women.
- Implementation of reorganized study management and advisory committee structure.
- Commencement of analytic work with the full baseline CT and OS dataset.
- Continued emphasis on safety monitoring and quality assurance by the PMC and the QA visit teams.

All reports summarize Clinical Center (CC) data provided to the CCC by January 31, 1999. All data presented are derived from WHILMA, the study database. Data managed in WHILMA are those defined by standardized data collection procedures and instruments (see *WHI Manuals, Vol. 2 – Procedures and Vol. 3 – Forms*).

Table 1.1 - Database Abbreviations for WHI CCs displays the abbreviations used in database reports to identify CCs. Other organizations providing data to this report are:

- McKesson BioServices, Rockville, Maryland, CCC subcontractor for specimen repository and drug distribution (Harrison Hoppes, PhD, President).

- Epicare, Bowman Gray School of Medicine, Winston-Salem, North Carolina (formerly Epicore, located at University of Alberta, Alberta, Ontario) CCC subcontractor for central reading of electrocardiograms (Pentti Rautaharju, MD, Principal Investigator).
- University of California, San Francisco, CCC subcontractor for central reading of bone densitometry (Steven Cummings, MD, Principal Investigator).
- Medical Research Laboratories, CCC Subcontractor of specimen analyses (Evan Stein, MD, PhD, Principal Investigator).

We note two changes in Clinical Center leadership in the past six months. Dr. Sally McNagny has recently left Emory University. Dr. Nelson Watts is now the Principal Investigator in Atlanta. Dr. Allan Hubbell has replaced Dr. Frank Meyskens as the Principal Investigator at the Irvine CC.

Table 1.1
Database Abbreviations for WHI CCs

Abbreviation	CC Institution and Location	Principal Investigator
Vanguard Clinical Centers (VCCs):		
ATLANTA	Emory University Atlanta (Decatur), Georgia	Nelson Watts, MD
BIRMING	University of Alabama at Birmingham Birmingham, Alabama	Albert Oberman, MD MPH
BOWMAN	Bowman Gray School of Medicine Winston-Salem(Greensboro), North Carolina	Electra Paskett, PhD
BRIGHAM	Brigham and Women's Hospital Boston (Chestnut Hill), Massachusetts	Joann Manson, MD DrPH
BUFFALO	State University of New York, Buffalo Buffalo, New York	Maurizio Trevisan, MD MS
CHICAGO	Northwestern University Chicago and Evanston, Illinois	Philip Greenland, MD
IOWACITY	University of Iowa Iowa City and Bettendorf, Iowa	Robert Wallace, MD
LAJOLLA	University of California, San Diego La Jolla and Chula Vista, California	Robert Langer, MD MPH
MEMPHIS	University of Tennessee Memphis, Tennessee	Karen Johnson, MD
MINNEAPO	University of Minnesota Minneapolis, Minnesota	Richard Grimm, MD
NEWARK	University of Medicine and Dentistry Newark, New Jersey	Norman Lasser, MD PhD
PAWTUCK	Memorial Hospital of Rhode Island Pawtucket, Rhode Island	Annalouise Assaf, PhD
PITTSBUR	University of Pittsburgh Pittsburgh, Pennsylvania	Lewis Kuller, MD DrPH
SEATTLE	Fred Hutchinson Cancer Research Center Seattle, Washington	Shirley Beresford, PhD
TUCSON	University of Arizona Tucson and Phoenix, Arizona	Tamsen Bassford, MD
UCDAVIS	University of California, Davis Sacramento, California	John Robbins, MD

Table 1.1 (continued)
Database Abbreviations for WHI CCs

Abbreviation	CC Institution and Location	Principal Investigator
New Clinical Centers (NCCs):		
CHAPHILL	University of North Carolina at Chapel Hill Chapel Hill, North Carolina	Gerardo Heiss, MD MPH
CHI-RUSH	Rush Presbyterian- St. Luke's Medical Center Chicago, Illinois	Henry Black, MD
CINCINNA	University of Cincinnati Cincinnati, Ohio	James Liu, MD
COLUMBUS	Ohio State University Columbus, Ohio	Rebecca Jackson, MD
DETROIT	Wayne State University Detroit, Michigan	Susan Hendrix, DO
GAINESVI	University of Florida Gainesville and Jacksonville, Florida	Marian Limacher, MD
GWU-DC	George Washington University Washington, DC	Judith Hsia, MD
HONOLULU	University of Hawaii Honolulu, Hawaii	David Curb, MD
HOUSTON	Baylor College of Medicine Houston, Texas	Jennifer Hays, PhD
IRVINE	University of California, Irvine Irvine, California	Allan Hubbell, MD
LA	University of California, Los Angeles Los Angeles, California	Howard Judd, MD
MADISON	University of Wisconsin Madison, Wisconsin	Catherine Allen, PhD
MEDLAN	Medlantic Research Institute Washington, D.C.	Barbara Howard, PhD
MIAMI	University of Miami Miami, Florida	Mary-Jo O'Sullivan, MD

Table 1.1 (continued)
Database Abbreviations for WHI CCs

Abbreviation	CC Institution and Location	Principal Investigator
NCCs: (cont.)		
MILWAUKE	Medical College of Wisconsin Milwaukee, Wisconsin	Jane Morley Kotchen MD MPH
NEVADA	University of Nevada Reno, Nevada	Sandra Daugherty, MD PhD
NY-CITY	Albert Einstein College of Medicine Bronx, New York	Sylvia Wassertheil-Smoller, PhD
OAKLAND	Kaiser Foundation Research Institute Oakland, California	Bette Caan, PhD
PORTLAND	Kaiser Foundation Research Institute Portland, Oregon	Cheryl Ritenbaugh, PhD
SANANTON	University of Texas San Antonio, Texas	Robert Schenken, MD
STANFORD	Stanford University San Jose, California	Marcia Stefanick, PhD
STONYBRK	Research Foundation of SUNY, Stony Brook Stony Brook, NY	Dorothy Lane, MD MPH
TORRANCE	University of California, Los Angeles Torrance, California	Rowan Chlebowski, MD PhD
WORCESTR	University of Massachusetts Worcester, Massachusetts	Judith Ockene, PhD

2. HRT Component

2.1 Recruitment

Recruitment into the HRT component, completed in October of 1998, reached 27,348 women (99.4% of goal). Of these, 10,739 women had a prior hysterectomy (39%) and were randomized to either unopposed estrogen (ERT) or placebo in equal proportions. The remaining 16,609 women with an intact uterus were randomized to combined estrogen/progestin (PERT) or its placebo, again in equal proportions for most of the recruitment period. *Table 2.1* documents the age distribution of this population.

2.2 Adherence

Women randomized to HRT are required to come for a clinic visit six and twelve months after randomization and annually thereafter. Adherence to medications is determined at all visits by weighing returned bottles if available or by self-report in the small proportion of women with missed pill collection. Symptoms and outcomes are also ascertained at these visits. Telephone contacts are also required at 6 weeks and on the anniversary of their six month visits. These contacts serve mostly to assure safety, address possible adherence and retention issues, ascertain outcomes and promote bonding. Calculated adherence data from these telephone contacts are limited so we do not report them here.

Table 2.2 – HRT Adherence Summary gives descriptive data on all women who are considered due for each contact by stratum. Rates of visits conducted, visits within a ± 2 week window, stopping intervention and taking protocol-assigned medications are shown by treatment arm for each interval for which we have adherence data. For stopping intervention and medication rates we excluded the 331 who were moved from ERT to PERT in early 1995 after our protocol change since their experience is unique in the trial. The final column is the adherence summary; our primary measure for monitoring the adherence summary is defined as the number of women known to have consumed more than 80% of their assigned HRT pills during that interval as a proportion of the number randomized and eligible for this visit. Thus 77% of women are known to be adherent at AV-1 and 55% are adherent at AV-5. As previously noted, women with an intact uterus are somewhat more adherent (1%-6%) than hysterectomized women throughout follow-up. There has been some slight improvement in adherence at AV-2 and beyond. This seems to be attributable to a small increase in pill collection rates.

Table 2.3 presents estimated drop-in and drop-out rates based on observed data and the associated design assumptions. The design assumptions underestimated the observed values to date, particularly for the first two years of follow-up. The power calculations assumed that 6% of HRT women would stop intervention in the first year with an additional 3% per year thereafter. An independent assumption of 3% per year lost to follow-up or competing risk events gives an overall drop-out rate of 8.8% in year 1, and 5.9% per year thereafter. Our lifetable estimate of the AV-1 drop-out rate is 9.8%, and our estimate for drop-out between AV-1 and AV-2 is 9.5% with small differences between those women with and without a uterus.

The design assumed that a small proportion (1.5% per year) of the HRT participants would stop study hormone pills and begin taking hormones outside of the trial. Among hysterectomized women this observed rate averages about 2.5%. In women with a uterus it is 1.9%.

Tables 2.4-2.7 examine HRT adherence in relation to study subject and program characteristics. The summary adherence measure mentioned above was used as the dependent variable indicating adherence (taking 80% or more of pills) in the preceding time interval (included in this report are the intervals from randomization to SAV-1, SAV-1 to AV-1, AV-1 to AV-2 and AV-2 to AV-3). The odds ratios (OR) represent the relative odds for becoming non-adherent among those who were previously adherent, and are shown separately by uterine status for each interval. The SAV-1 and AV-1 data should be considered final as AV-1s are essentially complete.

There are consistent patterns in some factors related to adherence across these analyses. Women in both strata (with and without a uterus) are less adherent if they are racial/ethnic minorities. There is a suggestion that prior hormone use predicts slightly lower adherence, though women who completed the HRT washout have better adherence. Women reporting symptoms (breast tenderness in either strata at AV-1 and bleeding in the women with a uterus during each preceding interval) are noticeably less adherent. Adherence decreases significantly with severity of reported breast tenderness at both AV-1 and AV-2 and at approximately the same rate in both strata.

Table 2.8 – Reasons for Stopping HRT summarizes the frequency of reported reasons for stopping interventions by hysterectomy status. For all women "health problems or symptoms from the WHI intervention" is the most frequently reported reason for stopping HRT study pills. A large proportion of women who have stopped intervention report health-related problems not directly associated with the intervention or conflicts between the study and their health needs or the guidance given to them by their provider.

2.3 Symptoms

Women may report symptoms potentially related to HRT at routine follow-up contacts or through non-routine contacts with the CC. The primary symptoms being monitored are bleeding and breast changes. (Note that for the regression models of adherence, "breast tenderness" rather than "breast changes" was used. Breast tenderness is not collected regularly on all participants after AV-1). Reports of bleeding and breast changes by contact type are shown in *Tables 2.9* and *2.10*, respectively. Note that 5% or more of women with a uterus report bleeding at each annual visit through AV-5. Reports of breast changes have reached a plateau at approximately 3% in both strata after SAV-2.

2.4 Safety Monitoring

Table 2.11 – Results of Endometrial Monitoring presents results of endometrial aspirations by time since randomization and study arm. As routine post-randomization biopsies are required of only a small sample (6%) of women at AV-3, AV-6, and AV-9, the vast majority of these tests represent non-routine aspirations performed to address bleeding problems. Among 2,827 biopsies, 73 (2.6%) yielded an abnormal result: 43 cystic, 9 adenomatous, 17 atypia and 4 cancer.

2.5 Laboratory Studies

Table 2.12 – presents the results of blood specimens analyses from a small (8.6%) cohort of HRT women selected randomly at baseline for these prospective analyses. This subsample incorporated over-sampling of minorities. The results shown here are weighted to reflect the overall WHI-CT distribution of race/ethnicity.

2.6 Intermediate Outcomes

Bone mineral density (BMD) measures are collected at the three BMD clinical centers (Pittsburgh, Birmingham, and Tucson) at baseline and at follow-up years 1,3,6, and 9. These data, shown in *Table 2.13*, suggest small increases in BMD between baseline and AV-3, with the largest change in the BMD of the spine (3.4%-4%), followed by hip (approximately 2.1%) and whole body (1.6%). There are no important differences between the two strata.

2.7 Vital Status

Table 2.14 presents data on the vital status and the participation status of participants in the HRT trial. A detailed description of CC and CCC activities to actively locate participants who do not complete their periodic visits is given in *Section 6 – Outcomes*. For operational purposes, we define CT participants to have "unknown" vital status if there is no contact with the participant for 18 months. Less than 1% of the HRT participants fall in this category. Another 1% have died and 1.4% of the HRT participants are known to be alive, but have not recently provided outcome information to the study by completing a *Form 33 – Medical History Update*. The design assumed that 3% per year would be lost-to-follow-up or dead. Currently the average follow-up for HRT participants is approximately 2.6 years, suggesting that approximately 7.8% could be expected to be dead or lost-to-follow-up. Our overall rates compare favorably to design assumptions. Conceivably, some of the participants who did not meet our operational definition of lost-to-follow-up may be lost by now as well. Even allowing for this time lag, we seem to have lost fewer participants than what was assumed for the power calculations. Clinic staff are actively pursuing these women, in the hopes of convincing them to resume follow-up, and to resume intervention when appropriate.

2.8 Outcomes

Table 2.15 contains counts of the number of locally verified major WHI outcomes for HRT participants by age and ethnicity. Approximately 15-20% of the self-reported outcomes have not yet been verified so the numbers in this table can be seen as a lower bound of the actual number of outcomes that have occurred. Compared to the design assumptions, we have observed about 70% of the expected number of CHD events and breast cancers, 75% of the expected number of colorectal cancers, and about 30% of the expected number of hip fractures. We anticipate that these percentages will increase as the "healthy volunteer effect" is diluted with time.

Table 2.16 compares the rates of the same locally verified outcomes between women who have and who have not been hysterectomized. For most cardiovascular outcomes the event rates are slightly larger for the women without a uterus, while for most cancers the rates are slightly larger for women with a uterus. Many of these differences are small and based on low numbers of events so they may be due to chance. The differences in cardiovascular disease rates are consistent with the risk profile differences we have previously observed, however.

Table 2.17 contains counts of the number of self-reports for some outcomes that are not locally verified in WHI. As most of the self-reported outcomes are somewhat over-reported (see *Section 6.3 – Outcomes Data Quality*), the number in this table should be taken as an upper bound to the number of events that have occurred in HRT participants.

2.9 Power Considerations

The power under the design assumptions for adherence and overall incidence rates and values derived from the observed data are shown in *Table 2.18*. These calculations assume 7% drop-outs in years 1 and 2 and 4% per year through the remaining follow-up (independent of the 3% lost-to-follow-up rates) and 2.5% drop-ins per year throughout follow-up. CHD incidence rates were adjusted to reflect the lower rates observed in the early follow-up period. In addition to the 33% reduction for healthy volunteer effect that the design assumed throughout follow-up, incidence rates in years 1, 2, and 3 were further reduced by 67%, 50% and 37% respectively. These changes produced a power for the ERT vs. Placebo comparison on CHD rates of 63% compared to the design value of 81%. For the PERT comparison the power drops from 88% to 76%.

2.10 Issues

While HRT adherence rates in the WHI appear to be impressive relative to adherence rates in routine clinical practice, they fall somewhat short of CT design assumptions, particularly between AV-1 and AV-2. With the completion of AV-1s this fall and the bulk of AV-2s also completed, we can not expect to improve these rates substantially, even with considerable effort in these numbers. Adherence at subsequent visits is still amenable to change and this continues to be a focus of attention.

With the approval of the Steering Committee, an adherence task force was formed to generate ideas to improve adherence for all clinical trial components. This committee, led by Dr. Sally Shumaker, has brought forward several proposals for supporting adherence. One of the primary initiatives under development is training for selected clinic staff on the motivational interviewing techniques previously given to the nutritionists. Additional proposals include sending a letter of appreciation to participants from the NHLBI Director, increasing the frequency of participant newsletters, and providing additional WHI reading materials in the clinic waiting rooms.

There is continuing pressure from primary care providers to switch participants to active hormones. Some of our participants need reassurance from clinics to stay on blinded medications in the face of conflicting information and non-specific symptoms. Principal Investigators, Consulting Gynecologists, and other clinicians are providing information to local health care providers about the study (via letters, presentations, and phone calls) to encourage collaborative relationships and therefore provide appropriate proactive and responsive study considerations when addressing women's individual healthcare needs.

There is significant variation between clinic level adherence measures, raising questions of the implementation of the program at some sites. The Performance Monitoring Committee is continuing its efforts to monitor and assist clinical centers having noteworthy problems in adherence.

Table 2.1
Hormone Replacement Therapy Component Age – Specific Recruitment

Data as of: August 25, 1999

	Total Randomized	% of Overall Goal	Age Distribution	Design Assumption
HRT (Overall)	**27,348**			
50-54	3426	125%	13%	10
55-59	5402	99%	20%	20
60-69	12364	100%	45%	45
70-79	6156	90%	23%	25
HRT without Uterus	**10,739**			
50-54	1398	114%	13%	10
55-59	1910	78%	18%	20
60-69	4851	88%	45%	45
70-79	2580	84%	24%	25
HRT with uterus	**16,609**			
50-54	2028	135%	12%	10
55-59	3492	116%	21%	20
60-69	7513	111%	45%	45
70-79	3576	95%	22%	25

Table 2.2
HRT Adherence Summary

Data as of: August 25, 1999

Contact	Due	Conducted		Conducted in Window		Stopped HRT during interval		Missed Pill Collection		Total with Collections		Medication Rate[1] <50%		Medication Rate[1] 50%-80%		Medication Rate[1] 80% +		Adherence Summary[2]
	N	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	%
6 Week	26275	24893	95	21024	80													
Semi-Annual Visit-1	27348	26684	98	22778	83	1411	5	1477	5	25500	95	1028	4	1898	7	22574	89	84
Without Uterus	10739	10431	97	8782	82	532	5	665	6	10054	94	416	4	823	8	8815	88	82
With Uterus	16609	16253	98	13996	84	879	5	812	5	15446	95	612	4	1075	7	13759	89	85
Annual Visit-1	27253	26304	96	21812	80	1314	5	1468	6	23605	94	998	4	2041	9	20566	87	77
Without Uterus	10699	10259	96	8504	80	560	5	661	7	9314	93	393	4	871	9	8050	86	76
With Uterus	16554	16045	97	13308	80	754	5	807	5	14291	95	605	4	1170	8	12516	88	77
Annual Visit-2	20766	19425	93	15819	76	1933	10	1918	11	15928	89	526	3	1501	9	13901	87	69
Without Uterus	8177	7559	93	6143	75	818	10	830	12	6272	88	197	3	662	11	5413	86	67
With Uterus	12589	11866	94	9676	77	1115	9	1088	10	9656	90	329	3	839	9	8488	88	70
Annual Visit –3	11161	10305	92	8268	74	779	7	808	9	7753	91	257	3	709	9	6787	88	63
Without Uterus	4466	4067	91	3264	73	347	8	356	10	3114	90	97	3	329	11	2688	86	61
With Uterus	6695	6238	93	5004	75	432	7	452	9	4639	91	160	3	380	8	4099	88	65
Annual Visit –4	4743	4367	92	3562	75	271	6	250	8	2969	92	91	3	246	8	2632	89	61
Without Uterus	1942	1757	91	1429	74	116	6	114	9	1233	92	37	3	115	9	1081	88	57
With Uterus	2801	2610	93	2133	76	155	6	136	7	1736	93	54	3	131	8	1551	89	64
Annual Visit –5	1255	1131	90	932	74	55	5	61	8	673	92	20	3	61	9	592	88	55
Without Uterus	525	465	89	389	74	28	5	30	9	315	91	8	3	35	11	272	86	53
With Uterus	730	666	91	543	75	27	5	31	8	358	92	12	3	26	7	320	89	57

[1] Medication rate calculated as number of pills taken divided by number of days since bottle(s) were dispensed.

[2] Adherence summary calculated as number of women consuming ≥ 80% of pills / # due for visit.

Note: Deceased women are excluded from all medication adherence calculations, but are included in the number "Due."

Table 2.3
HRT Drop-Out and Drop-In Rates by Follow-Up Time
(Design-specified values in parentheses)

Data as of: August 25, 1999

	Without Uterus				With Uterus				Overall Total			
	Interval[1]		Cumulative[2]		Interval		Cumulative		Interval		Cumulative	
Drop-Outs[3]												
AV-1	10.0%	(8.8)	10.0%	(8.8)	9.8%	(8.8)	9.8%	(8.8)	9.8%	(8.8)	9.8%	(8.8)
AV-2	10.1%	(5.9)	19.1%	(14.2)	9.1%	(5.9)	18.1%	(14.2)	9.5%	(5.9)	18.4%	(14.2)
AV-3	7.9%	(5.9)	25.5%	(19.2)	6.8%	(5.9)	23.6%	(19.2)	7.3%	(5.9)	24.4%	(19.2)
AV-4	6.1%	(5.9)	30.1%	(24.0)	6.4%	(5.9)	28.5%	(24.0)	6.2%	(5.9)	29.1%	(24.0)
AV-5	5.4%	(5.9)	33.8%	(28.5)	4.8%	(5.9)	31.9%	(28.5)	5.1%	(5.9)	32.7%	(28.5)
Drop-Ins[4]												
AV-1	2.9%	(1.5)	2.9%	(1.5)	2.0%	(1.5)	2.0%	(1.5)	2.4%	(1.5)	2.4%	(1.5)
AV-3	4.4%	(2.9)	7.2%	(4.4)	3.8%	(2.9)	5.7%	(4.4)	4.0%	(2.9)	6.3%	(4.4)

[1] Estimates of stopping or starting hormones in the Interval

[2] Estimates of cumulative rates

[3] Drop-out rates derived from Form 7 by date. Cumulative rates calculated as life-table estimates.

[4] Cumulative Drop-in rates derived from medication inventory collected at AV-1, AV-3, AV-6, AV-9. Interval estimates back-calculated from cumulative rates.

Table 2.4

Logistic Regression Analysis of HRT Medication Adherence between Baseline and Semi-Annual Visit 1 (SAV-1) [1,2]

Data as of: August 25, 1999

	HRT (N=26977)					
	Without Uterus (N=10719)			With Uterus (N=16258)		
	Non-Adherent Participants (N=1904)	Adherent Participants[3] (N=8815)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=2499)	Adherent Participants[3] (N=13759)	OR for adherence (>80%)[4]
Age:						
50-54[5]	283	1112	1.00	327	1647	1.00
55-59	385	1525	0.95	525	2890	1.03
60-69	783	4062	1.16	1053	6291	1.06
70-79	453	2115	1.01	594	2930	0.87
Ethnicity:						
White	1219	6849	1.00	1869	11765	1.00
Black	425	1188	0.55 **	260	841	0.57 **
Hispanic	190	464	0.51 **	259	618	0.56 **
Other Minority	66	298	0.83	105	500	0.80 *
Education:						
0-8 Yrs	83	245	0.98	126	246	0.59 **
Some H.S./Diploma	562	2577	0.93	635	3244	0.89 *
Post H.S.	1230	5921	1.00	1715	10189	1.00
Income:						
<20K	642	2559	1.00	726	2931	1.00
20-35K	486	2507	1.11	609	3602	1.24 **
35-50K	322	1623	1.05	442	2811	1.28 **
>50K	389	1920	1.02	649	4113	1.24 **
DM Randomized:						
No	1282	6051	1.00	1747	9985	1.00
Yes	622	2764	1.00	752	3774	0.89 *
HRT Washout:						
No	1657	7480	1.00	2338	12672	1.00
Yes	247	1335	1.23 *	161	1087	1.23 *
Marital Status:						
Married	949	4872	1.00	1343	8122	1.00
Not Married	935	3899	0.89 *	1136	5593	0.92
Hormones Ever:						
No	732	3349	1.00	1506	8278	1.00
Yes	1172	5466	0.90	993	5481	0.94

(continues)

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.4 (continued)
Logistic Regression Analysis of HRT Medication Adherence between Baseline and Semi-Annual Visit 1 (SAV-1) [1,2]

Data as of: August 25, 1999

	HRT (N=26977)					
	Without Uterus (N=10719)			With Uterus (N=16258)		
	Non-Adherent Participants (N=1904)	Adherent Participants[3] (N=8815)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=2499)	Adherent Participants[3] (N=13759)	OR for adherence (>80%)[4]
6 wk phone call						
No[5]	200	461	1.00	281	631	1.00
Yes	1704	8354	1.80 **	2218	13128	2.26 **
On-Study bleeding						
No Bleeding				1599	9315	1.00
Any Bleeding between Baseline and SAV-1				865	4328	0.82 **

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, then she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.5

Logistic Regression Analysis of HRT Medication Adherence between Semi-Annual Visit 1 (SAV-1) and Annual Visit 1 (AV1) for those Participants with 80% Medication Adherence at SAV-1[1,2]

Data as of: August 25, 1999

	HRT (N=22470)					
	Without Uterus (N=8770)			With Uterus (N=13700)		
	Non-Adherent Participants (N=1291)	Adherent Participants[3] (N=7479)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=1852)	Adherent Participants[3] (N=11848)	OR for adherence (>80%)[4]
Age:						
50-54[5]	182	928	1.00	218	1427	1.00
55-59	231	1289	1.06	383	2504	0.96
60-69	583	3455	1.10	837	5416	0.92
70-79	295	1806	1.11	414	2500	0.89
Ethnicity:						
White	875	5945	1.00	1466	10254	1.00
Black	263	915	0.52 **	175	658	0.57 **
Hispanic	99	362	0.61 **	123	490	0.68 **
Other Minority	52	243	0.70 *	80	419	0.77 *
Education:						
0-8 Yrs	46	197	1.05	53	193	0.75
Some H.S./Diploma	354	2211	1.09	435	2793	0.98
Post H.S.	883	5008	1.00	1344	8803	1.00
Income:						
<20K	401	2136	1.00	447	2466	1.00
20-35K	372	2126	0.98	470	3124	1.07
35-50K	220	1396	1.10	349	2450	1.10
>50K	265	1650	1.08	538	3556	1.00
DM Randomized:						
No	893	5119	1.00	1331	8604	1.00
Yes	398	2360	1.10	521	3244	0.99
HRT Washout:						
No	1118	6325	1.00	1749	10879	1.00
Yes	173	1154	1.23 *	103	969	1.64 **
Marital Status:						
Married	668	4188	1.00	1008	7091	1.00
Not Married	616	3256	0.95	829	4728	0.86 **
Hormones Ever:						
No	477	2847	1.00	1090	7153	1.00
Yes	814	4632	0.87 *	762	4695	0.86 **

(continues)

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.

** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.5 (continued)
Logistic Regression Analysis of HRT Medication Adherence between Semi-Annual Visit 1 (SAV-1) and Annual Visit 1 (AV1) for those Participants with 80% Medication Adherence at SAV-1-[1,2]

Data as of: August 25, 1999

	HRT (N=22470)					
	Without Uterus (N=8770)			With Uterus (N=13700)		
	Non-Adherent Participants (N=1291)	Adherent Participants[3] (N=7479)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=1852)	Adherent Participants[3] (N=11848)	OR for adherence (>80%)[4]
6 wk phone call						
No[5]	91	359	1.00	116	510	1.00
Yes	1200	7120	1.30*	1736	11338	1.29*
Reported Breast Changes at 6 mo.						
No	1215	7144	1.00	1709	11228	1.00
Yes	72	296	0.69**	130	570	0.73**
On-Study bleeding						
No bleeding				1175	7971	1.00
Any Bleeding between SAV-1 and AV-1				655	3735	0.85**

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, then she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.6
Logistic Regression Analysis of HRT Medication Adherence between Annual Visit 1 (AV-1) and Annual Visit 2 (AV-2) for those Participants with 80% Medication Adherence at AV-1[1,2]

Data as of: August 25, 1999

	HRT (N=15615)					
	Without Uterus (N=6123)			With Uterus (N=9492)		
	Non-Adherent Participants (N=1136)	Adherent Participants[3] (N=4987)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=1572)	Adherent Participants[3] (N=7920)	OR for adherence (>80%)[4]
Age:						
50-54[5]	227	776	1.00	280	1178	1.00
55-59	235	958	1.19	379	1843	1.09
60-69	446	2127	1.28 *	585	3413	1.27 **
70-79	228	1125	1.32 *	328	1485	1.04
Ethnicity:						
White	751	4018	1.00	1248	6928	1.00
Black	225	590	0.57 **	154	398	0.57 **
Hispanic	124	221	0.45 **	115	318	0.66 **
Other Minority	34	149	0.93	53	258	0.98
Education:						
0-8 Yrs	51	121	0.91	38	127	1.04
Some H.S./Diploma	346	1436	0.90	352	1822	1.06
Post H.S.	726	3381	1.00	1171	5927	1.00
Income:						
<20K	403	1405	1.00	396	1617	1.00
20-35K	298	1398	1.17	411	2104	1.15
35-50K	172	948	1.37 **	283	1661	1.31 **
>50K	229	1124	1.26 *	439	2389	1.24 *
DM Randomized:						
No	744	3304	1.00	1084	5650	1.00
Yes	392	1683	1.02	488	2270	0.93
HRT Washout:						
No	979	4241	1.00	1462	7280	1.00
Yes	157	746	1.12	110	640	1.28 *
Marital Status:						
Married	591	2826	1.00	882	4816	1.00
Not Married	533	2138	0.98	682	3081	0.93
Hormones Ever:						
No	456	1916	1.00	925	4756	1.00
Yes	680	3071	1.00	647	3164	0.92

(continues)

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.6 (continued)
Logistic Regression Analysis of HRT Medication Adherence between Annual Visit 1 (AV-1) and Annual Visit 2 (AV-2) for those Participants with 80% Medication Adherence at AV-1[1,2]

Data as of: August 25, 1999

	HRT (N=15615)					
	Without Uterus (N=6123)			With Uterus (N=9492)		
	Non-Adherent Participants (N=1136)	Adherent Participants[3] (N=4987)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=1572)	Adherent Participants[3] (N=7920)	OR for adherence (>80%)[4]
6 wk phone call						
No[5]	87	274	1.00	99	364	1.00
Yes	1049	4713	1.12	1473	7556	1.18
Breast tenderness at AV-1						
No breast tenderness	693	3493	1.00	1002	5587	1.00
Mild	232	1040	0.91	350	1665	0.93
Moderate	78	247	0.69 **	94	346	0.72 **
Severe	18	30	0.37 **	25	54	0.46 **
On-Study bleeding						
No bleeding				1055	5983	1.00
Any Bleeding between AV-1 and AV-2				483	1805	0.67 **

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, then she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.7
Logistic Regression Analysis of HRT Medication Adherence between Annual Visit 2 (AV-2) and Annual Visit 3 (AV-3) for those Participants with 80% Medication Adherence at AV-2[1,2]

Data as of: August 25, 1999

	HRT (N=7398)					
	Without Uterus (N=2958)			With Uterus (N=4440)		
	Non-Adherent Participants (N=530)	Adherent Participants[3] (N=2428)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=653)	Adherent Participants (N=3787)[3]	OR for adherence (>80%)[4]
Age:						
50-54[5]	120	432	1.00	117	659	1.00
55-59	115	491	1.18	161	935	0.99
60-69	190	1020	1.42 **	252	1622	1.08
70-79	105	484	1.19	123	570	0.82
Ethnicity:						
White	383	1939	1.00	533	3345	1.00
Black	97	309	0.71 *	54	192	0.64 *
Hispanic	37	101	0.57 *	42	131	0.64 *
Other Minority	13	79	1.25	24	119	0.80
Education:						
0-8 Yrs	15	67	1.30	23	60	0.49 *
Some H.S./Diploma	141	691	1.08	149	826	0.94
Post H.S.	368	1648	1.00	478	2881	1.00
Income:						
<20K	151	681	1.00	158	737	1.00
20-35K	155	707	0.95	184	1008	1.06
35-50K	93	479	1.05	127	802	1.21
>50K	116	519	0.96	173	1178	1.26
DM Randomized:						
No	342	1545	1.00	444	2577	1.00
Yes	188	883	1.06	209	1210	0.95
HRT Washout:						
No	460	2083	1.00	603	3460	1.00
Yes	70	345	1.22	50	327	1.18
Marital Status:						
Married	290	1390	1.00	368	2323	1.00
Not Married	236	1025	0.96	283	1455	0.92
Hormones Ever:						
No	189	962	1.00	374	2239	1.00
Yes	341	1466	0.78 *	279	1548	0.90

(continues)

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, then she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.7 (continued)
Logistic Regression Analysis of HRT Medication Adherence between Annual Visit 2 (AV-2) and Annual Visit 3 (AV-3) for those Participants with 80% Medication Adherence at AV-2[1,2]

Data as of: August 25, 1999

	HRT (N=7398)					
	Without Uterus (N=2958)			With Uterus (N=4440)		
	Non-Adherent Participants (N=530)	Adherent Participants[3] (N=2428)	OR for adherence (>80%)[4]	Non-Adherent Participants (N=653)	Adherent Participants (N=3787)[3]	OR for adherence (>80%)[4]
6 wk phone call						
No[5]	44	169	1.00	43	203	1.00
Yes	486	2259	1.02	610	3584	1.04
Breast tenderness at AV-1						
No breast tenderness	335	1739	1.00	450	2705	1.00
Mild	125	483	0.77 *	128	770	1.03
Moderate	41	113	0.53 **	32	156	0.88
Severe	3	15	1.10	6	27	0.74
On-Study bleeding						
No bleeding				501	3115	1.00
Any Bleeding between AV-2 and AV-3				133	619	0.74 **

[1] Excludes ERT to PERT participants.

[2] * P-value <=.05 from Wald test.
** P-value <=.01 from Wald test

[3] Adherence defined as participants who took at least 80% of HRT medications. If a participant does not have a pill collection, then she was considered non-adherent.

[4] Assuming asymptotic normality for parameter estimates

[5] Underlined levels are reference categories

Table 2.8
Reasons for Stopping HRT

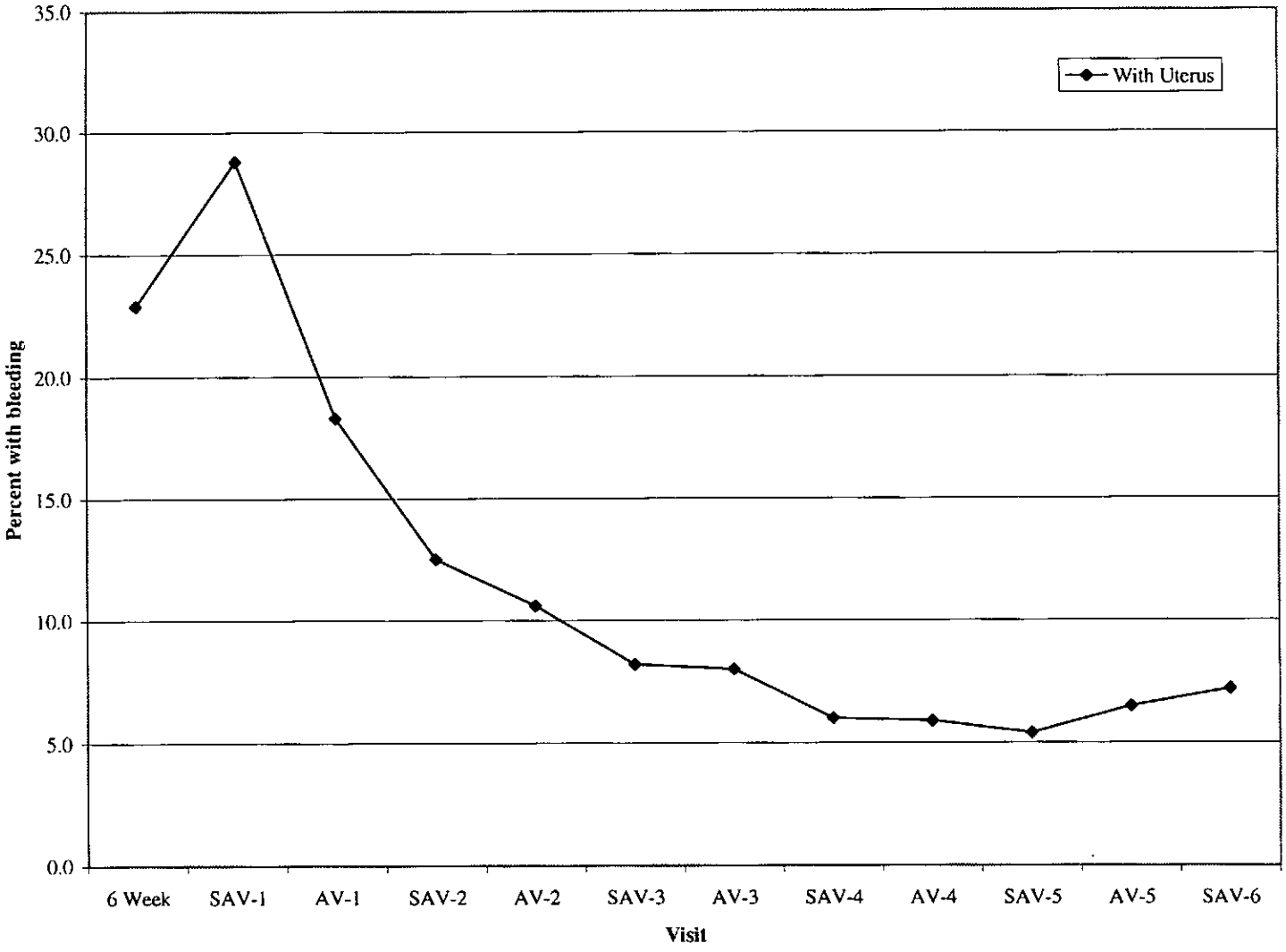
Data as of August 25, 1999

Reasons[1]	Without Uterus (N =2760)		With Uterus (N =3938)	
Personal	216	(8%)	241	(6%)
Travel	123	(4%)	118	(3%)
Study Procedures	52	(2%)	82	(2%)
Health	1148	(42%)	1468	(37%)
Experiencing health problems or symptoms not due to intervention	454	(16%)	538	(14%)
Worried about health effects of medical tests	10	(<1%)	16	(<1%)
Worried about costs if adverse effects occur	10	(<1%)	4	(<1%)
Advised not to participate by health care provider	493	(18%)	701	(18%)
Study conflicts with health care needs	446	(16%)	555	(14%)
Expected more care	8	(<1%)	10	(<1%)
Intervention	670	(24%)	1281	(33%)
Reports health problems or symptoms from WHI intervention	514	(19%)	1053	(27%)
Problem with Clinic Practitioner or other CC staff	3	(<1%)	13	(<1%)
Doesn't like taking pills	70	(3%)	74	(2%)
Doesn't like DM requirements	1	(<1%)	4	(<1%)
Problems with DM group nutritionist or group members	1	(<1%)	2	(<1%)
Doesn't like DM eating patterns	1	(<1%)	2	(<1%)
Doesn't like randomized nature of intervention	62	(2%)	95	(2%)
Expected some benefit from intervention	34	(1%)	35	(1%)
Won't participate in safety procedures.	37	(1%)	51	(1%)
Other	905	(33%)	1279	(32%)
Not Given	276	(10%)	422	(11%)

[1] Multiple reasons may be reported for a woman

Table 2.9
Reports of Bleeding

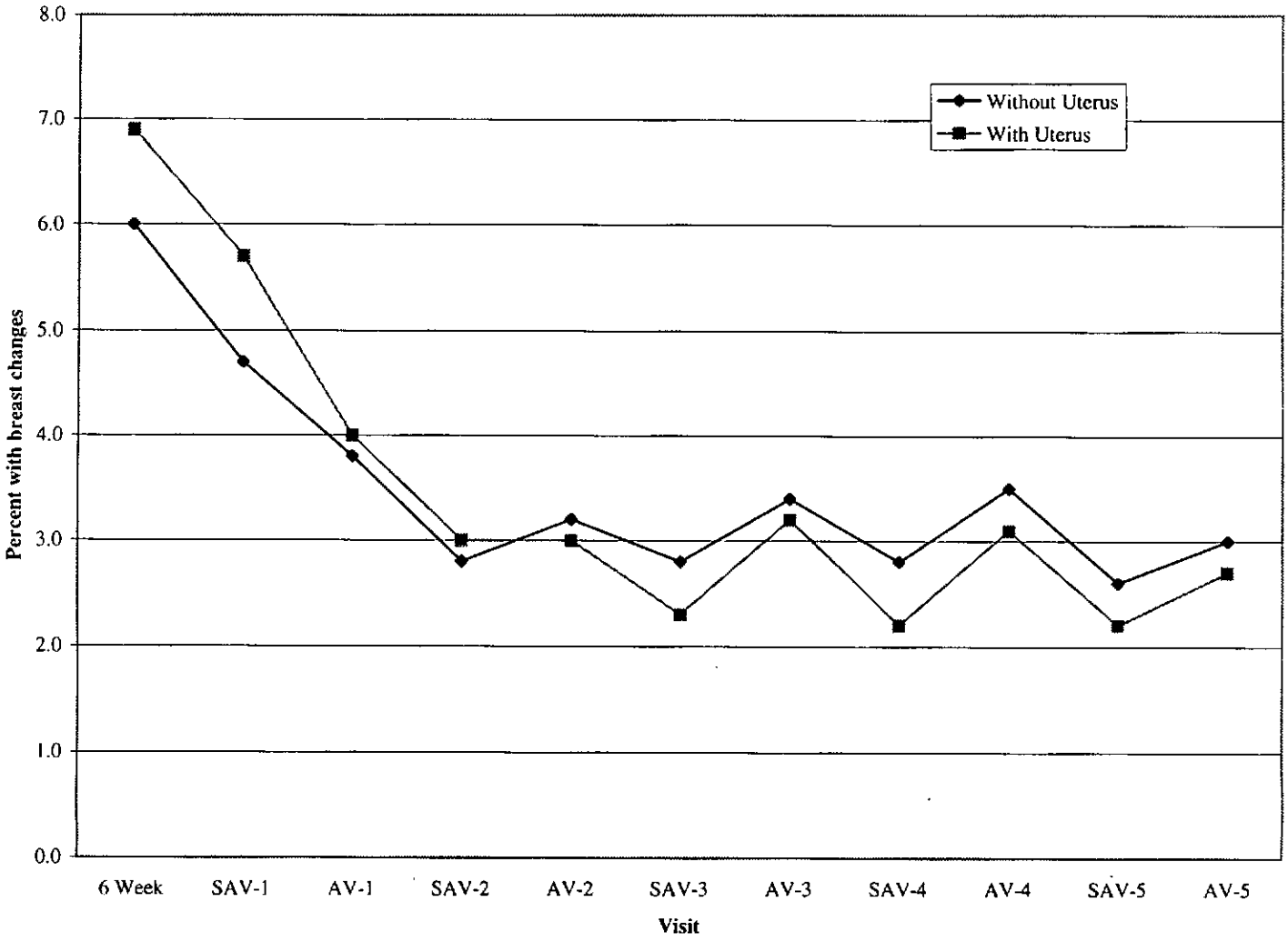
Data as of: August 25, 1999



Contact	With Uterus
6 Week HRT Phone Call – Number with Bleeding	3579 (22.9%)
Semi-Annual Visit 1 – Number with Bleeding	4688 (28.8%)
Annual Visit 1 – Number with Bleeding	2930 (18.3%)
Semi-Annual Visit 2 – Number with Bleeding	1779 (12.5%)
Annual Visit 2 – Number with Bleeding	1254 (10.6%)
Semi-Annual Visit 3 – Number with Bleeding	716 (8.2%)
Annual Visit 3 – Number with Bleeding	498 (8.0%)
Semi-Annual Visit 4 – Number with Bleeding	250 (6.0%)
Annual Visit 4 – Number with Bleeding	155 (5.9%)
Semi-Annual Visit 5 – Number with Bleeding	83 (5.4%)
Annual Visit 5 – Number with Bleeding	43 (6.5%)
Semi-Annual Visit 6 – Number with Bleeding	5 (7.2%)

Table 2.10
Reports of Breast Changes

Data as of: August 25, 1999



Contact	Without Uterus	With Uterus
6 Week HRT Phone Call – Number with Breast Changes	603 (6.0%)	1077 (6.9%)
Semi-Annual Visit 1 – Number with Breast Changes	468 (4.7%)	900 (5.7%)
Annual Visit 1 – Number with Breast Changes	371 (3.8%)	625 (4.0%)
Semi-Annual Visit 2 – Number with Breast Changes	234 (2.8%)	401 (3.0%)
Annual Visit 2 – Number with Breast Changes	223 (3.2%)	331 (3.0%)
Semi-Annual Visit 3 – Number with Breast Changes	138 (2.8%)	173 (2.3%)
Annual Visit 3 – Number with Breast Changes	119 (3.4%)	173 (3.2%)
Semi-Annual Visit 4 – Number with Breast Changes	59 (2.8%)	75 (2.2%)
Annual Visit 4 – Number with Breast Changes	47 (3.5%)	66 (3.1%)
Semi-Annual Visit 5 – Number with Breast Changes	20 (2.6%)	25 (2.2%)
Annual Visit 5 – Number with Breast Changes	11 (3.0%)	14 (2.7%)

Table 2.11
Endometrial Aspiration Results

Data as of: August 25, 1999

Months since randomized	N of aspirations[2,3]	Number with Abnormal Results[1]				
		Cystic	Adenomatous	Atypia	Cancer	Total[4]
0-6	104	5	1	1	-	2
6-12	706	11	2	4	-	6
12-18	674	11	3	3	3	9
18-24	424	11	3	3	-	6
24-36	267	2	-	1	-	1
36-42	295	-	-	3	1	4
42-48	210	1	-	2	-	2
48-54	77	2	-	-	-	-
54-60	44	-	-	-	-	-
60-66	22	-	-	-	-	-
66-72	4	-	-	-	-	-
Total	2827	43	9	17	4	30

[1] Abnormal results are based on local readings with the following groupings defined as follows:
Cystic is cystic hyperplasia without atypia
Adenomatous is adenomatous hyperplasia without atypia
Atypia is atypia or cystic or adenomatous hyperplasia with atypia

[2] All endometrial aspirations after first adenomatous or worse result removed. If participants had more than one endometrial aspiration within a 30-day period, the latest was used. Please note that routine aspirations for the Endometrial Aspiration subsample are included in this table.

[3] ERT-TO-PERT removed.

[4] Row totals combine adenomatous, atypias and cancer categories

Table 2.12
Blood Specimen Analysis: HRT Participants

Data as of: August 25, 1999

	Without Uterus			With Uterus		
	N	Mean*	S.D.*	N	Mean*	S.D.*
Micronutrients						
Alpha-Carotene (µg/ml)						
Baseline	581	0.08	0.06	703	0.09	0.07
AV-1	577	0.07	0.04	703	0.09	0.06
AV-1 - Baseline	577	-0.01	0.05	702	0.00	0.04
Alpha-tocopherol (µg/ml)						
Baseline	581	15.1	5.3	703	15.3	5.5
AV-1	577	16.6	6.7	704	15.7	5.5
AV-1 - Baseline	577	1.4	4.6	703	0.3	4.6
Beta-Carotene (µg/ml)						
Baseline	580	0.29	0.19	703	0.33	0.27
AV-1	576	0.26	0.22	704	0.30	0.26
AV-1 - Baseline	576	-0.03	0.21	703	-0.03	0.16
Beta-Cryptoxanthine (µg/ml)						
Baseline	581	0.08	0.04	703	0.09	0.06
AV-1	577	0.07	0.05	703	0.09	0.05
AV-1 - Baseline	577	0.00	0.04	702	-0.01	0.05
Gamma-tocopherol (µg/ml)						
Baseline	581	2.4	1.1	703	2.4	1.2
AV-1	577	2.1	1.1	704	2.0	1.0
AV-1 - Baseline	577	-0.3	0.9	703	-0.4	0.8
Lycopene (µg/ml)						
Baseline	581	0.38	0.15	703	0.40	0:16
AV-1	577	0.39	0.14	704	0.40	0.14
AV-1 - Baseline	577	0.01	0.13	703	-0.01	0.14
Lutein and Zeaxanthin (µg/ml)						
Baseline	581	0.20	0.07	703	0.21	0.08
AV-1	577	0.20	0.08	704	0.22	0.08
AV-1 - Baseline	577	0.00	0.05	703	0.01	0.05
Retinol (µg/ml)						
Baseline	581	0.59	0.11	703	0.58	0.12
AV-1	577	0.62	0.12	704	0.60	0.12
AV-1 - Baseline	577	0.03	0.09	703	0.01	0.08

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 2.12 (Continued)
Blood Specimen Analysis: HRT Participants

Data as of: August 25, 1999

	Without Uterus			With Uterus		
	N	Mean*	S.D.*	N	Mean*	S.D.*
Clotting Factor						
Factor VII Activity, Antigen (%)						
Baseline	567	124.5	21.9	686	119.7	21.7
AV-1	559	132.7	25.8	693	126.5	24.5
AV-1 – Baseline	547	8.8	20.2	679	6.8	16.9
Factor VII C (%)						
Baseline	549	129.1	21.7	671	124.8	22.8
AV-1	550	134.9	27.3	686	124.7	24.5
AV-1 – Baseline	523	6.0	21.8	659	-0.4	19.5
Fibrinogen (mg/dl)						
Baseline	567	312.8	51.1	686	307.3	48.3
AV-1	558	304.2	49.3	692	298.0	48.2
AV-1 – Baseline	546	-9.2	44.0	678	-9.1	46.7
Hormones / Other						
Glucose (mg/dl)						
Baseline	580	103.7	25.7	701	100.7	21.6
AV-1	579	101.8	20.3	703	98.6	18.2
AV-1 – Baseline	578	-2.0	17.4	700	-2.1	12.2
Insulin (μIU/ml)						
Baseline	576	11.9	5.6	700	11.0	5.0
AV-1	578	11.3	5.3	701	10.9	5.2
AV-1 – Baseline	573	-0.7	3.4	697	-0.1	2.9

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 2.12 (Continued)
Blood Specimen Analysis: HRT Participants

Data as of: August 25, 1999

	Without Uterus			With Uterus		
	N	Mean*	S.D.*	N	Mean*	S.D.*
Lipoproteins						
HDL-2 (mg/dl)						
Baseline	573	16.2	6.6	690	17.2	7.0
AV-1	568	18.6	7.5	696	18.6	7.5
AV-1 – Baseline	562	2.3	4.2	684	1.2	3.9
HDL-3 (mg/dl)						
Baseline	574	40.1	6.6	690	40.3	6.8
AV-1	570	42.1	7.1	697	41.2	6.3
AV-1 – Baseline	564	1.7	4.8	685	0.9	4.2
HDL-C (mg/dl)						
Baseline	577	56.4	11.8	704	57.5	12.5
AV-1	575	60.6	13.0	703	59.8	12.3
AV-1 – Baseline	573	4.0	7.5	703	2.3	6.1
LDL-C (mg/dl)						
Baseline	571	141.0	27.5	695	140.1	28.4
AV-1	569	126.9	25.6	692	128.1	26.0
AV-1 – Baseline	564	-14.3	23.8	688	-11.9	22.3
Lp(a) (mg/dl)						
Baseline	569	24.9	21.2	690	24.1	19.3
AV-1	565	23.5	21.2	694	21.5	17.9
AV-1 – Baseline	558	-1.6	9.4	683	-2.4	9.4
Total Cholesterol (mg/dl)						
Baseline	579	228.3	29.8	704	226.8	32.2
AV-1	577	219.9	26.1	703	217.4	29.0
AV-1 – Baseline	575	-8.7	24.6	703	-9.4	24.1
Triglyceride (mg/dl)						
Baseline	579	157.0	67.1	704	145.4	64.8
AV-1	577	163.9	62.3	702	146.4	56.7
AV-1 – Baseline	575	7.6	48.4	702	1.1	42.9

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 2.13
Bone Mineral Density[1] Analysis: HRT Participants

Data as of: August 25, 1999

	Without Uterus			With Uterus		
	N	Mean*	S.D.*	N	Mean*	S.D.*
Whole Body Scan						
Baseline	936	1.01	0.11	1025	0.99	0.10
AV-1	836	1.01	0.11	927	1.00	0.10
AV-3	461	1.03	0.11	481	1.02	0.10
AV-1 % Change from baseline BMD[2]	833	0.44	2.79	925	0.26	2.34
AV-3 % Change from baseline BMD[3]	458	1.60	3.39	479	1.63	3.25
Spine Scan						
Baseline	910	0.97	0.16	1004	0.95	0.16
AV-1	816	0.99	0.16	905	0.97	0.16
AV-3	456	1.00	0.17	475	0.99	0.17
AV-1 % Change from baseline BMD	814	1.89	4.56	902	2.06	4.36
AV-3 % Change from baseline BMD	454	3.38	6.48	473	4.03	6.06
Hip Scan						
Baseline	933	0.86	0.14	1024	0.84	0.13
AV-1	835	0.86	0.14	926	0.84	0.13
AV-3	462	0.89	0.15	484	0.87	0.14
AV-1 % Change from baseline BMD	832	0.71	3.27	925	0.60	3.14
AV-3 % Change from baseline BMD	459	2.09	4.61	483	2.18	4.58

[1] Measured in (g/cm^2).

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

[2] AV1 % Change from baseline BMD is defined as ((AV1-Baseline)/Baseline)x100

[3] AV3 % Change from baseline BMD is defined as ((AV3-Baseline)/Baseline)x100

Table 2.14
Lost-to-Follow-up and Vital Status: HRT Participants

Data as of: August 25, 1999

	HRT Participants (N=27348)	
	N	%
Vital Status/Participation		
Deceased	279	1.0
Alive: Current Participation[1]	25795	94.3
Alive: Recent Participation[2]	656	2.4
Alive: Inactive[3]	158	0.6
Alive: No Follow-up[4]	216	0.8
Unknown Status: Inactive[5]	135	0.5
Unknown Status: No Follow-up[6]	109	0.4

[1] Participants who have filled in a Form 33 within the last 9 months.

[2] Participants who last filled in a Form 33 between 9 and 18 months ago.

[3] Participants who are known to be alive within the last 18 months, but have not filled in a Form 33 within that period.

[4] Participants who are known to be alive within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

[5] Participants with whom there has not been contact within the last 18 months.

[6] Participants with whom there has not been contact within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

Table 2.15
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Hormone Replacement Therapy

Data as of: August 25, 1999

Outcomes	Total		Minority[1]		White	
Number randomized	27348		5320		22028	
Mean follow-up (months) [2]	31.0		29.9		31.2	
Cardiovascular						
CHD[3]	245	0.35%	37	0.28%	208	0.36%
Coronary death	54	0.08%	14	0.11%	40	0.07%
Total MI[4]	208	0.29%	28	0.21%	180	0.31%
Clinical MI	191	0.27%	25	0.19%	166	0.29%
Definite Silent MI	23	0.03%	4	0.03%	19	0.03%
Possible Silent MI	98	0.14%	18	0.14%	80	0.14%
Angina	336	0.48%	54	0.41%	282	0.49%
CABG/PTCA	291	0.41%	35	0.26%	256	0.45%
Carotid artery disease	70	0.10%	3	0.02%	67	0.12%
Congestive heart failure	151	0.21%	29	0.22%	122	0.21%
Stroke	159	0.23%	29	0.22%	130	0.23%
PVD	47	0.07%	7	0.05%	40	0.07%
DVT	101	0.14%	10	0.08%	91	0.16%
PE	63	0.09%	8	0.06%	55	0.10%
CHD[3]/Possible Silent MI	338	0.48%	54	0.41%	284	0.50%
Coronary disease[5]	756	1.07%	124	0.94%	632	1.10%
CHD[3]/Stroke/PE	456	0.65%	69	0.52%	387	0.67%
DVT/PE	140	0.20%	15	0.11%	125	0.22%
Total CVD	1095	1.55%	168	1.27%	927	1.62%
Cancer						
Breast cancer[6]	205	0.29%	20	0.15%	185	0.32%
Invasive breast cancer	158	0.22%	16	0.12%	142	0.25%
In situ breast cancer	48	0.07%	4	0.03%	44	0.08%
Ovary cancer	17	0.02%	1	0.01%	16	0.03%
Endometrial Cancer[7]	14	0.03%	1	0.02%	13	0.04%
Colorectal cancer	85	0.12%	19	0.14%	66	0.12%
Other cancer[8,9]	272	0.39%	29	0.22%	243	0.42%
Total cancer	587	0.83%	69	0.52%	518	0.90%
Fractures						
Hip fracture	53	0.08%	3	0.02%	50	0.09%
Vertebral fracture	68	0.10%	1	0.01%	67	0.12%
Other fracture[8,10]	991	1.40%	101	0.76%	890	1.55%
Total fracture	1089	1.54%	103	0.78%	986	1.72%
Deaths						
Cardiovascular deaths	90	0.13%	19	0.14%	71	0.12%
Cancer deaths	100	0.14%	9	0.07%	91	0.16%
Deaths: other known cause	30	0.04%	4	0.03%	26	0.05%
Deaths: unknown cause	13	0.02%	3	0.02%	10	0.02%
Deaths: not yet adjudicated	46	0.07%	11	0.08%	35	0.06%
Total death	279	0.40%	46	0.35%	233	0.41%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "CHD" includes clinical MI, definite silent MI, and coronary death.

[4] "Total MI" includes clinical MI and definite silent MI.

[5] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[6] Excludes one case with borderline malignancy.

[7] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[8] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[9] Excludes non-melanoma skin cancer

[10] "Other fracture" excludes fractures indicated as pathological.

Table 2.15 (Continued)
Locally Verified Outcomes (Annualized Percentages) by Age for Hormone Replacement Therapy

Data as of: August 25, 1999 [4]

Outcome	50-54		55-59		60-69		70-79	
Number randomized	3426		5407		12362		6153	
Mean follow-up (months) [1]	36.6		32.9		29.8		28.5	
Cardiovascular								
CHD[2]	19	0.18%	19	0.13%	127	0.41%	80	0.55%
Coronary death	4	0.04%	5	0.03%	26	0.08%	19	0.13%
Total MI[3]	16	0.15%	14	0.09%	110	0.36%	68	0.47%
Clinical MI	15	0.14%	13	0.09%	98	0.32%	65	0.45%
Definite Silent MI	2	0.02%	2	0.01%	15	0.05%	4	0.03%
Possible Silent MI	11	0.11%	22	0.15%	42	0.14%	23	0.16%
Angina	15	0.14%	44	0.30%	166	0.54%	111	0.76%
CABG/PTCA	14	0.13%	35	0.24%	143	0.47%	99	0.68%
Carotid artery disease	1	0.01%	11	0.07%	28	0.09%	30	0.21%
Congestive heart failure	8	0.08%	17	0.11%	65	0.21%	61	0.42%
Stroke	5	0.05%	14	0.09%	79	0.26%	61	0.42%
PVD	3	0.03%	4	0.03%	22	0.07%	18	0.12%
DVT	7	0.07%	8	0.05%	49	0.16%	37	0.25%
PE	4	0.04%	6	0.04%	27	0.09%	26	0.18%
CHD[2]/Possible Silent MI	30	0.29%	39	0.26%	168	0.55%	101	0.69%
Coronary disease[4]	47	0.45%	89	0.60%	364	1.18%	256	1.75%
CHD[2]/Stroke/PE	28	0.27%	38	0.26%	228	0.74%	162	1.11%
DVT/PE	8	0.08%	12	0.08%	66	0.21%	54	0.37%
Total CVD	63	0.60%	120	0.81%	528	1.72%	384	2.63%
Cancer								
Breast cancer[5]	26	0.25%	34	0.23%	94	0.31%	51	0.35%
Invasive breast cancer	19	0.18%	29	0.20%	72	0.23%	38	0.26%
In situ breast cancer	7	0.07%	5	0.03%	23	0.07%	13	0.09%
Ovary cancer	0	0.00%	1	0.01%	12	0.04%	4	0.03%
Endometrial Cancer[6]	0	0.00%	1	0.01%	6	0.03%	7	0.08%
Colorectal cancer	5	0.05%	7	0.05%	39	0.13%	34	0.23%
Other cancer[7,8]	22	0.21%	31	0.21%	127	0.41%	92	0.63%
Total cancer	53	0.51%	73	0.49%	274	0.89%	187	1.28%
Fractures								
Hip fracture	3	0.03%	1	0.01%	15	0.05%	34	0.23%
Vertebral fracture	3	0.03%	8	0.05%	27	0.09%	30	0.21%
Other fracture[7,9]	123	1.18%	159	1.07%	475	1.55%	234	1.60%
Total fracture	127	1.22%	166	1.12%	511	1.66%	285	1.95%
Deaths								
Cardiovascular deaths	5	0.05%	7	0.05%	42	0.14%	36	0.25%
Cancer deaths	2	0.02%	10	0.07%	47	0.15%	41	0.28%
Deaths: other known cause	4	0.04%	5	0.03%	14	0.05%	7	0.05%
Deaths: unknown cause	1	0.01%	1	0.01%	7	0.02%	4	0.03%
Deaths: not yet adjudicated	4	0.04%	3	0.02%	17	0.06%	22	0.15%
Total death	16	0.15%	26	0.18%	127	0.41%	110	0.75%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[2] "CHD" includes clinical MI, definite silent MI, and coronary death.

[3] "Total MI" includes clinical MI and definite silent MI.

[4] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[5] Excludes one case with borderline malignancy.

[6] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[7] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[8] Excludes non-melanoma skin cancer

[9] "Other fracture" excludes fractures indicated as pathological.

Table 2.16
Locally Verified Outcomes (Annualized Percentages) for HRT Participants Without and With Uterus

Data as of: August 25, 1999

Outcomes	Without Uterus		With Uterus	
Number randomized	10739		16609	
Mean follow-up (months)[1]	31.1		30.9	
Cardiovascular				
CHD[2]	108	0.39%	137	0.32%
Coronary death	29	0.10%	25	0.06%
Total MI[3]	87	0.31%	121	0.28%
Clinical MI	79	0.28%	112	0.26%
Definite Silent MI	12	0.04%	11	0.03%
Possible Silent MI	36	0.13%	62	0.14%
Angina	181	0.65%	155	0.36%
CABG/PTCA	141	0.51%	150	0.35%
Carotid artery disease	34	0.12%	36	0.08%
Congestive heart failure	83	0.30%	68	0.16%
Stroke	82	0.29%	77	0.18%
PVD	23	0.08%	24	0.06%
DVT	26	0.09%	75	0.18%
PE	14	0.05%	49	0.11%
CHD[2]/Possible Silent MI	141	0.51%	197	0.46%
Coronary disease[4]	368	1.32%	388	0.91%
CHD[2]/Stroke/PE	198	0.71%	258	0.60%
DVT/PE	34	0.12%	106	0.25%
Total CVD	505	1.81%	590	1.38%
Cancer				
Breast cancer[5]	69	0.25%	136	0.32%
Invasive breast cancer	49	0.18%	109	0.25%
In situ breast cancer	20	0.07%	28	0.07%
Ovary cancer	3	0.01%	14	0.03%
Endometrial Cancer	0	0.00%	14	0.03%
Colorectal cancer	46	0.17%	39	0.09%
Other cancer[6,7]	104	0.37%	168	0.39%
Total cancer	221	0.79%	366	0.86%
Fractures				
Hip fracture	20	0.07%	33	0.08%
Vertebral fracture	24	0.09%	44	0.10%
Other fracture[6,8]	389	1.40%	602	1.41%
Total fracture	423	1.52%	666	1.56%
Deaths				
Cardiovascular deaths	46	0.17%	44	0.10%
Cancer deaths	42	0.15%	58	0.14%
Deaths: other known cause	10	0.04%	20	0.05%
Deaths: unknown cause	10	0.04%	3	0.01%
Deaths: not yet adjudicated	19	0.07%	27	0.06%
Total death	127	0.46%	152	0.36%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[2] "CHD" includes clinical MI, definite silent MI, and coronary death.

[3] "Total MI" includes clinical MI and definite silent MI.

[4] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[5] Excludes one case with borderline malignancy.

[6] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[7] Excludes non-melanoma skin cancer

[8] "Other fracture" excludes fractures indicated as pathological.

Table 2.17
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Hormone Replacement Therapy

Data as of: August 25, 1999

Outcomes	Total		Ethnicity Minority[1]		White	
Number randomized	27348		5320		22028	
Mean follow-up (months) [2]	31.0		29.9		31.2	
Hospitalizations						
Ever	5573	(7.89%)	934	(7.06%)	4639	(8.09%)
Two or more	1971	(2.79%)	324	(2.45%)	1647	(2.87%)
Other						
Diabetes (treated)	1729	(2.45%)	652	(4.93%)	1077	(1.88%)
Gallbladder disease[3]	876	(1.24%)	150	(1.13%)	726	(1.27%)
Hysterectomy[4]	213	(0.50%)	22	(0.34%)	191	(0.53%)
Glaucoma	1078	(1.53%)	305	(2.30%)	773	(1.35%)
Osteoporosis	1906	(2.70%)	284	(2.15%)	1622	(2.83%)
Osteoarthritis	3274	(4.64%)	727	(5.49%)	2547	(4.44%)
Rheumatoid arthritis	742	(1.05%)	291	(2.20%)	451	(0.79%)
Intestinal polyps	1267	(1.79%)	204	(1.54%)	1063	(1.85%)
Lupus	121	(0.17%)	28	(0.21%)	93	(0.16%)
Kidney Stones	237	(0.34%)	59	(0.45%)	178	(0.31%)
Cataracts	3324	(4.71%)	577	(4.36%)	2747	(4.79%)
Pills for hypertension	7189	(10.18%)	1923	(14.53%)	5266	(9.18%)

Outcome	Age 50-54		55-59		60-69		70-79	
Number randomized	3426		5407		12362		6153	
Mean follow-up (months)[2]	36.6		32.9		29.8		28.5	
Hospitalizations								
Ever	533	(5.11%)	898	(6.05%)	2553	(8.31%)	1589	(10.89%)
Two or more	174	(1.67%)	292	(1.97%)	922	(3.00%)	583	(3.99%)
Other								
Diabetes (treated)	214	(2.05%)	369	(2.49%)	769	(2.50%)	377	(2.58%)
Gallbladder disease[3]	123	(1.18%)	178	(1.20%)	394	(1.28%)	181	(1.24%)
Hysterectomy[4]	21	(0.34%)	34	(0.35%)	100	(0.54%)	58	(0.69%)
Glaucoma	86	(0.82%)	152	(1.02%)	510	(1.66%)	330	(2.26%)
Osteoporosis	109	(1.04%)	268	(1.81%)	874	(2.84%)	655	(4.49%)
Osteoarthritis	290	(2.78%)	540	(3.64%)	1461	(4.75%)	983	(6.73%)
Rheumatoid arthritis	95	(0.91%)	148	(1.00%)	321	(1.04%)	178	(1.22%)
Intestinal polyps	107	(1.03%)	176	(1.19%)	653	(2.12%)	331	(2.27%)
Lupus	21	(0.20%)	23	(0.16%)	54	(0.18%)	23	(0.16%)
Kidney Stones	26	(0.25%)	44	(0.30%)	118	(0.38%)	49	(0.34%)
Cataracts	100	(0.96%)	338	(2.28%)	1629	(5.30%)	1257	(8.61%)
Pills for hypertension	695	(6.66%)	1243	(8.38%)	3235	(10.52%)	2016	(13.81%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

Table 2.18
Sensitivity of HRT Study Power to Adherence and Incidence Rate Assumptions

Outcome	Year	Intervention Effect[1] (%)	Percentage of Cases[1]				Power				
			Intervention		Control		ERT vs. Placebo		PERT vs. Placebo		Combined HRT vs. Placebo
			Design	Revised[2]	Design	Revised[2]	Design[3]	Revised Adherence & Incidence Rates[4]	Design[3]	Revised Adherence & Incidence Rates[4]	
CHD	2001	17	2.71	2.01	3.26	2.41	46	32	54	41	63
		21	2.60	1.93	3.26	2.40	62	44	70	56	79
		24	2.49	1.84	3.25	2.39	76	57	84	70	91
	2004	17	4.16	3.50	5.03	4.15	64	47	73	59	82
		21	3.97	3.35	5.02	4.13	81	63	88	76	94
		24	3.79	3.20	5.01	4.11	92	77	96	88	99

[1] Intervention Effects and Percentage of Cases are shown for original Design assumptions. The other adherence patterns would produce greater incidence rates in Intervention women and a corresponding reduction in the estimated treatment effect.

[2] Revised incidence rates reflect greater healthy volunteer effects (67%, 50%, 37%) in years 1-3.

[3] Combined Drop-out and loss to follow-up rates of 8.8% in year 1, 5.9% per year thereafter; Drop-in rate of 1.5% per year.

[4] Combined Drop-out and loss to follow-up rates of 9.8% in year 1, 8.4% in year 2, and 6.9% per year thereafter: Drop-in rate of 2.5% per year. Average follow-up is 8.5 years.

3. DM Status

3.1 Recruitment

Age-specific DM recruitment data are presented in *Table 3.1*. The age distributions exceeded the design assumptions for ages 50-54, 55-59, and 60-69. For the age category 70-79, recruitment was lower than designed.

3.2 Adherence

Nutrient intake data for adherence monitoring are presented in *Tables 3.2-3.4*. Studywide, the mean difference between Intervention and Comparison women is 11.0% energy from fat at AV-1, 10.0% at AV-2, 9.6% at AV-3, 8.4% at AV-4, and 8.2% at AV-5. These results are based on only those women providing a food frequency questionnaire at the designated visit. Missing data account for 11% of our sample at AV-1 and up to 16% at AV-3. The C-I value in minority women is smaller (8.9%) at AV-1 than the overall results, though after AV-1 appears to be diminishing at a slower rate in this group than overall (*Table 3.4*). Although the AV-4 and AV-5 figures are somewhat concerning, these estimates are somewhat a function of the early cohort effect. That is, women randomized early in WHI received higher fat gram goals than the majority of WHI participants, who were randomized after implementation of reduced fat gram goals. At AV-2, AV-3, and AV-4, the C-I difference is larger for women who have reduced fat gram goals than the original goals. Overall, 81% of DM Intervention participants have reduced fat gram goals. For fruit and vegetable intake, the mean difference between the arms of the trial is roughly 1 serving per day more for Intervention vs. Comparison women. New to this report are data for grain servings. The mean difference between the two arms of the trial is approximately 0.8 more servings per day of grains for Intervention vs. Comparison women.

Multivariate analyses were conducted to identify factors associated with C-I differences in percentage energy from fat (*Tables 3.5-3.6*). Participant characteristics associated with a lower C-I difference include being older, a minority, having a higher BMI, having gained weight, or not having weight measured at AV-1 (*Table 3.7*). Body weight data are presented in *Table 3.7*. On average, the difference in body weight between Control and Intervention participants at AV-1 was 2 kg, with a return to 0.2 kg by AV-5. From a trend perspective, these results are consistent with changes in energy intake estimated with the FFQ. Several DM participation variables, including attending sessions, making up missed sessions and self-monitoring, have significant positive impacts on the C-I difference at AV-1 and AV-2 (*Table 3.6*). Note that making up sessions may have lesser impact than attending sessions.

3.3 Blood Specimen and Bone Density Analyses

Table 3.8 presents the results of blood specimens analyses from a small (4.3%) cohort of DM women selected randomly at baseline for these prospective analyses. This subsample incorporated oversampling of minorities. The results shown here are weighted to reflect the overall WHI distribution of race/ethnicity. Differences between baseline and AV-1 are mostly modest, with reductions of about 5% in LDL cholesterol and about 3% in total cholesterol on average for Intervention and Control women combined. Note that baseline and AV-1 specimens were batched together for concurrent analyses by Medical Research Labs.

Table 3.9 presents blinded bone mineral density data from the DM bone density subsample. Again, changes from baseline to AV-1 or AV-3 are interesting with increases in mean bone mineral density in the whole body scan as well as the spine and hip scan. An increase in BMD was not expected from this intervention. Possible reasons for this observation include use of calcium supplements and/or HRT, selection of healthy conscious women, incomplete BMD data (14% at AV-3) or measurement issues. This topic warrants further investigation.

3.4 Adherence to Follow-up

Table 3.10 summarizes adherence to follow-up contacts by treatment arm and contact type. Follow-up participation has been roughly equivalent in the two arms. The acceptable adherence rates specified by the Steering Committee for collection of outcome data are 90% at AV-1, with a decline of no more than 1% per year. WHI adherence rates are above or at these rates for Years 1 through 5. There is an overall reduction in follow-up adherence over time, which is being carefully monitored.

3.5 Vital Status

Table 3.11 presents data on the vital status and the participation status of participants in the DM trial. A detailed description of CC and CCC activities to actively locate participants who do not complete their periodic visits is given in *Section 6 – Outcomes*. For operational purposes, we define CT participants to have an "unknown" vital status if there is no contact with the participant for 18 months. Less than 1% of the DM participants fall in this category. Another 0.9% have died and 1.5% of the DM participants are known to be alive, but have not provided recent outcomes information to the study by filling in a *Form 33 – Medical History Update*. The design assumed that 3% per year would be lost-to-follow-up or dead. Currently the average follow-up for DM participants is approximately 2.75 years, suggesting that approximately 8.3% could be expected to be dead or lost-to-follow-up. Our overall rates compare favorably to design assumptions. Conceivably, some of the participants who did not meet our operational definition of lost-to-follow-up may be lost by now as well. Even allowing for this time lag, we seem to have lost fewer participants than what was assumed for the power calculations. Clinic staff are actively pursuing these women, in the hopes of convincing them to resume follow-up and intervention when appropriate.

3.6 Outcomes

Table 3.12 contains counts of the number of locally verified major WHI outcomes for DM participants by ethnicity and age. Approximately 15-20% of the self-reported outcomes have not yet been verified, so the numbers in this table can be seen as a lower bound to the actual number of outcomes that have occurred. Compared to the design assumptions, we have observed almost 100% of the expected number of breast cancers, 70% of the expected number of colorectal cancers, about 70-80% of the expected number of CHD events, and about 15-20% of the expected number hip fractures. We anticipate that these percentages will all increase as the "healthy volunteer effect" is diluted with time.

Table 3.13 contains counts of the number of self-reports for some outcomes that are not locally verified in WHI. As most of the locally verified outcomes are somewhat over-reported (see *Section 6.3 – Outcomes Data Quality)* the number in this table should be taken as an upper bound to the number of events that have occurred in DM participants.

3.7 Power Considerations

While the observed Comparison - Intervention (C-I) differences represent a substantial achievement, they fall short of the assumptions of 13% C-I at AV-1 and subsequent decline of 0.25% per year. The lower than anticipated value of C-I at AV-1 will reduce the overall power of the study but the size of the impact depends considerably on the degree of adherence throughout the remaining years of follow-up. The power calculations shown in *Table 3.14* were calculated under two patterns of adherence assumptions. The first set is based on existing C-I values of 11% at AV-1, and 10% at AV-2 with a projected decline to 8% by year 10. The second scenario again starts at 11% but stays at 10% throughout the remaining follow-up. Using the final sample size and age distribution of DM participants and 8.5 years of follow-up on average, the study has about 63% power for breast cancer and 79% power for colorectal cancer under the first adherence assumptions. We could obtain 73% power for breast cancer and 80% for colorectal cancer, if the C-I values were 11% at AV-1 and 10% at all subsequent time points. These calculations suggest that this second adherence pattern is the level of performance we must aim to achieve. We note that the intervention effect modeling for design considerations was based on percent of energy from fat. Other changes associated with the low fat eating pattern (e.g., increases in fruits, vegetables, and grains) would likely improve the power as these changes may have additional, complementary prevention effects.

3.8 Discussion of Issues

During the past six months, the WHI investigators and staff have undertaken a number of activities addressing adherence. Most notably, in August of this year, the DM Intervention began implementing an Intensive Intervention Program incorporating motivational interviewing techniques, modeled after the pilot study that was completed in 1998. Clinical Center nutritionists conducting the intensive program received centralized training on motivational interviewing techniques during August 1999. WHI investigators and staff continue to evaluate additional advanced adherence initiatives for incorporation into the WHI DM Intervention.

Table 3.1
Dietary Modification Component Age - Specific Recruitment

Data as of: August 25, 1999

	Total Randomized	% of Overall Goal	Age Distribution	Design Assumption
DM	**48,837**			
50-54	6958	149%	14%	10
55-59	11042	118%	23%	20
60-69	22714	108%	47%	45
70-79	8123	70%	17%	25

Table 3.2
Nutrient Intake Monitoring

Data as of: August 25, 1999

	Intervention			Control			Difference		
	N	Mean	SD	N	Mean	SD	Mean[1]	SE	p-value[2]
% Energy from Fat									
FFQ Baseline	19542	38.8	5.0	29295	38.8	5.0	0.0	0.0	0.82
FFQ Year 1[3]	17957	25.1	7.5	26540	36.1	6.9	11.0	0.1	0.00
FFQ Year 2[4]	4582	26.0	7.5	6727	36.0	7.0	10.0	0.1	0.00
FFQ Year 3[5]	909	26.7	7.6	1260	36.3	6.8	9.6	0.3	0.00
FFQ Year 4[6]	352	28.1	7.6	528	36.5	7.1	8.4	0.5	0.00
FFQ Year 5[7]	103	27.7	7.8	141	35.9	7.2	8.2	1.0	0.00
4DFR Baseline	892	32.8	6.4	1349	33.0	6.8	0.2	0.3	0.55
4DFR Year 1	776	21.6	7.3	1134	33.0	6.8	11.4	0.3	0.00
24 Hr Recall, Post-baseline	226	23.0	9.2	262	32.1	7.6	9.1	0.8	0.00
24 Hr Recall, Year 1	191	22.4	7.9	238	32.7	7.8	10.3	0.8	0.00
24 Hr Recall, Year 2	119	23.4	9.4	160	32.1	8.2	8.7	1.1	0.00
24 Hr Recall, Year 3	60	25.2	8.2	80	34.4	8.4	9.2	1.4	0.00
24 Hr Recall, Year 3 Cohort	303	24.3	8.2	486	32.5	7.1	8.2	0.6	0.00
24 Hr Recall, Year 4	18	24.3	10.1	32	32.0	8.1	7.7	2.6	0.01
Total Energy (kcal)									
FFQ Baseline	19542	1789	713	29295	1789	707	0	6.6	0.94
FFQ Year 1	17957	1473	531	26540	1585	641	112	5.8	0.00
FFQ Year 2	4582	1487	523	6727	1578	623	91	11.2	0.00
FFQ Year 3	909	1493	525	1260	1576	642	83	25.9	0.03
FFQ Year 4	352	1508	548	528	1549	657	41	42.4	0.86
FFQ Year 5	103	1519	500	141	1515	562	4	69.6	0.59
4DFR Baseline	892	1707	454	1349	1713	460	6	19.7	0.80
4DFR Year 1	776	1425	357	1134	1631	448	206	19.3	0.00
24 Hr Recall, Post-baseline	226	1520	418	262	1653	516	133	43	0.00
24 Hr Recall, Year 1	191	1505	422	238	1633	482	128	44.3	0.00
24 Hr Recall, Year 2	119	1501	452	160	1612	551	111	61.9	0.23
24 Hr Recall, Year 3	60	1492	380	80	1734	512	242	78.6	0.01
24 Hr Recall, Year 3 Cohort	303	1480	381	486	1645	481	165	32.6	0.00
24 Hr Recall, Year 4	18	1603	403	32	1515	455	88	128.8	0.38
Total Fat (g)									
FFQ Baseline	19542	77.9	35.3	29295	77.8	34.7	0.1	0.3	0.87
FFQ Year 1	17957	41.4	21.6	26540	64.5	31.7	23.1	0.3	0.00
FFQ Year 2	4582	43.0	20.9	6727	64.0	31.0	21.0	0.5	0.00
FFQ Year 3	909	44.9	22.9	1260	64.5	31.5	19.6	1.2	0.00
FFQ Year 4	352	47.5	24.5	528	63.4	31.4	15.9	2.0	0.00
FFQ Year 5	103	47.2	23.1	141	61.9	28.9	14.7	3.4	0.00
4DFR Baseline	892	63.0	23.6	1349	63.8	24.6	0.8	1.0	0.73
4DFR Year 1	776	34.1	14.7	1134	60.6	23.6	26.5	1.0	0.00
24 Hr Recall, Post-baseline	226	39.6	21.9	262	60.5	26.9	20.9	2.2	0.00
24 Hr Recall, Year 1	191	37.4	17.3	238	60.6	25.3	23.2	2.1	0.00
24 Hr Recall, Year 2	119	39.5	22.5	160	59.0	28.4	19.5	3.2	0.00
24 Hr Recall, Year 3	60	41.8	17.3	80	68.0	30.0	26.2	4.3	0.00
24 Hr Recall, Year 3 Cohort	303	40.6	18.4	486	60.9	24.6	20.3	1.6	0.00
24 Hr Recall, Year 4	18	43.6	22.0	32	55.5	26.0	11.9	7.3	0.11

(continues)

[1] Absolute difference.

[2] P-values based on testing in the natural log scale except for % Energy from fat

[3] 4935 (27%) Intervention women had <=20% energy from fat at year 1.

[4] 1032 (23%) Intervention women had <=20% energy from fat at year 2.

[5] 178 (20%) Intervention women had <=20% energy from fat at year 3

[6] 44 (13%) Intervention women had <=20% energy from fat at year 4.

[7] 20 (19%) Intervention women had <=20% energy from fat at year 5.

Table 3.2 (continued)
Nutrient Intake Monitoring

Data as of: August 25, 1999

	Intervention			Control			Difference		
	N	Mean	SD	N	Mean	SD	Mean[1]	SE	p-value[2]
Saturated Fat (g)									
FFQ Baseline	19542	27.4	13.4	29295	27.3	13.2	0.1	0.1	0.85
FFQ Year 1[3]	17957	14.1	8.0	26540	22.5	11.9	8.4	0.1	0.00
FFQ Year 2[4]	4582	14.6	7.7	6727	22.4	11.5	7.8	0.2	0.00
FFQ Year 3[5]	909	15.3	8.5	1260	22.6	12.0	7.3	0.5	0.00
FFQ Year 4[6]	352	16.4	8.9	528	22.1	11.4	5.7	0.7	0.00
FFQ Year 5[7]	103	16.0	8.1	141	21.5	10.8	5.5	1.3	0.00
4DFR Baseline	892	20.6	8.9	1349	20.9	9.3	0.3	0.4	0.73
4DFR Year 1	776	10.6	5.3	1134	19.6	8.4	9.0	0.3	0.00
24 Hr Recall, Post-baseline	226	12.9	7.9	262	20.1	9.6	7.2	0.8	0.00
24 Hr Recall, Year 1	191	11.8	6.3	238	20.1	10.2	8.3	0.8	0.00
24 Hr Recall, Year 2	119	12.7	7.9	160	19.1	10.0	6.4	1.1	0.00
24 Hr Recall, Year 3	60	13.8	6.7	80	22.9	10.2	9.1	1.5	0.00
24 Hr Recall, Year 3 Cohort	303	12.8	6.4	486	20.0	9.0	7.2	0.6	0.00
24 Hr Recall, Year 4	18	14.2	8.2	32	19.0	10.8	4.8	2.9	0.07
Polyunsaturated Fat (g)									
FFQ Baseline	19542	15.3	7.6	29295	15.3	7.6	0.0	0.1	0.78
FFQ Year 1	17957	7.9	4.3	26540	12.5	6.7	4.6	0.1	0.00
FFQ Year 2	4582	8.2	4.3	6727	12.3	6.4	4.1	0.1	0.00
FFQ Year 3	909	8.5	4.7	1260	12.3	6.3	3.8	0.2	0.00
FFQ Year 4	352	9.1	5.1	528	12.2	6.8	3.1	0.4	0.00
FFQ Year 5	103	9.1	4.9	141	12.0	6.3	2.9	0.7	0.00
4DFR Baseline	892	13.1	5.8	1349	13.5	6.1	0.4	0.3	0.41
4DFR Year 1	776	7.4	3.4	1134	12.8	6.2	5.4	0.2	0.00
24 Hr Recall, Post-baseline	226	8.3	5.0	262	12.6	7.3	4.3	0.6	0.00
24 Hr Recall, Year 1	191	7.9	4.5	238	12.4	6.2	4.5	0.5	0.00
24 Hr Recall, Year 2	119	8.4	5.9	160	12.6	8.1	4.2	0.9	0.00
24 Hr Recall, Year 3	60	8.4	4.5	80	14.4	8.7	6.0	1.2	0.00
24 Hr Recall, Year 3 Cohort	303	8.8	4.7	486	12.6	6.5	3.8	0.4	0.00
24 Hr Recall, Year 4	18	9.0	4.7	32	10.3	5.8	1.3	1.6	0.29
Fruits and Vegetables (servings)									
FFQ Baseline	19471	3.6	1.8	29217	3.6	1.8	0.0	0.0	0.69
FFQ Year 1	17877	5.0	2.3	26460	3.8	2.0	1.2	0.0	0.00
FFQ Year 2	4628	5.1	2.4	6803	3.9	2.0	1.2	0.0	0.00
FFQ Year 3	978	5.1	2.3	1370	3.9	2.0	1.2	0.1	0.00
FFQ Year 4	369	5.1	2.3	558	3.9	2.1	1.2	0.1	0.00
FFQ Year 5	113	5.1	2.6	151	3.9	2.1	1.2	0.3	0.00
Grain Servings (Not including desserts/pastries)									
FFQ Baseline	19469	4.7	2.5	29215	4.8	2.5	0.1	0.0	0.43
FFQ Year 1	17873	5.1	2.7	26450	4.2	2.3	0.9	0.0	0.00
FFQ Year 2	4627	5.0	2.5	6799	4.2	2.2	0.8	0.0	0.00
FFQ Year 3	978	4.9	2.7	1369	4.1	2.2	0.8	0.1	0.00
FFQ Year 4	369	4.8	2.6	556	4.1	2.4	0.7	0.2	0.00
FFQ Year 5	113	4.9	2.5	151	3.9	2.1	1.0	0.3	0.00

[1] Absolute difference.

[2] P-values based on testing in the natural log scale except for % Energy from fat

[3] 4935 (27%) Intervention women had <=20% energy from fat at year 1.

[4] 1032 (23%) Intervention women had <=20% energy from fat at year 2.

[5] 178 (20%) Intervention women had <=20% energy from fat at year 3

[6] 44 (13%) Intervention women had <=20% energy from fat at year 4.

[7] 20 (19%) Intervention women had <=20% energy from fat at year 5.

Table 3.3
Nutrient Intake Monitoring For Women With Revised Fat Gram Goals

Data as of: August 25, 1999

	Intervention[1]			Control[2]			Difference		
	N	Mean	SD	N	Mean	SD	Mean[3]	SE	p-value[4]
% Energy from Fat									
FFQ Baseline	15857	38.8	5.0	23754	38.8	4.9	0.0	0.1	0.49
FFQ Year 1	14532	25.3	7.6	21540	36.2	6.9	10.9	0.1	0.00
FFQ Year 2	3532	26.1	7.6	5071	36.3	6.9	10.2	0.2	0.00
FFQ Year 3	505	27.2	8.0	736	37.0	6.5	9.8	0.4	0.00
FFQ Year 4	43	28.2	8.6	61	37.7	6.6	9.5	1.5	0.00
4DFR Baseline	691	32.4	6.5	1036	33.0	6.9	0.6	0.3	0.07
4DFR Year 1	593	21.5	7.5	855	33.1	6.9	11.6	0.4	0.00
24 Hr Recall, Post-baseline	186	23.4	9.4	205	32.1	7.7	8.7	0.9	0.00
24 Hr Recall, Year 1	142	22.1	7.9	170	32.8	7.6	10.7	0.9	0.00
24 Hr Recall, Year 2	82	22.6	8.4	99	31.7	8.3	9.1	1.2	0.00
24 Hr Recall, Year 3	14	23.3	7.0	24	33.4	8.3	10.1	2.6	0.00
24 Hr Recall, Year 3 Cohort	137	24.0	7.9	236	32.9	7.3	8.9	0.8	0.00
Total Energy (kcal)									
FFQ Baseline	15857	1780	701	23754	1786	706	6	7.2	0.47
FFQ Year 1	14532	1467	530	21540	1588	644	121	6.4	0.00
FFQ Year 2	3532	1477	523	5071	1582	625	105	12.8	0.00
FFQ Year 3	505	1475	504	736	1599	657	124	34.6	0.01
FFQ Year 4	43	1505	689	61	1613	941	108	168.5	0.93
4DFR Baseline	691	1688	455	1036	1713	469	25	22.8	0.31
4DFR Year 1	593	1406	365	855	1625	448	219	22.2	0.00
24 Hr Recall, Post-baseline	186	1499	418	205	1640	524	141	48.3	0.00
24 Hr Recall, Year 1	142	1507	432	170	1653	497	146	53.3	0.01
24 Hr Recall, Year 2	82	1508	456	99	1578	524	70	73.8	0.70
24 Hr Recall, Year 3	14	1661	323	24	1724	522	63	154.8	0.57
24 Hr Recall, Year 3 Cohort	137	1489	357	236	1621	477	132	46.9	0.01
Total Fat (g)									
FFQ Baseline	15857	77.4	34.6	23754	77.6	34.6	0.2	0.4	0.63
FFQ Year 1	14532	41.5	21.8	21540	64.9	31.9	23.4	0.3	0.00
FFQ Year 2	3532	42.9	21.2	5071	64.7	31.2	21.8	0.6	0.00
FFQ Year 3	505	45.1	22.6	736	66.6	32.5	21.5	1.7	0.00
FFQ Year 4	43	48.0	32.1	61	67.8	41.8	19.8	7.6	0.01
4DFR Baseline	691	61.5	23.3	1036	63.8	25.1	2.3	1.2	0.12
4DFR Year 1	593	33.6	15.0	855	60.7	24.0	27.1	1.1	0.00
24 Hr Recall, Post-baseline	186	39.7	22.1	205	60.2	27.7	20.5	2.6	0.00
24 Hr Recall, Year 1	142	36.6	16.4	170	61.7	25.7	25.1	2.5	0.00
24 Hr Recall, Year 2	82	38.5	21.7	99	57.0	27.1	18.5	3.7	0.00
24 Hr Recall, Year 3	14	43.7	16.1	24	66.2	29.8	22.5	8.6	0.01
24 Hr Recall, Year 3 Cohort	137	40.2	17.5	236	60.9	24.7	20.7	2.4	0.00

(continues)

[1] Intervention group is defined as women randomized to Intervention after 6/15/95 that have revised fat gram goals.
[2] Control group is defined as women randomized to Control after 6/15/95.
[3] Absolute difference.
[4] P-values based on testing in the natural log scale except for % Energy from fat

Table 3.3 (continued)
Nutrient Intake Monitoring For Women With Revised Fat Gram Goals

Data as of: August 25, 1999

	Intervention[1]			Control[2]			Difference		
	N	Mean	SD	N	Mean	SD	Mean[3]	SE	p-value[4]
Saturated Fat (g)									
FFQ Baseline	15857	27.2	13.2	23754	27.2	13.1	0.0	0.1	0.82
FFQ Year 1	14532	14.1	8.1	21540	22.6	11.9	8.5	0.1	0.00
FFQ Year 2	3532	14.6	7.9	5071	22.5	11.6	7.9	0.2	0.00
FFQ Year 3	505	15.5	8.5	736	23.2	12.4	7.7	0.6	0.00
FFQ Year 4	43	16.2	10.9	61	23.5	14.3	7.3	2.6	0.01
4DFR Baseline	691	20.0	8.8	1036	20.8	9.5	0.8	0.5	0.17
4DFR Year 1	593	10.3	5.4	855	19.4	8.3	9.1	0.4	0.00
24 Hr Recall, Post-baseline	186	13.0	8.0	205	20.0	9.7	7.0	0.9	0.00
24 Hr Recall, Year 1	142	11.4	5.9	170	20.5	10.4	9.1	1.0	0.00
24 Hr Recall, Year 2	82	12.3	7.9	99	18.1	8.7	5.8	1.2	0.00
24 Hr Recall, Year 3	14	14.8	7.0	24	22.3	9.7	7.5	3.0	0.02
24 Hr Recall, Year 3 Cohort	137	12.4	6.0	236	20.0	8.9	7.6	0.9	0.00
Polyunsaturated Fat (g)									
FFQ Baseline	15857	15.1	7.4	23754	15.1	7.4	0.0	0.1	0.54
FFQ Year 1	14532	7.8	4.4	21540	12.5	6.7	4.7	0.1	0.00
FFQ Year 2	3532	8.2	4.3	5071	12.5	6.5	4.3	0.1	0.00
FFQ Year 3	505	8.6	4.6	736	12.9	6.4	4.3	0.3	0.00
FFQ Year 4	43	9.4	6.3	61	12.9	8.6	3.5	1.5	0.04
4DFR Baseline	691	12.8	5.7	1036	13.5	6.3	0.7	0.3	0.06
4DFR Year 1	593	7.4	3.5	855	13.0	6.5	5.6	0.3	0.00
24 Hr Recall, Post-baseline	186	8.3	5.1	205	12.4	7.4	4.1	0.6	0.00
24 Hr Recall, Year 1	142	7.8	4.4	170	12.6	5.9	4.8	0.6	0.00
24 Hr Recall, Year 2	82	8.4	5.4	99	12.2	7.9	3.8	1.0	0.00
24 Hr Recall, Year 3	14	7.9	3.1	24	14.9	11.3	7.0	3.1	0.01
24 Hr Recall, Year 3 Cohort	137	8.9	4.4	236	12.6	6.3	3.7	0.6	0.00
Fruits and Vegetables (servings)									
FFQ Baseline	15816	3.6	1.8	23708	3.6	1.8	0.0	0.0	0.64
FFQ Year 1	14484	5.0	2.3	21486	3.9	2.0	1.1	0.0	0.00
FFQ Year 2	3586	5.1	2.4	5161	3.9	2.0	1.2	0.0	0.00
FFQ Year 3	578	5.1	2.4	853	4.0	2.0	1.1	0.1	0.00
FFQ Year 4	59	5.3	2.6	97	3.9	2.4	1.4	0.4	0.00
Grain Servings (Not including desserts/pastries)									
FFQ Baseline	15814	4.7	2.5	23706	4.8	2.5	0.1	0.0	0.21
FFQ Year 1	14480	5.0	2.6	21477	4.2	2.3	0.8	0.0	0.00
FFQ Year 2	3585	4.9	2.5	5158	4.2	2.3	0.7	0.1	0.00
FFQ Year 3	578	4.7	2.6	852	4.1	2.2	0.6	0.1	0.00
FFQ Year 4	59	4.7	2.6	97	4.1	3.0	0.6	0.5	0.12

[1] Intervention group is defined as women randomized to Intervention after 6/15/95 that have revised fat gram goals.

[2] Control group is defined as women randomized to Control after 6/15/95.

[3] Absolute difference.

[4] P-values based on testing in the natural log scale except for % Energy from fat

Table 3.4
Nutrient Intake Monitoring in Minority Women

Data as of: August 25, 1999

	Intervention			Control			Difference		
	N	Mean	SD	N	Mean	SD	Mean[1]	SE	p-value[2]
% Energy from Fat									
FFQ Baseline	3628	39.4	5.2	5347	39.4	5.2	0.0	0.1	0.48
FFQ Year 1[3]	3109	27.6	8.2	4513	36.5	7.3	8.9	0.2	0.00
FFQ Year 2[4]	792	28.3	8.0	1124	36.3	7.3	8.0	0.4	0.00
FFQ Year 3[5]	143	29.4	8.5	219	36.7	7.0	7.3	0.8	0.00
FFQ Year 4[6]	51	29.6	7.2	67	37.2	8.2	7.6	1.4	0.00
4DFR Baseline	451	33.0	6.4	680	33.3	6.9	0.3	0.4	0.42
4DFR Year 1	385	22.9	7.7	532	33.4	6.9	10.5	0.5	0.00
24 Hr Recall, Post-baseline	40	24.6	10.7	43	30.6	7.6	6.0	2.0	0.00
24 Hr Recall, Year 1	30	23.1	7.2	36	31.2	7.5	8.1	1.8	0.00
24 Hr Recall, Year 2	20	27.4	11.8	32	29.5	9.3	2.1	2.9	0.47
24 Hr Recall, Year 3	9	28.5	8.0	10	40.8	7.0	12.3	3.4	0.01
24 Hr Recall, Year 3 Cohort	104	25.6	7.9	172	33.0	7.3	7.4	0.9	0.00
Total Energy (kcal)									
FFQ Baseline	3628	1763	812	5347	1757	825	6	17.6	0.45
FFQ Year 1	3109	1418	629	4513	1516	768	98	16.7	0.00
FFQ Year 2	792	1417	634	1124	1513	746	96	32.6	0.03
FFQ Year 3	143	1430	618	219	1496	759	66	76	0.71
FFQ Year 4	51	1445	651	67	1554	1056	109	168	0.94
4DFR Baseline	451	1670	480	680	1686	471	16	28.8	0.47
4DFR Year 1	385	1385	376	532	1608	473	223	29.1	0.00
24 Hr Recall, Post-baseline	40	1470	492	43	1599	415	129	99.7	0.10
24 Hr Recall, Year 1	30	1516	389	36	1493	371	23	93.8	0.81
24 Hr Recall, Year 2	20	1555	582	32	1474	595	81	168.2	0.42
24 Hr Recall, Year 3	9	1303	290	10	1586	556	283	207.1	0.25
24 Hr Recall, Year 3 Cohort	104	1475	392	172	1533	402	58	49.5	0.26
Total Fat (g)									
FFQ Baseline	3628	77.9	39.9	5347	77.7	40.2	0.2	0.9	0.62
FFQ Year 1	3109	44.0	26.4	4513	62.7	37.2	18.7	0.8	0.00
FFQ Year 2	792	44.8	25.3	1124	62.3	36.6	17.5	1.5	0.00
FFQ Year 3	143	48.5	29.8	219	61.9	36.3	13.4	3.6	0.00
FFQ Year 4	51	47.7	28.5	67	63.9	44.8	16.2	7.2	0.06
4DFR Baseline	451	61.8	23.2	680	63.6	25.8	1.8	1.5	0.43
4DFR Year 1	385	35.3	16.1	532	60.8	25.0	25.5	1.5	0.00
24 Hr Recall, Post-baseline	40	40.0	22.8	43	55.2	21.7	15.2	4.9	0.00
24 Hr Recall, Year 1	30	38.3	14.7	36	53.4	20.2	15.1	4.4	0.00
24 Hr Recall, Year 2	20	50.9	36.5	32	49.6	27.4	1.3	8.9	0.96
24 Hr Recall, Year 3	9	41.7	15.6	10	73.7	33.0	32.0	12.1	0.01
24 Hr Recall, Year 3 Cohort	104	42.6	19.1	172	57.4	21.9	14.8	2.6	0.00

(continues)

[1] Absolute difference.

[2] P-values based on testing in the natural log scale except for % Energy from fat

[3] 567 (18%) Intervention women had <=20% energy from fat at year 1.

[4] 126 (16%) Intervention women had <=20% energy from fat at year 2.

[5] 18 (13%) Intervention women had <=20% energy from fat at year 3

[6] 3 (6%) Intervention women had <=20% energy from fat at year 4.

Table 3.4 (continued)
Nutrient Intake Monitoring in Minority Women

Data as of: August 25, 1999

	Intervention			Control			Difference		
	N	Mean	SD	N	Mean	SD	Mean[1]	SE	p-value[2]
Saturated Fat (g)									
FFQ Baseline	3628	26.0	14.2	5347	25.9	14.5	0.1	0.3	0.63
FFQ Year 1[3]	3109	14.4	9.1	4513	20.7	12.9	6.3	0.3	0.00
FFQ Year 2[4]	792	14.7	9.0	1124	20.6	12.9	5.9	0.5	0.00
FFQ Year 3[5]	143	16.0	10.1	219	20.4	13.2	4.4	1.3	0.00
FFQ Year 4[6]	51	16.0	9.6	67	21.0	14.7	5.0	2.4	0.09
4DFR Baseline	451	19.5	8.5	680	20.3	9.4	0.8	0.5	0.32
4DFR Year 1	385	10.7	5.8	532	18.9	8.4	8.2	0.5	0.00
24 Hr Recall, Post-baseline	40	12.4	7.5	43	18.0	8.7	5.6	1.8	0.00
24 Hr Recall, Year 1	30	12.0	6.5	36	15.4	6.3	3.4	1.6	0.01
24 Hr Recall, Year 2	20	15.9	11.7	32	14.7	7.5	1.2	2.7	0.84
24 Hr Recall, Year 3	9	13.1	6.7	10	22.3	8.8	9.2	3.6	0.01
24 Hr Recall, Year 3 Cohort	104	13.0	6.3	172	18.2	8.0	5.2	0.9	0.00
Polyunsaturated Fat (g)									
FFQ Baseline	3628	15.9	8.6	5347	15.8	8.6	0.1	0.2	0.51
FFQ Year 1	3109	8.7	5.5	4513	12.8	7.9	4.1	0.2	0.00
FFQ Year 2	792	8.9	5.3	1124	12.5	7.6	3.6	0.3	0.00
FFQ Year 3	143	9.8	6.7	219	12.4	7.2	2.6	0.8	0.00
FFQ Year 4	51	9.2	6.0	67	13.1	10.2	3.9	1.6	0.05
4DFR Baseline	451	13.4	6.0	680	13.7	6.5	0.3	0.4	0.57
4DFR Year 1	385	7.8	3.7	532	13.3	6.8	5.5	0.4	0.00
24 Hr Recall, Post-baseline	40	8.9	5.3	43	11.5	6.0	2.6	1.2	0.01
24 Hr Recall, Year 1	30	8.1	3.1	36	12.9	5.7	4.8	1.2	0.00
24 Hr Recall, Year 2	20	10.8	9.1	32	11.2	9.0	0.4	2.6	0.89
24 Hr Recall, Year 3	9	8.5	2.8	10	16.4	7.9	7.9	2.8	0.02
24 Hr Recall, Year 3 Cohort	104	9.4	5.2	172	12.4	6.1	3.0	0.7	0.00
Fruits and Vegetables (servings)									
FFQ Baseline	3619	3.3	1.9	5343	3.2	1.9	0.1	0.0	0.09
FFQ Year 1	3098	4.5	2.5	4508	3.4	2.0	1.1	0.1	0.00
FFQ Year 2	803	4.6	2.6	1138	3.4	2.1	1.2	0.1	0.00
FFQ Year 3	152	4.6	2.4	225	3.6	2.1	1.0	0.2	0.00
FFQ Year 4	53	4.6	2.5	72	3.8	3.0	0.8	0.5	0.02
Grain Servings (Not including desserts/pastries)									
FFQ Baseline	3619	4.8	2.9	5342	4.7	2.9	0.1	0.1	0.52
FFQ Year 1	3097	4.8	2.9	4506	4.2	2.7	0.6	0.1	0.00
FFQ Year 2	803	4.6	2.9	1137	4.2	2.7	0.4	0.1	0.00
FFQ Year 3	152	4.6	2.9	225	4.0	2.6	0.6	0.3	0.03
FFQ Year 4	53	4.7	2.9	72	4.2	3.8	0.5	0.6	0.19

[1] Absolute difference.

[2] P-values based on testing in the natural log scale except for % Energy from fat

[3] 567 (18%) Intervention women had <=20% energy from fat at year 1.

[4] 126 (16%) Intervention women had <=20% energy from fat at year 2.

[5] 18 (13%) Intervention women had <=20% energy from fat at year 3

[6] 3 (6%) Intervention women had <=20% energy from fat at year 4.

Table 3.5
Multivariate Analysis of Study Subject Characteristics
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-1:

Data as of: August 25, 1999

Study Subject Characteristics		C - I (%)
		N=44295
Age	50-54 vs. 60-69	0.52 *
	55-59 vs. 60-69	0.38 *
	70-79 vs. 60-69	-1.31 **
Ethnicity	Black vs. White	-1.26 **
	Hispanic vs. White	-1.50 **
	Other Minority vs. White	-0.88 *
Education	0-8 Years vs. Post H.S.	0.18
	Some H.S. or Diploma vs. Post H.S.	0.11
Marital Status	Not Married vs. Married	0.01
Family Income	<20K vs. ≥75K	-0.80 **
	20-35K vs. ≥75K	-0.32
	35-50K vs. ≥75K	0.01
	50-75K vs. ≥75K	-0.09
Weight Change	Lost ≥5 kg vs. Stayed within 2kg	1.08 **
	Lost 2-5 kg vs. Stayed within 2kg	1.39 **
	Gained ≥2 kg vs. Stayed within 2 kg	-0.72 **
	Weight change not reported vs. Stayed within 2 kg	-1.98 **
HRT Randomized	Yes vs. No	0.42 *
BMI - Mean(BMI)	BMI - 29.12	-0.04 **
Hysterectomy	Yes vs. No	0.11

* Indicates p-value <.05 from two-sided t-test.
** Indicates p-value <.01 from two-sided t-test.
Note: Model adjusted for clinic effects.

Table 3.5 (continued)
Multivariate Analysis of Study Subject Characteristics
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-2:

Data as of: August 25, 1999

Study Subject Characteristics		C - I (%)
		N=11445
Age	50-54 vs. 60-69	-0.02
	55-59 vs. 60-69	0.24
	70-79 vs. 60-69	-1.77 **
Ethnicity	Black vs. White	-1.88 **
	Hispanic vs. White	0.01
	Other Minority vs. White	-0.71
Education	0-8 Years vs. Post H.S.	-1.12
	Some H.S. or Diploma vs. Post H.S.	0.08
Marital Status	Not Married vs. Married	-0.52
Family Income	<20K vs. ≥75K	-0.16
	20-35K vs. ≥75K	0.54
	35-50K vs. ≥75K	0.55
	50-75K vs. ≥75K	0.30
Weight Change	Lost ≥5 kg vs. Stayed within 2kg	1.22 **
	Lost 2-5 kg vs. Stayed within 2kg	1.10 **
	Gained ≥2 kg vs. Stayed within 2 kg	-0.44
	Weight change not reported vs. Stayed within 2 kg	-3.05 **
HRT Randomized	Yes vs. No	-0.04
BMI - Mean(BMI)	BMI - 29.12	-0.08 **
Hysterectomy	Yes vs. No	-0.18

* Indicates p-value <.05 from two-sided t-test.
** Indicates p-value <.01 from two-sided t-test.
Note: Model adjusted for clinic effects.

Table 3.5 (continued)
Multivariate Analysis of Study Subject Characteristics
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-3:

Data as of: August 25, 1999

Study Subject Characteristics		C - I (%)
		N=2354
Age	50-54 vs. 60-69	0.16
	55-59 vs. 60-69	1.43
	70-79 vs. 60-69	0.20
Ethnicity	Black vs. White	-1.09
	Hispanic vs. White	-1.73
	Other Minority vs. White	-1.55
Education	0-8 Years vs. Post H.S.	0.58
	Some H.S. or Diploma vs. Post H.S.	-0.43
Marital Status	Not Married vs. Married	-0.45
Family Income	<20K vs. ≥75K	-0.69
	20-35K vs. ≥75K	0.46
	35-50K vs. ≥75K	0.17
	50-75K vs. ≥75K	-0.62
Weight Change	Lost ≥5 kg vs. Stayed within 2kg	1.02
	Lost 2-5 kg vs. Stayed within 2kg	2.18 *
	Gained ≥2 kg vs. Stayed within 2 kg	0.49
	Weight change not reported vs. Stayed within 2 kg	-0.70
HRT Randomized	Yes vs. No	0.03
BMI - Mean(BMI)	BMI - 29.12	-0.08
Hysterectomy	Yes vs. No	-0.11

* Indicates p-value <.05 from two-sided t-test.
** Indicates p-value <.01 from two-sided t-test.
Note: Model adjusted for clinic effects.

Table 3.6
Effects of DM Intervention Participation Variables
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-1:

Data as of: August 25, 1999

DM Implementation/Participation	C-I % Energy from Fat[1] N=44499	C-I % Energy from Fat[1] N=44499
Intervention Group Size	0.00	-0.01
Days from Randomization to Intervention Group/100	-0.57 **	-0.42 **
% Assigned Sessions Attended by AV-1 (10% change)	1.08 **	0.41 **
Eligible for ≥1 Make-up Session by AV-1	-2.31 **	-1.42 **
% Sessions Made-up by AV-1 (10% change)	0.37 **	0.16 **
Fat Gram Goal	0.05 **	0.04 *
% Assigned Sessions (out of 3-18) Providing Fat Scores by AV-1 (10% change)		0.35 **

[1] Model adjusted for clinic effects and terms with listed coefficients.

* Indicates p-value <.05 from two-sided t-test.

** Indicates p-value <.01 from two-sided t-test.

Table 3.6 (continued)
Effects of DM Intervention Participation Variables
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-2:

Data as of: August 25, 1999

DM Implementation/Participation	C-I % Energy from Fat[1] N=11484	C-I % Energy from Fat[1] N=11484
Intervention Group Size	0.02	0.02
Days from Randomization to Intervention Group/100	0.39 **	0.41 **
% Assigned Sessions Attended by AV-2 (10% change)	0.84 **	0.50 **
Eligible for ≥1 Make-up Session by AV-2	-2.21 **	-1.24 *
% Sessions Made-up by AV-2 (10% change)	0.36 **	0.21 **
% Assigned Maintenance Sessions Attended by AV-2 (10% change)	0.29 **	0.11 *
Eligible for ≥ Make-up Maintenance Session by AV-2	-0.51	-0.35
% Assigned Maintenance Sessions Made-up by AV-2 (10% change)	0.11 **	0.02
Fat Gram Goal	0.002	-0.003
% Assigned Sessions (out of 3-18) Providing Fat Scores by AV-2 (10% change)		0.42 **
% Assigned Maintenance Sessions Providing Fat Scores by AV-2 (10% change)		0.24 **

[1] Model adjusted for clinic effects and terms with listed coefficients.

* Indicates p-value <.05 from two-sided t-test.

** Indicates p-value <.01 from two-sided t-test.

Table 3.6 (continued)
Effects of DM Intervention Participation Variables
on Control - Intervention Difference in % Energy from Fat from FFQ at AV-3:

Data as of: August 25, 1999

DM Implementation/Participation	C-I % Energy from Fat[1] N=2363	C-I % Energy from Fat[1] N=2363
Intervention Group Size	-0.04	
Days from Randomization to Intervention Group/100	0.12	
% Assigned Sessions Attended by AV-3 (10% change)	0.09	
Eligible for ≥1 Make-up Session by AV-3	-1.98	
% Sessions Made-up by AV-3 (10% change)	0.17	
% Assigned Maintenance Sessions Attended by AV-2 (10% change)	-0.01	
Eligible for ≥1 Make-up Maintenance Session by AV-2	0.09	
% Assigned Maintenance Sessions Made-up by AV-2 (10% change)	-0.12	
% Assigned Maintenance Sessions Attended by AV-3 (10% change)	-0.05	-0.009
Eligible for ≥ Make-up Maintenance Session by AV-3	-2.49 **	-2.74 **
% Assigned Maintenance Sessions Made-up by AV-3 (10% change)	0.18 *	0.20 **
Fat Gram Goal	0.0003	-0.02
% Assigned Sessions (out of 3-18) Providing Fat Scores by AV-2 (10% change)	-0.15	
% Assigned Maintenance Sessions Providing Fat Scores by AV-2 (10% change)	0.16	
% Assigned Sessions (out of 3-18) Providing Fat Scores by AV-3 (10% change)	0.79 **	0.91 **
% Assigned Maintenance Sessions Providing Fat Scores by AV-3 (10% change)	0.30 **	0.31 **

[1] Model adjusted for clinic effects and terms with listed coefficients.

* Indicates p-value <.05 from two-sided t-test.

** Indicates p-value <.01 from two-sided t-test.

Table 3.7
Body Weight

Data as of: August 25, 1999

Body Weight (kg)[1]	Intervention			Control			Difference		
	N	Mean	S.D.	N	Mean	S.D.	Mean[2]	S.E.	p-value
All Participants									
Baseline	19524	76.8	16.7	29272	76.7	16.5	-0.1	0.2	0.36
Year 1	18031	74.4	16.8	26537	76.3	16.8	1.9	0.2	0.00
Year 2	13260	75.2	17.2	19807	76.5	16.7	1.3	0.2	0.00
Year 3	8007	75.6	17.0	12160	76.4	16.5	0.8	0.2	0.00
Year 4	3499	75.6	16.7	5313	76.1	16.2	0.5	0.4	0.21
Year 5	979	75.1	16.5	1522	75.3	15.7	0.2	0.7	0.66
Minority Participants									
Baseline	3624	80.0	18.7	5346	79.4	18.9	-0.6	0.4	0.12
Year 1	3182	78.7	19.6	4592	78.9	19.3	0.2	0.4	0.74
Year 2	2235	79.2	19.4	3325	79.3	19.0	0.1	0.5	0.87
Year 3	1265	79.9	19.5	1933	80.2	19.3	0.3	0.7	0.69
Year 4	469	80.6	17.8	677	80.1	18.2	-0.5	1.1	0.61
Year 5	99	78.9	16.7	142	77.5	19.0	-1.4	2.4	0.57
Participants Aged 70-79									
Baseline	3247	73.0	14.7	4871	72.9	14.5	-0.1	0.3	0.80
Year 1	2996	70.7	15.2	4458	72.6	15.4	1.9	0.4	0.00
Year 2	2061	70.6	15.0	3101	72.2	14.9	1.6	0.4	0.00
Year 3	1078	70.5	15.5	1656	71.2	14.5	0.7	0.6	0.20
Year 4	473	70.0	14.9	706	70.9	13.9	0.9	0.9	0.30
Year 5	106	69.5	14.1	167	70.6	13.4	1.1	1.7	0.51
Participants with Revised Fat Gram Goals[3]									
Baseline	15843	77.0	17.0	23739	77.0	16.9	0.0	0.2	0.79
Year 1	14578	74.6	17.1	21471	76.6	17.1	2.0	0.2	0.00
Year 2	10000	75.4	17.4	14971	76.8	17.0	1.4	0.2	0.00
Year 3	4811	75.8	17.4	7331	76.8	16.8	1.0	0.3	0.00
Year 4	513	75.6	17.3	655	76.5	16.7	0.9	1.0	0.34

[1] Shown for 30 <= weight (kg) <= 220

[2] Control - Intervention

[3] For revised fat gram goals:
Intervention group is defined as women randomized to Intervention after 6/15/95 that have revised fat gram goals.
Control group is defined as women randomized to Control after 6/15/95.

Table 3.8
Blood Specimen Analysis: DM Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Micronutrients			
Alpha-Carotene (µg/ml)			
Baseline	1554	0.08	0.06
AV-1	1555	0.08	0.05
AV-1 – Baseline	1552	0.00	0.05
Alpha-tocopherol (µg/ml)			
Baseline	1554	15.5	5.1
AV-1	1555	16.1	5.2
AV-1 – Baseline	1552	0.5	4.1
Beta-Carotene (µg/ml)			
Baseline	1554	0.29	0.21
AV-1	1555	0.30	0.21
AV-1 – Baseline	1552	0.01	0.18
Beta-Cryptoxanthine (µg/ml)			
Baseline	1554	0.08	0.05
AV-1	1554	0.09	0.05
AV-1 – Baseline	1551	0.00	0.04
Gamma-tocopherol (µg/ml)			
Baseline	1554	2.2	1.2
AV-1	1554	1.9	1.1
AV-1 – Baseline	1551	-0.3	0.8
Lycopene (µg/ml)			
Baseline	1554	0.40	0.15
AV-1	1555	0.40	0.15
AV-1 – Baseline	1552	0.00	0.14
Lutein and Zeaxanthin (µg/ml)			
Baseline	1554	0.22	0.09
AV-1	1555	0.22	0.09
AV-1 – Baseline	1552	0.00	0.06
Retinol (µg/ml)			
Baseline	1554	0.60	0.12
AV-1	1555	0.60	0.12
AV-1 – Baseline	1552	0.00	0.08

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 3.8 (Continued)
Blood Specimen Analysis: DM Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Clotting Factors			
Factor VII Activity, Antigen (%)			
Baseline	1530	127.7	25.4
AV-1	1522	127.7	26.2
AV-1 - Baseline	1499	0.1	17.3
Factor VII C (%)			
Baseline	1495	130.2	26.3
AV-1	1495	127.3	25.5
AV-1 - Baseline	1447	-3.3	20.0
Fibrinogen (mg/dl)			
Baseline	1530	300.7	48.1
AV-1	1522	299.7	45.9
AV-1 - Baseline	1499	-1.2	39.3
Hormones/Other			
Glucose (mg/dl)			
Baseline	1555	99.3	21.0
AV-1	1554	98.1	19.7
AV-1 - Baseline	1552	-1.2	15.8
Insulin (µIU/ml)			
Baseline	1549	10.7	4.8
AV-1	1548	10.8	9.9
AV-1 - Baseline	1540	0.1	8.5

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 3.8 (Continued)
Blood Specimen Analysis: DM Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Lipoproteins			
HDL-2 (mg/dl)			
Baseline	1528	18.3	7.2
AV-1	1536	18.4	7.1
AV-1 - Baseline	1513	0.2	4.3
HDL-3 (mg/dl)			
Baseline	1530	41.8	7.4
AV-1	1537	41.1	6.9
AV-1 - Baseline	1516	-0.6	4.6
HDL-C (mg/dl)			
Baseline	1549	60.0	13.0
AV-1	1551	59.6	12.4
AV-1 - Baseline	1545	-0.3	7.1
LDL-C (mg/dl)			
Baseline	1530	134.4	28.5
AV-1	1524	128.1	27.8
AV-1 - Baseline	1511	-6.4	19.1
Lp(a) (mg/dl)			
Baseline	1533	24.6	21.0
AV-1	1529	23.8	20.3
AV-1 - Baseline	1510	-0.9	8.0
Total Cholesterol (mg/dl)			
Baseline	1552	225.0	30.8
AV-1	1553	218.6	30.1
AV-1 - Baseline	1549	-6.6	21.8
Triglyceride (mg/dl)			
Baseline	1552	153.8	74.1
AV-1	1553	156.4	77.3
AV-1 - Baseline	1549	2.2	47.0

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants randomized to CT.

Table 3.9
Bone Mineral Density[1] Analysis: DM Participants

Data as of: August 25, 1999

	N	Mean	S.D.
Whole Body Scan			
Baseline	3620	1.03	0.11
AV1	3269	1.03	0.11
AV3	2327	1.04	0.11
AV1 % Change from baseline BMD[2]	3240	0.18	2.49
AV3 % Change from baseline BMD[3]	2303	1.25	3.37
Spine Scan			
Baseline	3551	0.99	0.17
AV1	3209	1.00	0.17
AV3	2288	1.01	0.17
AV1 % Change from baseline BMD	3186	0.72	3.86
AV3 % Change from baseline BMD	2271	2.13	5.19
Hip Scan			
Baseline	3620	0.87	0.14
AV1	3267	0.87	0.14
AV3	2324	0.88	0.14
AV1 % Change from baseline BMD	3249	-0.05	2.77
AV3 % Change from baseline BMD	2311	1.00	4.16

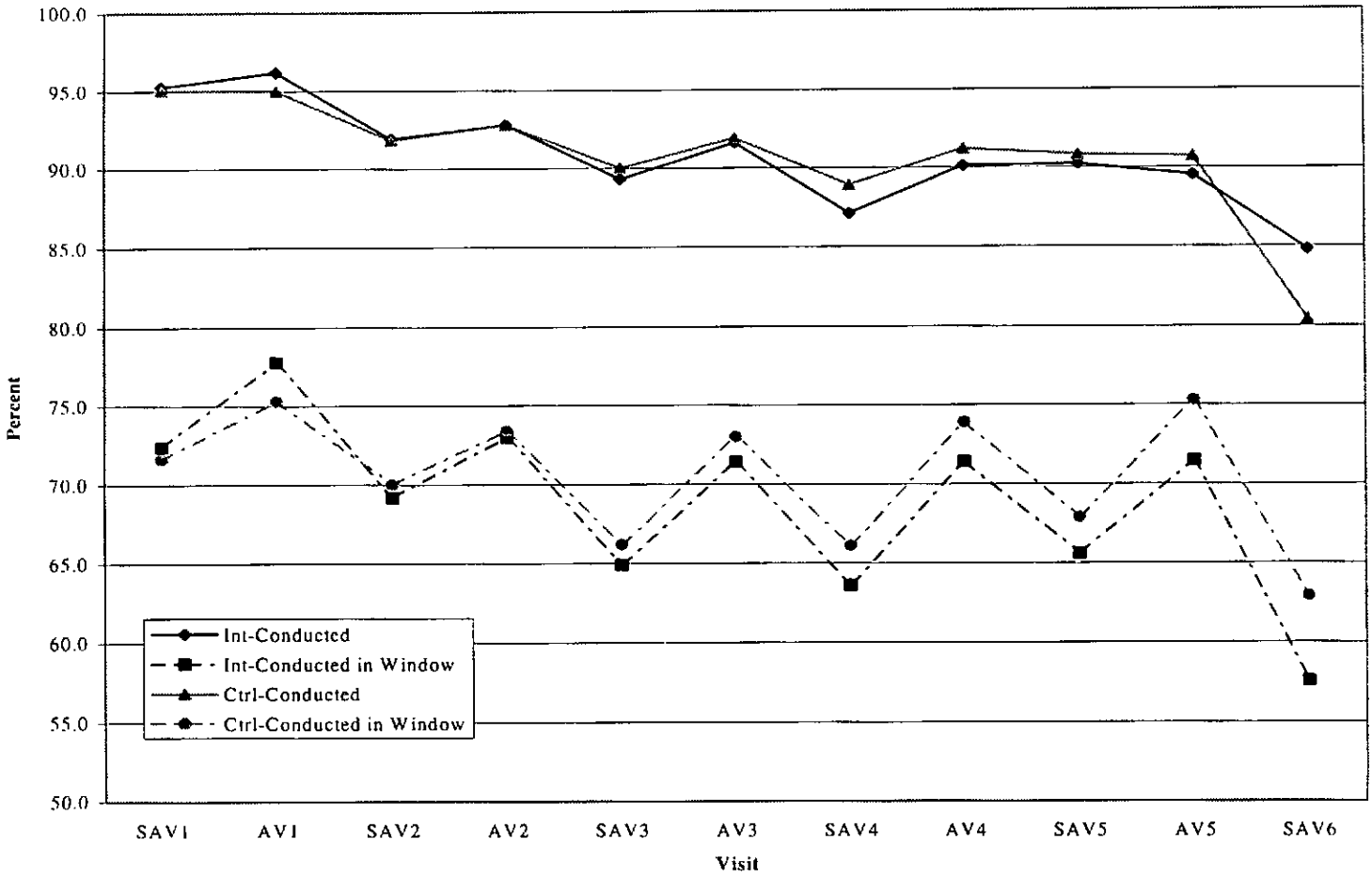
[1] Measured in (g/cm^2).

[2] AV1 % Change from baseline BMD is defined as ((AV1-Baseline)/Baseline)x100

[3] AV3 % Change from baseline BMD is defined as ((AV3-Baseline)/Baseline)x100

Table 3.10
Adherence to Follow-up Contacts

Data as of: August 25, 1999



Contact		Due N	Conducted N	Conducted %	Conducted in window N	Conducted in window %
Semi-Annual Contact 1	Intervention	19542	18619	95.3%	14147	72.4%
	Control	29295	27847	95.1%	20976	71.6%
Annual Visit 1	Intervention	19538	18804	96.2%	15191	77.8%
	Control	29290	27838	95.0%	22041	75.3%
Semi-Annual Contact 2	Intervention	18022	16559	91.9%	12476	69.2%
	Control	27041	24831	91.8%	18919	70.0%
Annual Visit 2	Intervention	15568	14446	92.8%	11365	73.0%
	Control	23361	21674	92.8%	17145	73.4%
Semi-Annual Contact 3	Intervention	12581	11233	89.3%	8161	64.9%
	Control	18857	16962	90.0%	12483	66.2%
Annual Visit 3	Intervention	9416	8622	91.6%	6720	71.4%
	Control	14148	13008	91.9%	10335	73.0%
Semi-Annual Contact 4	Intervention	6575	5728	87.1%	4181	63.6%
	Control	9824	8730	88.9%	6495	66.1%
Annual Visit 4	Intervention	4305	3880	90.1%	3075	71.4%
	Control	6431	5863	91.2%	4752	73.9%
Semi-Annual Contact 5	Intervention	2656	2396	90.2%	1742	65.6%
	Control	3960	3595	90.8%	2689	67.9%
Annual Visit 5	Intervention	1270	1137	89.5%	908	71.5%
	Control	1928	1749	90.7%	1452	75.3%
Semi-Annual Visit 6	Intervention	92	78	84.8%	53	57.6%
	Control	143	115	80.4%	90	62.9%

Table 3.11
Lost to Follow-up and Vital Status: DM Participants

Data as of: August 25, 1999

	DM Participants (N=48837)	
	N	%
Vital Status/Participation		
Deceased	417	0.9
Alive: Current Participation[1]	45810	93.8
Alive: Recent Participation[2]	1474	3.0
Alive: Inactive[3]	260	0.5
Alive: No Follow-up[4]	424	0.9
Unknown Status: Inactive[5]	259	0.5
Unknown Status: No Follow-up[6]	193	0.4

[1] Participants who have filled in a Form 33 within the last 9 months.

[2] Participants who last filled in a Form 33 between 9 and 18 months ago.

[3] Participants who are known to be alive within the last 18 months, but have not filled in a Form 33 within that period.

[4] Participants who are known to be alive within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

[5] Participants with whom there has not been contact within the last 18 months.

[6] Participants with whom there has not been contact within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

Table 3.12
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Dietary Modification

Data as of: August 25, 1999

Outcomes	Total		Minority[1]		White	
Number randomized	48837		9076		39761	
Mean follow-up (months) [2]	33.0		30.9		33.5	
Cancer						
Breast cancer[3]	521	0.39%	60	0.26%	461	0.42%
Invasive breast cancer	401	0.30%	44	0.19%	357	0.32%
In situ breast cancer	123	0.09%	16	0.07%	107	0.10%
Ovary cancer	59	0.04%	8	0.03%	51	0.05%
Endometrial Cancer[4]	78	0.10%	8	0.07%	70	0.11%
Colorectal cancer	146	0.11%	29	0.12%	117	0.11%
Other cancer[5,6]	510	0.38%	55	0.24%	455	0.41%
Total cancer	1294	0.96%	158	0.68%	1136	1.02%
Cardiovascular						
CHD[7]	346	0.26%	44	0.19%	302	0.27%
Coronary death	57	0.04%	5	0.02%	52	0.05%
Total MI[8]	304	0.23%	42	0.18%	262	0.24%
Clinical MI	277	0.21%	34	0.15%	243	0.22%
Definite Silent MI	33	0.02%	8	0.03%	25	0.02%
Possible Silent MI	191	0.14%	34	0.15%	157	0.14%
Angina	521	0.39%	95	0.41%	426	0.38%
CABG/PTCA	415	0.31%	47	0.20%	368	0.33%
Carotid artery disease	87	0.06%	10	0.04%	77	0.07%
Congestive heart failure	198	0.15%	37	0.16%	161	0.15%
Stroke	234	0.17%	40	0.17%	194	0.17%
PVD	65	0.05%	16	0.07%	49	0.04%
DVT	35	0.03%	3	0.01%	32	0.03%
PE	23	0.02%	1	0.00%	22	0.02%
CHD[7]/Possible Silent MI	528	0.39%	77	0.33%	451	0.41%
Coronary disease[9]	1118	0.83%	184	0.79%	934	0.84%
CHD[7]/Stroke/PE	589	0.44%	82	0.35%	507	0.46%
DVT/PE	52	0.04%	4	0.02%	48	0.04%
Total CVD	1466	1.09%	234	1.00%	1232	1.11%
Fractures						
Hip fracture	81	0.06%	4	0.02%	77	0.07%
Vertebral fracture	113	0.08%	6	0.03%	107	0.10%
Other fracture[5,10]	1607	1.20%	161	0.69%	1446	1.30%
Total fracture	1762	1.31%	170	0.73%	1592	1.44%
Deaths						
Cardiovascular deaths	118	0.09%	16	0.07%	102	0.09%
Cancer deaths	165	0.12%	19	0.08%	146	0.13%
Deaths: other known cause	42	0.03%	10	0.04%	32	0.03%
Deaths: unknown cause	26	0.02%	4	0.02%	22	0.02%
Deaths: not yet adjudicated	66	0.05%	15	0.06%	51	0.05%
Total death	417	0.31%	64	0.27%	353	0.32%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] Excludes four cases with borderline malignancy.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[5] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[6] Excludes non-melanoma skin cancer

[7] "CHD" includes clinical MI, definite silent MI, and coronary death.

[8] "Total MI" includes clinical MI and definite silent MI.

[9] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[10] "Other fracture" excludes fractures indicated as pathological.

Table 3.12
Locally Verified Outcomes (Annualized Percentages) by Age for Dietary Modification

Data as of: August 25, 1999

Outcome	50-54		55-59		60-69		70-79	
Number randomized	6961		11043		22713		8120	
Mean follow-up (months) [1]	39.2		35.2		30.9		30.7	
Cancer								
Breast cancer[2]	60	0.26%	125	0.39%	238	0.41%	98	0.47%
Invasive breast cancer	38	0.17%	97	0.30%	191	0.33%	75	0.36%
In situ breast cancer	22	0.10%	28	0.09%	48	0.08%	25	0.12%
Ovary cancer	10	0.04%	13	0.04%	22	0.04%	14	0.07%
Endometrial Cancer[3]	12	0.09%	17	0.09%	32	0.10%	17	0.15%
Colorectal cancer	7	0.03%	28	0.09%	74	0.13%	37	0.18%
Other cancer[4,5]	51	0.22%	73	0.23%	267	0.46%	119	0.57%
Total cancer	138	0.61%	248	0.76%	624	1.07%	284	1.37%
Cardiovascular								
CHD[6]	26	0.11%	40	0.12%	167	0.29%	113	0.54%
Coronary death	1	0.00%	6	0.02%	25	0.04%	25	0.12%
Total MI[7]	25	0.11%	36	0.11%	150	0.26%	93	0.45%
Clinical MI	20	0.09%	34	0.10%	135	0.23%	88	0.42%
Definite Silent MI	5	0.02%	2	0.01%	18	0.03%	8	0.04%
Possible Silent MI	20	0.09%	47	0.14%	89	0.15%	35	0.17%
Angina	38	0.17%	67	0.21%	265	0.45%	151	0.73%
CABG/PTCA	26	0.11%	49	0.15%	212	0.36%	128	0.62%
Carotid artery disease	5	0.02%	9	0.03%	37	0.06%	36	0.17%
Congestive heart failure	13	0.06%	18	0.06%	97	0.17%	70	0.34%
Stroke	11	0.05%	22	0.07%	117	0.20%	84	0.40%
PVD	2	0.01%	9	0.03%	27	0.05%	27	0.13%
DVT	2	0.01%	3	0.01%	17	0.03%	13	0.06%
PE	0	0.00%	2	0.01%	11	0.02%	10	0.05%
CHD[6]/Possible Silent MI	46	0.20%	85	0.26%	252	0.43%	145	0.70%
Coronary disease[8]	86	0.38%	155	0.48%	550	0.94%	327	1.57%
CHD[6]/Stroke/PE	37	0.16%	63	0.19%	289	0.49%	200	0.96%
DVT/PE	2	0.01%	4	0.01%	25	0.04%	21	0.10%
Total CVD	101	0.44%	190	0.59%	719	1.23%	456	2.19%
Fractures								
Hip fracture	5	0.02%	6	0.02%	27	0.05%	43	0.21%
Vertebral fracture	7	0.03%	9	0.03%	53	0.09%	44	0.21%
Other fracture[4,9]	216	0.95%	325	1.00%	754	1.29%	312	1.50%
Total fracture	226	0.99%	338	1.04%	817	1.40%	381	1.83%
Deaths								
Cardiovascular deaths	3	0.01%	10	0.03%	56	0.10%	49	0.24%
Cancer deaths	11	0.05%	24	0.07%	82	0.14%	48	0.23%
Deaths: other known cause	5	0.02%	5	0.02%	21	0.04%	11	0.05%
Deaths: unknown cause	3	0.01%	2	0.01%	14	0.02%	7	0.03%
Deaths: not yet adjudicated	6	0.03%	6	0.02%	35	0.06%	19	0.09%
Total death	28	0.12%	47	0.14%	208	0.36%	134	0.64%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[2] Excludes four cases with borderline malignancy.

[3] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[4] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[5] Excludes non-melanoma skin cancer

[6] "CHD" includes clinical MI, definite silent MI, and coronary death.

[7] "Total MI" includes clinical MI and definite silent MI.

[8] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[9] "Other fracture" excludes fractures indicated as pathological.

Table 3.13
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Dietary Modification

Data as of: August 25, 1999

Outcomes	Total		Ethnicity: Minority[1]		White	
Number randomized	48837		9076		39761	
Mean follow-up (months) [2]	33.0		30.9		33.5	
Hospitalizations						
Ever	10242	(7.62%)	1632	(6.99%)	8610	(7.76%)
Two or more	3543	(2.64%)	530	(2.27%)	3013	(2.72%)
Other						
Diabetes (treated)	2554	(1.90%)	933	(3.99%)	1621	(1.46%)
Gallbladder disease[3]	1587	(1.18%)	253	(1.08%)	1334	(1.20%)
Hysterectomy[4]	643	(0.84%)	81	(0.70%)	562	(0.87%)
Glaucoma	1898	(1.41%)	481	(2.06%)	1417	(1.28%)
Osteoporosis	3768	(2.80%)	512	(2.19%)	3256	(2.94%)
Osteoarthritis	6413	(4.77%)	1343	(5.75%)	5070	(4.57%)
Rheumatoid arthritis	1338	(1.00%)	443	(1.90%)	895	(0.81%)
Intestinal polyps	2548	(1.90%)	448	(1.92%)	2100	(1.89%)
Lupus	206	(0.15%)	50	(0.21%)	156	(0.14%)
Kidney Stones	438	(0.33%)	92	(0.39%)	346	(0.31%)
Cataracts	5751	(4.28%)	1001	(4.28%)	4750	(4.28%)
Pills for hypertension	13570	(10.10%)	3419	(14.63%)	10151	(9.15%)

Outcome	Age: 50-54		55-59		60-69		70-79	
Number randomized	6961		11043		22713		8120	
Mean follow-up (months) [2]	39.2		35.2		30.9		30.7	
Hospitalizations								
Ever	1183	(5.20%)	1950	(6.01%)	4801	(8.22%)	2308	(11.11%)
Two or more	376	(1.65%)	629	(1.94%)	1630	(2.79%)	908	(4.37%)
Other								
Diabetes (treated)	289	(1.27%)	554	(1.71%)	1225	(2.10%)	486	(2.34%)
Gallbladder disease[3]	252	(1.11%)	386	(1.19%)	713	(1.22%)	236	(1.14%)
Hysterectomy[4]	113	(0.88%)	157	(0.80%)	267	(0.82%)	106	(0.94%)
Glaucoma	170	(0.75%)	323	(1.00%)	929	(1.59%)	476	(2.29%)
Osteoporosis	342	(1.50%)	640	(1.97%)	1853	(3.17%)	933	(4.49%)
Osteoarthritis	672	(2.95%)	1247	(3.85%)	3075	(5.27%)	1419	(6.83%)
Rheumatoid arthritis	185	(0.81%)	312	(0.96%)	600	(1.03%)	241	(1.16%)
Intestinal polyps	274	(1.20%)	519	(1.60%)	1250	(2.14%)	505	(2.43%)
Lupus	32	(0.14%)	52	(0.16%)	100	(0.17%)	22	(0.11%)
Kidney Stones	60	(0.26%)	102	(0.31%)	217	(0.37%)	59	(0.28%)
Cataracts	225	(0.99%)	707	(2.18%)	3088	(5.29%)	1731	(8.33%)
Pills for hypertension	1485	(6.53%)	2687	(8.29%)	6461	(11.06%)	2937	(14.13%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

Table 3.14
Sensitivity of DM Study Power to Adherence Assumptions

Outcome	Year	Intervention Effect[1] (%)	Percentage of Cases[1]		Power (%)		
			Control	Intervention	Design[2]	Revised Adherence[3]	Revised Goal[5]
Breast Cancer							
	2001	11	1.98	1.86	28	17	19
		12	1.99	1.85	35	21	23
		14	1.99	1.83	44	26	29
	2004	11	2.86	2.61	63	42	50
		12	2.86	2.57	75	52	62
		14	2.86	2.54	86[4]	63	73
Colorectal Cancer							
	2001	18	1.08	0.97	37	23	25
		20	1.08	0.96	45	27	30
		22	1.09	0.95	52	32	36
	2004	18	1.64	1.40	83	60	70
		20	1.63	1.37	90	70	80
		22	1.63	1.24	95	79	87

[1] Intervention Effects and Percentage of Cases are shown for original Design assumptions. The other adherence patterns would produce greater incidence rates in Intervention women and a corresponding reduction in the estimated treatment effect.

[2] C-1 % Energy from fat: 13% at AV-1, 11% at year 10

[3] C-1 % Energy from fat: 11% at AV-1, 8% at year 10. 8.5 follow-up years.

[4] Design values

[5] C-1 % Energy from fat: 11% at AV-1, 10% at year 10. 8.5 follow-up years.

4. CaD Intervention Status

4.1 CaD Recruitment

Table 4.1 presents the number of women randomized in the Calcium and Vitamin D component of the WHI Clinical Trial as of August 25, 1999. A total of 35,638 women have been randomized which is 79.2% of the overall goal of 45,000. The age distribution of the CaD trial participants is somewhat younger than anticipated in the design assumptions for the trial. Thus far, 17% of women randomized are aged 70-79 years compared with the design assumption of 25%.

4.2 Adherence to Supplements

Table 4.2 presents rates of follow-up, stopping intervention and pill collection, and adherence to pill taking by visit schedule for all CaD participants, CaD participants randomized at AV-1 and CaD participants randomized at AV-2, respectively. The adherence pattern among women with pill collections is generally stable over time. The adherence summary for all CaD participants, defined as those women known to be consuming 80% or more of the prescribed dose, has improved since the last report and is now about 55%-60% (adherence summary was 53%-59% in the last progress report). Note that the adherence summary for AV-1 randomized CaD participants is now very similar (53% to 60%) to those participants randomized at AV-2 (52%-61%). Adherence to CaD, however, remains somewhat low, primarily because a significant proportion of women stopping the intervention entirely, and because of lower than expected pill-taking rates among women staying on the intervention.

Table 4.3 summarizes interval and cumulative drop-out rates in comparison to the original design assumptions. The original power calculations for CaD assumed a 6% drop-out rate in year 1 and a 3% per year drop-out rate thereafter. An independent loss to follow-up rate of 3% per year was also incorporated resulting in approximately 8.8% stopping intervention in year 1 and 5.9% in subsequent years. Our current data suggest the drop-out rates are roughly 0%-25% above the assumed level, depending on the follow-up visit, an improvement since the analysis on the last report when drop-out rates were roughly 30%-35% above the assumed level. Note that the cumulative drop-out rate through AV-4 has been reduced to 11% above design assumptions.

To understand factors related to adherence, we performed multivariate analyses of study subject characteristics using the adherence summary value (1=known to be taking ≥ 80% of pills; 0=otherwise). Reported symptoms of gas or constipation at AV-1 (*Form 38*) and CaD formulation (chewable or swallowable) were added to the models of adherence. *Tables 4.4* through *4.7* present the fitted models for SAV-2 through AV-4, respectively among women with > 80 percent adherence at the previous contact. Among women taking the swallowable formulation, the odds for adherence at SAV-2 were the same as for women taking the chewable formulation. The swallowable formulation was associated with significantly better adherence at AV-2 (OR=1.15), AV-3 (OR=1.52), and AV-4 (OR=1.81). SAV-2 adherence was lower among women reporting moderate to severe symptoms of gas and constipation at AV-1. This effect was not seen in the analyses among women at AV-2 and AV-3 who were adherent at SAV-2 and AV-2, respectively. These analyses are consistent in indicating that increasing age

is associated with better adherence at SAV-2 and AV-2 while DM only participants and African-American and Hispanic women have lower adherence at all time periods. The 4-week call is associated with a statistically significant, higher level of adherence at SAV-2.

Table 4.8 summarizes the frequency of reported reasons for stopping CaD. The majority of women stopping study supplements do so of their own accord. Only 8% have indicated that they were advised by their physician to discontinue these supplements. Forty-one percent of the women who have stopped taking their study pills report a reason related to the intervention itself, 25% report health reasons and 6% report personal reasons. Symptoms or health problems associated with the intervention was the most frequently reported intervention-related reason followed by not liking to take the pills.

We also monitor the number of women who have begun alternative anti-osteoporosis therapies within the CaD trial. As of August 25, 1999, 856 (2.4%) women were taking alendronate, 112 (0.3%) were taking calcitonin, and 140 (0.4%) were taking raloxifene.

4.3 Bone Mineral Density

Table 4.9 presents the mean bone mineral density levels at AV-1 and AV-3 and percent change in BMD during this interval among women randomized at the three BMD measurement sites (Pittsburgh, Arizona, Birmingham). At the three skeletal sites examined (hip, spine, and whole body), BMD has increased between AV-1 and AV-3 from 1-2%, with the greatest change occurring at the spine.

4.4 Vital Status

Table 4.10 presents data on the vital status and the participation status of participants in the CaD trial. A detailed description of CC and CCC activities to actively locate participants who do not complete their periodic visits is given in *Section 6 – Outcomes.* Note that CT participants are assigned an "unknown" vital status if there is no contact with the participant for 18 months. As many CaD participants have been in this trial for less than that period, only 0.3% of the participants has an unknown vital status, and all but 2.7% of the participants not known to be deceased have completed a *Form 33 – Medical History Update,* in the last 9 months.

4.5 Outcomes

Table 4.11 contains counts of the number of locally verified major WHI outcomes for CaD participants. In this table only outcomes that took place after randomization in the CaD trial are included. Approximately 15-20% of the self-reported outcomes have not yet been verified, so the numbers in this table should thus be seen as a lower bound to the actual number of outcomes that took place. Currently we have only observed about 25% of the number of hip fractures that we expected in the power calculations to have observed with the current follow-up. Presumably this is caused by a larger than expected early "healthy volunteer effect." The number of observed colorectal and breast cancer cases is approximately 90% of what was expected. The number of CHD events is about 65% of what was expected.

Table 4.12 contains counts of the number of self-reports for some outcomes that are not locally verified in WHI. As most of the self-reported outcomes are somewhat over-reported (see *Section 6.3 – Outcomes Data Quality*), the number in this table should be taken as an upper bound to the number of events that have occurred in CaD participants.

4.6 Power Considerations

Since significant proportions of still active women are taking less than the prescribed dose, it is anticipated that this would have an additional effect on study power beyond drop-out rates. To examine these effects, we have calculated the power for CaD using the type of adherence model employed for the DM component. This approach incorporates total calcium intake from diet and supplements. To make within-model comparisons, we determined the calcium intake assumptions that would reproduce the original power calculations based on a model that dichotomized adherence to pills, holding constant all other parameters (e.g., treatment effect, lag time, control group incidence rates, and average follow-up time). Total calcium consumption (in mg) of 920, 950, 1000 at baseline, year 1 and year 9, respectively in controls and similarly 1920, 1850, 1800 in the intervention arm produces powers within 1%-2% of the protocol-specified values with n=45,000 for all outcomes of interest. The value of 920 mg/day in controls at baseline was determined from the median total calcium intake in the CaD participants at AV-1 who are also DM participants, thus providing FFQ data.

With recruitment ongoing we have conducted power sensitivity analyses using a projected sample size of 36,000, an adherence pattern suggested by the current data and revised incidence rates, reflecting the low early rates of hip fractures (healthy volunteer effect starting at 0.2 in year 1 and rising to 0.8 by year 7). *Table 4.13* shows the power for Hip Fractures, Other Fractures and colorectal cancer under both adherence patterns and all other parameters held constant. Note that power is low for hip fracture and colorectal cancer in scenarios based on poor adherence. Power for all clinical fractures is high under most scenarios, especially if moderate adherence is achieved.

4.7 Issues

Previous efforts indicated that the chewable tablet formulation was a significant barrier to adherence. The tablet manufacturer is now providing us with a swallowable pill (OSCal), as an alternative. Dosages of calcium and vitamin D are equal to the chewable tablet.

With the two forms of study pills available (in October 1997), women are given the choice of the chewable or swallowable forms, at randomization and at each follow-up dispensing. Effects of this optional formulation on randomization and adherence rates (*Tables 4.4-4.7*) have been positive. Clinical Centers have also had some success in starting the swallowable formulation with women who previously dropped intervention before the new formulation became available. Women's preferences for the swallowable formulation have been much higher than anticipated. We are working with the manufacturer to maintain adequate supplies.

Clinical Centers have been provided with additional resources (e.g., Web-based government publications) related to management of constipation in older women. PMC site visitors have also provided additional training on how to discuss gastrointestinal symptoms with women before and after randomization to CaD.

Many Clinical Centers have reported that before and after randomization to CaD women were confused about whether or not they can take their own calcium supplements. Study materials (e.g., brochures and information sheets) have been revised or developed to clarify that women can take their own supplements and remain on study pills.

The lower than anticipated fracture rates probably arise from a recruitment of fewer than expected women aged 70-79 and a stronger, healthy volunteer effect, as we have also observed in CHD. We expect that this difference will diminish with additional follow-up.

Table 4.1
Calcium and Vitamin D Component Age - Specific Recruitment

Data as of: August 25, 1999

	Total Randomized	% of Overall Goal	Age Distribution	Design Assumption
CaD	**35,638**			
50-54	5152	117%	14%	10
55-59	8199	94%	23%	20
60-69	16099	82%	45%	45
70-79	6188	57%	17%	25

Table 4.2
CaD Adherence Summary
All CaD Participants

Data as of: August 25, 1999

	Due	Conducted		Conducted in Window		Stopped CaD		Missed Pill Collection		Total with Collections		Medication Rate[1] <50%		Medication Rate[1] 50%-80%		Medication Rate[1] 80% +		Adherence Summary[2]
	N	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	%
Semi-Annual Contact-2	30392	29517	97	24099	79	2018	7	4083	13	26285	87	3754	14	5304	20	17227	66	57
Annual Visit-2	26051	25218	97	20654	79	1225	5	1945	8	21764	92	2308	11	3765	17	15691	72	60
Annual Visit -3	16368	15635	96	12629	77	1174	7	1648	12	12707	89	1242	10	2319	18	9146	72	56
Annual Visit -4	7184	6803	95	5578	78	347	5	562	10	5242	90	445	9	877	17	3920	75	55
Annual Visit -5	1871	1762	94	1456	78	90	5	127	9	1356	91	98	7	183	14	1075	79	58

[1] Medication rate calculated as the number of pills taken divided by the number of days since bottle(s) were dispensed.
[2] Adherence summary calculated as the number of women consuming ≥80% of pills divided by the number due for a visit.
Note: Deceased women are excluded from all medication adherence calculations.

Table 4.2 (continued)
CaD Adherence Summary
Participants Randomized to CaD at Annual Visit 1 (AV-1)

Data as of: August 25, 1999

	Due	Stopped CaD		Missed Pill Collection		Total with Collections		Medication Rate[1] <50%		Medication Rate[1] 50%-80%		Medication Rate[1] 80% +		Adherence Summary[2]
	N	N	%	N	%	N	%	N	%	N	%	N	%	%
Annual Visit-2	25979	1225	5	1944	8	21758	92	2307	11	3764	17	15687	72	60
Annual Visit -3	14612	943	7	1359	11	11330	89	1035	9	2013	18	8282	73	57
Annual Visit -4	5872	273	5	466	10	4285	90	339	8	713	17	3233	75	55
Annual Visit -5	736	37	5	69	12	492	88	35	7	64	13	393	80	53

[1] Medication rate calculated as the number of pills taken divided by the number of days since bottle(s) were dispensed.
[2] Adherence summary calculated as the number of women consuming ≥80% of pills divided by the number due for a visit.
Note: Deceased women are excluded from all medication adherence calculations.

Table 4.2 (continued)
CaD Adherence Summary
Participants Randomized to CaD at Annual Visit 2 (AV-2)

Data as of: August 25, 1999

	Due	Stopped CaD		Missed Pill Collection		Total with Collections		Medication Rate[1] <50%		Medication Rate[1] 50%-80%		Medication Rate[1] 80% +		Adherence Summary[2]
	N	N	%	N	%	N	%	N	%	N	%	N	%	%
Annual Visit -3	1650	231	14	288	18	1358	83	206	15	302	22	850	63	52
Annual Visit -4	1252	74	6	96	9	957	91	106	11	164	17	687	72	55
Annual Visit -5	1117	53	5	58	6	864	94	63	7	119	14	682	79	61

[1] Medication rate calculated as the number of pills taken divided by the number of days since bottle(s) were dispensed.
[2] Adherence summary calculated as the number of women consuming ≥80% of pills divided by the number due for a visit.
Note: Deceased women are excluded from all medication adherence calculations.

Table 4.3
CaD Drop-Out Rates by Follow-Up Time
(Design-specified values in parentheses)

Data as of: August 25, 1999

	Total			
	Interval[1]		Cumulative[2]	
Drop-Outs[3]				
AV-2	11.0%	(8.8)	11.0%	(8.8)
AV-3	7.2%	(5.9)	17.4%	(14.2)
AV-4	4.9%	(5.9)	21.4%	(19.2)

[1] Estimates of stopping or starting supplements in the Interval

[2] Estimates of cumulative rates

[3] Drop-out rates derived from Form 7 by date. Cumulative rates calculated as life-table estimates.

Table 4.4
Logistic Regression Analyses of CaD Adherence at Semi-Annual Visit-2 (SAV-2)[1]

Data as of: August 25, 1999

	CaD (N=30368)		
	Non-Adherent Participants (N=13141)	Adherent[2] Participants (N=17227)	OR
Age:			
50-54[3]	2491	2159	1.00
55-59	3440	3991	1.27 **
60-69	5196	7994	1.62 **
70-79	2014	3082	1.54 **
Ethnicity:			
White	10455	14826	1.00
Black	1518	1186	0.63 **
Hispanic	707	617	0.67 **
Other Minority	436	568	0.95
Education:			
0-8 Years	219	226	0.93
Some H.S. / Diploma	2700	4033	1.09 **
Post H.S.	10124	12860	1.00
Income:			
<20 K	2140	2768	1.00
20-35K	3072	4332	1.06
35K-50K	2562	3528	1.07
>50K	4675	5748	1.04
Marital Status:			
Married	7964	10847	1.00
Not Married	5113	6318	0.91 **
Four Week Phone Call[4]:			
No	1993	1666	1.00
Yes	8167	12652	1.65 **
Gas:			
Symptom Did Not Occur	4312	5867	1.00
Mild	6440	8793	1.03
Moderate to Severe	2389	2567	0.88 **
Constipation:			
Symptom Did Not Occur	8559	11737	1.00
Mild	3458	4330	0.94 *
Moderate to Severe	1124	1160	0.84 **
Primary CT Randomization:			
DM and HRT	1611	2696	1.00
HRT only	3219	5958	1.03
DM only	8311	8573	0.59 **
CaD Formulation:			
Chewable	8220	10001	1.00
Swallowable	4913	7226	1.00

[1] * P-values <=.05 from Wald Test.

** P-values <=.01 from Wald Test.

[2] Defined as taking 80% or more of their study pills. Participants with missing pill collections are considered non-adherent (adherence=0).

[3] Underlined levels are reference categories.

[4] Includes participants randomized to CaD after 8/15/96.

Table 4.5
Logistic Regression Analyses of CaD Adherence at Annual Visit-2 (AV-2)[1]
for Participants with >80% CaD Adherence at SAV-2

Data as of: August 25, 1999

	CaD (N=14318)		
	Non-Adherent Participants (N=2796)	Adherent[2] Participants (N=11522)	OR
Age:			
50-54[3]	515	1589	1.00
55-59	682	2720	1.27 **
60-69	1136	5184	1.41 **
70-79	463	2028	1.34 **
Ethnicity:			
White	2258	10092	1.00
Black	294	701	0.58 **
Hispanic	148	369	0.59 **
Other Minority	88	344	0.90
Education:			
0-8 Years	49	135	0.83
Some H.S. / Diploma	582	2711	1.08
Post H.S.	2145	8603	1.00
Income:			
<20 K	466	1835	1.00
20-35K	650	2958	1.08
35K-50K	544	2353	1.05
>50K	984	3819	0.99
Marital Status:			
Married	1685	7380	1.00
Not Married	1098	4106	0.86 **
Gas:			
Symptom Did Not Occur	953	3899	1.00
Mild	1376	5735	1.02
Moderate to Severe	467	1888	1.00
Constipation:			
Symptom Did Not Occur	1865	7715	1.00
Mild	711	2945	0.99
Moderate to Severe	220	862	0.94
Primary CT Randomization:			
DM and HRT	384	1887	1.00
HRT only	748	4142	1.08
DM only	1664	5493	0.57 **
HRT Adherence at AV2:			
No	313	1855	1.00
Yes	819	4174	0.85 *
CaD Formulation:			
Chewable	1543	5807	1.00
Swallowable	1249	5715	1.15 **

[1] * P-values <=.05 from Wald Test.

** P-values <=.01 from Wald Test.

[2] Defined as taking 80% or more of their study pills. Participants with missing pill collections are considered non-adherent (adherence=0).

[3] Underlined levels are reference categories.

Table 4.6
Logistic Regression Analyses of CaD Adherence at Annual Visit-3 (AV-3)[1]
for Participants with >80% CaD Adherence at AV-2

Data as of: August 25, 1999

	CaD (N=8321)		
	Non-Adherent Participants (N=1730)	**Adherent[2] Participants (N=6591)**	**OR**
Age:			
50-54[3]	368	1212	1.00
55-59	451	1634	1.10
60-69	661	2801	1.22 **
70-79	250	944	1.07
Ethnicity:			
White	1417	5791	1.00
Black	187	416	0.63 **
Hispanic	81	199	0.68 *
Other Minority	39	178	1.18
Education:			
0-8 Years	37	83	0.68
Some H.S. / Diploma	362	1484	1.02
Post H.S.	1318	4991	1.00
Income:			
<20 K	299	1010	1.00
20-35K	420	1686	1.11
35K-50K	322	1383	1.20
>50K	612	2214	1.05
Marital Status:			
Married	1063	4319	1.00
Not Married	660	2254	0.87 *
Gas			
Symptom Did Not Occur	599	2234	1.00
Mild	857	3304	1.06
Moderate to Severe	274	1053	1.07
Constipation			
Symptom Did Not Occur	1151	4420	1.00
Mild	451	1690	0.96
Moderate to Severe	128	481	0.97
Primary CT Randomization:			
DM and HRT	234	1067	1.00
HRT only	407	2078	1.11
DM only	1089	3446	0.73 **
HRT Adherence at AV3			
No	243	1114	1.00
Yes	398	2031	1.11
CaD Formulation:			
Chewable	1401	4877	1.00
Swallowable	329	1714	1.52 **

[1] * P-values <=.05 from Wald Test.

** P-values <=.01 from Wald Test.

[2] Defined as taking 80% or more of their study pills. Participants with missing pill collections are considered non-adherent (adherence=0).

[3] Underlined levels are reference categories.

Table 4.7
Logistic Regression Analyses of CaD Adherence at Annual Visit-4 (AV-4)[1]
for Participants with >80% CaD Adherence at AV-3

Data as of: August 25, 1999

	CaD (N=3714)		
	Non-Adherent Participants (N=656)	**Adherent[2] Participants (N=3058)**	**OR**
Age:			
50-54[3]	137	523	1.00
55-59	179	731	1.01
60-69	249	1371	1.29 *
70-79	91	433	1.19
Ethnicity:			
White	540	2793	1.00
Black	77	140	0.43 **
Hispanic	23	74	0.72
Other Minority	16	49	0.60
Education:			
0-8 Years	10	39	0.92
Some H.S. / Diploma	131	732	1.10
Post H.S.	508	2280	1.00
Income:			
<20 K	102	461	1.00
20-35K	178	832	0.99
35K-50K	123	662	1.22
>50K	228	975	0.99
Marital Status:			
Married	410	2056	1.00
Not Married	244	993	0.86
Gas			
Symptom Did Not Occur	200	1027	1.00
Mild	342	1506	0.87
Moderate to Severe	114	525	0.92
Constipation			
Symptom Did Not Occur	406	2030	1.00
Mild	205	791	0.79 *
Moderate to Severe	45	237	1.11
Primary CT Randomization:			
DM and HRT	111	541	1.00
HRT only	145	882	1.29
DM only	400	1635	0.84
HRT Adherence at AV4			
No	102	544	1.00
Yes	154	879	1.02
CaD Formulation:			
Chewable	622	2821	1.00
Swallowable	34	237	1.81 **

[1] * P-values <=.05 from Wald Test.

** P-values <=.01 from Wald Test.

[2] Defined as taking 80% or more of their study pills. Participants with missing pill collections are considered non-adherent (adherence=0).

[3] Underlined levels are reference categories.

Table 4.8
Reasons for Stopping CaD

Data as of: August 25, 1999

Reasons[1]	(N=5085)	
Personal	313	(6%)
Travel	109	(2%)
Study Procedures	69	(1%)
Health	1274	(25%)
Experiencing health problems or symptoms not due to intervention	722	(14%)
Worried about health effects of medical tests	27	(1%)
Worried about costs if adverse effects occur	12	(<1%)
Advised not to participate by health care provider	396	(8%)
Study conflicts with health care needs	316	(6%)
Expected more care	12	(<1%)
Intervention	2105	(41%)
Reports health problems or symptoms from WHI Intervention	1379	(27%)
Problem with Clinic Practitioner or other CC staff	3	(<1%)
Doesn't like taking pills	594	(12%)
Doesn't like DM requirements	12	(<1%)
Problems with DM group nutritionist or group members	4	(<1%)
Doesn't like DM eating patterns	5	(<1%)
Doesn't like randomized nature of intervention	235	(5%)
Expected some benefit from intervention	35	(1%)
Won't participate in safety procedures	31	(1%)
Other	1627	(32%)
Not Given	593	(12%)

[1] Multiple reasons may be reported for a woman.

Table 4.9
Bone Mineral Density[1] Analysis: CaD Participants

Data as of: August 25, 1999

	N	Mean	S.D.
Whole Body Scan			
AV1	2416	1.02	0.11
AV3	1517	1.04	0.11
AV3 % Change from baseline BMD[2]	1473	1.45	2.99
Spine Scan			
AV1	2359	0.99	0.17
AV3	1497	1.01	0.17
AV3 % Change from baseline BMD[2]	1455	1.65	4.34
Hip Scan			
AV1	2409	0.86	0.14
AV3	1516	0.88	0.14
AV3 % Change from baseline BMD[2]	1476	1.31	3.40

[1] Measured in (g/cm^2).

[2] Percent Change from BMD is defined as ((AV3-AV1)/AV1)x100

Table 4.10
Lost-to-Follow-up and Vital Status: CaD Participants

Data as of: August 25, 1999

	CaD Participants (N=35638)	
	N	%
Vital Status/Participation		
Deceased	192	0.5
Alive: Current Participation[1]	34506	96.8
Alive: Recent Participation[2]	686	1.9
Alive: Inactive[3]	97	0.3
Alive: No Follow-up[4]	71	0.2
Unknown Status: Inactive[5]	60	0.2
Unknown Status: No Follow-up[6]	26	0.1

[1] Participants who have filled in a Form 33 within the last 9 months.

[2] Participants who last filled in a Form 33 between 9 and 18 months ago.

[3] Participants who are known to be alive within the last 18 months, but have not filled in a Form 33 within that period.

[4] Participants who are known to be alive within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

[5] Participants with whom there has not been contact within the last 18 months.

[6] Participants with whom there has not been contact within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

Table 4.11
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Calcium and Vitamin D

Data as of: August 25, 1999

Outcomes	Total		Minority[1]		White	
No. of participants w/ *Form 33*	32588		5358		27230	
Mean follow-up (months) [2]	21.9		20.5		22.1	
Fractures						
Hip fracture	30	0.05%	1	0.01%	29	0.06%
Vertebral fracture	46	0.08%	4	0.04%	42	0.08%
Other fracture[6,3]	733	1.23%	65	0.71%	668	1.33%
Total fracture	792	1.33%	69	0.75%	723	1.44%
Cancer						
Colorectal cancer	74	0.12%	16	0.17%	58	0.12%
Breast cancer[4]	238	0.40%	25	0.27%	213	0.42%
Invasive breast cancer	185	0.31%	20	0.22%	165	0.33%
In situ breast cancer	53	0.09%	5	0.05%	48	0.10%
Ovary cancer	26	0.04%	3	0.03%	23	0.05%
Endometrial Cancer[5]	35	0.10%	1	0.02%	34	0.11%
Other cancer[6,7]	213	0.36%	20	0.22%	193	0.38%
Total cancer	579	0.98%	65	0.71%	514	1.02%
Cardiovascular						
CHD[8]	164	0.28%	18	0.20%	146	0.29%
Coronary death	31	0.05%	5	0.05%	26	0.05%
Total MI[9]	144	0.24%	14	0.15%	130	0.26%
Clinical MI	122	0.21%	10	0.11%	112	0.22%
Definite Silent MI	28	0.05%	4	0.04%	24	0.05%
Possible Silent MI	135	0.23%	17	0.19%	118	0.24%
Angina	232	0.39%	29	0.32%	203	0.40%
CABG/PTCA	189	0.32%	19	0.21%	170	0.34%
Carotid artery disease	42	0.07%	3	0.03%	39	0.08%
Congestive heart failure	113	0.19%	17	0.19%	96	0.19%
Stroke	93	0.16%	12	0.13%	81	0.16%
PVD	29	0.05%	7	0.08%	22	0.04%
DVT	26	0.04%	1	0.01%	25	0.05%
PE	19	0.03%	4	0.04%	15	0.03%
CHD[8]/Possible Silent MI	295	0.50%	35	0.38%	260	0.52%
Coronary disease[10]	587	0.99%	73	0.80%	514	1.02%
CHD[8]/Stroke/PE	270	0.45%	33	0.36%	237	0.47%
DVT/PE	42	0.07%	5	0.05%	37	0.07%
Total CVD	747	1.26%	94	1.03%	653	1.30%
Deaths						
Cardiovascular deaths	56	0.09%	9	0.10%	47	0.09%
Cancer deaths	68	0.11%	8	0.09%	60	0.12%
Deaths: other known cause	17	0.03%	2	0.02%	15	0.03%
Deaths: unknown cause	9	0.02%	2	0.02%	7	0.01%
Deaths: not yet adjudicated	42	0.07%	12	0.13%	30	0.06%
Total death	192	0.32%	33	0.36%	159	0.32%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death.*

[3] "Other fracture" excludes fractures indicated as pathological.

[4] Excludes three cases with borderline malignancy.

[5] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[6] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[7] Excludes non-melanoma skin cancer

[8] "CHD" includes clinical MI, definite silent MI, and coronary death.

[9] "Total MI" includes clinical MI and definite silent MI.

[10] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina,congestive heart failure, and CABG/PTCA.

Table 4.11
Locally Verified Outcomes (Annualized Percentages) by Age for Calcium and Vitamin D

Data as of: August 25, 1999

Outcome	50-54		55-59		60-69		70-79	
No. of participants w/ *Form 33*	5027		7906		14193		5462	
Mean follow-up (months) [1]	25.8		22.5		20.8		20.1	
Fractures								
Hip fracture	3	0.03%	3	0.02%	9	0.04%	15	0.16%
Vertebral fracture	2	0.02%	2	0.01%	23	0.09%	19	0.21%
Other fracture[2,5]	107	0.99%	164	1.11%	320	1.30%	142	1.55%
Total fracture	111	1.03%	169	1.14%	345	1.40%	167	1.83%
Cancer								
Colorectal cancer	7	0.06%	15	0.10%	29	0.12%	23	0.25%
Breast cancer[3]	33	0.31%	62	0.42%	99	0.40%	44	0.48%
Invasive breast cancer	25	0.23%	48	0.32%	80	0.33%	32	0.35%
In situ breast cancer	8	0.07%	14	0.09%	19	0.08%	12	0.13%
Ovary cancer	4	0.04%	5	0.03%	12	0.05%	5	0.05%
Endometrial Cancer[4]	5	0.08%	8	0.09%	17	0.12%	5	0.10%
Other cancer[5,6]	22	0.20%	35	0.24%	107	0.44%	49	0.54%
Total cancer	71	0.66%	123	0.83%	260	1.06%	125	1.37%
Cardiovascular								
CHD[7]	18	0.17%	18	0.12%	82	0.33%	46	0.50%
Coronary death	3	0.03%	2	0.01%	15	0.06%	11	0.12%
Total MI[8]	16	0.15%	16	0.11%	73	0.30%	39	0.43%
Clinical MI	13	0.12%	13	0.09%	59	0.24%	37	0.40%
Silent MI	4	0.04%	3	0.02%	17	0.07%	4	0.04%
Possible Silent MI	19	0.18%	33	0.22%	52	0.21%	31	0.34%
Angina	21	0.19%	29	0.20%	113	0.46%	69	0.75%
CABG/PTCA	16	0.15%	20	0.13%	91	0.37%	62	0.68%
Carotid artery disease	2	0.02%	5	0.03%	17	0.07%	18	0.20%
Congestive heart failure	6	0.06%	14	0.09%	53	0.22%	40	0.44%
Stroke	4	0.04%	13	0.09%	44	0.18%	32	0.35%
PVD	1	0.01%	2	0.01%	10	0.04%	16	0.17%
DVT	2	0.02%	2	0.01%	15	0.06%	7	0.08%
PE	1	0.01%	2	0.01%	13	0.05%	3	0.03%
CHD[7]/Possible Silent MI	37	0.34%	50	0.34%	134	0.55%	74	0.81%
Coronary disease[9]	56	0.52%	88	0.59%	272	1.11%	171	1.87%
CHD[7]/Stroke/PE	23	0.21%	32	0.22%	137	0.56%	78	0.85%
DVT/PE	3	0.03%	4	0.03%	26	0.11%	9	0.10%
Total CVD	64	0.59%	105	0.71%	355	1.44%	223	2.44%
Deaths								
Cardiovascular deaths	4	0.04%	5	0.03%	25	0.10%	22	0.24%
Cancer deaths	2	0.02%	13	0.09%	29	0.12%	24	0.26%
Deaths: other known cause	2	0.02%	2	0.01%	9	0.04%	4	0.04%
Deaths: unknown cause	1	0.01%	1	0.01%	5	0.02%	2	0.02%
Deaths: not yet adjudicated	5	0.05%	2	0.01%	17	0.07%	18	0.20%
Total death	14	0.13%	23	0.16%	85	0.35%	70	0.77%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death.*

[2] "Other fracture" excludes fractures indicated as pathological.

[3] Excludes three cases with borderline malignancy.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[5] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[6] Excludes non-melanoma skin cancer

[7] "CHD" includes clinical MI, definite silent MI, and coronary death.

[8] "Total MI" includes clinical MI and definite silent MI.

[9] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

Table 4.12
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Calcium and Vitamin D

Data as of: August 25, 1999

Outcomes	Total		Ethnicity: Minority[1]		White	
No. of participants w/ *Form 33*	32588		5358		27230	
Mean follow-up (months) [2]	21.9		20.5		22.1	
Hospitalizations						
Ever	4782	(8.06%)	697	(7.61%)	4085	(8.14%)
Two or more	1375	(2.32%)	201	(2.19%)	1174	(2.34%)
Other						
Diabetes (treated)	1354	(2.28%)	464	(5.07%)	890	(1.77%)
Gallbladder disease[3]	742	(1.25%)	111	(1.21%)	631	(1.26%)
Hysterectomy[4]	271	(0.78%)	26	(0.58%)	245	(0.81%)
Glaucoma	875	(1.47%)	217	(2.37%)	658	(1.31%)
Osteoporosis	1625	(2.74%)	219	(2.39%)	1406	(2.80%)
Osteoarthritis	3130	(5.27%)	602	(6.57%)	2528	(5.04%)
Rheumatoid arthritis	548	(0.92%)	193	(2.11%)	355	(0.71%)
Intestinal polyps	1161	(1.96%)	179	(1.95%)	982	(1.96%)
Lupus	108	(0.18%)	17	(0.19%)	91	(0.18%)
Kidney Stones	161	(0.27%)	31	(0.34%)	130	(0.26%)
Cataracts	3039	(5.12%)	476	(5.20%)	2563	(5.11%)
Pills for hypertension	6813	(11.48%)	1641	(17.92%)	5172	(10.30%)

Outcome	Age: 50-54		55-59		60-69		70-79	
Number randomized	5027		7906		14193		5462	
Mean follow-up (months)[2]	25.8		22.5		20.8		20.1	
Hospitalizations								
Ever	608	(5.62%)	971	(6.55%)	2147	(8.74%)	1056	(11.55%)
Two or more	164	(1.52%)	247	(1.67%)	612	(2.49%)	352	(3.85%)
Other								
Diabetes (treated)	200	(1.85%)	328	(2.21%)	577	(2.35%)	249	(2.72%)
Gallbladder disease[3]	121	(1.12%)	192	(1.30%)	320	(1.30%)	109	(1.19%)
Hysterectomy[4]	45	(0.73%)	70	(0.77%)	118	(0.82%)	38	(0.74%)
Glaucoma	100	(0.92%)	158	(1.07%)	404	(1.64%)	213	(2.33%)
Osteoporosis	162	(1.50%)	296	(2.00%)	773	(3.15%)	394	(4.31%)
Osteoarthritis	374	(3.46%)	652	(4.40%)	1409	(5.73%)	695	(7.60%)
Rheumatoid arthritis	86	(0.80%)	144	(0.97%)	227	(0.92%)	91	(1.00%)
Intestinal polyps	128	(1.18%)	242	(1.63%)	556	(2.26%)	235	(2.57%)
Lupus	22	(0.20%)	28	(0.19%)	45	(0.18%)	13	(0.14%)
Kidney Stones	16	(0.15%)	45	(0.30%)	77	(0.31%)	23	(0.25%)
Cataracts	144	(1.33%)	436	(2.94%)	1545	(6.29%)	914	(10.00%)
Pills for hypertension	867	(8.02%)	1427	(9.63%)	3006	(12.23%)	1513	(16.55%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

Table 4.13
Sensitivity of CaD Study Power to Adherence and Incidence Rate Assumptions
Revised Sample Size of 36,000

	Year	Intervention Effect[1] (%)	Percentage of Cases[1] Control	Intervention	Design[2]	Revised Assumptions[3]
Hip Fractures						
	2001	20	1.61	1.36	57	29
		27	1.62	1.31	74	40
		33	1.62	1.26	86	52
	2004	20	2.84	2.35	86	58
		27	2.85	2.25	96	75
		33	2.85	2.15	99	88
Combined Fractures						
	2001	19	6.48	5.54	98	91
		23	6.50	5.36	>99	98
		28	6.51	5.18	>99	>99
	2004	19	10.22	8.62	>99	99
		23	10.24	8.30	>99	>99
		28	10.25	7.98	>99	>99
Colorectal Cancer						
	2001	18	0.90	0.80	22	15
		20	0.90	0.79	26	18
		22	0.90	0.78	30	20
	2004	18	1.48	1.22	68	47
		20	1.49	1.20	77	54
		22	1.49	1.18	84	62

[1] Intervention Effects and Percentage of Cases are shown for original Design assumptions. The other adherence patterns would produce greater incidence rates in Intervention women and a corresponding reduction in the estimated treatment effect.

[2] For design, the calculations were based on n = 35,000.

[3] For revised assumption, calculations were based on n = 36,000 and 7.5 years of follow-up for years 1 though 9. For hip fractures, a healthy volunteer factor of (.20, .30, .60, .50, .60, .70, .80, .80, .80) were applied to the incidence rates.

5. OS Activities

5.1 Overview of Follow-up

OS follow-up is conducted by annual mailed self-administered questionnaires except for year 3, when participants attend a clinic follow-up visit. Approximately 2 months prior to the anniversary of the participants enrollment, the CCC mails the Medical History Update and the OS Exposure Update questionnaires. Participants mail their completed questionnaires to their local CC for data entry and outcomes processing. Non-respondents receive up to two additional mailings from the CCC. For odd numbered follow-up years, CCs must attempt to complete follow-up of non-responders by local contacts, usually telephone reminders or interviews.

The year 3 clinic visit was incorporated to assess change in physical measures, blood analytes, diet, and use of medications and supplements. These visits began in the first VCCs in Fall, 1997. Of those participants due for the year 3 visit to date, 89% overall completed medical history updates (*Form 33*) and 82.4% provided blood samples (*Form 100*).

5.2 Completeness of Follow-up

Table 5.1 shows completeness of OS mail follow-up by follow-up year, type of contact and clinic group. These rates reflect our experience with those participants for whom the sequence of mailings are complete and there has been at least two months for CC follow-up.

The overall response of 95.9% for Year 1 data collection, which includes mailings plus CC follow-up of non-responders, slightly exceeds the 95% goal. For Year 2, the rates fall slightly short of the 94% goal, at least in part because CC follow-up of non-responders is not required in even numbered follow-up years. Response rates to Year 4 data collection mailings, which began in July 1998, are not yet available.

5.3 Laboratory Analyses – OS

The OS Measurement Precision Study (MPS) was designed to provide data on the reproducibility of measures from questionnaires and blood specimens. A one-percent subsample of OS participants was selected at random at the time of enrollment. Blood samples were collected at enrollment and approximately 10 weeks later, frozen, and sent to the laboratory in the same batch for analysis.

The same set of routine blood measures run on the CT was run on the OS-MPS subsample. *Table 5.2* shows the mean values of all analytes at baseline and 10 weeks, the absolute and percent difference from baseline to 10 weeks, the coefficient of variation (CV), and the intraclass correlation coefficient. For comparison of the analyte variability, we include *Table 5.3* which presents the CV of the QA blinded duplicates that are analyzed routinely with all the WHI specimens. These values represent the variability associated with lab processing, whereas the OS-MPS results incorporate the variability in the participant over the 10 week interval.

5.4 Bone Mineral Density

Bone scans are given to all enrolled WHI participants in three Clinical Centers: Birmingham, Pittsburgh and Tucson. The choice of three centers was based on reducing the variability associated with multiple sites and operators while achieving adequate sample size. The selection of these three

Clinical Centers was based both on their previous experience in bone densitometry and the expected enrollment of minorities which will allow us to address hypotheses regarding racial/ethnic differences. Bone scans are given at baseline and years 1, 3, 6, and 9 in these centers.

Table 5.4 shows the OS component-specific BMD means and standard deviations for baseline AV-3 along with % change from baseline for the three types of scans available: whole body, spine, and hip. Baseline and % change is also given using only those women who have an AV3 bone scan, as nearly 3,000 of the women with a baseline do not have an AV3 measure. The current data suggest overall a very small increase in bone density over three years in this group of women. In general, we would have expected a small decrease in BMD over time. As with the corresponding DM results, this increase could be related to some selection of health conscious women who may be taking hormone replacement therapy or calcium supplements of their own. Alternatively, there may be some bias introduced by missing data (currently 33% of OS women at these 3 sites are missing BMD data) or measurement problem. Further investigation of this issue is needed.

5.5 Vital Status

Table 5.5 presents data on the vital status and the participation status of participants in the OS. A detailed description of CC and CCC activities to actively locate participants who do not complete their periodic visits is given in *Section 6 – Outcomes*. For operational purposes, we define OS participants to have an "unknown" vital status if there is no contact with the participant for 36 months. As many of the OS participants have not been in the study for as long as 36 months only 0.5% of the participants fall in the "unknown vital status" category. For the same reason, only 0.2% of the participants are known to be alive but have not filled in a *Form 33 – Medical History Update* in the last 36 months. In addition, 3.8% of the OS participants fall in the "recent participation" category, as they have not filled out a *Form 33* within the last 18 months. Some of these participants may, unfortunately, end up being lost-to-follow-up as well. Almost 1% of the OS participants are deceased.

5.6 Outcomes

Table 5.6 contains counts of the number of locally verified major WHI outcomes for OS participants by age and ethnicity. Approximately 15-20% of the self-reported outcomes have not yet been verified, the numbers in this table can be seen as a lower bound to the actual number of outcomes that took place. Compared to the incidence rates used in the CT design. we have observed almost 100% of the expected number of breast cancers, 60% of the expected number of colorectal cancers, about 40% of the expected number of CHD events, and about 30% of the expected number hip fractures. We anticipate that these percentages will increase as the "healthy volunteer effect" attenuated over time.

Table 5.7 contains counts of the number of self-reports for some outcomes that are not locally verified in WHI. As most of the locally verified outcomes are somewhat over-reported (see *Section 6.3 – Outcomes Data Quality*), the number in this table should be taken as an upper bound to the number of events that have occurred among OS participants.

Table 5.1
Response rates to OS Follow-up Procedures

	# Due[1]	Mailings Initiated[2] N	Mailings Initiated[2] %	Response to Mailings N	Response to Mailings %[3]	Response to CC follow-up N	Response to CC follow-up %[4]	Total Responses N	Total Responses %[5]
Year 1	65529	65370	99.8	60729	92.9	2123	45.7	62852	95.9
VCC	30623	30597	99.9	28155	92.0	1398	57.2	29553	96.5
NCC	34906	34773	99.6	32574	93.7	725	33.0	33299	95.4
Year 2	42007	40966	97.5	38529	94.1	N/A		38930	92.7
VCC	20370	19804	97.2	18578	93.8	N/A		18863	92.6
NCC	21637	21162	97.8	19951	94.3	N/A		20067	92.7

[1] Excludes women who are deceased.
[2] Mailings are not sent to women who have requested no follow-up, who are deceased, who have a non-deliverable address at the time of mailing, or who have a *Form 33* completed within the previous 3 months.
[3] Percent response of those initiated.
[4] Percent response from OS participants not responding to mailings. CC follow-up not required in even numbered follow-up years.
[5] Percent response of those due.

Table 5.2
Blood Specimen Analysis: OS - MPS Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Micronutrients			
Alpha-Carotene (µg/ml)			
Baseline	1061	0.10	0.08
10 weeks	892	0.10	0.07
10 weeks - baseline	872	-0.01	0.06
10 week % change from baseline[1]	872	4.41	63.41
CV (%)[2]	872	24.33	16.42
Intraclass correlation coefficient = 0.73			
Alpha-tocopherol (µg/ml)			
Baseline	1061	18.37	7.02
10 weeks	892	18.52	6.90
10 weeks - baseline	872	0.01	3.89
10 week % change from baseline	872	1.98	18.05
CV (%)	872	10.70	8.20
Intraclass correlation coefficient = 0.81			
Beta-Carotene (µg/ml)			
Baseline	1061	0.36	0.31
10 weeks	892	0.36	0.28
10 weeks - baseline	872	-0.01	0.15
10 week % change from baseline	872	7.27	46.42
CV (%)	872	21.16	14.69
Intraclass correlation coefficient = 0.84			
Beta-Cryptoxanthine (µg/ml)			
Baseline	1061	0.10	0.06
10 weeks	892	0.11	0.07
10 weeks - baseline	872	0.01	0.05
10 week % change from baseline	872	18.43	58.22
CV (%)	872	24.45	15.96
Intraclass correlation coefficient = 0.62			
Gamma-tocopherol (µg/ml)			
Baseline	1061	1.67	1.16
10 weeks	892	1.76	1.31
10 weeks - baseline	872	0.04	0.71
10 week % change from baseline	872	12.78	53.39
CV (%)	872	22.55	15.83
Intraclass correlation coefficient = 0.85			
Lycopene (µg/ml)			
Baseline	1061	0.42	0.17
10 weeks	892	0.40	0.17
10 weeks - baseline	872	-0.01	0.13
10 week % change from baseline	872	8.52	65.02
CV (%)	872	22.94	14.85
Intraclass correlation coefficient = 0.65			

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants enrolled in OS.

[1] '10 week % change from baseline' defined as the absolute value of 10 week – baseline difference divided by baseline value x 100.

[2] Coefficient of variation of 'Baseline' and '10 week' results.

Table 5.2 (Continued)
Blood Specimen Analysis: OS – MPS Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Micronutrients (cont.)			
Lutein and Zeaxanthin (µg/ml)			
Baseline	1061	0.23	0.09
10 weeks	892	0.24	0.09
10 weeks - baseline	872	0.00	0.06
10 week % change from baseline[1]	872	5.38	28.56
CV (%)[2]	872	13.26	9.96
Intraclass correlation coefficient = 0.83			
Retinol (µg/ml)			
Baseline	1061	0.63	0.13
10 weeks	892	0.63	0.13
10 weeks - baseline	872	0.00	0.08
10 week % change from baseline	872	1.48	14.18
CV (%)	872	7.45	6.31
Intraclass correlation coefficient = 0.81			
Clotting Factor			
Factor VII Activity, Antigen (%)			
Baseline	1029	127.44	25.23
10 weeks	865	126.70	24.67
10 weeks - baseline	828	-0.19	12.49
10 week % change from baseline	828	0.65	9.81
CV (%)	828	6.16	4.59
Intraclass correlation coefficient = 0.86			
Factor VII C (%)			
Baseline	1001	126.09	24.20
10 weeks	848	128.28	28.20
10 weeks - baseline	790	1.87	14.73
10 week % change from baseline	790	1.91	11.37
CV (%)	790	6.58	5.49
Intraclass correlation coefficient = 0.83			
Fibrinogen (mg/dl)			
Baseline	1028	297.50	48.84
10 weeks	866	296.13	49.73
10 weeks - baseline	828	-0.81	41.44
10 week % change from baseline	828	0.85	13.05
CV (%)	828	7.38	6.18
Intraclass correlation coefficient = 0.67			

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants enrolled in OS.

[1] '10 week % change from baseline' defined as the absolute value of 10 week – baseline difference divided by baseline value x 100.

[2] Coefficient of variation of 'Baseline' and '10 week' results.

Table 5.2 (Continued)
Blood Specimen Analysis: OS - MPS Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Hormones / Other			
Glucose (mg/dl)			
Baseline	1055	96.08	17.52
10 weeks	889	95.35	16.33
10 weeks - baseline	863	0.05	8.91
10 week % change from baseline[1]	863	0.22	8.22
CV (%)[2]	863	5.00	3.94
Intraclass correlation coefficient = 0.83			
Insulin (μIU/ml)[3]			
Baseline	1006	9.98	4.29
10 weeks	852	10.58	3.37
10 weeks - baseline	803	0.67	4.88
10 week % change from baseline	803	14.56	41.09
CV (%)	803	20.69	13.88
Intraclass correlation coefficient = 0.71			
Lipoproteins			
HDL-2 (mg/dl)			
Baseline	1033	21.79	8.35
10 weeks	879	21.59	7.96
10 weeks - baseline	837	-0.30	3.96
10 week % change from baseline	837	2.24	20.15
CV (%)	837	11.09	9.03
Intraclass correlation coefficient = 0.88			
HDL-3 (mg/dl)			
Baseline	1033	41.83	7.56
10 weeks	879	41.59	7.48
10 weeks - baseline	837	-0.24	3.97
10 week % change from baseline	837	0.17	9.83
CV (%)	837	6.06	4.63
Intraclass correlation coefficient = 0.86			
HDL-C (mg/dl)			
Baseline	1061	63.64	14.48
10 weeks	887	63.19	14.12
10 weeks - baseline	867	-0.44	6.66
10 week % change from baseline	867	0.24	10.42
CV (%)	867	6.38	5.01
Intraclass correlation coefficient = 0.89			

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants enrolled in OS.

[1] '10 week % change from baseline' defined as the absolute value of 10 week – baseline difference divided by baseline value x 100.

[2] Coefficient of variation of 'Baseline' and '10 week' results.

[3] One extreme outlier excluded from analysis of insulin.

Table 5.2 (Continued)
Blood Specimen Analysis: OS - MPS Participants

Data as of: August 25, 1999

	N	Mean*	S.D.*
Lipoproteins (cont.)			
LDL-C (mg/dl)			
Baseline	1042	125.00	28.14
10 weeks	872	124.96	28.12
10 weeks - baseline	843	-1.45	17.23
10 week % change from baseline[1]	843	0.38	14.33
CV (%)[2]	843	8.58	6.69
Intraclass correlation coefficient = 0.83			
Lp(a) (mg/dl)			
Baseline	1059	27.92	23.91
10 weeks	888	28.60	24.32
10 weeks - baseline	867	-0.39	8.77
10 week % change from baseline	867	11.27	202.03
CV (%)	867	12.87	14.33
Intraclass correlation coefficient = 0.95			
Total Cholesterol (mg/dl)			
Baseline	1062	218.40	30.43
10 weeks	890	218.27	29.60
10 weeks - baseline	870	-1.48	19.36
10 week % change from baseline	870	-0.09	8.96
CV (%)	870	5.59	4.13
Intraclass correlation coefficient = 0.82			
Triglyceride (mg/dl)			
Baseline	1062	149.03	76.18
10 weeks	890	153.81	84.81
10 weeks - baseline	870	3.27	47.72
10 week % change from baseline	870	6.94	45.36
CV (%)	870	15.56	11.37
Intraclass correlation coefficient = 0.80			

* Means and standard deviations are weighted by ethnicity using the ethnicity distribution of participants enrolled in OS.

[1] '10 week % change from baseline' defined as the absolute value of 10 week – baseline difference divided by baseline value x 100.

[2] Coefficient of variation of 'Baseline' and '10 week' results.

Table 5.3
Blood Specimen Analysis: CV[1] (%) of Blinded Duplicates

Data as of: August 25, 1999

	(CVC%)		
	N	Mean	S.D.
Micronutrients			
Alpha-Carotene (µg/ml)	185	11.52	13.24
Alpha-tocopherol (µg/ml)	186	4.41	8.45
Beta-Carotene (µg/ml)	186	9.57	10.01
Beta-Cryptoxanthine (µg/ml)	186	7.05	6.78
Gamma-tocopherol (µg/ml)	186	5.05	5.28
Lycopene (µg/ml)	186	9.41	10.90
Lutein and Zeaxanthin (µg/ml)	186	6.46	6.03
Retinol (µg/ml)	186	3.63	3.19
Clotting Factors			
Factor VII Activity, Antigen (%)	180	4.63	4.02
Factor VII C (%)	177	3.52	4.20
Fibrinogen (mg/dl)	181	2.93	3.50
Hormones/Other			
Glucose (mg/dl)	182	1.36	1.58
Insulin (µIU/ml)	173	8.02	7.85
Lipoproteins			
HDL-2 (mg/dl)	176	8.62	9.62
HDL-3 (mg/dl)	176	2.90	2.66
HDL-C (mg/dl)	184	1.97	1.87
LDL-C (mg/dl)	182	1.74	1.37
Lp(a) (mg/dl)	176	16.15	18.12
Total Cholesterol (mg/dl)	185	0.85	0.74
Triglyceride (mg/dl)	185	1.38	1.81

[1] Coefficient of variation of duplicate results.

Table 5.4
Bone Mineral Density[1] Analysis: OS Participants

Data as of: August 25, 1999

	N	Mean	S.D.
Whole Body Scan			
Baseline	6417	1.01	0.11
Baseline (for ppts. with an AV3 scan)	3431	1.01	0.11
AV3	3458	1.02	0.11
AV3 % Change from baseline BMD[2]	3431	0.89	3.48
Spine Scan			
Baseline	6312	0.98	0.17
Baseline (for ppts. with an AV3 scan)	3397	0.98	0.17
AV3	3414	1.00	0.18
AV3 % Change from baseline BMD	3397	1.78	5.14
Hip Scan			
Baseline	6418	0.84	0.14
Baseline (for ppts. with an AV3 scan)	3450	0.84	0.14
AV3	3464	0.85	0.14
AV3 % Change from baseline BMD	3450	0.47	4.10

[1] Measured in (g/cm^2).
[2] AV3 % Change from baseline BMD is defined as ((AV3-Baseline)/Baseline)x100

Table 5.5
Lost-to-Follow-up and Vital Status: OS Participants

Data as of: August 25, 1999

	OS Participants (N=93725)	
	N	%
Vital Status/Participation		
Deceased	825	0.9
Alive: Current Participation	88670	94.6
Alive: Recent Participation	3580	3.8
Alive: Inactive	20	0.0
Alive: No Follow-up	143	0.2
Unknown Status: Inactive	477	0.5
Unknown Status: No Follow-up	10	0.0

Table 5.6
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Observational Study

Data as of: August 25, 1999

Outcomes	Total		Ethnicity: Minority[1]		White	
Number enrolled	93725		15698		78027	
Mean follow-up (months) [2]	26.9		25.7		27.1	
Cardiovascular						
CHD[3]	388	0.18%	54	0.16%	334	0.19%
Coronary death	105	0.05%	15	0.04%	90	0.05%
Clinical MI	312	0.15%	46	0.14%	266	0.15%
Angina	787	0.37%	94	0.28%	693	0.39%
CABG/PTCA	598	0.28%	70	0.21%	528	0.30%
Carotid artery disease	133	0.06%	17	0.05%	116	0.07%
Congestive heart failure	363	0.17%	59	0.18%	304	0.17%
Stroke	292	0.14%	55	0.16%	237	0.13%
PVD	99	0.05%	11	0.03%	88	0.05%
DVT	8	0.00%	0	0.00%	8	0.00%
PE	6	0.00%	0	0.00%	6	0.00%
Coronary disease[4]	1385	0.66%	180	0.54%	1205	0.68%
CHD[3]/Stroke/PE	673	0.32%	109	0.32%	564	0.32%
DVT/PE	13	0.01%	0	0.00%	13	0.01%
Total CVD	1797	0.85%	243	0.72%	1554	0.88%
Cancer						
Breast cancer[5]	889	0.42%	102	0.30%	787	0.45%
Invasive breast cancer	720	0.34%	77	0.23%	643	0.36%
In situ breast cancer	172	0.08%	24	0.07%	148	0.08%
Ovary cancer	76	0.04%	4	0.01%	72	0.04%
Endometrial Cancer[6]	113	0.10%	14	0.10%	99	0.10%
Colorectal cancer	183	0.09%	28	0.08%	155	0.09%
Other cancer[7,8]	747	0.36%	56	0.17%	691	0.39%
Total cancer	1980	0.94%	200	0.59%	1780	1.01%
Fractures						
Hip fracture	159	0.08%	8	0.02%	151	0.09%
Vertebral fracture[9]	30	0.15%	1	0.02%	29	0.19%
Other fracture[7,9,10]	247	1.24%	20	0.47%	227	1.45%
Total fracture[11]	427	NA	29	NA	398	NA
Deaths						
Cardiovascular deaths	193	0.09%	24	0.07%	169	0.10%
Cancer deaths	293	0.14%	30	0.09%	263	0.15%
Deaths: other known cause	96	0.05%	9	0.03%	87	0.05%
Deaths: unknown cause	65	0.03%	12	0.04%	53	0.03%
Deaths: not yet adjudicated	178	0.08%	42	0.12%	136	0.08%
Total death	825	0.39%	117	0.35%	708	0.40%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "CHD" includes clinical MI, and coronary death.

[4] "Coronary disease" includes clinical MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[5] Excludes three cases with borderline malignancy.

[6] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[7] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[8] Excludes non-melanoma skin cancer

[9] Only women from three bone density clinics.

[10] "Other fracture" excludes fractures indicated as pathological.

[11] Hip fractures are adjudicated at all clinics, while other fractures are adjudicated only at a few clinics. A combined annualized percentage cannot be computed.

Table 5.6 (Continued)
Locally Verified Outcomes (Annualized Percentages) by Age for Observational Study

Data as of: August 25, 1999

Outcome	Age 50-54		55-59		60-69		70-79	
Number enrolled	12388		17321		41219		22797	
Mean follow-up (months) [1]	30.4		29.1		25.7		25.6	
Cardiovascular								
CHD[2]	11	0.04%	31	0.07%	142	0.16%	204	0.42%
Coronary death	0	0.00%	5	0.01%	33	0.04%	67	0.14%
Clinical MI	11	0.04%	27	0.06%	117	0.13%	157	0.32%
Angina	37	0.12%	82	0.20%	356	0.40%	312	0.64%
CABG/PTCA	17	0.05%	60	0.14%	272	0.31%	249	0.51%
Carotid artery disease	10	0.03%	11	0.03%	52	0.06%	60	0.12%
Congestive heart failure	11	0.04%	25	0.06%	152	0.17%	175	0.36%
Stroke	7	0.02%	25	0.06%	111	0.13%	149	0.31%
PVD	4	0.01%	9	0.02%	31	0.04%	55	0.11%
DVT	0	0.00%	1	0.00%	4	0.00%	3	0.01%
PE	0	0.00%	1	0.00%	0	0.00%	5	0.01%
Coronary disease[3]	52	0.17%	124	0.30%	593	0.67%	616	1.27%
CHD[2]/Stroke/PE	18	0.06%	56	0.13%	249	0.28%	350	0.72%
DVT/PE	0	0.00%	2	0.00%	4	0.00%	7	0.01%
Total CVD	69	0.22%	160	0.38%	746	0.84%	822	1.69%
Cancer								
Breast cancer[4]	95	0.30%	153	0.36%	405	0.46%	236	0.48%
Invasive breast cancer	77	0.25%	124	0.30%	326	0.37%	193	0.40%
In situ breast cancer	20	0.06%	31	0.07%	81	0.09%	40	0.08%
Ovary cancer	7	0.02%	13	0.03%	37	0.04%	19	0.04%
Endometrial Cancer[5]	10	0.06%	13	0.05%	52	0.11%	38	0.15%
Colorectal cancer	9	0.03%	23	0.05%	73	0.08%	78	0.16%
Other cancer[6,7]	57	0.18%	101	0.24%	329	0.37%	260	0.53%
Total cancer	176	0.56%	297	0.71%	887	1.00%	620	1.27%
Fractures								
Hip fracture	3	0.01%	16	0.04%	51	0.06%	89	0.18%
Vertebral fracture[8]	0	0.00%	1	0.03%	9	0.11%	20	0.42%
Other fracture[6,8,9]	33	1.16%	42	1.12%	93	1.09%	79	1.66%
Total fracture[10]	36	0.11%	59	0.14%	149	0.17%	183	0.38%
Deaths								
Cardiovascular deaths	3	0.01%	11	0.03%	60	0.07%	119	0.24%
Cancer deaths	12	0.04%	33	0.08%	134	0.15%	114	0.23%
Deaths: other known cause	5	0.02%	10	0.02%	42	0.05%	39	0.08%
Deaths: unknown cause	4	0.01%	9	0.02%	24	0.03%	28	0.06%
Deaths: not yet adjudicated	10	0.03%	26	0.06%	72	0.08%	70	0.14%
Total death	34	0.11%	89	0.21%	332	0.38%	370	0.76%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[2] "CHD" includes clinical MI, and coronary death.

[3] "Coronary disease" includes clinical MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[4] Excludes three cases with borderline malignancy.

[5] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[6] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[7] Excludes non-melanoma skin cancer

[8] Only women from three bone density clinics.

[9] "Other fracture" excludes fractures indicated as pathological.

[10] Hip fractures are adjudicated at all clinics, while other fractures are adjudicated only at a few clinics. A combined annualized percentage cannot be computed.

Table 5.7
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Observational Study

Data as of: August 25, 1999

Outcomes	Total		Ethnicity Minority[1]		White	
Number enrolled	93725		15698		78027	
Mean follow-up (months) [2]	26.9		25.7		27.2	
Hospitalizations						
Ever	14486	(6.88%)	1818	(5.41%)	12668	(7.18%)
Two or more	4230	(2.01%)	518	(1.54%)	3712	(2.10%)
Other						
Diabetes (treated)	3575	(1.70%)	1168	(3.47%)	2407	(1.36%)
Gallbladder disease[3]	2118	(1.01%)	286	(0.85%)	1832	(1.04%)
Hysterectomy[4]	1117	(0.91%)	163	(0.93%)	954	(0.90%)
Glaucoma	2721	(1.29%)	679	(2.02%)	2042	(1.16%)
Osteoporosis	7868	(3.74%)	943	(2.80%)	6925	(3.92%)
Osteoarthritis	11290	(5.37%)	1877	(5.58%)	9413	(5.33%)
Rheumatoid arthritis	1868	(0.89%)	606	(1.80%)	1262	(0.71%)
Intestinal polyps	4019	(1.91%)	607	(1.80%)	3412	(1.93%)
Lupus	329	(0.16%)	64	(0.19%)	265	(0.15%)
Kidney Stones	529	(0.25%)	104	(0.31%)	425	(0.24%)
Cataracts	9536	(4.53%)	1443	(4.29%)	8093	(4.58%)
Pills for hypertension	22317	(10.61%)	4628	(13.76%)	17689	(10.02%)

Outcome	Age 50-54		55-59		60-69		70-79	
Number enrolled	12388		17321		41219		22797	
Mean follow-up (months)[2]	30.4		29.1		25.8		25.6	
Hospitalizations								
Ever	1401	(4.46%)	2102	(5.01%)	6317	(7.14%)	4666	(9.59%)
Two or more	382	(1.22%)	537	(1.28%)	1834	(2.07%)	1477	(3.03%)
Other								
Diabetes (treated)	355	(1.13%)	583	(1.39%)	1656	(1.87%)	981	(2.02%)
Gallbladder disease[3]	318	(1.01%)	400	(0.95%)	925	(1.05%)	475	(0.98%)
Hysterectomy[4]	183	(0.98%)	208	(0.80%)	484	(0.94%)	242	(0.89%)
Glaucoma	225	(0.72%)	346	(0.82%)	1198	(1.35%)	952	(1.96%)
Osteoporosis	655	(2.09%)	1113	(2.65%)	3567	(4.03%)	2533	(5.20%)
Osteoarthritis	983	(3.13%)	1658	(3.95%)	4916	(5.56%)	3733	(7.67%)
Rheumatoid arthritis	266	(0.85%)	337	(0.80%)	735	(0.83%)	530	(1.09%)
Intestinal polyps	407	(1.30%)	710	(1.69%)	1820	(2.06%)	1082	(2.22%)
Lupus	64	(0.20%)	70	(0.17%)	134	(0.15%)	61	(0.13%)
Kidney Stones	61	(0.19%)	106	(0.25%)	228	(0.26%)	134	(0.28%)
Cataracts	322	(1.03%)	813	(1.94%)	4601	(5.20%)	3800	(7.81%)
Pills for hypertension	1975	(6.29%)	3404	(8.12%)	9878	(11.17%)	7060	(14.51%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

6. Outcomes Processing

6.1 Overview

Most outcomes are initially ascertained by self-report on *Form 33 – Medical History Update*. CT participants complete this form every six months; OS participants complete this form every year. Those participants who report an outcome requiring documentation and adjudication are asked to complete a more detailed form (*Form 33D*) that collects the information needed to request the associated medical records.

After these forms are completed and entered into the database, the CCs execute a database function that identifies adjudication cases based on the *Form 33D* information. CCs then request hospital and related records as specified in *Volume 8 – Outcomes* for each outcome category. Once the cases are documented, clinic staff send the charts for potential cardiovascular, cancer, and fracture outcomes to the local physician adjudicator for evaluation and classification. Upon return, clinic staff enter the local determinations into the WHI database. Key cardiovascular outcomes are adjudicated by a central committee process. Currently WHI requires central adjudication of all such events. The investigators at UCSF (Steve Cummings, PI) subcontract to the CCC to adjudicate all hip fractures. Staff at the CCC code and adjudicate all cancers of major interest in the study (breast, colon, rectum, ovary, and endometrium) using standardized SEER guidelines. In addition to the cardiovascular, cancer, and fracture outcome data, which are adjudicated, outcomes for selected other diseases, such as diabetes, gallbladder disease, and hysterectomy, are collected as self-reports only.

We present data both for the adjudicated outcomes as well as for the self-reports of the outcomes that are not adjudicated. The monitoring analysis is conducted on outcomes as classified by the local adjudicator. Currently about 88% of the self-reports have been adjudicated. We do *not* report on the self-reports for which the adjudication process is not yet finished. We feel that we have now reached the stage in the study where the fraction of the self-reports that are not yet adjudicated is sufficiently small that omitting it does not distort the larger picture. Central adjudication results, while offering a higher degree of standardization, will eventually be available only on a subsample, and even then only after a lag time of several months. The central adjudication process should therefore be viewed primarily as a quality assurance effort.

6.2 Terminology

When a particular outcome, say MI, is investigated, all participants can be divided into five groups:

1. Those who have no self-report of an MI and have no locally confirmed MI.

2. Those who have a self-report of an MI and a locally confirmed MI. We refer to these participants' cases as *confirmed (with self-report)*.

3. Those who have no self-report of an MI but do have a locally confirmed MI usually as a result of an investigation of a self-report of another outcome. We refer to these participants' cases as *confirmed (without self-report).*

4. Those who have a self-report of an MI but do not have a locally confirmed MI, and for whom all relevant adjudication cases are closed. We refer to these participants' self-reports as *denied.*

5. Those who have a self-report of an MI, but do not have a locally confirmed MI, while some of the relevant adjudication cases are still open. We refer to these participants' self-reports as *open.*

The *confirmed cases* are the participants in categories 2 and 3; the *self-reports* are the participants in categories 2, 4, and 5; the *closed self-reports* are the participants in categories 2 and 4. For some analyses we divide the *denied* self-reports into three groups:

4a. Those for which the self-reported outcome was denied, but for whom a related outcome (e.g., an angina based on an MI self-report) was found. We refer to those participants' self-reports as *denied - related outcome found.* For the outcome tables, we consider all cardiovascular outcomes to be related, all cancer outcomes to be related, and all fracture outcomes to be related.

4b. Those for which the self-report was denied after review of the relevant documentation. We refer to those participants' self-reports as *denied - no (related) outcome found.*

4c. Those for which the self-report was *denied* for *administrative reasons.* Self-reports can only be denied if they satisfy one of several narrowly defined rules. Usually this means that no documentation was obtained after several attempts over a one-year period. Reasons for not obtaining documentation are:

- The provider named by the participant does not have or will not release documentation about the WHI participant, and the WHI participant is not able to name another provider

- The provider indicated by the participant does not respond after repeated contacts by the CC over a period of at least one year (common for hospitalizations out of the country).

6.3 Outcomes Data Quality

Tables 6.1-6.2 – Timeliness and Completeness of Local Adjudications displays the distribution of time required to locally adjudicate a self-reported outcome by month of *Form 33*, for the CT and the OS, respectively. This table is based on the day on which the form was received by the clinic, which may not be the same as the day on which the form was entered in the database. Thus, some of the more recent data will improve when more adjudications are key entered. Overall 90% of self-reported outcomes in the CT and 86% of the self-reported outcomes in the OS requiring adjudication have been closed. In particular, 41% of the outcomes in the CT and 46% of the outcomes in the OS have been closed within 90 days of self-report and 61% (CT) and 68% (OS) within 180 days. (Note: the fact that the percentages for the OS appear better is

because most of the outcomes in 1996 and earlier, when outcomes processing was considerably slower, are CT outcomes.)

Since the May 1998 DSMB meeting, there has been a coordinated effort from CCs, CCC, Project Office, Performance Monitoring Committee, and Efficiency Task Force to improve the timeliness and completeness of the local adjudication process. Since then considerable progress with both timeliness and completeness of the local adjudication process has been made. For example, the percentage of forms that were adjudicated within 90 days has increased from about 40-45% to 65-70%. At the same time, the percentage of forms that are more than a year old that have not yet been adjudicated has been reduced to 2.1% for the CT and 3.7% for the OS. One year ago about 7% of forms that were more than a year old had not yet been adjudicated; six months ago it was about 5%. There has been steady and significant improvement in processing old cases. Twenty-five of the 40 CCs currently have 10 or fewer outstanding *Forms 33D* that are more than one year old.

Figure 6.1-6.2 – Timeliness of Adjudications display Kaplan-Meier curves for the time period from reporting an outcome on *Form 33D* until the adjudication case is closed per year of self-report and, for recent data, per quarter of self-report, separately for the CT and OS. Both Kaplan-Meier clearly show that improvements in the processing of outcomes have happened throughout the study. The difference between the two most recent curves displays the improvements over the last six months.

The outcomes ascertainment, documentation and adjudication effort is by necessity a lengthy process involving interaction between the clinical center, the participant, and her health care providers. Some of the biggest hurdles are related to the interactions with the providers and these will continue to slow the outcomes process, particularly when the event of interest occurred near the time of the participant's self-report. In these instances the chart may not be complete or available, causing CCs to issue multiple requests. The CCC continues to work closely with the Outcomes Performance Monitoring Committee (OPMC) to develop reports and other tools that will facilitate timely outcomes processing by the CCs. Until recently the CCC and the OPMC have been emphasizing processing of CT self-reports in their activities. In the future OS self-reports will be included in most reports.

Table 6.3-6.4 – Agreement of Local Adjudications with Self-Reports shows condition types that the participant can indicate on *Form 33* or *Form 33D* and the fraction of time that the local adjudicator agrees with that self-report. Because of the complications of the adjudication process, it is not straightforward to define an appropriate estimate of the accuracy of individual self-reports. For example, for most outcome types second occurrences do not need to be adjudicated, but if the participant reports a second occurrence before the first is confirmed, an adjudication case will be opened anyway. This case will be closed without a locally confirmed outcome when the first self-report is confirmed. To circumvent this and similar problems, the unit in *Tables 6.3* and *6.4* is defined to be a *participant* rather than an outcome event. For some participants whose self-report is denied, related outcomes may be found. We also note that on *Form 33* and *Form 33D* participants report a "stroke or transient ischemic attack (TIA)", while for monitoring purposes only the outcome "stroke" is used. Thus, the number of confirmed cases in *Table 6.3* and *6.4,* which include TIA, is substantially larger than that in some of the outcomes tables.

A self-reported outcome may be denied for the following reasons: (i) the outcome did take place, but could not be verified because insufficient evidence was available to the WHI adjudicator; (ii) the outcome did not take place, but a related outcome (which may or may not be of interest to WHI) occurred; (iii) the outcome took place before enrollment in WHI; and (iv) the current self-report was a duplicate report of a previous self-report.

The accuracy of self-reports varies considerably by outcome. For many outcomes the agreement rates for the CT are a few percentage points higher than for the OS. The accuracy of cancer and fracture self-reports may be higher than that for cardiovascular disease because more cardiovascular self-reports result in a related outcome. If those related outcomes are included with the confirmed self-reports, cardiovascular outcomes have a 77% agreement rate between self-reports and locally confirmed outcomes (86% if we exclude angina, which is probably the softest cardiovascular outcome), cancer outcomes have an agreement rate of 85% (96% for the primary cancers), and fracture outcomes have an agreement rate of 79% for the CT and OS combined.

The number of administrative denials is somewhat larger for fractures than for other outcomes categories since many more fractures are treated outpatient, and it is harder to receive satisfactory documentation of some outpatient providers. Note that the accuracy of self-reports for *other fractures* reflects the percentage of people who reported an *other fracture* for whom any of the fractures in the other category was found, even if the participant indicated the wrong broken bone.

Table 6.5-6.6 – Agreement of Central Adjudications with Local Adjudications shows that there is good agreement between local and central adjudications for all outcomes. Often angina and congestive heart failure occur in conjunction with an MI. Disagreement on angina or CHF, when there is agreement about the MI, is not considered very serious. Some self-reports are locally adjudicated as one type of outcome, while they are centrally adjudicated as another outcome. Since we see the central adjudication process primarily as quality assurance, data regarding such cross-classification is not shown.

There is a considerable backlog of locally confirmed cases that have not yet been centrally adjudicated. This backlog is partly artificial, as it takes about three-four months for a locally confirmed case to finish the central adjudication process. In addition, the cancer coder position was recently restructured, and CCC staff puts a higher priority on assisting clinics than on central adjudication.

6.4 Outcomes Data Summary

Currently, for the CT we observe approximately 80-90% of the breast and colorectal cancer cases of what was assumed for the power calculations. The observed rate of CHD is approximately what was assumed for the 55-59 and 60-69 age categories. The rate in the youngest age category, 50-54 at baseline, is actually slightly higher than what was assumed, but as the numbers in this category are very small, this may very well be due to noise. Only in the oldest age category, 70-79 at baseline, are the current observed rates considerably lower (about 55%) than design assumptions. The participants in the oldest age category were among the latest to be recruited, so the "healthy volunteer effect" may still be an important factor for these

women. The rates of hip fractures are currently only about 20-30% of what was assumed, for all age categories.

Similar tables for the HRT, DM, and CaD component are in the chapters about these components. Currently, the rates of cancer and fractures in the OS and CT are very similar. The rate of cardiovascular events is somewhat higher in the CT than in the OS. One possible explanation is that the eligibility criteria for the DM, which excluded women who were eating a low percentage of fat from calories, may have moved a group at lower risk of cardiovascular disease from the CT to the OS.

Tables 6.7 – Other Cancers and *6.8 – Other Fractures* split out the other cancers and other fractures for the locally verified outcomes by event type and by study. Note that other fractures are only locally verified at the three bone mineral density clinics.

Table 6.9 – Centrally Adjudicated Breast Cancer Cases by Histology Code and In-Situ versus Invasive displays some of the information that is obtained about cancer cases through the central cancer coding process. As the number of cancers, other than breast cancer, which have been coded centrally is still small, we only present data on breast cancer cases. As expected, about 20% of all breast cancers are lobular and about 25% are in situ.

Table 6.10-6.11 – Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for CT and OS contain counts of the number of self-reports for some of the WHI outcomes that are not verified. As for many of the confirmed outcomes the participants over report (see *Tables 6.3-6.4)* the numbers in these tables should be seen as upper bounds to the number of outcomes that has currently occurred. Not surprisingly, for many of the outcomes the rates differ considerably by minority status and by age at baseline.

Table 6.12-6.13 – Locally Verified Outcomes (Annualized Percentages) by Ethnicity and by Age for CT and OS contain the number of locally verified outcomes for the major WHI outcomes. Since a number of the outcomes still need to be adjudicated, the numbers in these tables give a lower bound on the number of outcomes that currently have occurred. We estimate that the actual number of cases for most outcomes is currently about 15-20% larger than what is reported here. When we get further in the study the number of not yet adjudicated cases will decrease as a fraction if the total number of cases.

6.5 ECG Data

Electrocardiograms (ECGs) are obtained from all CT participants at baseline, and years 3, 6 and 9. The ECGs are sent for analysis to EPICARE (Pentti Rautaharju, PI), which subcontracts to the CCC. EPICARE provides the CCC with a comprehensive analysis of each individual ECG, as well as with a serial analysis of the follow-up ECGs of a participant relative to that participant's baseline ECG. This serial analysis is intended to identify silent MIs, defined as MIs detected by this ECG analysis but not reported by the participant. Analysis of individual ECGs may also be of interest, since abnormalities in ECGs are known to be predictors of future cardiovascular problems.

As of August 25, 1999 the CCC had received serial analysis on 20,197 CT participants, whose year 3 ECGs had been analyzed by EPICARE. In this report we present some preliminary analysis of the serial ECG data.

Table 6.14 – Cross-tabulation of ECG Codes Suggesting an Incident MI and Locally Confirmed and Self-Reported MI for all CT participants shows the relation between MIs that have been identified before the year 3 ECG and incident MIs as identified by the ECG analysis. We note that only a small number of the locally confirmed MIs identified by the WHI outcomes process were found by the ECG analysis (7 of 151 confirmed MIs).

6.6 Vital Status

Table 6.15 – Cause of Death presents the cause of death for CT and OS participants. To reduce the time that it takes before cause of death information is available on WHI participants who have passed away, death adjudication procedures were changed in April 1999 to encourage clinics to report a "temporary" cause of death for those participants for whom some, but not all documentation related to the death has been collected. This change in procedures was made in recognition of the fact that it is often more difficult to obtain documents for death cases than for self-reports, for which participants can sign a release themselves. The goal is that a temporary cause is entered in the database as soon as possible, preferably within eight weeks. The cause based on the complete documentation should be entered as soon as all documents are collected. Cases for which reported unsuccessful requests for documentation have been made over a one year period can be closed out with incomplete documentation. This happens, for example, when deaths occur outside the country, or when the death resulted in litigation.

As of the August 25 database, there were 623 deaths in the CT and 825 in the OS. Of the 623 CT deaths, there were 441 (71%) for which a final adjudication was available, and an additional 83 (13%) for which a temporary adjudication was available. These 623 CT deaths include 52 that were first reported between June 25 and August 25 of this year. Of the 571 that were first reported before June 25, 1999, 441 have a final adjudication and 74 have a temporary one, giving us cause of death information on 90% of the CT deaths. For the OS there is cause of death information on 78% of all deaths, and 84% of all deaths that were reported before June 25, 1999.

These numbers represent a substantial improvement over our previous report. At that time no cause of death information was available on 44% of the deaths. Of the deaths with a temporary adjudication, about 25% have reported "unknown cause of death," considerably larger than the 3% of the cases with a final adjudicated death of unknown cause.

About 37% of the final adjudicated deaths are based on a death certificate only. For about 7% of cases, no death certificate is available. A death certificate and other documents are available for the remaining 56%.

Table 6.16 – Lost-to-Follow-up and Vital Status by clinic: CT displays information about the follow-up and vital status of CT participants per clinic. In June 1999 CCs were provided with a list of CT participants for whom there was no *Form 33* collected within the last 18 months, and who were not deceased. Clinical Centers were asked to make every effort to try to locate these

participants, and encourage further study participation. Some participants had information in the database that indicated that they never wanted to be contacted again by WHI. If this was the case, CCs were to verify whether this participation status was correct. If indeed a participant had expressed this opinion, she was not to be contacted again. For these participants we will still be able to obtain limited vital status information using a National Death Index (NDI) search. Of the 936 participants on these lists to be contacted, 405 had the "absolutely no follow-up" status. We note that for some of the participants in this last group the last contact is fairly recent.

Clinical Centers were able to contact approximately two-thirds of the 936 women who had been lost. For the remaining participants the search is continuing. For the large majority of the "absolutely no follow-up" women, it was determined that this was indeed the appropriate status. In *Table 6.16* we have combined these "absolutely no follow-up" participants with the "no follow-up" participants (participants who expressed no further interest in the study, but that clinics still try to convince to participate further). In this table approximately 100 participants listed as having an "unknown" vital status had their last *Form 33* between December 1, 1997 and February 25, 1998. These participants are currently considered to have an unknown vital status, but were still considered to be alive when the clinics were first provided lists of participants to be contacted.

Vital status is unknown for approximately 0.9% of the CT participants. In addition, there is no recent outcomes information on an additional 1.5% of the participants. Some of the women in the "Alive: inactive" category are participants who were recently contacted and found to be alive, but who have not yet filled in a *Form 33*. Thus, the percentage of participants currently lost-to-follow-up is between 1.8% and 2.4%.

The percentage of participants with unknown vital status ranges from 0 to 2.9% across Clinical Centers. The percentage of participants with no recent outcomes data ranges from 0.2 to 8.7% across CCs.

Table 6.17 – Lost-to-Follow-up and Vital Status by Clinic: OS contains the same information as *Table 6.16* about the OS. Note, however, that no vital status sweep for the OS has taken place. The numbers in this table are therefore overly pessimistic. We expect that a fair number of OS participants can be encouraged to reenter the OS when CCs conduct a similar "OS vital status sweep" this winter. As OS participants are only considered lost after 36 months, the percentage of participants with unknown or inactive vital status is much smaller – many OS participants have not been in the study for as long as 36 months. The percentage of participants that are alive and not current ranges from only 0.6% to over 15% of the participants across CCs.

Table 6.1
Timeliness and Completeness of Local Adjudications - CT[1]

Data as of: August 25, 1999

Forms with conditions[2]		Number and % of forms with conditions locally adjudicated by days from Form 33 encounter date to completion of local adjudication							
Date of Form 33 encounter		≤ 90		≤ 180		Closed		Open	
	N	N	%	N	%	N	%	N	%
<= June 30 1996	3904	265	7	776	20	3835	98	69	2
1996 July - December	1377	309	22	725	53	1354	98	23	2
1997 January-June	2167	766	35	1338	62	2133	98	34	2
1997 July-December	2531	978	39	1518	60	2481	98	50	2
1998 January-June	3567	1677	47	2806	79	3488	98	79	2
1998 July	676	408	60	540	80	656	97	20	3
1998 August	722	412	57	593	82	689	95	33	5
1998 September	693	384	55	577	83	657	95	36	5
1998 October	784	435	55	636	81	746	95	38	5
1998 November	661	381	58	522	79	604	91	57	9
1998 December	601	360	60	508	85	554	92	47	8
1999 January	733	453	62	632	86	657	90	76	10
1999 February	694	422	61	578	83	587	85	107	15
1999 March	812	512	63	669	82	669	82	143	18
1999 April	766	496	65	605	79	605	79	161	21
1999 May	752	504	67	542	72	542	72	210	28
1999 June	790	442	56	442	56	442	56	348	44
1999 July	691	241	35	241	35	241	35	450	65
1999 August	408	30	7	30	7	30	7	378	93
Total	23329	9475	41	14278	61	20970	90	2359	10

[1] This table is based on the day *Form 33* was received by the clinic, not on the day the form was entered in the database.

[2] Conditions are self-reported events that require additional documentation

Figure 6.1 Clinical Trial Timeliness per Period of Self-Report

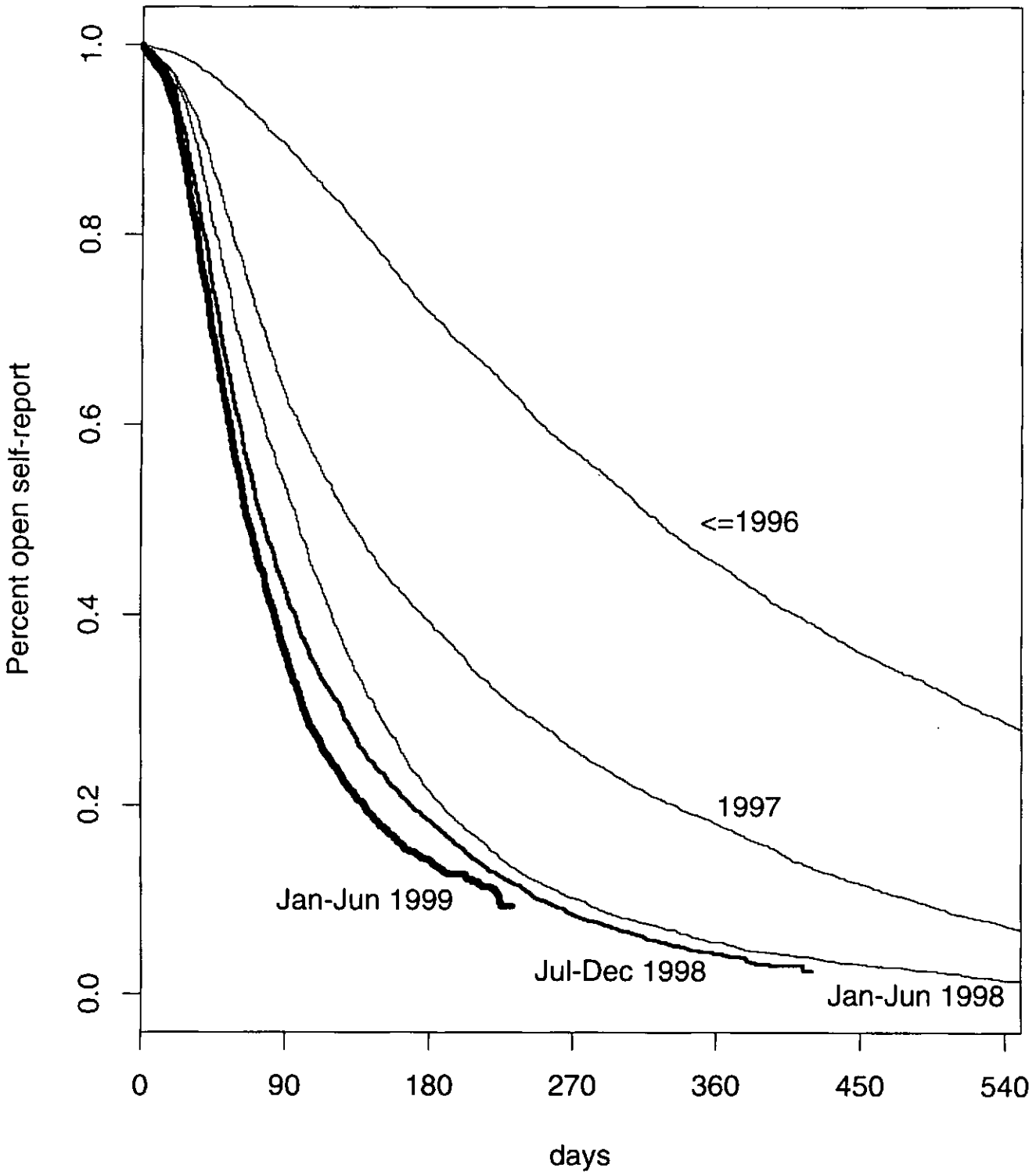


Table 6.2
Timeliness and Completeness of Local Adjudications - OS[1]

Data as of: August 25, 1999

Forms with conditions[2]		Number and % of forms with conditions locally adjudicated by days from Form 33 encounter date to completion of local adjudication							
Date of Form 33 encounter		≤ 90		≤ 180		Closed		Open	
	N	N	%	N	%	N	%	N	%
<= June 30 1996	236	86	36	129	55	234	99	2	1
1996 July - December	1301	311	24	711	55	1277	98	24	2
1997 January-June	2143	861	40	1423	66	2090	98	53	2
1997 July-December	2282	715	31	1373	60	2196	96	86	4
1998 January-June	2814	1279	45	2062	73	2678	95	136	5
1998 July	616	341	55	466	76	581	94	35	6
1998 August	663	374	56	538	81	622	94	41	6
1998 September	604	327	54	481	80	558	92	46	8
1998 October	688	347	50	519	75	636	92	52	8
1998 November	577	300	52	450	78	523	91	54	9
1998 December	625	336	54	497	80	550	88	75	12
1999 January	641	375	59	561	88	576	90	65	10
1999 February	731	454	62	650	89	655	90	76	10
1999 March	847	520	61	698	82	698	82	149	18
1999 April	822	539	66	667	81	667	81	155	19
1999 May	771	509	66	549	71	549	71	222	29
1999 June	902	481	53	481	53	481	53	421	47
1999 July	688	201	29	201	29	201	29	487	71
1999 August	447	33	7	33	7	33	7	414	93
Total	18398	8389	46	12489	68	15805	86	2593	14

[1] This table is based on the day *Form 33* was received by the clinic, not on the day the form was entered in the database.

[2] Conditions are self-reported events that require additional documentation

Figure 6.2 Observational Study Timeliness per Period of Self-Report

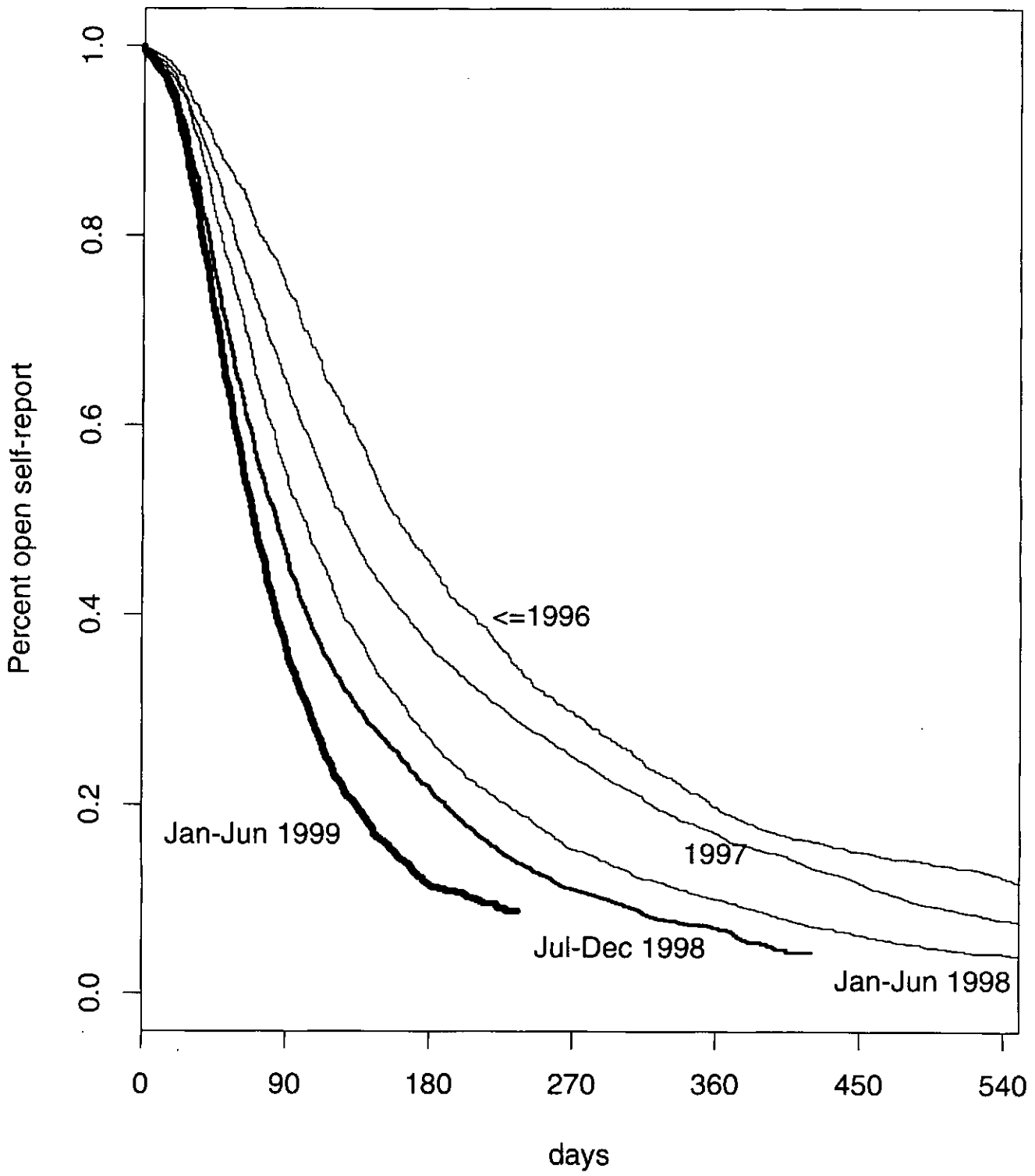


Table 6.3
Agreement of the Local Adjudications with Self-Reports — CT

Data as of: August 25, 1999

	Participants with a self-report	Closed		Confirmed		Denied – related outcome found		Denied – no outcome found		Administrative denials	
		N	%	N	%[1]	N	%[1]	N	%[1]	N	%[1]
Cardiovascular											
MI	435	382	88%	283	(74%)	51	(13%)	43	(11%)	5	(1%)
Angina[2]	998	864	87%	360	(42%)	139	(16%)	349	(40%)	16	(2%)
Congestive heart failure	247	206	83%	144	(70%)	19	(9%)	39	(19%)	4	(2%)
CABG/PTCA	761	654	86%	584	(89%)	42	(6%)	23	(4%)	5	(1%)
Carotid artery disease[3]	135	111	82%	91	(82%)	13	(12%)	6	(5%)	1	(1%)
Stroke/TIA[4]	622	538	86%	413	(77%)	30	(6%)	86	(16%)	9	(2%)
PVD	84	79	94%	49	(62%)	10	(13%)	18	(23%)	2	(3%)
DVT[5]	148	129	87%	83	(64%)	22	(17%)	21	(16%)	3	(2%)
PE[5]	63	58	92%	52	(90%)	1	(2%)	5	(9%)	0	(0%)
Cancers											
Breast cancer	775	668	86%	639[6]	(96%)	0	(0%)	28	(4%)	1	(0%)
Ovary cancer	92	73	79%	56	(77%)	12	(16%)	3	(4%)	2	(3%)
Endometrial cancer	112	97	87%	67	(69%)	16	(16%)	12	(12%)	2	(2%)
Colorectal	243	205	84%	183	(89%)	11	(5%)	9	(4%)	2	(1%)
Other cancer[7]	934	794	85%	585	(74%)	45	(6%)	144	(18%)	20	(3%)
Fractures											
Hip fracture	146	124	85%	102	(82%)	4	(3%)	16	(13%)	2	(2%)
Vertebral fracture	303	263	87%	133	(51%)	8	(3%)	107	(41%)	15	(6%)
Other fracture	3083	2718	88%	2194	(81%)	16	(1%)	428	(16%)	80	(3%)

[1] Percentages between parentheses are relative to "closed."

[2] Angina that is self-reported after a confirmed MI, is not adjudicated. In particular, 101 self-reports of angina (98 denied related, 2 denied, 1 administrative denial) are associated with participants who have a confirmed MI

[3] Carotid artery disease that is self-reported after a confirmed Stroke, is not adjudicated. In particular, 1 self-report of Carotid artery disease (1 denied related) is associated with a participant who has a confirmed Stroke.

[4] Stroke and TIA have a combined self-report. Only stroke is monitored. There were 120 participants who reported stroke/TIA for whom only TIA was confirmed

[5] HRT Participants only

[6] There were 488 confirmed cases of invasive breast cancer and 154 confirmed cases of in situ breast cancer.

[7] Excludes non-melanoma skin cancer

Table 6.4
Agreement of the Local Adjudications with Self-Reports — OS

Data as of: August 25, 1999

	Participants with a self-report	Closed		Confirmed		Denied – related outcome found		Denied – no outcome found		Administrative denials	
		N	%	N	%[1]	N	%[1]	N	%[1]	N	%[1]
Cardiovascular											
MI	310	249	80%	161	(65%)	53	(21%)	33	(13%)	2	(1%)
Angina[2]	977	805	82%	367	(46%)	77	(10%)	345	(43%)	16	(2%)
Congestive heart failure	265	219	83%	149	(68%)	15	(7%)	51	(23%)	4	(2%)
CABG/PTCA	742	606	82%	519	(86%)	48	(8%)	33	(5%)	6	(1%)
Carotid artery disease[3]	145	117	81%	84	(72%)	20	(17%)	12	(10%)	1	(1%)
Stroke/TIA[4]	624	494	79%	377	(76%)	19	(4%)	88	(18%)	10	(2%)
PVD	116	91	78%	52	(57%)	10	(11%)	26	(29%)	3	(3%)
Cancers											
Breast cancer	1141	940	82%	832[5]	(89%)	4	(0%)	95	(10%)	9	(1%)
Ovary cancer	99	77	78%	50	(65%)	11	(14%)	16	(21%)	0	(0%)
Endometrial cancer	115	98	85%	73	(74%)	15	(15%)	9	(9%)	1	(1%)
Colorectal	233	188	81%	155	(82%)	11	(6%)	18	(10%)	4	(2%)
Other cancer[6]	1139	905	79%	598	(66%)	72	(8%)	208	(23%)	27	(3%)
Fractures											
Hip fracture	206	168	82%	134	(80%)	6	(4%)	22	(13%)	6	(4%)
Vertebral fracture	44	39	89%	23	(59%)	5	(13%)	9	(23%)	2	(5%)
Other fracture	352	293	83%	226	(77%)	6	(2%)	51	(17%)	10	(3%)

[1] Percentages between parentheses are relative to "closed."

[2] Angina that is self-reported after a confirmed MI, is not adjudicated. In particular, 44 self-reports of angina (41 denied related, 3 denied) are associated with participants who have a confirmed MI

[3] Carotid artery disease that is self-reported after a confirmed Stroke, is not adjudicated. In particular, 3 self-report of Carotid artery disease (3 denied related) is associated with a participant who has a confirmed Stroke.

[4] Stroke and TIA have a combined self-report. Only stroke is monitored. There were 136 participants who reported stroke/TIA for whom only TIA was confirmed

[5] There were 674 confirmed cases of invasive breast cancer and 163 confirmed cases of in situ breast cancer.

[6] Excludes non-melanoma skin cancer

Table 6.5
Agreement of Central Adjudications with Local Adjudications — CT

Data as of: August 25, 1999

	Locally confirmed N	Centrally adjudicated N	%	In agreement N	%[1]
Cardiovascular					
MI	410	234	57%	207	88%
Angina[2]	737	471	64%	371	79%
Congestive heart failure	308	188	61%	142	76%
CABG/PTCA	637	403	63%	391	97%
DVT[3]	101	70	69%	66	94%
PE[3]	63	36	57%	34	94%
Cancers					
Breast cancer	655	147	22%	145	99%
Invasive	497	114	23%	106	93%
Non Invasive	162	33	20%	28	85%
Ovary cancer	68	20	29%	20	100%
Endometrial cancer	88	33	38%	32	97%
Colorectal cancer	201	57	28%	56	98%
Fractures					
Hip fracture	124	74	60%	70	95%

[1] Percentage is relative to centrally adjudicated cases

[2] Participants with a confirmed MI no longer require adjudication of angina

[3] HRT only; DVT and PE are centrally adjudicated since May of 1997

Table 6.6
Agreement of Central Adjudications with Local Adjudications — OS

Data as of: August 25, 1999

	Locally confirmed N	Centrally adjudicated N	Centrally adjudicated %	In agreement N	In agreement %[1]
Cardiovascular					
MI	312	169	54%	144	85%
Angina[2]	755	440	58%	367	83%
Congestive heart failure	363	208	57%	171	82%
CABG/PTCA	598	345	58%	336	97%
Cancers					
Breast cancer	864	185	21%	175	95%
Invasive	692	144	21%	131	91%
Non Invasive	182	41	23%	30	73%
Ovary cancer	72	16	22%	12	75%
Endometrial cancer	109	34	31%	31	91%
Colorectal cancer	172	44	26%	39	89%
Fractures					
Hip fracture	159	89	56%	87	98%

[1] Percentage is relative to centrally adjudicated cases

[2] Participants with a confirmed MI no longer require adjudication of angina

Table 6.7
Locally Confirmed Other Cancers: CT and OS Participants

Data as of: August 25, 1999

	CT		OS	
Number of participants providing Form 33	68135		93725	
Mean follow-up time (months)	32.2		26.9	
Ppts with other cancer	688	(0.38%)	747	(0.36%)
Accessory sinus	0	(0.00%)	0	(0.00%)
Adrenal gland	1	(0.00%)	2	(0.00%)
Anus	3	(0.00%)	5	(0.00%)
Biliary tract	11	(0.01%)	7	(0.00%)
Bladder	37	(0.02%)	38	(0.02%)
Bones/joints/articular cartilage (limbs)	2	(0.00%)	1	(0.00%)
Bones/joints/articular cartilage (other)	2	(0.00%)	1	(0.00%)
Brain	19	(0.01%)	19	(0.01%)
Cervix	24	(0.01%)	8	(0.00%)
Connective/subcutaneous/soft tissues	2	(0.00%)	3	(0.00%)
Endocrine gland, related structures	1	(0.00%)	1	(0.00%)
Esophagus	3	(0.00%)	4	(0.00%)
Eye and adnexa	1	(0.00%)	2	(0.00%)
Genital organs	9	(0.00%)	6	(0.00%)
Kidney	33	(0.02%)	33	(0.02%)
Larynx	4	(0.00%)	1	(0.00%)
Leukemia	31	(0.02%)	17	(0.01%)
Liver	9	(0.00%)	10	(0.00%)
Lung (bronchus)	117	(0.06%)	145	(0.07%)
Lymph nodes	3	(0.00%)	2	(0.00%)
Lymphoma, Hodgkins disease	1	(0.00%)	2	(0.00%)
Lymphoma, non-Hodgkins	53	(0.03%)	57	(0.03%)
Melanoma of the skin	85	(0.05%)	101	(0.05%)
Multiple myeloma	26	(0.01%)	21	(0.01%)
Oral (mouth)	4	(0.00%)	4	(0.00%)
Palate	2	(0.00%)	2	(0.00%)
Pancreas	39	(0.02%)	32	(0.02%)
Parotid gland (Stensen's duct)	2	(0.00%)	4	(0.00%)
Peripheral nerves and autonomic nervous system	0	(0.00%)	1	(0.00%)
Pyriform sinus	0	(0.00%)	0	(0.00%)
Respiratory system, intrathoracic	1	(0.00%)	2	(0.00%)
Salivary glands	1	(0.00%)	1	(0.00%)
Stomach	4	(0.00%)	5	(0.00%)
Thyroid	16	(0.01%)	24	(0.01%)
Tongue	8	(0.00%)	3	(0.00%)
Urinary organs	1	(0.00%)	5	(0.00%)
Uterus, not specified	11	(0.01%)	18	(0.01%)
Other/unknown site of cancer	127	(0.07%)	166	(0.08%)

Table 6.8
Locally Confirmed Other Fractures: CT and OS Participants

Data as of: August 25, 1999

	CT		OS[1]	
Number of participants providing Form 33	68135		7203	
Mean follow-up time (months)	32.2		33.1	
Ppts with other fractures	2,307	(1.26%)	248	(1.25%)
Ankle	394	(0.22%)	34	(0.17%)
Carpal bone(s) in wrist	51	(0.03%)	5	(0.03%)
Clavicle or collar bone	35	(0.02%)	6	(0.03%)
Humerus, shaft/unspecified	20	(0.01%)	2	(0.01%)
Humerus, upper end	205	(0.11%)	20	(0.10%)
Lower end of humerus	29	(0.02%)	3	(0.02%)
Metacarpal bone(s)	84	(0.05%)	6	(0.03%)
Patella	89	(0.05%)	16	(0.08%)
Pelvis	66	(0.04%)	15	(0.08%)
Radius or ulna	125	(0.07%)	70	(0.35%)
Sacrum and coccyx	21	(0.01%)	4	(0.02%)
Scapula	11	(0.01%)	2	(0.01%)
Shaft of femur	27	(0.01%)	1	(0.01%)
Tarsal/metatarsal bones	383	(0.21%)	44	(0.22%)
Tibia and fibula	47	(0.03%)	4	(0.02%)
Tibial plateau	209	(0.11%)	16	(0.08%)
Upper radius/ulna	652	(0.36%)	15	(0.08%)

[1] Only for OS bone density clinics.

Table 6.9
Centrally Adjudicated Breast Cancer Cases by Histology Code: In situ vs. Invasive
CT and OS Participants

Data as of: August 25, 1999

	In situ	Invasive	Total
	N	N	N
Breast Cancer			
Lobular	11	53	64
Ductal	56	185	241
Other	6	24	30
Total	73	262	335

Centrally Adjudicated Breast Cancer Cases by Histology Code: In situ vs. Invasive
CT Participants Only

	In situ	Invasive	Total
	N	N	N
Breast Cancer			
Lobular	8	25	33
Ductal	28	79	107
Other	1	10	11
Total	37	114	151

Centrally Adjudicated Breast Cancer Cases by Histology Code: In situ vs. Invasive
OS Participants Only

	In situ	Invasive	Total
	N	N	N
Breast Cancer			
Lobular	3	28	31
Ductal	28	106	134
Other	5	14	19
Total	36	148	184

Table 6.10
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Clinical Trial

Data as of: August 25, 1999

Outcomes	Total		Ethnicity: Minority[1]		White	
Number randomized	68135		12612		55523	
Mean follow-up (months) [2]	32.2		30.4		32.6	
Hospitalizations						
Ever	14090	(7.71%)	2239	(7.00%)	11851	(7.86%)
Two or more	4911	(2.69%)	745	(2.33%)	4166	(2.76%)
Other						
Diabetes (treated)	3716	(2.03%)	1363	(4.26%)	2353	(1.56%)
Gallbladder disease[3]	2176	(1.19%)	354	(1.11%)	1822	(1.21%)
Hysterectomy[4]	798	(0.75%)	98	(0.62%)	700	(0.77%)
Glaucoma	2665	(1.46%)	695	(2.17%)	1970	(1.31%)
Osteoporosis	5184	(2.84%)	710	(2.22%)	4474	(2.97%)
Osteoarthritis	8698	(4.76%)	1812	(5.67%)	6886	(4.57%)
Rheumatoid arthritis	1850	(1.01%)	643	(2.01%)	1207	(0.80%)
Intestinal polyps	3429	(1.88%)	579	(1.81%)	2850	(1.89%)
Lupus	295	(0.16%)	70	(0.22%)	225	(0.15%)
Kidney Stones	599	(0.33%)	128	(0.40%)	471	(0.31%)
Cataracts	8144	(4.46%)	1400	(4.38%)	6744	(4.47%)
Pills for hypertension	18483	(10.11%)	4660	(14.58%)	13823	(9.17%)

Outcome	Age: 50-54		55-59		60-69		70-79	
Number randomized	9191		14664		31390		12890	
Mean follow-up (months)[2]	38.4		34.5		30.3		29.7	
Hospitalizations								
Ever	1522	(5.17%)	2526	(5.99%)	6530	(8.23%)	3512	(11.01%)
Two or more	490	(1.67%)	820	(1.95%)	2246	(2.83%)	1355	(4.25%)
Other								
Diabetes (treated)	435	(1.48%)	781	(1.85%)	1734	(2.18%)	766	(2.40%)
Gallbladder disease[3]	328	(1.12%)	496	(1.18%)	985	(1.24%)	367	(1.15%)
Hysterectomy[4]	127	(0.76%)	182	(0.70%)	341	(0.75%)	148	(0.83%)
Glaucoma	226	(0.77%)	431	(1.02%)	1280	(1.61%)	728	(2.28%)
Osteoporosis	420	(1.43%)	821	(1.95%)	2476	(3.12%)	1467	(4.60%)
Osteoarthritis	855	(2.91%)	1600	(3.80%)	4061	(5.12%)	2182	(6.84%)
Rheumatoid arthritis	250	(0.85%)	412	(0.98%)	805	(1.01%)	383	(1.20%)
Intestinal polyps	338	(1.15%)	632	(1.50%)	1699	(2.14%)	760	(2.38%)
Lupus	48	(0.16%)	71	(0.17%)	137	(0.17%)	39	(0.12%)
Kidney Stones	78	(0.27%)	130	(0.31%)	292	(0.37%)	99	(0.31%)
Cataracts	296	(1.01%)	917	(2.18%)	4208	(5.30%)	2723	(8.54%)
Pills for hypertension	1912	(6.50%)	3455	(8.20%)	8632	(10.88%)	4484	(14.06%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

Table 6.11
Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Ethnicity and Age for Observational Study

Data as of: August 25, 1999

Outcomes	Total		Ethnicity Minority[1]		White	
Number enrolled	93725		15698		78027	
Mean follow-up (months) [2]	26.9		25.7		27.2	
Hospitalizations						
Ever	14486	(6.88%)	1818	(5.41%)	12668	(7.18%)
Two or more	4230	(2.01%)	518	(1.54%)	3712	(2.10%)
Other						
Diabetes (treated)	3575	(1.70%)	1168	(3.47%)	2407	(1.36%)
Gallbladder disease[3]	2118	(1.01%)	286	(0.85%)	1832	(1.04%)
Hysterectomy[4]	1117	(0.91%)	163	(0.93%)	954	(0.90%)
Glaucoma	2721	(1.29%)	679	(2.02%)	2042	(1.16%)
Osteoporosis	7868	(3.74%)	943	(2.80%)	6925	(3.92%)
Osteoarthritis	11290	(5.37%)	1877	(5.58%)	9413	(5.33%)
Rheumatoid arthritis	1868	(0.89%)	606	(1.80%)	1262	(0.71%)
Intestinal polyps	4019	(1.91%)	607	(1.80%)	3412	(1.93%)
Lupus	329	(0.16%)	64	(0.19%)	265	(0.15%)
Kidney Stones	529	(0.25%)	104	(0.31%)	425	(0.24%)
Cataracts	9536	(4.53%)	1443	(4.29%)	8093	(4.58%)
Pills for hypertension	22317	(10.61%)	4628	(13.76%)	17689	(10.02%)

Outcome	Age 50-54		55-59		60-69		70-79	
Number enrolled	12388		17321		41219		22797	
Mean follow-up (months)[2]	30.4		29.1		25.8		25.6	
Hospitalizations								
Ever	1401	(4.46%)	2102	(5.01%)	6317	(7.14%)	4666	(9.59%)
Two or more	382	(1.22%)	537	(1.28%)	1834	(2.07%)	1477	(3.03%)
Other								
Diabetes (treated)	355	(1.13%)	583	(1.39%)	1656	(1.87%)	981	(2.02%)
Gallbladder disease[3]	318	(1.01%)	400	(0.95%)	925	(1.05%)	475	(0.98%)
Hysterectomy[4]	183	(0.98%)	208	(0.80%)	484	(0.94%)	242	(0.89%)
Glaucoma	225	(0.72%)	346	(0.82%)	1198	(1.35%)	952	(1.96%)
Osteoporosis	655	(2.09%)	1113	(2.65%)	3567	(4.03%)	2533	(5.20%)
Osteoarthritis	983	(3.13%)	1658	(3.95%)	4916	(5.56%)	3733	(7.67%)
Rheumatoid arthritis	266	(0.85%)	337	(0.80%)	735	(0.83%)	530	(1.09%)
Intestinal polyps	407	(1.30%)	710	(1.69%)	1820	(2.06%)	1082	(2.22%)
Lupus	64	(0.20%)	70	(0.17%)	134	(0.15%)	61	(0.13%)
Kidney Stones	61	(0.19%)	106	(0.25%)	228	(0.26%)	134	(0.28%)
Cataracts	322	(1.03%)	813	(1.94%)	4601	(5.20%)	3800	(7.81%)
Pills for hypertension	1975	(6.29%)	3404	(8.12%)	9878	(11.17%)	7060	(14.51%)

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

[4] Only women without a baseline hysterectomy are used to compute the annual rates of hysterectomy.

Table 6.12
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Clinical Trial

Data as of: August 25, 1999

Outcomes	Total		Minority[1]		White	
Number randomized	68135		12612		55523	
Mean follow-up (months) [2]	32.2		30.4		32.6	
Cardiovascular						
CHD[3]	517	0.28%	71	0.22%	446	0.30%
Coronary death	98	0.05%	17	0.05%	81	0.05%
Total MI[4]	447	0.24%	60	0.19%	387	0.26%
Clinical MI	410	0.22%	51	0.16%	359	0.24%
Definite Silent MI	48	0.03%	10	0.03%	38	0.03%
Possible Silent MI	254	0.14%	42	0.13%	212	0.14%
Angina	766	0.42%	134	0.42%	632	0.42%
CABG/PTCA	637	0.35%	77	0.24%	560	0.37%
Carotid artery disease	138	0.08%	13	0.04%	125	0.08%
Congestive heart failure	308	0.17%	54	0.17%	254	0.17%
Stroke	342	0.19%	61	0.19%	281	0.19%
PVD	96	0.05%	21	0.07%	75	0.05%
DVT	106	0.06%	10	0.03%	96	0.06%
PE	68	0.04%	8	0.03%	60	0.04%
CHD[3]/Possible Silent MI	760	0.42%	111	0.35%	649	0.43%
Coronary disease[5]	1661	0.91%	269	0.84%	1392	0.92%
CHD[3]/Stroke/PE	904	0.49%	133	0.42%	771	0.51%
DVT/PE	150	0.08%	15	0.05%	135	0.09%
Total CVD	2244	1.23%	352	1.10%	1892	1.25%
Cancer						
Breast cancer[6]	650	0.36%	74	0.23%	576	0.38%
Invasive breast cancer	497	0.27%	55	0.17%	442	0.29%
In situ breast cancer	157	0.09%	19	0.06%	138	0.09%
Ovary cancer	73	0.04%	8	0.03%	65	0.04%
Endometrial Cancer[7]	88	0.08%	9	0.06%	79	0.05%
Colorectal cancer	203	0.11%	39	0.12%	164	0.18%
Other cancer[8,9]	688	0.38%	75	0.23%	613	0.41%
Total cancer	1679	0.92%	203	0.63%	1476	0.98%
Fractures						
Hip fracture	123	0.07%	6	0.02%	117	0.08%
Vertebral fracture	164	0.09%	7	0.02%	157	0.10%
Other fracture[8,10]	2307	1.26%	227	0.71%	2080	1.38%
Total fracture	2537	1.39%	237	0.74%	2300	1.53%
Deaths						
Cardiovascular deaths	189	0.10%	32	0.10%	157	0.10%
Cancer deaths	233	0.13%	26	0.08%	207	0.14%
Deaths: other known cause	63	0.03%	11	0.03%	52	0.03%
Deaths: unknown cause	39	0.02%	7	0.02%	32	0.02%
Deaths: not yet adjudicated	99	0.05%	22	0.07%	77	0.05%
Total death	623	0.34%	98	0.31%	525	0.35%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death.*

[3] "CHD" includes clinical MI, definite silent MI and coronary death.

[4] "Total MI" includes clinical MI and definite silent MI.

[5] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[6] Excludes five cases with borderline malignancy.

[7] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[8] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[9] Excludes non-melanoma skin cancer

[10] "Other fracture" excludes fractures indicated as pathological.

Table 6.12 (Continued)
Locally Verified Outcomes (Annualized Percentages) by Age for Clinical Trial

Data as of: August 25, 1999

Outcome	50-54		55-59		60-69		70-79	
Number randomized	9191		14664		31390		12890	
Mean follow-up (months) [1]	38.4		34.5		30.3		29.7	
Cardiovascular								
CHD[2]	40	0.14%	54	0.13%	249	0.31%	174	0.55%
Coronary death	5	0.02%	9	0.02%	45	0.06%	39	0.12%
Total MI[3]	36	0.12%	47	0.11%	218	0.27%	146	0.46%
Clinical MI	30	0.10%	44	0.10%	197	0.25%	139	0.44%
Definite Silent MI	7	0.02%	4	0.01%	26	0.03%	11	0.03%
Possible Silent MI	27	0.09%	60	0.14%	116	0.15%	51	0.16%
Angina	47	0.16%	106	0.25%	376	0.47%	237	0.74%
CABG/PTCA	35	0.12%	79	0.19%	313	0.39%	210	0.66%
Carotid artery disease	5	0.02%	19	0.05%	55	0.07%	59	0.18%
Congestive heart failure	16	0.05%	32	0.08%	143	0.18%	117	0.37%
Stroke	13	0.04%	30	0.07%	165	0.21%	134	0.42%
PVD	5	0.02%	11	0.03%	42	0.05%	38	0.12%
DVT	8	0.03%	8	0.02%	51	0.06%	39	0.12%
PE	4	0.01%	6	0.01%	30	0.04%	28	0.09%
CHD[2]/Possible Silent MI	67	0.23%	111	0.26%	361	0.45%	221	0.69%
Coronary disease[4]	115	0.39%	225	0.53%	796	1.00%	525	1.65%
CHD[2]/Stroke/PE	57	0.19%	88	0.21%	434	0.55%	325	1.02%
DVT/PE	9	0.03%	12	0.03%	71	0.09%	58	0.18%
Total CVD	142	0.48%	280	0.66%	1070	1.35%	752	2.36%
Cancer								
Breast cancer[5]	76	0.26%	141	0.33%	296	0.37%	137	0.43%
Invasive breast cancer	50	0.17%	111	0.26%	232	0.29%	104	0.33%
In situ breast cancer	26	0.09%	30	0.07%	66	0.08%	35	0.11%
Ovary cancer	10	0.03%	13	0.03%	32	0.04%	18	0.06%
Endometrial Cancer[6]	12	0.07%	18	0.07%	37	0.08%	21	0.12%
Colorectal cancer	11	0.04%	32	0.08%	99	0.12%	61	0.19%
Other cancer[7,8]	64	0.22%	94	0.22%	343	0.43%	187	0.59%
Total cancer	171	0.58%	290	0.69%	796	1.00%	422	1.32%
Fractures								
Hip fracture	8	0.03%	7	0.02%	39	0.05%	69	0.22%
Vertebral fracture	8	0.03%	14	0.03%	73	0.09%	69	0.22%
Other fracture[7,9]	298	1.01%	431	1.02%	1077	1.36%	501	1.57%
Total fracture	310	1.05%	448	1.06%	1168	1.47%	611	1.92%
Deaths								
Cardiovascular deaths	8	0.03%	15	0.04%	89	0.11%	77	0.24%
Cancer deaths	13	0.04%	31	0.07%	114	0.14%	75	0.24%
Deaths: other known cause	7	0.02%	9	0.02%	31	0.04%	16	0.05%
Deaths: unknown cause	4	0.01%	3	0.01%	21	0.03%	11	0.03%
Deaths: not yet adjudicated	8	0.03%	9	0.02%	45	0.06%	37	0.12%
Total death	40	0.14%	67	0.16%	300	0.38%	216	0.68%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death.*

[2] "CHD" includes clinical MI, definite silent MI, and coronary death.

[3] "Total MI" includes clinical MI and definite silent MI.

[4] "Coronary disease" includes clinical MI, definite silent MI, possible silent MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[5] Excludes five cases with borderline malignancy.

[6] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[7] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[8] Excludes non-melanoma skin cancer

[9] "Other fracture" excludes fractures indicated as pathological.

Table 6.13
Locally Verified Outcomes (Annualized Percentages) by Ethnicity for Observational Study

Data as of: August 25, 1999

Outcomes	Total		Ethnicity: Minority[1]		White	
Number enrolled	93725		15698		78027	
Mean follow-up (months) [2]	26.9		25.7		27.1	
Cardiovascular						
CHD[3]	388	0.18%	54	0.16%	334	0.19%
Coronary death	105	0.05%	15	0.04%	90	0.05%
Clinical MI	312	0.15%	46	0.14%	266	0.15%
Angina	787	0.37%	94	0.28%	693	0.39%
CABG/PTCA	598	0.28%	70	0.21%	528	0.30%
Carotid artery disease	133	0.06%	17	0.05%	116	0.07%
Congestive heart failure	363	0.17%	59	0.18%	304	0.17%
Stroke	292	0.14%	55	0.16%	237	0.13%
PVD	99	0.05%	11	0.03%	88	0.05%
DVT	8	0.00%	0	0.00%	8	0.00%
PE	6	0.00%	0	0.00%	6	0.00%
Coronary disease[4]	1385	0.66%	180	0.54%	1205	0.68%
CHD[3]/Stroke/PE	673	0.32%	109	0.32%	564	0.32%
DVT/PE	13	0.01%	0	0.00%	13	0.01%
Total CVD	1797	0.85%	243	0.72%	1554	0.88%
Cancer						
Breast cancer[5]	889	0.42%	102	0.30%	787	0.45%
Invasive breast cancer	720	0.34%	77	0.23%	643	0.36%
In situ breast cancer	172	0.08%	24	0.07%	148	0.08%
Ovary cancer	76	0.04%	4	0.01%	72	0.04%
Endometrial Cancer[6]	113	0.10%	14	0.10%	99	0.10%
Colorectal cancer	183	0.09%	28	0.08%	155	0.09%
Other cancer[7,8]	747	0.36%	56	0.17%	691	0.39%
Total cancer	1980	0.94%	200	0.59%	1780	1.01%
Fractures						
Hip fracture	159	0.08%	8	0.02%	151	0.09%
Vertebral fracture[9]	30	0.15%	1	0.02%	29	0.19%
Other fracture[7,9,10]	247	1.24%	20	0.47%	227	1.45%
Total fracture[11]	427	NA	29	NA	398	NA
Deaths						
Cardiovascular deaths	193	0.09%	24	0.07%	169	0.10%
Cancer deaths	293	0.14%	30	0.09%	263	0.15%
Deaths: other known cause	96	0.05%	9	0.03%	87	0.05%
Deaths: unknown cause	65	0.03%	12	0.04%	53	0.03%
Deaths: not yet adjudicated	178	0.08%	42	0.12%	136	0.08%
Total death	825	0.39%	117	0.35%	708	0.40%

[1] Participants with unmarked ethnicity are classified as Minority.

[2] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death*.

[3] "CHD" includes clinical MI, and coronary death.

[4] "Coronary disease" includes clinical MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[5] Excludes three cases with borderline malignancy.

[6] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[7] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[8] Excludes non-melanoma skin cancer

[9] Only women from three bone density clinics.

[10] "Other fracture" excludes fractures indicated as pathological.

[11] Hip fractures are adjudicated at all clinics, while other fractures are adjudicated only at a few clinics. A combined annualized percentage cannot be computed.

Table 6.13 (Continued)
Locally Verified Outcomes (Annualized Percentages) by Age for Observational Study

Data as of: August 25, 1999

Outcome	Age 50-54		55-59		60-69		70-79	
Number enrolled	12388		17321		41219		22797	
Mean follow-up (months) [1]	30.4		29.1		25.7		25.6	
Cardiovascular								
CHD[2]	11	0.04%	31	0.07%	142	0.16%	204	0.42%
Coronary death	0	0.00%	5	0.01%	33	0.04%	67	0.14%
Clinical MI	11	0.04%	27	0.06%	117	0.13%	157	0.32%
Angina	37	0.12%	82	0.20%	356	0.40%	312	0.64%
CABG/PTCA	17	0.05%	60	0.14%	272	0.31%	249	0.51%
Carotid artery disease	10	0.03%	11	0.03%	52	0.06%	60	0.12%
Congestive heart failure	11	0.04%	25	0.06%	152	0.17%	175	0.36%
Stroke	7	0.02%	25	0.06%	111	0.13%	149	0.31%
PVD	4	0.01%	9	0.02%	31	0.04%	55	0.11%
DVT	0	0.00%	1	0.00%	4	0.00%	3	0.01%
PE	0	0.00%	1	0.00%	0	0.00%	5	0.01%
Coronary disease[3]	52	0.17%	124	0.30%	593	0.67%	616	1.27%
CHD[2]/Stroke/PE	18	0.06%	56	0.13%	249	0.28%	350	0.72%
DVT/PE	0	0.00%	2	0.00%	4	0.00%	7	0.01%
Total CVD	69	0.22%	160	0.38%	746	0.84%	822	1.69%
Cancer								
Breast cancer[4]	95	0.30%	153	0.36%	405	0.46%	236	0.48%
Invasive breast cancer	77	0.25%	124	0.30%	326	0.37%	193	0.40%
In situ breast cancer	20	0.06%	31	0.07%	81	0.09%	40	0.08%
Ovary cancer	7	0.02%	13	0.03%	37	0.04%	19	0.04%
Endometrial Cancer[5]	10	0.06%	13	0.05%	52	0.11%	38	0.15%
Colorectal cancer	9	0.03%	23	0.05%	73	0.08%	78	0.16%
Other cancer[6,7]	57	0.18%	101	0.24%	329	0.37%	260	0.53%
Total cancer	176	0.56%	297	0.71%	887	1.00%	620	1.27%
Fractures								
Hip fracture	3	0.01%	16	0.04%	51	0.06%	89	0.18%
Vertebral fracture[8]	0	0.00%	1	0.03%	9	0.11%	20	0.42%
Other fracture[6,8,9]	33	1.16%	42	1.12%	93	1.09%	79	1.66%
Total fracture[10]	36	0.11%	59	0.14%	149	0.17%	183	0.38%
Deaths								
Cardiovascular deaths	3	0.01%	11	0.03%	60	0.07%	119	0.24%
Cancer deaths	12	0.04%	33	0.08%	134	0.15%	114	0.23%
Deaths: other known cause	5	0.02%	10	0.02%	42	0.05%	39	0.08%
Deaths: unknown cause	4	0.01%	9	0.02%	24	0.03%	28	0.06%
Deaths: not yet adjudicated	10	0.03%	26	0.06%	72	0.08%	70	0.14%
Total death	34	0.11%	89	0.21%	332	0.38%	370	0.76%

[1] Mean follow-up is the number of months from enrollment to the date the last *Form 33* was completed, or date of death from *Form 120 - Initial Notification of Death.*

[2] "CHD" includes clinical MI, and coronary death.

[3] "Coronary disease" includes clinical MI, coronary death, angina, congestive heart failure, and CABG/PTCA.

[4] Excludes three cases with borderline malignancy.

[5] Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

[6] Only one report of "other cancer" or "other fracture" is counted per woman; however, the first other cancer or other fracture of each type is adjudicated.

[7] Excludes non-melanoma skin cancer

[8] Only women from three bone density clinics.

[9] "Other fracture" excludes fractures indicated as pathological.

[10] Hip fractures are adjudicated at all clinics, while other fractures are adjudicated only at a few clinics. A combined annualized percentage cannot be computed.

Table 6.14
Cross-tabulation of ECG Codes Suggesting an Incident MI and Locally Confirmed and Self-Reported MI for all CT participants

Data as of: August 25, 1999

	No Locally Confirmed MI or Open Self-Report of MI	Open Self-Report of MI[1]	Locally Confirmed MI[2]	Total
All CT Participants				
No significant Q or ST-T evolution[3]	18984	5	106	19095
Borderline Q-wave change[4]	647	1	10	658
Ischemic ST-T evolution[5]	286	1	13	300
Possible evolving Q-wave MI[6]	243	0	11	254
Evolving Q-wave MI[7]	37[8]	0	11	48
Total	20197	7	151	20355
HRT Participants				
No significant Q or ST-T evolution[3]	6741	4	46	6791
Borderline Q-wave change[4]	244	0	3	247
Ischemic ST-T evolution[5]	122	0	6	128
Possible evolving Q-wave MI[6]	93	0	5	98
Evolving Q-wave MI[7]	17	0	6	23
Total	7217	4	66	7287
DM Participants				
No significant Q or ST-T evolution[3]	14545	1	79	14625
Borderline Q-wave change[4]	486	1	7	494
Ischemic ST-T evolution[5]	204	1	8	213
Possible evolving Q-wave MI[6]	182	0	9	191
Evolving Q-wave MI[7]	27	0	6	33
Total	15444	3	109	15556
CaD Participants				
No significant Q or ST-T evolution[3]	10756	1	41	10798
Borderline Q-wave change[4]	403	0	4	407
Ischemic ST-T evolution[5]	152	0	4	156
Possible evolving Q-wave MI[6]	131	0	4	135
Evolving Q-wave MI[7]	22	0	6	28
Total	11464	1	59	11524

[1] Includes only self-reports of events before the year 3 ECG.
[2] Includes only locally confirmed MIs that took place before the year 3 ECG.
[3] Novacode Incident MI code I.5.0
[4] Novacode Incident MI code I.5.7
[5] Novacode Incident MI code I.5.5, I.5.6.1, and I.5.6.2
[6] Novacode Incident MI code I.5.3 and I.5.4
[7] Novacode Incident MI code I.5.1 and I.5.2
[8] Cases in this cell are potentially the silent MIs.

Table 6.15
Cause of Death: CT and OS Participants (Annualized Percentages)

Data as of: August 25, 1999

	CT		OS	
Number Randomized	68135		93725	
Mean Follow-up Time (months)	32.2		26.9	
Total death	623	(0.34%)	825	(0.39%)
Adjudicated death	524	(0.29%)	647	(0.31%)
Cardiovascular				
Athereosclerotic cardiac	85	(0.05%)	90	(0.04%)
Cerebrovascular	39	(0.02%)	44	(0.02%)
Other cardiovascular	52	(0.03%)	47	(0.02%)
Unknown cardiovascular	13	(0.01%)	12	(0.01%)
Total cardiovascular deaths	189	(0.10%)	193	(0.09%)
Cancer				
Breast cancer	2	(0.00%)	36	(0.02%)
Ovarian cancer	15	(0.01%)	17	(0.01%)
Endometrial cancer	3	(0.00%)	5	(0.00%)
Colorectal cancer	25	(0.01%)	29	(0.01%)
Other cancer	175	(0.10%)	188	(0.09%)
Unknown cancer site	13	(0.01%)	18	(0.01%)
Total cancer deaths	233	(0.13%)	293	(0.14%)
Accident/injury				
Homicide	4	(0.00%)	3	(0.00%)
Accident	20	(0.01%)	14	(0.01%)
Suicide	2	(0.00%)	9	(0.00%)
Other injury	2	(0.00%)	1	(0.00%)
Total accidental deaths	28	(0.02%)	27	(0.01%)
Other				
Other known cause	35	(0.02%)	69	(0.03%)
Unknown cause	39	(0.02%)	65	(0.03%)
Total deaths – other causes	74	(0.04%)	134	(0.06%)
Final Adjudicated Death[1]	441		514	
No documentation available	0	(0.0%)	2	(0.4%)
Death certificate only	171	(38.8%)	182	(35.4%)
Other documents but no death certificate	38	(8.6%)	31	(6.0%)
Death certificate and other documents	232	(52.6%)	299	(58.2%)
Temporary Adjudicated Death[1]	83		133	
No documentation available	46	(55.4%)	93	(69.9%)
Death certificate only	26	(31.3%)	23	(17.3%)
Other documents but no death certificate	5	(6.0%)	5	(3.8%)
Death certificate and other documents	6	(7.2%)	12	(9.0%)

[1] Percentages are of the number of 'final' or 'temporary' adjudicated death.

Table 6.16
Lost-to-Follow-up and Vital Status by Clinic: CT Participants

Data as of: August 25, 1999

	Deceased		Alive: Current Participation[1]		Alive: Recent Participation[2]		Alive: Inactive[3]		Alive: No Follow-up[4]		Unknown Status: Inactive[5]		Unknown Status: No Follow-up[6]		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Clinic															
VCCs															
Atlanta	20	1.2	1563	91.2	73	4.3	13	0.8	14	0.8	25	1.5	6	0.4	1714
Birmingham	33	1.8	1752	95.7	34	1.9	2	0.1	5	0.3	2	0.1	3	0.2	1831
Bowman	9	0.6	1456	96.2	14	0.9	4	0.3	11	0.7	3	0.2	16	1.1	1513
Brigham	21	0.9	2206	95.6	56	2.4	2	0.1	10	0.4	11	0.5	2	0.1	2308
Buffalo	21	1.3	1528	94.8	39	2.4	5	0.3	2	0.1	10	0.6	6	0.4	1611
Chicago	24	1.5	1519	93.5	32	2.0	13	0.8	28	1.7	3	0.2	6	0.4	1625
Iowa City	26	1.1	2387	98.0	13	0.5	0	0.0	4	0.2	2	0.1	4	0.2	2436
La Jolla	24	1.1	2019	94.4	29	1.4	5	0.2	6	0.3	14	0.7	41	1.9	2138
Memphis	23	1.3	1623	93.1	50	2.9	12	0.7	17	1.0	13	0.7	6	0.3	1744
Minneapolis	23	1.2	1909	96.2	44	2.2	2	0.1	5	0.3	0	0.0	2	0.1	1985
Newark	24	1.0	2282	92.5	100	4.1	4	0.2	41	1.7	13	0.5	4	0.2	2468
Pawtucket	21	0.8	2527	95.3	40	1.5	6	0.2	41	1.5	4	0.2	13	0.5	2652
Pittsburgh	22	1.3	1589	95.8	38	2.3	2	0.1	4	0.2	0	0.0	4	0.2	1659
Seattle	20	1.1	1697	95.1	42	2.4	3	0.2	5	0.3	1	0.1	16	0.9	1784
Tucson	31	1.5	1877	92.1	75	3.7	12	0.6	21	1.0	14	0.7	7	0.3	2037
U.C. Davis	29	1.5	1757	93.9	45	2.4	17	0.9	17	0.9	4	0.2	3	0.2	1872
NCCs															
Chapel Hill	12	0.8	1503	97.9	9	0.6	0	0.0	10	0.7	0	0.0	2	0.1	1536
Chi-rush	14	1.1	1263	94.9	28	2.1	1	0.1	9	0.7	4	0.3	12	0.9	1331
Cincinnati	5	0.4	1236	88.5	78	5.6	24	1.7	20	1.4	22	1.6	11	0.8	1396
Columbus	16	1.0	1502	96.3	22	1.4	1	0.1	12	0.8	1	0.1	6	0.4	1560
Detroit	4	0.3	1240	90.0	52	3.8	12	0.9	30	2.2	24	1.7	16	1.2	1378
Gainesville	17	0.8	1961	96.1	29	1.4	8	0.4	16	0.8	1	0.0	8	0.4	2040
GWU-DC	5	0.3	1463	96.8	23	1.5	1	0.1	14	0.9	2	0.1	4	0.3	1512
Honolulu	5	0.4	1272	90.4	71	5.0	17	1.2	9	0.6	27	1.9	6	0.4	1407
Houston	3	0.2	1080	85.4	113	8.9	21	1.7	17	1.3	30	2.4	1	0.1	1265
Irvine	7	0.4	1514	93.5	45	2.8	11	0.7	18	1.1	18	1.1	6	0.4	1619
L.A.	13	0.8	1565	91.8	61	3.6	39	2.3	13	0.8	13	0.8	0	0.0	1704
Madison	14	0.9	1511	97.0	15	1.0	4	0.3	10	0.6	0	0.0	4	0.3	1558
Medlantic	14	0.9	1426	94.9	36	2.4	2	0.1	14	0.9	9	0.6	2	0.1	1503
Miami	10	0.7	1195	80.5	154	10.4	60	4.0	35	2.4	24	1.6	7	0.5	1485
Milwaukee	12	0.7	1575	95.2	50	3.0	6	0.4	9	0.5	2	0.1	0	0.0	1654
Nevada	22	1.5	1466	98.1	4	0.3	1	0.1	2	0.1	0	0.0	0	0.0	1495
NY-City	14	0.7	1713	90.7	106	5.6	7	0.4	7	0.4	29	1.5	13	0.7	1889
Oakland	11	0.7	1542	96.9	24	1.5	3	0.2	6	0.4	3	0.2	3	0.2	1592
Portland	13	0.8	1523	93.8	64	3.9	9	0.6	7	0.4	2	0.1	5	0.3	1623
San Antonio	4	0.3	1179	85.7	100	7.3	27	2.0	48	3.5	14	1.0	4	0.3	1376
Stanford	12	0.7	1781	97.7	14	0.8	1	0.1	11	0.6	2	0.1	1	0.1	1822
Stonybrook	8	0.6	1323	97.6	18	1.3	0	0.0	4	0.3	1	0.1	1	0.1	1355
Torrance	7	0.7	933	91.1	49	4.8	9	0.9	14	1.4	7	0.7	5	0.5	1024
Worcester	10	0.6	1586	97.1	25	1.5	0	0.0	1	0.1	2	0.1	10	0.6	1634
Total	623	0.9	64043	94.0	1914	2.8	366	0.5	567	0.8	356	0.5	266	0.4	68135

[1] Participants who have filled in a Form 33 within the last 9 months.

[2] Participants who last filled in a Form 33 between 9 and 18 months ago.

[3] Participants who are known to be alive within the last 18 months, but have not filled in a Form 33 within that period.

[4] Participants who are known to be alive within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

[5] Participants with whom there has not been contact within the last 18 months.

[6] Participants with whom there has not been contact within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

Table 6.17
Lost-to-Follow-up and Vital Status by Clinic: OS Participants

Data as of: August 25, 1999

	Deceased		Alive: Current Participation[1]		Alive: Fairly Current Participation[2]		Alive: Inactive[3]		Alive: No Follow-up[4]		Unknown Status: Inactive[5]		Unknown Status: No Follow-up[6]		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Clinic															
VCCs															
Atlanta	16	0.6	2383	96.4	58	2.3	0	0.0	5	0.2	9	0.4	0	0.0	2471
Birmingham	37	1.5	2368	93.7	106	4.2	0	0.0	6	0.2	10	0.4	0	0.0	2527
Bowman	22	1.0	2141	96.3	42	1.9	0	0.0	14	0.6	2	0.1	2	0.1	2223
Brigham	10	0.3	2896	98.2	40	1.4	0	0.0	0	0.0	3	0.1	0	0.0	2949
Buffalo	41	1.8	2097	93.2	86	3.8	1	0.0	5	0.2	18	0.8	1	0.0	2249
Chicago	19	1.0	1813	95.8	45	2.4	0	0.0	6	0.3	9	0.5	0	0.0	1892
Iowa City	18	0.6	3065	98.2	29	0.9	0	0.0	6	0.2	1	0.0	1	0.0	3120
La Jolla	33	1.0	3295	95.2	118	3.4	0	0.0	4	0.1	11	0.3	0	0.0	3461
Memphis	18	0.7	2241	89.0	226	9.0	0	0.0	5	0.2	28	1.1	0	0.0	2518
Minneapolis	8	0.3	2650	97.4	53	1.9	0	0.0	2	0.1	5	0.2	3	0.1	2721
Newark	25	0.7	3085	91.2	249	7.4	0	0.0	5	0.1	19	0.6	0	0.0	3383
Pawtucket	24	0.7	3459	96.4	91	2.5	0	0.0	6	0.2	10	0.3	0	0.0	3590
Pittsburgh	32	1.7	1805	94.2	65	3.4	0	0.0	1	0.1	13	0.7	0	0.0	1916
Seattle	23	1.4	1597	96.1	36	2.2	0	0.0	2	0.1	3	0.2	0	0.0	1661
Tucson	32	1.2	2569	93.0	139	5.0	1	0.0	3	0.1	19	0.7	0	0.0	2763
U.C. Davis	20	0.9	2145	95.2	74	3.3	4	0.2	2	0.1	8	0.4	1	0.0	2254
NCCs															
Chapel Hill	15	0.7	2029	97.5	35	1.7	0	0.0	0	0.0	1	0.0	0	0.0	2080
Chi-rush	11	0.5	1928	93.8	95	4.6	1	0.0	6	0.3	14	0.7	0	0.0	2055
Cincinnati	10	0.4	2089	92.9	136	6.0	0	0.0	1	0.0	13	0.6	0	0.0	2249
Columbus	21	0.9	2156	96.8	50	2.2	0	0.0	1	0.0	0	0.0	0	0.0	2228
Detroit	14	0.7	1988	94.2	89	4.2	1	0.0	6	0.3	13	0.6	0	0.0	2111
Gainesville	24	0.9	2668	95.7	78	2.8	0	0.0	9	0.3	6	0.2	2	0.1	2787
GWU-DC	25	1.1	2190	97.3	31	1.4	0	0.0	0	0.0	5	0.2	0	0.0	2251
Honolulu	8	0.4	1992	94.1	106	5.0	0	0.0	6	0.3	4	0.2	0	0.0	2116
Houston	16	0.8	1824	85.8	241	11.3	0	0.0	2	0.1	44	2.1	0	0.0	2127
Irvine	23	1.0	2127	95.5	63	2.8	2	0.1	5	0.2	7	0.3	0	0.0	2227
L.A.	8	0.4	2124	96.8	56	2.6	1	0.0	2	0.1	3	0.1	0	0.0	2194
Madison	27	1.4	1932	97.3	22	1.1	1	0.1	3	0.2	0	0.0	0	0.0	1985
Medlantic	17	0.8	1990	90.8	133	6.1	3	0.1	0	0.0	49	2.2	0	0.0	2192
Miami	13	0.9	1152	82.2	217	15.5	5	0.4	2	0.1	13	0.9	0	0.0	1402
Milwaukee	15	0.7	2151	95.5	85	3.8	0	0.0	1	0.0	0	0.0	0	0.0	2252
Nevada	49	2.2	2120	97.1	9	0.4	0	0.0	4	0.2	1	0.0	0	0.0	2183
NY-City	20	0.7	2547	87.8	246	8.5	0	0.0	6	0.2	81	2.8	0	0.0	2900
Oakland	26	1.3	1976	96.2	35	1.7	0	0.0	6	0.3	11	0.5	0	0.0	2054
Portland	11	0.5	2164	97.3	44	2.0	0	0.0	1	0.0	5	0.2	0	0.0	2225
San Antonio	13	0.7	1796	92.6	113	5.8	0	0.0	5	0.3	13	0.7	0	0.0	1940
Stanford	30	1.1	2627	97.4	36	1.3	0	0.0	2	0.1	2	0.1	0	0.0	2697
Stonybrook	16	0.8	1938	95.6	68	3.4	0	0.0	1	0.0	5	0.2	0	0.0	2028
Torrance	14	0.9	1365	90.7	109	7.2	0	0.0	1	0.1	16	1.1	0	0.0	1505
Worcester	21	0.9	2188	97.7	26	1.2	0	0.0	1	0.0	3	0.1	0	0.0	2239
Total	825	0.9	88670	94.6	3580	3.8	20	0.0	143	0.2	477	0.5	10	0.0	93725

[1] Participants who have filled in a Form 33 within the last 18 months.

[2] Participants who last filled in a Form 33 between 18 and 36 months ago.

[3] Participants who are known to be alive within the last 36 months, but have not filled in a Form 33 within that period.

[4] Participants who are known to be alive within the last 18 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

[5] Participants with whom there has not been contact within the last 36 months.

[6] Participants with whom there has not been contact within the last 36 months and have participant status 'wants no follow-up' or 'wants absolutely no follow-up'.

7. Clinical Center Performance Monitoring

7.1 Performance Monitoring

A four step plan is used to identify clinic-specific performance issues in a timely fashion, to reinforce good performance, and to provide assistance or institute corrective action if performance is inadequate. The Performance Monitoring Committee (PMC) Report, updated quarterly, summarizes clinic-specific performance (see *Table 7.1 – Clinical Center Performance Summary* for cumulative data through August 25, 1999).

7.2 PMC Committee Activity

In July 1998, the PMC separated its monitoring activities into two separate groups, with one group addressing outcomes and one group addressing adherence/retention and other issues. Membership of the Outcomes PMC includes Anne McTiernan, CCC, chair; David Curb, Honolulu Clinical Center, Marian Limacher, Gainesville Clinical Center; Curt Furberg, CFC; Jacques Rossouw, Project Office; and Bernedine Lund, CCC. Membership of the Adherence/Retention PMC (A&R PMC) includes: Sally Shumaker, CFC, chair; Shirley Beresford, Seattle Clinical Center; Cheryl Ritenbaugh, Portland Clinical Center; Linda Pottern, Project Office; and Ross Prentice, Barb Cochrane, Lesley Tinker, Julie Hunt and Bernedine Lund, CCC. In August 1999, both groups began planning for the rotation of the clinical center PI representatives on the committees.

Since February 1, 1998, the A&R PMC held one conference call per month, reviewing 5-6 clinical centers on each call. Data on each clinical center reviewed on each call included: the newly developed DM Triage System Adherence Levels; comparison of performance to goals as well as to clinical center averages; and task completeness. The committee conducted two Level 4 visits to clinical centers since February 1. Two additional Level 4 visits are planned, with one scheduled for September 1999 and the other planned before the end of the year. The PMC visits were extended from one to two days, allowing for additional focus on clinical center adherence and retention activities and incorporating an overview of motivational interviewing techniques.

In the spring, the A&R PMC enhanced its feedback to clinical centers by implementing the following steps: 1) one month before their review on the PMC, the PMC sends the clinical centers information about the clinical center that will be reviewed on the PMC call, and asks if they have any information they would like to provide in the review process; 2) the memo sent to the clinical center after the PMC review asks for specific information on actions the center is doing or planning to address areas of concern; if a center is doing well in specific areas, the memo requests details of what the center finds is working well; 3) if follow-up information is not received from a center, a follow-up letter and/or phone call is made to solicit information from the center; 4) updated a PMC visit survey to gather information on the revised PMC visit. These activities have resulted in a greater dialog and information sharing between the centers and the PMC.

The A&R PMC also conducted the following activities to enhance information on study-wide adherence and retention issues: drafted a proposal for a workshop on "challenges Related to an Aging Participant Population;" obtained approval to have a Behavioral Advisory Committee member participate on the HRT, DM, CaD, and OS Advisory Committee calls; proposed a CT

Adherence and Retention Task Force to gather, review, and propose adherence and retention activities.

In the same period, the Outcomes PMC also held one conference call per month, reviewing 6-10 clinical centers on each call. A summary of each clinical center includes 1) recent and cumulative data on collection of required forms, outcomes packet assembly, and local adjudication; 2) a graph showing the timeliness of outcomes processing over time; and 3) a summary of number of staff and local adjudicators. The committee also modified the CC Performance Summary to include the timeliness of *Form 33D – Medical History Update (Detail)*. The Outcomes PMC identified three types of issues at clinical centers that may be contributing to issues with outcomes processing, including staff support, WHILMA support, and operations issues. The committee is also identifying specific steps improved clinical centers have taken so the procedures can be shared with other centers.

In February, the Outcomes PMC recommended that procedures to determine the vital status of all participants be developed. Procedures for identifying and classifying participants based on follow-up status and vital status were refined, and initial procedures were distributed to the clinical centers in late summer.

CC Performance Summary
Data as of 8/25/99
Summary

	CaD Recruit.		HRT Follow-up		DM Follow-up		Retention		HRT Intervention		DM Intervention		CaD Intervention		Outcomes		Central Lab		Data	
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99
Atlanta	72	73	90	88	87	88	9.6	10.2	76	74	9.6	9.7	74	72	42	45	96	95	91	91
Birmingham	74	75	96	96	95	95	8.6	8.9	84	84	8.0	8.1	72	71	30	30	94	97	72	72
Bowman	65	65	95	95	92	93	9.8	9.2	79	79	10.4	10.4	76	77	43	43	97	97	93	93
Brigham	66	66	96	97	93	94	7.9	8.1	84	84	10.4	10.5	75	76	26	31	96	97	78	78
Buffalo	88	88	91	93	91	93	9.8	9.8	76	78	9.9	9.9	76	76	78	79	96	95	96	96
Chapel Hill	72	72	96	97	95	96	4.9	5.7	88	86	9.9	9.9	80	78	49	52	97	97	83	83
Chicago	72	72	93	93	91	92	11.4	12.0	84	85	10.8	10.9	68	71	39	46	96	98	83	83
Chi-Rush	88	89	95	95	94	95	9.4	10.2	78	79	8.3	8.4	78	79	47	40	92	92	84	84
Cincinnati	91	91	89	88	81	85	7.9	8.3	83	82	9.0	9.1	72	71	52	51	93	91	77	77
Columbus	81	80	96	96	95	95	8.6	9.3	82	82	12.2	12.1	79	82	54	57	94	96	88	88
Detroit	86	87	80	83	78	82	11.3	10.6	75	75	10.4	9.6	64	67	52	46	89	95	81	81
Gainesville	55	56	96	95	96	96	9.1	9.5	86	87	11.7	11.7	76	78	67	70	95	94	97	97
GWU-DC	78	78	93	95	93	95	7.4	7.6	82	81	11.7	11.7	68	72	59	63	95	89	97	97
Honolulu	69	69	89	89	89	90	4.8	5.7	82	84	9.5	9.5	70	78	59	60	98	99	90	90
Houston	66	66	77	83	71	77	8.3	9.4	77	76	11.0	10.8	61	67	34	39	88	91	87	87
Iowa	92	92	98	99	97	98[1]	4.5	5.0	89	90	12.3	12.3	81	83	66	67	96	95	94	94
Irvine	80	78	84	85	86	87	9.9	11.0	79	79	12.0	11.9	68	72	28	21	96	96	67	67
LaJolla	75	75	90	91	91	91	10.1	10.0	74	77	8.9	9.1	74	74	63	61	94	95	93	93
Los Angeles	85	86	91	92[1]	80	84	6.0	6.3	84	85	11.5	11.1	68	73	53	45	97	97	82	82
Madison	83	84	98	98	97	97	7.3	7.7	87	88	11.8	11.7	76	77	88	89	97	98	98	98

CC Performance Summary
Data as of 8/25/99
Summary

	CaD Recruit.		HRT Follow-up		DM Follow-up		Retention		HRT Intervention		DM Intervention		CaD Intervention		Outcomes		Central Lab		Data	
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99
Medlantic	78	78	94	91	89	90	7.8	8.3	72	70	6.5	6.8	61	58	28	32	90	90	89	89
Memphis	78	77	92	93	91	92	11.4	12.0	80	81	10.6	10.6	67	68	28	32	92	94	71	71
Miami	53	51	74	75	71	72	18.3	18.9	67	68	7.1	7.2	59	53	37	32	97	95	87	87
Milwaukee	88	87	96	96	97	95	6.0	6.7	87	88	11.7	11.9	79	81	66	68	96	96	93	93
Minneapolis	77	78	92	92	88	88	6.3	6.5	85	86	11.9	11.9	81	80	49	49	100	100	87	87
Nevada	93	95	98	98	98	98	7.5	8.0	85	86	13.8	13.7	79	80	52	54	98	98	97	97
Newark	78	78	92	93	86	88	8.7	9.4	76	77	10.9	10.6	61	62	57	59	97	97	85	85
NY City	67	64	88	86	88	86	7.7	8.4	77	76	8.8	9.0	66	67	28	31	93	95	80	80
Oakland	59	59	97	95	95	95	3.4	3.5	91	87	12.3	12.3	84	85	32	37	93	94	86	86
Pawtucket	74	74	92	93	92	93	10.4	10.7	84	84	9.8	9.7	74	76	59	60	94	93	81	81
Pittsburgh	76	76	95	95	95	95	7.2	7.8	83	84	11.7	11.7	76	77	51	53	99	99	86	86
Portland	76	75	92	90	89	89	6.4	7.3	87	81	10.7	11.0	78	76	30	36	93	93	67	67
San Antonio	89	89	82	83	75	79	8.8	11.2	76	75	8.3	8.1	65	68	51	55	94	95	93	93
Seattle	67	67	85	93	88	95	9.5	10.3	75	82	11.8	11.9	65	74	61	64	95	93	80	80
Stanford	84	84	98	98	95	95	6.0	6.4	87	87	11.5	11.5	80	74	68	72	96	96	84	84
Stony Brook	65	64	98	97	97	95	8.9	9.9	84	85	9.4	9.4	72	73	77	80	97	95	98	98
Torrance	79	80	88	91	84	87	8.3	9.7	81	81	11.5	11.6	72	73	35	36	95	96	83	83
Tucson	70	70	88	88	91	92	11.3	11.8	74	74	9.5	9.6	68	69	53	55	89	96	91	91
UCDavis	83	83	92	92	91	93	10.1	10.5	84	83	10.4	10.3	71	72	73	75	96	97	79	79
Worcester	74	75	95	97	93	96	7.0	7.5	84	84	9.7	9.7	71	65	60	63	95	94	86	86
Study Avg.	76	76	92	92	90	91	8.4	9.0	81	81	10.4	10.4	72	73	51	52	95	95	86	86

Note: Summary data is taken from the summary columns of the PMC Reports corresponding to the column headings, except DM Intervention cum. numbers from the previous month. These data are taken directly from that quarter's PMC report.

CC Performance Summary
Data as of 8/25/99
Recruitment

	Completed Recruitment Results[1]						Ongoing Recruitment		
	% Goal			Age (70-79)		Min-	CaD[2]		
	HRT	DM	OS	HRT	DM	ority	% goal		
	cum., Dec 98	cum., Dec 98	cum., Dec 98	cum., Dec 98	cum., Dec 98	cum., Dec 98	cum., May 99	cum., Aug 99	Rank
Atlanta	75	106	89	52	61	32	72	73	27
Birmingham	101	100	91	65	52	38	74	75	23
Bowman	101	102	100	75	54	13	65	65	35
Brigham	87	108	88	67	108	5	66	66	34
Buffalo	112	108	101	113	69	5	88	88	6
Chapel Hill	103	105	94	98	53	12	72	72	29
Chicago	93	115	85	102	99	17	72	72	28
Chi-Rush	177	177	185	122	101	62	88	89	5
Cincinnati	71	78	81	71	57	11	91	91	3
Columbus	99	108	100	98	68	6	81	80	13
Detroit	88	95	95	56	34	33	86	87	8
Gainesville	120	100	100	90	62	8	55	56	39
GWU-DC	90	105	101	90	50	15	78	78	19
Honolulu	68	104	95	54	52	76	69	69	31
Houston	76	85	96	43	41	18	66	66	33
Iowa	138	95	94	117	60	1	92	92	2
Irvine	99	108	100	92	71	11	80	78	16
LaJolla	81	103	104	85	84	21	75	75	25
Los Angeles	100	119	98	116	92	20	85	86	9
Madison	108	102	89	96	65	1	83	84	11

CC Performance Summary
Data as of 8/25/99
Recruitment

	Completed Recruitment Results[1]						Ongoing Recruitment		
	% Goal			Age (70-79)		Min-	CaD[2]		
	HRT	DM	OS	HRT	DM	ority	% goal		
Medlantic	100	105	99	67	43	68	78	78	17
Memphis	100	96	91	93	63	21	78	77	20
Miami	94	102	63	40	68	50	53	51	40
Milwaukee	122	108	101	113	66	4	88	87	7
Minneapolis	109	100	98	95	62	2	77	78	18
Nevada	107	101	98	97	65	6	93	95	1
Newark	103	114	102	96	67	20	78	78	15
NY City	100	98	104	101	73	41	67	64	37
Oakland	105	102	92	98	66	19	59	59	38
Pawtucket	91	108	92	80	73	5	74	74	26
Pittsburgh	108	111	86	90	63	6	76	76	21
Portland	103	109	100	81	65	5	76	75	24
San Antonio	117	89	87	56	44	54	89	89	4
Seattle	119	108	75	134	100	6	67	67	32
Stanford	93	104	98	111	88	12	84	84	10
Stony Brook	84	95	92	104	96	7	65	64	36
Torrance	71	106	90	67	90	29	79	80	14
Tucson	99	107	99	135	119	19	70	70	30
UCDavis	111	132	101	126	127	12	83	83	12
Worcester	100	113	101	116	88	4	74	75	22
Study Avg.	101	106	96	90	71	20	76	76	

[1] As reported in the Monthly Activity Reports for the period ending 12/31/98 (HRT and DM - WHIP1109, OS - WHIP1126, Age - Derived from WHIP1107, Minority - Derived from WHIP0961.

[2] Derived from WHIP1140, 1141 and 1125. Calculation used to determine % of goal is the Total # of CaD Randomizations / the Total # of DM and HRT AV1s Due, less the overlap, times 70%.

CC Performance Summary
Data as of 8/25/99
HRT Follow-up

	SAV1[1] Conducted		AV1[1] Conducted		SAV2[1] Conducted		AV2[1] Conducted		SAV3[1] Conducted		AV3[1] Conducted		SAV4[1] Conducted		AV4[1] Conducted		SAV5[1] Conducted		AV5[1] Conducted		Overall		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Atlanta	98	98	98	98	93	93	91	91	88	89	88	88	81	82	85	86	83	84	-	73	90	88	33
Birmingham	98	98	98	98	98	97	97	97	96	96	95	96	95	93	94	95	92	93	94	96	96	96	9
Bowman	97	97	96	96	93	93	95	95	92	93	94	95	92	93	95	95	94	96	97	99	95	95	12
Brigham	100	100	99	99	98	99	97	97	96	96	97	97	96	97	96	96	92	94	89	93	96	97	7
Buffalo	97	97	97	97	94	94	94	95	93	94	91	92	92	92	86	90	91	94	79	87	91	93	18
Chapel Hill	99	99	98	99	97	97	96	98	94	95	99	99	89	93	-	100	-	-	-	-	96	97	5
Chicago	96	96	96	96	94	94	94	94	91	91	93	93	92	94	94	94	93	91	90	86	93	93	21
Chi-Rush	99	99	97	97	96	96	94	95	91	92	95	93	90	92	-	-	-	-	-	-	95	95	15
Cincinnati	99	99	95	95	91	91	90	89	83	84	83	79	85	86	-	83	-	-	-	-	89	88	32
Columbus	99	99	99	99	97	97	96	95	92	93	97	95	95	93	-	-	-	-	-	-	96	96	10
Detroit	89	89	88	90	78	80	77	80	68	70	82	83	76	81	-	92	-	-	-	-	80	83	39
Gainesville	99	99	97	97	97	97	95	95	94	94	96	93	94	95	100	93	-	-	-	-	96	95	13
GWU-DC	99	99	99	99	96	97	94	95	92	94	94	95	89	92	80	90	-	-	-	-	93	95	16
Honolulu	95	95	95	95	91	91	91	90	87	88	87	89	76	81	-	85	-	-	-	-	89	89	31
Houston	96	96	91	93	83	83	82	83	71	75	82	84	65	69	50	83	-	-	-	-	77	83	37
Iowa	100	100	100	100	99	99	99	99	98	98	98	98	98	98	98	99	95	97	93	99	98	99	1
Irvine	94	94	91	91	84	85	87	88	83	86	80	84	71	79	-	75	-	-	-	-	84	85	36
LaJolla	95	95	92	92	91	91	90	91	90	91	92	93	90	92	90	89	89	90	86	84	90	91	28
Los Angeles	99	99	96	96	94	95	92	92	90	93	85	87	80	86	-	86	-	-	-	-	91	92	26
Madison	100	100	99	99	99	99	97	98	98	98	95	96	96	98	-	92	-	-	-	-	98	98	4

CC Performance Summary
Data as of 8/25/99
HRT Follow-up

	SAV1[1] Conducted		AV1[1] Conducted		SAV2[1] Conducted		AV2[1] Conducted		SAV3[1] Conducted		AV3[1] Conducted		SAV4[1] Conducted		AV4[1] Conducted		SAV5[1] Conducted		AV5[1] Conducted		Overall		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Medlantic	99	99	98	98	94	94	95	93	91	91	90	91	88	86	-	76	-	-	-	-	94	91	27
Memphis	98		97	97	92	92	94	95	93	93	93	93	89	89	92	92	92	91	85	92	92	93	23
Miami	89	89	85	85	71	71	74	73	57	60	72	71	71	67	-	85	-	-	-	-	74	75	40
Milwaukee	99	99	99	99	97	97	97	96	96	96	96	95	88	88	-	96	-	-	-	-	96	96	11
Minneapolis	100	100	100	100	93	94	98	98	76	78	98	98	66	69	99	97	91	93	97	95	92	92	24
Nevada	100	100	99	99	98	99	98	98	98	97	96	96	98	97	-	97	-	-	-	-	98	98	3
Newark	97	97	95	95	92	93	90	91	87	89	90	90	93	93	91	93	96	95	85	95	92	93	20
NY City	98	98	95	95	91	90	86	87	86	88	84	84	77	81	-	65	-	-	-	-	88	86	35
Oakland	99	99	99	99	98	98	96	96	96	96	96	98	95	93	-	82	-	-	-	-	97	95	14
Pawtucket	99	99	97	97	95	95	95	95	93	94	92	93	88	89	91	91	89	90	81	88	92	93	19
Pittsburgh	99	99	98	98	97	97	97	97	94	94	95	95	95	95	92	93	94	93	87	88	95	95	17
Portland	99	99	96	96	95	95	91	91	90	90	88	88	84	84	-	78	-	-	-	-	92	90	30
San Antonio	87	87	89	89	80	80	84	85	77	76	83	85	79	78	80	85	-	-	-	-	82	83	38
Seattle	97	97	97	97	96	96	95	96	91	95	84	94	84	91	80	91	79	88	42	83	85	93	22
Stanford	99	99	98	98	98	98	96	98	96	97	96	96	100	99	-	-	-	-	-	-	98	98	2
Stony Brook	100	100	99	99	99	99	98	99	96	97	96	96	95	97	-	88	-	-	-	-	98	97	6
Torrance	94	94	95	95	91	92	88	91	86	86	81	85	80	93	-	90	-	-	-	-	88	91	29
Tucson	96	96	94	94	91	92	88	88	87	87	83	83	85	86	84	86	87	86	88	79	88	88	34
UCDavis	99	99	96	96	95	95	95	95	93	93	91	92	92	93	89	92	84	86	82	80	92	92	25
Worcester	100	100	98	99	98	98	97	98	96	97	91	93	80	91	-	-	-	-	-	-	95	97	8
Study Avg.	97	97	96	96	93	93	93	93	89	90	91	91	87	89	88	89	90	91	85	88	92	92	

[1] From WHIP1141. Includes all HRT participants, including deaths, stopped intervention, and stopped or lost-to-follow-up.

Note: Conducted = % of visits due for which at least one task has been key-entered (excluding tasks 10, 39, 53, 81, 85 92).

CC Performance Summary
Data as of 8/25/99
DM Follow-up

	SAV1[1] Conducted		AV1[1] Conducted		SAV2[1] Conducted		AV2[1] Conducted		SAV3[1] Conducted		AV3[1] Conducted		SAV4[1] Conducted		AV4[1] Conducted		SAV5[1] Conducted		AV5[1] Conducted		Overall		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Atlanta	95	95	96	96	92	92	90	90	88	89	88	88	81	82	85	86	83	87	70	76	87	88	29
Birmingham	99	99	99	99	98	97	96	97	95	96	95	95	93	92	94	95	90	91	93	93	95	95	8
Bowman	89	89	94	94	88	88	93	93	89	91	92	94	91	91	94	95	94	95	95	96	92	93	20
Brigham	99	99	98	98	94	95	95	95	94	93	94	94	91	93	92	92	88	89	89	95	93	94	17
Buffalo	97	97	97	97	94	94	95	95	94	94	92	93	92	92	85	87	90	93	77	85	91	93	19
Chapel Hill	96	96	97	98	96	96	96	97	94	96	96	97	93	94	-	100	-	-	-	-	95	96	4
Chicago	96	96	94	94	93	93	92	92	90	91	92	92	91	91	90	91	91	90	80	88	91	92	23
Chi-Rush	99	99	98	97	97	97	94	94	91	90	89	90	93	95	-	100	-	-	-	-	94	95	10
Cincinnati	95	95	95	96	90	88	88	90	83	81	80	82	79	79	39	70	-	-	-	-	81	85	35
Columbus	96	96	98	98	91	92	96	97	92	92	95	97	97	97	-	95	-	-	-	-	95	95	11
Detroit	90	90	79	80	83	83	76	79	72	75	75	82	70	80	-	58	-	90	-	-	78	82	37
Gainesville	99	99	97	97	96	96	95	95	94	94	96	95	96	96	93	92	-	-	-	-	96	96	6
GWU-DC	99	99	99	99	97	97	95	96	93	95	92	95	88	90	81	87	-	-	-	-	93	95	16
Honolulu	92	92	95	95	86	86	92	91	81	81	91	92	87	85	86	95	-	-	-	-	89	90	27
Houston	88	89	84	87	75	76	74	81	62	67	72	80	42	54	67	83	-	-	-	-	71	77	39
Iowa	99	99	99	99	99	99	99	99	98	99	98	98	98	98	96	98	94	96	91	98	97	98	1
Irvine	94	94	94	94	88	89	91	91	86	87	83	87	66	75	-	83	-	-	-	-	86	87	32
LaJolla	94	94	94	95	93	93	92	93	91	91	89	90	88	90	88	88	89	88	89	89	91	91	25
Los Angeles	88	90	91	92	84	87	84	86	75	82	77	80	64	76	-	77	-	-	-	-	80	84	36
Madison	100	100	98	98	98	98	96	96	97	98	95	96	93	95	-	93	-	-	-	-	97	97	3

CC Performance Summary
Data as of 8/25/99
DM Follow-up

	SAV1[1] Conducted		AV1[1] Conducted		SAV2[1] Conducted		AV2[1] Conducted		SAV3[1] Conducted		AV3[1] Conducted		SAV4[1] Conducted		AV4[1] Conducted		SAV5[1] Conducted		AV5[1] Conducted		Overall		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Medlantic	96	96	97	97	92	92	90	89	88	89	89	90	86	89	77	82	-	-	-	-	89	90	26
Memphis	95	95	96	96	89	89	94	94	90	90	93	93	90	90	90	91	89	89	85	89	91	92	24
Miami	72	72	85	86	64	66	71	70	66	67	65	68	73	76	-	73	-	-	-	-	71	72	40
Milwaukee	100	100	99	99	98	97	96	96	96	96	95	94	92	90	-	89	-	-	-	-	97	95	14
Minneapolis	87	87	99	99	92	92	98	98	72	72	98	98	52	56	98	95	89	88	92	91	88	88	30
Nevada	100	100	99	99	99	99	98	98	98	99	97	98	97	96	-	95	-	-	-	-	98	98	2
Newark	94	93	92	93	87	87	85	86	82	83	79	82	85	88	83	87	89	90	85	86	86	88	31
NY City	98	98	95	93	90	90	88	86	81	82	83	83	80	80	-	77	-	-	-	-	88	86	34
Oakland	97	97	98	98	96	96	97	98	91	91	96	96	91	93	76	93	-	-	-	-	95	95	9
Pawtucket	97	97	96	96	91	92	95	96	93	94	93	93	89	90	92	90	90	90	89	92	92	93	18
Pittsburgh	98	98	98	98	92	92	97	98	92	92	96	96	96	96	94	94	95	95	90	92	95	95	15
Portland	98	98	96	96	97	95	93	93	91	89	91	90	86	80	64	75	-	-	-	-	89	89	28
San Antonio	85	85	88	88	74	75	84	84	71	72	79	82	65	70	57	77	-	-	-	-	75	79	38
Seattle	97	97	96	97	94	95	96	96	92	95	94	96	92	96	90	94	86	93	44	92	88	95	13
Stanford	99	99	97	98	97	97	94	97	96	96	92	95	91	95	-	86	-	-	-	-	95	95	7
Stony Brook	99	99	98	97	97	97	97	97	96	95	95	92	96	96	-	88	-	-	-	-	97	95	12
Torrance	92	92	94	94	88	89	83	87	82	84	75	82	75	83	-	83	-	-	-	-	84	87	33
Tucson	97	97	95	95	94	94	92	92	92	92	89	91	91	92	89	90	88	90	86	88	91	92	22
UCDavis	96	96	96	96	94	94	95	96	92	92	93	93	91	91	91	92	83	87	80	89	91	93	21
Worcester	99	99	98	98	97	97	96	96	96	97	92	92	91	94	79	96	-	-	-	-	93	96	5
Study Avg.	95	95	95	95	91	92	92	92	88	89	89	91	85	87	83	88	89	91	84	90	90	91	

[1] From WHIP1140. Includes all HRT participants, including deaths, stopped intervention, and stopped or lost-to-follow-up.

Note: Conducted = % of visits due for which at least one task has been key-entered (excluding tasks 39, 53, 81, 85 92).

CC Performance Summary
Data as of 8/25/99
Retention

	HRT				DM				CaD				OS				
	% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Followup		Overall		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Atlanta	31.8	33.0	2.8	3.3	2.4	2.6	2.6	2.7	16.8	17.9	1.3	1.4	-	-	9.6	10.2	29
Birmingham	23.0	24.3	2.9	2.7	9.7	9.6	3.4	3.2	10.8	11.8	1.9	1.8	-	-	8.6	8.9	19
Bowman	27.8	27.0	2.9	2.7	7.7	7.0	3.7	2.4	16.2	15.3	0.6	0.9	-	-	9.8	9.2	20
Brigham	20.6	21.9	1.5	1.4	6.7	6.7	1.5	1.5	16.8	16.7	0.3	0.4	-	-	7.9	8.1	15
Buffalo	33.9	34.1	1.6	1.6	5.2	5.2	2.7	2.3	14.8	15.1	0.6	0.5	-	-	9.8	9.8	26
Chapel Hill	15.6	18.8	1.3	1.3	2.7	2.9	2.1	2.5	7.1	7.5	0.8	0.9	-	-	4.9	5.7	3
Chicago	26.4	27.4	4.4	3.9	11.7	13.6	4.4	4.4	19.3	20.8	1.9	2.0	-	-	11.4	12.0	39
Chi-Rush	24.7	25.8	4.4	4.2	7.9	11.1	3.8	4.0	13.5	14.3	1.9	1.5	-	-	9.4	10.2	29
Cincinnati	18.2	19.7	3.5	3.5	10.8	11.6	2.5	2.8	10.9	11.2	1.2	1.0	-	-	7.9	8.3	16
Columbus	24.3	25.6	2.5	2.6	7.7	9.2	2.6	2.5	14.0	14.9	0.7	0.9	-	-	8.6	9.3	21
Detroit	23.4	25.9	7.2	6.1	17.4	12.2	7.0	6.4	11.3	12.0	1.6	1.1	-	-	11.3	10.6	33
Gainesville	25.6	26.9	3.9	3.5	6.0	6.5	3.0	2.9	15.0	15.4	1.3	1.6	-	-	9.1	9.5	24
GWU-DC	25.1	26.2	2.7	2.0	1.8	2.0	2.2	2.0	11.8	12.8	0.5	0.6	-	-	7.4	7.6	11
Honolulu	13.9	16.1	1.7	2.4	2.9	3.4	1.9	2.4	7.4	8.6	0.9	1.0	-	-	4.8	5.7	3
Houston	23.5	27.7	2.3	2.3	7.6	7.9	2.4	2.6	12.8	15.1	1.1	1.0	-	-	8.3	9.4	23
Iowa	14.4	15.7	1.3	1.4	2.0	2.3	2.0	2.2	6.3	7.3	0.8	1.0	-	-	4.5	5.0	2
Irvine	27.0	28.8	4.1	4.9	10.8	13.6	2.2	2.1	13.7	15.5	1.6	1.2	-	-	9.9	11.0	35
LaJolla	28.8	29.1	4.7	4.4	5.4	5.5	4.4	3.8	15.4	15.8	1.6	1.5	-	-	10.1	10.0	28
Los Angeles	11.1	12.9	2.1	2.0	5.5	6.3	3.2	2.5	12.9	13.4	1.4	0.8	-	-	6.0	6.3	5
Madison	21.1	22.3	1.8	2.1	3.2	3.2	2.0	2.3	14.6	15.6	0.8	0.9	-	-	7.3	7.7	12

CC Performance Summary
Data as of 8/25/99
Retention

	HRT				DM				CaD				OS		Overall		
	% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Intervention[1]		% Stopping Follow-up[2]		% Stopping Followup				
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank
Medlantic	20.1	21.2	2.9	2.9	12.2	12.9	3.0	3.0	7.3	8.4	1.3	1.4	-	-	7.8	8.3	16
Memphis	27.7	29.5	3.8	3.4	9.9	10.3	3.6	4.0	21.5	23.3	1.7	1.5	-	-	11.4	12.0	38
Miami	46.9	46.0	6.4	6.0	21.0	23.6	4.7	6.0	28.0	28.5	3.0	3.2	-	-	18.3	18.9	40
Milwaukee	19.9	21.3	1.7	2.3	1.7	2.4	1.2	1.3	10.7	11.8	0.9	1.0	-	-	6.0	6.7	8
Minneapolis	19.9	20.2	1.2	1.1	4.5	4.3	2.0	2.0	9.3	10.4	0.8	0.7	-	-	6.3	6.5	7
Nevada	22.1	23.7	1.6	1.9	9.7	10.2	1.4	1.8	9.7	9.9	0.7	0.7	-	-	7.5	8.0	14
Newark	20.3	22.4	3.8	4.1	6.7	7.1	3.4	3.8	16.6	17.6	1.4	1.5	-	-	8.7	9.4	22
NY City	22.5	24.4	2.8	2.6	4.0	5.8	2.2	2.3	13.9	14.0	1.0	1.0	-	-	7.7	8.4	18
Oakland	10.7	11.4	1.6	1.6	1.8	1.8	1.5	1.5	3.9	4.3	0.6	0.6	-	-	3.4	3.5	1
Pawtucket	27.1	27.3	5.0	5.2	7.4	7.7	3.3	3.6	17.9	18.5	1.4	1.6	-	-	10.4	10.7	34
Pittsburgh	22.1	23.4	3.2	3.2	1.7	1.7	1.7	2.0	13.5	15.2	0.9	1.3	-	-	7.2	7.8	13
Portland	16.8	19.2	2.8	2.8	2.6	4.3	2.6	3.1	13.0	13.7	0.6	0.6	-	-	6.4	7.3	9
San Antonio	21.2	25.0	3.9	4.8	10.2	17.5	4.0	4.6	11.9	13.9	1.4	1.3	-	-	8.8	11.2	36
Seattle	29.3	30.7	3.0	3.3	3.9	5.8	2.4	2.5	17.3	18.5	0.8	1.2	-	-	9.5	10.3	31
Stanford	17.8	19.3	1.6	1.6	3.5	3.5	1.8	2.1	10.5	11.3	0.6	0.7	-	-	6.0	6.4	6
Stony Brook	27.6	30.0	2.0	2.2	7.4	10.1	2.1	2.2	13.1	13.1	1.3	1.5	-	-	8.9	9.9	27
Torrance	24.2	26.1	4.3	5.5	9.0	10.2	2.5	3.7	8.8	11.4	0.9	1.1	-	-	8.3	9.7	25
Tucson	28.9	31.3	6.5	5.7	5.4	5.7	4.0	4.1	21.3	22.3	1.4	1.5	-	-	11.3	11.8	37
UCDavis	27.2	28.2	4.0	3.4	8.7	9.8	3.1	2.9	15.7	16.8	1.6	1.6	-	-	10.1	10.5	32
Worcester	20.7	22.8	0.8	1.0	6.0	6.9	1.9	2.0	12.1	11.4	0.6	0.7	-	-	7.0	7.5	10
Study Avg.	23.3	24.8	3.1	3.1	6.8	7.6	2.8	2.9	13.4	14.3	1.1	1.2			8.4	9.0	

[1] Based on Form 7; includes deaths, stopped follow-up, and stopped or lost-to-follow-up. (WHIP0745 for HRT, WHIP0748 for DM, and WHIP 0744 for CaD)

[2] Based on Form 7; includes deaths and lost-to-follow-up. (WHIP0745 for HRT, WHIP0748 for DM, and WHIP 0744 for CaD)

CC Performance Summary
Data as of 8/25/99
HRT Intervention

	AV1						AV2						AV3						AV4						AV5								Overall		
	% w/Pill Cnt @ AV1[1]		% ≥ 80% Adherent at AV1[2]		Adhere. Summary at AV1[3]		% w/Pill Cnt @ AV2[1]		% ≥ 80% Adherent at AV2[2]		Adhere. Summary at AV2[3]		% w/Pill Cnt @ AV3[1]		% ≥ 80% Adherent at AV3[2]		Adhere. Summary at AV3[3]		% w/Pill Cnt @ AV4[1]		% ≥ 80% Adherent at AV4[2]		Adhere. Summary at AV4[3]		% w/Pill Cnt @ AV5[1]		% ≥ 80% Adherent at AV5[2]		Adhere. Summary at AV5[3]		% Blinded		Weighted Avg.[4]		Rank
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	
Atlanta	96	96	83	83	73	73	84	85	81	81	58	58	84	85	82	83	52	53	92	92	78	78	47	46	-	83	-	80	-	34	89	89	76	74	37
Birmingham	95	95	88	87	79	79	90	91	86	87	69	71	94	94	86	85	65	64	93	93	91	91	66	66	96	97	85	88	68	67	90	89	84	84	17
Bowman	95	94	79	79	69	69	91	91	83	83	65	65	93	94	82	80	57	57	93	92	86	88	57	57	100	95	81	87	41	46	89	88	79	79	29
Brigham	98	98	88	87	79	79	94	94	88	89	73	73	96	96	89	89	70	72	96	96	88	89	67	66	89	91	91	87	60	56	88	88	84	84	14
Buffalo	94	94	85	85	73	73	88	89	86	86	64	64	94	95	83	84	58	58	88	90	89	87	51	51	77	90	80	82	32	41	83	83	76	78	30
Chapel Hill	97	97	89	88	81	80	95	94	92	92	79	78	95	96	89	88	80	76	-	85	-	91	-	63	-	-	-	-	-	-	88	86	88	86	9
Chicago	92	92	89	89	77	77	89	89	87	88	67	68	91	92	93	93	65	66	94	94	93	93	67	65	-	96	-	100	-	67	88	88	84	85	12
Chi-Rush	93	93	79	78	69	69	90	91	81	82	63	64	88	88	80	82	55	58	-	-	-	-	-	-	-	-	-	-	-	-	94	93	78	79	27
Cincinnati	92	92	90	90	77	77	90	90	90	92	72	71	90	89	82	84	59	58	-	85	-	88	-	63	-	-	-	-	-	-	88	87	83	82	20
Columbus	97	97	85	84	76	75	90	90	85	85	65	65	94	94	84	84	56	55	-	-	-	-	-	-	-	-	-	-	-	-	93	92	82	82	22
Detroit	83	84	86	85	69	69	73	76	82	81	54	56	72	74	89	88	54	54	-	-	-	-	-	-	-	-	-	-	-	-	91	91	75	75	36
Gainesville	96	96	92	91	82	82	91	92	93	93	73	74	94	94	92	92	71	68	91	95	90	92	65	67	-	-	-	-	-	-	92	92	86	87	6
GWU-DC	95	94	87	87	77	77	87	88	89	87	66	67	92	94	82	85	58	61	-	90	-	89	-	52	-	-	-	-	-	-	83	83	82	81	25
Honolulu	96	95	85	85	78	77	92	90	86	85	72	70	87	88	85	86	60	62	-	92	-	100	-	85	-	-	-	-	-	-	85	83	82	84	13
Houston	90	91	93	92	79	78	78	77	87	87	59	60	80	73	88	86	55	50	64	82	100	81	50	46	-	-		-		-	93	93	77	76	34
Iowa	99	99	92	92	87	87	96	96	92	92	84	84	97	96	94	94	83	83	93	94	96	95	79	81	97	97	86	92	66	75	83	81	89	90	1
Irvine	88	88	88	89	69	70	87	87	84	83	57	56	83	86	93	91	52	55	-	-	-	-	-	-	-	-	-	-	-	-	93	93	79	79	28
LaJolla	89	90	84	84	69	69	90	90	83	83	59	60	93	93	87	87	57	57	95	95	83	84	49	51	67	88	70	80	22	36	88	88	74	77	32
Los Angeles	95	95	85	84	77	77	90	91	87	88	73	73	91	89	90	91	68	68	-	91	-	100	-	71	-	-	-	-	-	-	85	85	84	85	10
Madison	99	99	89	89	82	82	93	92	92	92	76	76	93	94	88	90	69	72	-	100	-	94	-	74	-	-	-	-	-	-	87	87	87	88	3

CC Performance Summary
Data as of 8/25/99
HRT Intervention

	AV1						AV2						AV3						AV4						AV5								Overall		
	% w/Pill Cnt @ AV1[1]		% ≥ 80% Adherent at AV1[2]		Adhere. Summary at AV1[3]		% w/Pill Cnt @ AV2[1]		% ≥ 80% Adherent at AV2[2]		Adhere. Summary at AV2[3]		% w/Pill Cnt @ AV3[1]		% ≥ 80% Adherent at AV3[2]		Adhere. Summary at AV3[3]		% w/Pill Cnt @ AV4[1]		% ≥ 80% Adherent at AV4[2]		Adhere. Summary at AV4[3]		% w/Pill Cnt @ AV5[1]		% ≥ 80% Adherent at AV5[2]		Adhere. Summary at AV5[3]		% Blinded		Weighted Avg.[4]		Rank
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	
Medlantic	96	96	73	74	65	66	82	82	67	68	48	48	83	81	77	74	45	44	-	66	-	86	-	41	-	-	-	-	-	-	96	96	72	70	39
Memphis	93	94	86	86	75	75	87	88	87	87	68	69	91	91	88	87	66	66	92	92	86	86	63	61	82	88	83	84	53	55	91	91	80	81	26
Miami	76	77	80	80	55	55	68	68	78	77	43	41	67	72	83	86	39	43	-	-	-	-	-	-	-	-	-	-	-	-	97	97	67	68	40
Milwaukee	97	97	90	90	83	84	91	91	91	91	76	74	93	94	93	92	69	69	-	100	-	95	-	80	-	-	-	-	-	-	86	86	87	88	2
Minneapolis	97	97	87	87	81	81	93	93	91	91	78	78	94	94	87	88	69	70	93	94	93	94	68	69	87	89	93	93	64	63	91	91	85	86	8
Nevada	98	99	84	84	78	78	94	93	88	88	74	73	94	93	90	90	69	68	-	100	-	91	-	75	-	-	-	-	-	-	84	83	85	86	7
Newark	92	92	86	86	74	74	86	87	83	83	63	64	90	88	74	76	57	57	91	91	79	78	59	58	90	87	59	75	42	51	91	91	76	77	31
NY City	92	92	83	83	71	70	80	80	85	85	59	59	80	82	84	83	49	51	-	77	-	100	-	46	-	-	-	-	-	-	88	87	77	76	33
Oakland	99	99	93	93	89	89	94	93	93	93	83	82	98	99	95	92	83	82	-	77	-	90	-	56	-	-	-	-	-	-	82	81	91	87	4
Pawtucket	95	96	89	89	77	78	94	94	91	92	74	74	90	90	92	93	64	66	90	92	95	95	60	61	100	93	87	94	60	59	85	84	84	84	15
Pittsburgh	98	98	88	88	82	82	95	95	87	88	77	77	93	93	88	88	68	70	95	95	85	87	62	64	90	95	82	83	48	48	95	95	83	84	18
Portland	94	93	91	91	82	80	88	86	91	92	73	73	90	88	96	95	76	72	-	85	-	73	-	44	-	-	-	-	-	-	90	88	87	81	24
San Antonio	85	85	90	90	71	71	80	80	81	81	57	57	78	80	84	81	49	51	-	88	-	82	-	48	-	-	-	-	-	-	90	90	76	75	35
Seattle	97	97	89	89	79	79	90	92	86	87	69	70	78	88	86	87	51	60	85	92	89	92	47	54	44	89	100	94	28	50	89	89	75	82	21
Stanford	95	96	92	92	83	84	92	95	91	91	76	77	90	93	95	91	69	67	-	-	-	-	-	-	-	-	-	-	-	-	85	84	87	87	5
Stony Brook	96	96	87	88	76	76	91	91	87	87	68	68	90	90	92	94	70	67	-	92	-	100	-	69	-	-	-	-	-	-	87	85	84	85	11
Torrance	90	90	90	90	75	76	87	87	84	84	63	64	88	88	88	89	62	64	-	88	-	93	-	65	-	-	-	-	-	-	87	86	81	81	23
Tucson	89	89	85	84	67	67	81	82	80	81	53	54	82	82	81	82	47	48	87	89	83	81	48	46	-	90	-	83	-	43	95	95	74	74	38
UCDavis	92	93	90	90	79	79	89	90	90	89	72	72	93	92	90	90	69	68	88	91	90	88	62	62	100	90	100	92	63	53	85	85	84	83	19
Worcester	98	98	87	88	77	78	92	93	89	88	69	70	89	91	87	87	59	59	-	-	-	-	-	-	-	-	-	-	-	-	94	92	84	84	16
Study Avg.	94	94	87	87	76	76	88	88	86	86	67	67	89	89	87	87	62	62	90	90	88	89	59	61	86	91	84	87	50	53	89	88	81	81	
*Weights	1		1		1		1		1		1		1		1		1		1		1		1		1		1		0.5					

[1] % of AVs conducted that include study pill collections or estimates where ppts were dispensed pills at previous AV or later; excludes deaths and ERT -> PERT ppts. From data analysis distributed to CCs quarterly.

[2] % of ppts adherent as measured by pill count or estimate at AVs; excludes deaths and ERT -> PERT ppts. From data analysis distributed to CCs quarterly.

[3] % of ppts due for the AV who took at least 80% of their study pills; excludes deaths and ERT -> PERT ppts. From data analysis distributed to CCs quarterly.

[4] % of ppts for whom no unblinding occurred. From DSMB report not distributed to CCs.

CC Performance Summary
Data as of 8/25/99
DM Intervention – Participation, Adherence, and Retention[1]

	Triage Level[2]								IIP Tracking				% Stop Inter / % Stop FU[3]		[C-I] % Fat[4]									
	% Triage Level 1		% Triage Level 2		% Triage Level 3		% Triage Level 4		IIP Tracking		IIP Tracking				AV1		AV2		AV3[5]		AV4[5]			
															C-I %	% FFQs Done	C-I %	% FFQs Done	C-I %	% FFQs Done	C-I %	% FFQs Done	C-I	
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	FU cum., Aug 99	Interv cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	Average	Rank[6]
Atlanta	45	44	20	18	18	21	17	17	-	-	-	-	2.7	2.6	10.3	86	9.1	82	-	78	-	73	9.7	26
Birmingham	43	46	22	23	27	23	9	8	-	-	-	-	3.2	9.6	8.5	87	7.7	74	-	78	-	81	8.1	37
Bowman (total)	41	42	31	25	13	19	15	15	-	-	-	-	2.4	7.0	10.6	89	10.1	88	-	83	-	92	10.4	22
Bowman	41	43	29	25	13	17	17	16	-	-	-	-	-	-	10.5	88	9.0	85	-	84	-	92	-	-
RRC	39	39	38	26	13	24	9	11	-	-	-	-	-	-	10.9	91	12.9	97	-	67	-	100	-	-
Brigham	45	46	15	17	23	18	17	19	-	-	-	-	1.5	6.7	10.8	95	10.2	89	-	87	-	84	10.5	21
Buffalo	36	39	24	20	39	41	2	1	-	-	-	-	2.3	5.2	10.4	91	9.3	84	-	84	-	74	9.9	24
Chapel Hill	41	45	29	27	14	11	15	18	-	-	-	-	2.5	2.9	9.6	93	10.1	92	-	86	-	-	9.9	25
Chicago (total)	54	54	20	18	14	17	12	11	-	-	-	-	4.4	13.6	11.2	80	10.5	76	-	79	-	94	10.9	17
Chicago	54	58	22	24	11	9	12	9	-	-	-	-	-	-	10.9	69	9.7	61	-	63	-	88	-	-
Evanston	53	51	18	13	17	24	11	13	-	-	-	-	-	-	11.6	91	11.2	91	-	93	-	100	-	-
Chi-Rush	44	38	17	16	24	23	15	23	-	-	-	-	4.0	11.1	9.4	90	7.4	87	-	-	-	-	8.4	36
Cincinnati	29	36	16	25	33	23	22	16	-	-	-	-	2.8	11.6	10.4	90	7.8	79	-	73	-	-	9.1	33
Columbus	42	45	34	33	11	8	13	15	-	-	-	-	2.5	9.2	12.5	93	11.7	83	-	90	-	-	12.1	4
Detroit	33	30	27	21	24	25	16	24	-	-	-	-	6.4	12.2	10.4	66	8.7	63	-	64	-	-	9.6	30
Gainesville (total)	52	53	18	17	13	10	17	20	-	-	-	-	2.9	6.5	11.9	91	11.4	88	-	96	-	-	11.7	9
Gainesville	66	61	17	17	6	4	12	17	-	-	-	-	-	-	12.2	94	11.6	86	-	100	-	-	-	-
Jacksonville	38	43	20	17	19	16	23	23	-	-	-	-	-	-	11.6	89	11.1	90	-	88	-	-	-	-
GWU-DC	62	58	17	19	12	11	8	11	-	-	-	-	2.0	2.0	12.2	91	11.1	86	-	79	-	-	11.7	12
Honolulu	37	29	18	23	15	15	30	32	-	-	-	-	2.4	3.4	9.4	91	9.6	88	-	78	-	-	9.5	31
Houston	32	38	27	25	15	12	25	25	-	-	-	-	2.6	7.9	11.3	70	10.3	64	-	52	-	-	10.8	18
Iowa City (total)	64	61	22	21	11	13	3	4	-	-	-	-	2.2	2.3	12.9	98	11.6	97	-	97	-	91	12.3	2
Iowa City	70	64	19	21	8	11	3	5	-	-	-	-	-	-	12.7	98	11.7	98	-	97	-	93	-	-
Bettendorf	57	58	25	21	15	17	3	4	-	-	-	-	-	-	13.1	97	11.4	94	-	97	-	91	-	-
Irvine	49	56	21	21	11	10	20	13	-	-	-	-	2.1	13.6	12.7	84	11.1	75	-	81	-	-	11.9	6
LaJolla	39	41	21	20	6	5	34	35	-	-	-	-	3.8	5.5	9.8	89	8.3	87	-	93	-	85	9.1	34
Los Angeles	35	43	13	13	14	15	38	29	-	-	-	-	2.5	6.3	11.4	82	10.7	72	-	83	-	-	11.1	15
Madison	42	43	27	28	13	12	18	17	-	-	-	-	2.3	3.2	12.5	96	10.8	93	-	100	-	-	11.7	9
Medlantic	33	36	25	20	25	16	18	28	-	-	-	-	3.0	12.9	7.9	82	5.6	71	-	68	-	-	6.8	40

CC Performance Summary
Data as of 8/25/99
DM Intervention – Participation, Adherence, and Retention[1]

	Triage Level[2]								IIP Tracking				% Stop Inter % Stop FU[3]		[C-I] % Fat[4]									
															AV1		AV2		AV3[5]		AV4[5]			
	% Triage Level 1		% Triage Level 2		% Triage Level 3		% Triage Level 4		IIP Tracking		IIP Tracking		FU	Interv	C-I %	% FFQs Done	C-I %	% FFQs Done	C-I %	% FFQs Done	C-I %	% FFQs Done	C-I Average	Rank[6]
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99	cum., Aug 99		
Memphis (total)	51	53	17	21	8	6	24	20	-	-	-	-	4.0	10.3	10.9	90	10.3	82	-	76	-	79	10.6	19
Memphis	50	52	16	21	8	6	26	21	-	-	-	-	-	-	10.9	91	10.2	84	-	75	-	79	-	-
Memstat	53	58	31	26	6	2	11	14	-	-	-	-	-	-	10.8	81	10.9	65	-	100	-	100	-	-
Miami	45	40	22	18	13	13	20	29	-	-	-	-	6.0	23.6	7.0	67	7.3	56	-	58	-	-	7.2	39
Milwaukee	39	47	20	23	12	12	29	18	-	-	-	-	1.3	2.4	11.5	97	12.3	91	-	91	-	-	11.9	5
Minneapolis	39	42	21	23	13	11	27	24	-	-	-	-	2.0	4.3	12.5	96	11.2	94	-	95	-	93	11.9	8
Nevada	73	78	14	9	2	2	11	10	-	-	-	-	1.8	10.2	14.5	96	12.9	95	-	100	-	-	13.7	1
Newark (total)	37	39	19	20	18	18	25	23	-	-	-	-	3.8	7.1	11.0	84	10.1	74	-	68	-	77	10.6	20
Newark	36	37	19	20	19	19	26	24	-	-	-	-	-	-	11.3	81	9.8	71	-	68	-	76	-	-
New Bruns.	45	48	23	22	14	13	18	18	-	-	-	-	-	-	9.8	95	10.6	91	-	50	-	100	-	-
NY City	36	38	20	20	20	15	23	27	-	-	-	-	2.3	5.8	8.6	89	9.4	82	-	69	-	-	9.0	35
Oakland	52	51	24	25	16	16	8	9	-	-	-	-	1.5	1.8	12.1	98	12.4	96	-	100	-	-	12.3	2
Pawtucket (total)	45	48	24	20	10	10	21	22	-	-	-	-	3.6	7.7	10.5	85	8.8	92	-	82	-	78	9.7	28
Pawtucket	50	51	25	21	8	9	17	19	-	-	-	-	-	-	10.3	80	8.6	91	-	81	-	78	-	-
Fall River	34	43	23	18	12	11	31	28	-	-	-	-	-	-	10.9	93	9.2	94	-	90	-	75	-	-
Pittsburgh	51	51	9	10	24	21	16	18	-	-	-	-	2.0	1.7	12.9	91	10.4	86	-	98	-	83	11.7	9
Portland	42	46	25	25	24	20	9	10	-	-	-	-	3.1	4.3	11.8	91	10.2	81	-	83	-	-	11.0	16
San Antonio	23	22	11	15	16	15	49	47	-	-	-	-	4.6	17.5	8.0	75	8.1	70	-	90	-	-	8.1	38
Seattle	42	46	15	17	19	18	24	20	-	-	-	-	2.5	5.8	12.7	94	11.1	85	-	96	-	86	11.9	6
Stanford	45	52	29	26	16	12	10	10	-	-	-	-	2.1	3.5	12.5	95	10.4	94	-	100	-	-	11.5	14
Stony Brook	41	49	30	27	16	12	14	13	-	-	-	-	2.2	10.1	10.2	96	8.6	95	-	77	-	-	9.4	32
Torrance	44	44	17	13	17	20	22	23	-	-	-	-	3.7	10.2	11.6	83	11.5	78	-	64	-	-	11.6	13
Tucson (total)	43	43	17	19	22	21	18	17	-	-	-	-	4.1	5.7	10.2	87	9.0	76	-	77	-	76	9.6	29
Tucson	32	31	18	18	30	31	20	20	-	-	-	-	-	-	8.6	83	8.2	74	-	75	-	74	-	-
Phoenix	65	59	16	19	5	8	14	14	-	-	-	-	-	-	12.2	94	10.2	79	-	81	-	80	-	-
UCDavis	51	47	21	20	12	13	17	19	-	-	-	-	2.9	9.8	10.5	90	10.0	81	-	78	-	81	10.3	23
Worcester	48	47	24	25	9	8	18	20	-	-	-	-	2.0	6.9	10.9	95	8.5	90	-	93	-	-	9.7	26
Study Avg.	43	44	21	20	16	15	18	19					2.9	7.6	10.9	88	9.9	83	9.6	83	8.4	83	10.4	

[1] Group dynamics also influence participation. Group dynamics for which we have reports include Timeliness of group formation (WHIP1110 & WHIP1118) distributed in Monthly Activity Reports.

[2] From CCC Report - Level 1 = completes sessions & meets fat gram goal; Level 2 = completes sessions but does not meet fat gram goal; Level 3 = completes sessions but does not self-monitor; Level 4 = completes < 1 session.

[3] From WHIP748. Not dependent on each other; may stop intervention or follow-up independently.

[4] [Control-Intervention] % fat. Difference between Control and Intervention % fat from FFQ, unadjusted for participant characteristics. Design Assumption = 15% at AV1; goal as of AGM 1996 = 13%. FFQs are averaged. FFQs collected on 100% ppts at AV1, 30% at AV2 and 10% at AV3 and AV4.

[5] Taken from Annual Progress Report for the period ending August 25, 1999 for information purposes only. FFQ numbers are too small to report for individual CCs at this time.

[6] Rank based on C-I average.

CC Performance Summary
Data as of 8/25/99
CaD Intervention

	AV2						AV3						AV4						AV5						Overall		
	% w/Pill Cnt @ AV2[1]		% ≥ 80% Adherent at AV2[2]		Adhere. Summary at AV2[3]		% w/Pill Cnt @ AV3[1]		% ≥ 80% Adherent at AV3[2]		Adhere. Summary at AV3[3]		% w/Pill Cnt @ AV4[1]		% ≥ 80% Adherent at AV4[2]		Adhere. Summary at AV4[3]		% w/Pill Cnt @ AV5[1]		% ≥ 80% Adherent at AV5[2]		Adhere. Summary at AV5[3]		Avg.		Rank
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	
Atlanta	91	91	68	68	54	54	84	85	72	72	53	53	90	89	75	74	53	53	82	91	100	84	64	56	74	72	24
Birmingham	93	93	63	66	55	57	90	91	60	60	49	49	94	93	65	65	53	53	89	94	88	77	72	61	72	71	28
Bowman	96	96	73	72	62	62	91	91	74	76	57	60	94	94	79	82	60	60	91	92	76	76	59	61	76	77	12
Brigham	97	97	73	73	60	61	91	92	74	75	56	58	93	93	73	73	53	54	94	96	79	79	55	57	75	76	17
Buffalo	93	93	69	69	58	59	87	88	72	72	55	56	90	91	82	81	61	62	83	91	94	87	69	65	76	76	14
Chapel Hill	95	95	79	79	70	70	97	96	73	73	66	66	-	97	-	70	-	54	-	-	-	-	-	-	80	78	10
Chicago	83	83	71	71	54	54	86	86	72	71	53	53	82	93	70	71	45	46	75	89	78	81	45	56	68	71	29
Chi-Rush	94	95	76	76	66	66	88	92	79	76	67	67	-	-	-	-	-	-	-	-	-	-	-	-	78	79	7
Cincinnati	89	90	68	70	55	57	83	83	71	72	51	52	90	86	89	77	53	50	-	-	-	-	-	-	72	71	30
Columbus	96	97	78	79	67	68	91	92	81	84	59	62	-	100	-	94	-	64	-	-	-	-	-	-	79	82	3
Detroit	79	81	72	71	54	54	71	74	64	66	41	43	-	83	-	80	-	52	-	-	-	-	-	-	64	67	34
Gainesville	96	96	77	77	67	67	92	92	74	76	59	61	93	92	75	83	49	58	-	-	-	-	-	-	76	78	9
GWU-DC	92	92	72	71	59	60	88	89	70	70	55	55	68	88	73	74	39	52	-	-	-	-	-	-	68	72	25
Honolulu	92	92	77	76	66	66	92	90	78	79	67	67	82	96	44	73	31	66	-	-	-	-	-	-	70	78	8
Houston	84	84	72	74	57	58	80	77	72	73	51	49	64	70	44	71	21	42	-	-	-	-	-	-	61	67	36
Iowa	97	98	77	78	71	73	95	95	75	76	69	70	94	97	79	80	70	73	90	96	82	82	69	75	81	83	2
Irvine	87	88	72	73	58	59	79	81	65	68	45	48	-	86	-	83	-	63	-	-	-	-	-	-	68	72	26
LaJolla	91	91	73	74	62	63	88	88	69	69	55	56	94	95	76	74	56	56	91	92	77	77	61	54	74	74	18
Los Angeles	87	88	74	75	56	58	85	86	66	72	42	50	-	82	-	91	-	54	-	-	-	-	-	-	68	73	23
Madison	94	94	72	72	63	62	94	95	71	74	58	62	-	88	-	84	-	59	-	-	-	-	-	-	76	77	13

CC Performance Summary
Data as of 8/25/99
CaD Intervention

	AV2						AV3						AV4						AV5						Overall		
	% w/Pill Cnt @ AV2[1]		% ≥ 80% Adherent at AV2[2]		Adhere. Summary at AV2[3]		% w/Pill Cnt @ AV3[1]		% ≥ 80% Adherent at AV3[2]		Adhere. Summary at AV3[3]		% w/Pill Cnt @ AV4[1]		% ≥ 80% Adherent at AV4[2]		Adhere. Summary at AV4[3]		% w/Pill Cnt @ AV5[1]		% ≥ 80% Adherent at AV5[2]		Adhere. Summary at AV5[3]		Avg.		Rank
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	
Mediantic	93	90	53	53	46	45	85	86	50	52	39	42	-	70	-	54	-	30	-	-	-	-	-	-	61	58	39
Memphis	89	90	67	68	52	53	83	84	64	65	44	46	86	87	66	66	41	42	86	89	78	76	51	49	67	68	32
Miami	74	74	61	60	40	39	71	68	68	66	41	37	-	62	-	50	-	21	-	-	-	-	-	-	59	53	40
Milwaukee	95	95	73	73	64	64	93	93	81	80	69	69	-	94	-	88	-	69	-	-	-	-	-	-	79	81	4
Minneapolis	96	96	78	78	70	69	91	92	79	79	66	67	90	91	82	82	66	66	94	92	86	83	71	68	81	80	5
Nevada	96	97	76	77	69	69	93	93	76	77	66	67	-	96	-	79	-	68	-	-	-	-	-	-	79	80	6
Newark	87	87	62	62	48	49	80	81	51	53	35	37	87	87	59	59	39	39	85	77	65	74	37	41	61	62	38
NY City	87	85	66	67	50	50	79	81	70	70	43	45	-	81	-	77	-	48	-	-	-	-	-	-	66	67	35
Oakland	98	98	78	79	74	74	97	98	81	82	75	76	-	98	-	87	-	76	-	-	-	-	-	-	84	85	1
Pawtucket	97	97	73	74	62	64	90	91	70	73	53	56	93	94	72	73	52	53	96	96	72	80	54	59	74	76	15
Pittsburgh	96	97	71	71	64	65	93	92	71	73	60	61	95	95	79	80	65	65	85	89	78	80	59	62	76	77	11
Portland	92	91	74	74	61	62	93	89	83	81	66	62	-	84	-	85	-	55	-	-	-	-	-	-	78	76	15
San Antonio	86	84	67	68	52	52	87	85	65	61	50	45	69	77	73	84	38	52	-	-	-	-	-	-	65	68	33
Seattle	92	94	73	72	61	62	84	91	73	73	54	58	88	94	70	71	51	55	51	90	62	74	24	52	65	74	20
Stanford	94	97	80	79	69	71	93	94	77	79	64	65	-	75	-	67	-	40	-	-	-	-	-	-	80	74	18
Stony Brook	93	93	68	67	57	56	87	89	73	74	56	58	-	85	-	82	-	54	-	-	-	-	-	-	72	73	22
Torrance	87	89	67	68	55	57	85	86	81	76	60	57	-	93	-	78	-	57	-	-	-	-	-	-	72	73	21
Tucson	83	83	71	72	50	52	80	81	69	69	44	46	84	86	72	72	43	44	100	98	70	78	44	45	68	69	31
UCDavis	90	90	72	72	61	61	88	88	70	72	56	57	88	88	75	75	52	54	79	85	79	74	46	49	71	72	27
Worcester	96	96	64	65	55	56	90	88	72	73	52	53	-	71	-	60	-	25	-	-	-	-	-	-	71	65	37
Study Avg.	91	91	71	72	59	60	87	88	71	72	55	56	87	88	71	76	50	53	86	91	79	79	55	57	72	73	

[1] % of AVs conducted that include study pill collections or estimates where ppts were dispensed pills at previous AV or later; excludes death. From data analysis distributed to CCs quarterly.

[2] % of ppts adherent as measured by pill count or estimate at AVs; excludes deaths. From data analysis distributed to CCs quarterly.

[3] % of ppts due for the AV who took at least 80% of their study pills; excludes deaths. From data analysis distributed to CCs quarterly.

CC Performance Summary
Data as of 8/25/99
Outcomes Analysis

	Form 33 & 33D Collection								Documentation				Local Adjudication						Timeliness from Form 33D		
	Form 33: % Collected for CT		Form 33: % Collected for OS[1]		Form 33D: % Collected[2]		% Form 33D Collected within 3 weeks of Form 33		% Cases assigned to local adjudication[3]		% Cases assigned within 12 weeks[4]		% Assigned cases adjudicated		% Adjudicated within 14 days[5]		% Agreement with Central Adj.		% Cases closed within 14 weeks of Form 33D[6]		Rank[7]
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	
Atlanta	90	90	92	91	91	92	74	76	86	85	65	64	97	98	79	79	-	-	42	45	27
Birmingham	96	97	86	86	98	99	91	92	79	85	54	54	90	90	93	94	-	-	30	30	39
Bowman	92	93	94	95	98	98	76	77	86	79	68	66	97	98	59	60	-	-	43	43	28
Brigham	95	96	95	94	100	100	89	88	85	88	73	73	84	92	39	37	-	-	26	31	38
Buffalo	92	93	92	92	100	99	75	77	96	95	89	89	100	99	90	91	-	-	78	79	3
Chapel Hill	95	96	94	94	100	100	59	62	90	90	62	66	99	100	88	90	-	-	49	52	21
Chicago	91	92	94	94	76	81	23	23	80	76	60	65	94	94	79	75	-	-	39	46	24
Chi-Rush	96	96	83	83	97	95	80	79	58	70	61	54	90	99	73	79	-	-	47	40	29
Cincinnati	86	86	84	84	97	92	59	58	86	79	65	60	97	97	85	85	-	-	52	51	22
Columbus	94	95	95	94	97	98	50	52	89	89	66	68	99	99	74	77	-	-	54	57	16
Detroit	78	80	87	88	94	99	35	41	75	88	59	64	92	93	64	61	-	-	52	46	25
Gainesville	96	97	92	93	99	99	71	74	92	92	77	78	99	99	89	90	-	-	67	70	6
GWU-DC	96	97	93	93	98	98	61	63	88	89	69	71	98	98	98	97	-	-	59	63	10
Honolulu	89	89	90	90	99	99	86	87	93	93	87	88	98	98	82	83	-	-	59	60	14
Houston	77	79	82	79	75	69	24	24	87	87	56	59	94	91	81	80	-	-	34	39	30
Iowa	98	98	96	96	99	99	73	75	92	91	86	85	97	99	62	64	-	-	66	67	8
Irvine	87	88	89	89	98	98	37	41	72	67	37	34	71	86	60	69	-	-	28	21	40
LaJolla	91	92	86	88	97	97	56	58	92	93	91	91	75	80	42	38	-	-	63	61	12
Los Angeles	87	89	91	91	91	82	60	56	96	87	77	79	64	64	50	49	-	-	53	45	26
Madison	98	98	97	96	100	100	84	84	95	96	92	93	100	100	60	63	-	-	88	89	1

CC Performance Summary
Data as of 8/25/99
Outcomes Analysis

	Form 33 & 33D Collection								Documentation				Local Adjudication						Timeliness from Form 33D		
	Form 33: % Collected for CT		Form 33: % Collected for OS[1]		Form 33D: % Collected[2]		% Form 33D Collected within 3 weeks of Form 33		% Cases assigned to local adjudication[3]		% Cases assigned within 12 weeks[4]		% Assigned cases adjudicated		% Adjudicated within 14 days[5]		% Agreement with Central Adj.		% Cases closed within 14 weeks of Form 33D[6]		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank[7]
Medlantic	93	93	79	80	99	99	61	65	76	75	50	50	94	92	68	72	-	-	28	32	34
Memphis	91	92	83	81	97	96	75	77	84	89	64	64	96	97	87	89	-	-	28	32	36
Miami	71	72	78	76	94	98	38	44	58	74	54	50	86	88	32	40	-	-	37	32	35
Milwaukee	96	96	92	91	99	98	86	83	90	89	73	73	92	94	99	99	-	-	66	68	7
Minneapolis	89	88	94	94	92	91	64	64	86	91	84	83	98	99	64	63	-	-	49	49	23
Nevada	98	98	96	96	100	100	79	81	89	90	70	71	91	93	57	57	-	-	52	54	19
Newark	87	88	88	87	97	99	32	38	86	87	78	78	95	97	73	72	-	-	57	59	15
NY City	91	90	78	76	86	87	52	56	78	80	53	53	86	92	39	39	-	-	28	31	37
Oakland	96	96	89	89	99	99	90	89	89	90	58	61	97	97	72	75	-	-	32	37	31
Pawtucket	94	94	90	89	99	99	52	55	89	92	81	81	99	98	70	74	-	-	59	60	13
Pittsburgh	94	95	85	84	100	100	89	89	94	96	89	89	100	100	96	96	-	-	51	53	20
Portland	93	92	93	92	96	94	86	85	84	92	45	49	98	99	83	85	-	-	30	36	33
San Antonio	79	80	86	85	99	100	77	80	85	88	60	62	95	96	84	83	-	-	51	55	18
Seattle	92	95	94	96	98	99	45	51	90	95	78	81	99	100	93	95	-	-	61	64	9
Stanford	97	98	91	93	99	99	78	81	92	95	79	82	100	98	93	92	-	-	68	72	5
Stony Brook	97	97	92	92	99	100	79	82	93	93	83	85	99	100	92	93	-	-	77	80	2
Torrance	86	88	84	87	85	79	44	40	67	58	54	57	95	94	75	74	-	-	35	36	32
Tucson	91	92	90	89	98	98	82	82	87	88	78	79	98	99	64	68	-	-	53	55	17
UCDavis	92	93	94	94	99	99	73	75	95	95	86	88	100	100	98	98	-	-	73	75	4
Worcester	96	97	94	94	99	99	77	79	93	92	68	71	95	97	91	89	-	-	60	63	11
Study Avg.	91	92	90	89	96	96	66	67	86	87	70	70	94	95	74	75	-	-	51	52	

[1] Initial Form 33 mailings from CCC to OS participants was delayed approximately 6 months. From WHIP1257.

[2] Starting March 1996, Form 33, ver. 3, require Form 33D. From WHIP1257.

[3] % cases assigned of those for which documents were requested. Derived from WHIP1263.

[4] % cases assigned within 12 weeks or have been waiting less than 12 weeks but not yet sent to local adjudication. Derived from WHIP1263 and WHIP1264.

[5] % adjudicated within 14 days or have been waiting less than 14 days but have not yet been adjudicated. Derived from WHIP1263 and WHIP1264.

[6] % closed within 14 weeks of Forms 33D (Version 1, 2), 33D or 125 or have been waiting less than 14 weeks from Form 33D. Derived from WHIP1262 and WHIP1266.

[7] Rank based on overall timeliness.

CC Performance Summary
Data as of 8/25/99

	Central Laboratory									Data Management		
	ECGs		Blood		4DFRs		Summary			Timeliness		
	% grades 1 - 3[1]		% Complete[2]		% < 4 Errors[3]		Average			of key-entry[4]		
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank	cum., May 99	cum., Aug 99	Rank
Atlanta	95	94	93	93	99	99	96	95	24	91	91	12
Birmingham	90	100	93	93	99	99	94	97	8	72	72	37
Bowman	94	94	97	97	100	100	97	97	10	93	93	9
Brigham	96	100	96	96	97	97	96	97	7	78	78	35
Buffalo	99	97	92	92	96	96	96	95	21	96	96	6
Chapel Hill	97	96	95	95	99	99	97	97	11	83	83	27
Chicago	92	97	96	96	99	99	96	98	6	83	83	26
Chi-Rush	89	87	94	94	95	95	92	92	36	84	84	25
Cincinnati	95	90	86	86	97	97	93	91	38	77	77	36
Columbus	95	98	91	91	97	97	94	96	18	88	88	16
Detroit	82	98	91	91	95	95	89	95	26	81	81	31
Gainesville	97	92	95	95	94	94	95	94	32	97	97	4
GWU-DC	88	71	98	98	99	99	95	89	40	97	97	4
Honolulu	97	99	99	99	99	99	98	99	3	90	90	14
Houston	87	96	79	80	99	99	88	91	37	87	87	18
Iowa	90	87	97	97	100	100	96	95	28	94	94	7
Irvine	98	97	97	97	93	94	96	96	17	67	67	39
LaJolla	90	92	98	98	95	95	94	95	25	93	93	10
Los Angeles	96	97	95	94	100	100	97	97	9	82	82	29
Madison	93	96	99	99	100	100	97	98	4	98	98	1

CC Performance Summary
Data as of 8/25/99

	Central Laboratory									Data Management		
	ECGs		Blood		4DFRs		Summary			Timeliness of key-entry[4]		
	% grades 1 - 3[1]		% Complete[2]		% < 4 Errors[3]		Average					
	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	cum., May 99	cum., Aug 99	Rank	cum., May 99	cum., Aug 99	Rank
Medlantic	94	93	92	92	84	84	90	90	39	89	89	15
Memphis	87	94	90	90	98	98	92	94	31	71	71	38
Miami	97	91	95	95	98	98	97	95	27	87	87	19
Milwaukee	95	98	93	93	98	98	96	96	15	93	93	8
Minneapolis	100	100	100	100	99	99	100	100	1	87	87	17
Nevada	95	94	99	99	100	100	98	98	5	97	97	3
Newark	94	94	97	97	99	99	97	97	12	85	85	23
NY City	87	94	98	98	93	93	93	95	22	80	80	33
Oakland	88	90	93	93	99	99	93	94	29	86	86	20
Pawtucket	92	88	92	93	97	97	94	93	35	81	81	30
Pittsburgh	98	100	98	98	99	99	99	99	2	86	86	21
Portland	99	100	83	83	97	97	93	93	33	67	67	39
San Antonio	94	97	93	93	97	97	94	95	20	93	93	11
Seattle	94	89	96	96	95	95	95	93	34	80	80	32
Stanford	92	93	96	96	100	100	96	96	14	84	84	24
Stony Brook	97	92	93	93	100	100	97	95	23	98	98	2
Torrance	90	90	96	96	100	100	95	96	19	83	83	28
Tucson	78	100	95	95	93	93	89	96	16	91	91	12
UCDavis	95	96	98	98	95	95	96	97	13	79	79	34
Worcester	95	93	94	94	95	95	95	94	30	86	86	22
Study Avg.	93	94	94	94	97	97	95	95		86	86	

[1] % ECGs of acceptable quality (grades 1 - 3). Derived from WHIP1023.
[2] % Complete blood aliquots, based on aliquots required for visit type. From WHIP1044.
[3] % archived 4DFRs with < 4 errors, cum. from Jan. 1, 1995. Derived from WHIP0935. Distributed to CCs quarterly.
[4] Timeliness = % data entered within two weeks. From WHIP1112. Can be run by CC as WHIP0774.

8. Study Activities

A number of WHI-related scientific endeavors have been initiated by study investigators. Publications in scholarly journals are approved through the Presentations and Publications Advisory Committee and the Project Office. Ancillary studies are approved by the Design and Analysis Advisory Committee and the Project Office. Those initiatives that could potentially threaten the integrity of the Clinical Trial results before the completion of the study are to be referred to the DSMB for review. A full statement of the relevant policies may be found in the *WHI Manuals, Vol. 1 – Study Protocol and Policies, Section 3 – Study Policies.*

Table 8.1 – Publications presents current and planned publications that have been approved by the Publications and Presentations Committee.

Table 8.2 – Ancillary Studies lists all ancillary study proposals received by the Design and Analysis Committee along with some key features of the studies and their current status.

Table 8.1
Publications

MS ID	Title	Authors	Data Focus	Stage	Reference
10	A Comprehensive Data Management System for Multicenter Studies	**Anderson**, Davis, Koch	Gen.	10	
27	The Effects of Insurance Coverage and Ethnicity on Mammography Utilization in a Postmenopausal Population	**Bush**, Langer	Gen.	10	Western Journal of Medicine 168:236-40, 1998
9	Approaches to Monitoring the Results of Long-term Disease Prevention Trials: Examples from the Women's Health Initiative	**Freedman**, Anderson, Kipnis, Prentice, Wang, Rossouw, Wittes, DeMets	CT	10	Controlled Clinical Trials. 17(6):509-25, 1996 Dec.
37	Depression as Mediated by Social Support, Life Events, and Sexual Activity in Postmenopausal Non-Hispanic White and Latina Women	**Larisch**, Talavera, Langer, Velasquez, Elder	Gen.	10	
71	The Women's Health Initiative: Goals, Rationale, and Current Status	**Liu**	Gen.	10	Menopausal Medicine, Vol.6(2), p.1-4, 1998
5	Women Health Initiative: Why Now? What is it? What's New?	**Matthews**, Shumaker, Bowen, Langer, Hunt, Kaplan, Klesges, Ritenbaugh	Gen.	10	American Psychologist. 52(2):101-116, 1997 Feb.
1	Informed Consent in the Women's Health Initiative Clinical Trial and Observational Study	**McTiernan**, Rossouw, Manson, Franzi, Taylor, Carleton, Johnson, Nevitt	Gen.	10	Journal of Women's Health 4(5):519-29, 1995
35	Measurement Characteristics of the WHI Food Frequency Questionnaire	**Patterson**, Kristal, Carter, Tinker, Bolton, Agurs-Collins	Gen.	10	Annals of Epidemiology 1999:9:178-197
6	Low-fat Diet Practices of Older Women: "Prevalence and Implication for Dietary Assessment"	**Patterson**, Kristal, Coates, Ritenbaugh, Van Horn, Caggiula, Snetselaar, Tylavsky	Gen.	10	Journal of the American Dietetic Association. 96(7):670-9, 1996 Jul.
8	Design of the WHI Clinical Trial and Observational Study	**Prentice**, Rossouw, Furberg, Johnson, Henderson, Cummings, Manson, Freedman, Oberman, Kuller, Anderson	Gen.	10	Controlled Clinical Trials 19:61-109, 1998
11	The Role of Randomized Controlled Trials in Assessing the Benefits and Risks of Long-term Hormone Replacement Therapy: Example of the Women's Health Initiative	**Prentice**, Rossouw, Johnson, Freedman, McTiernan	CT	10	Menopause 3(2):71-76, 1996

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
7	The Evolution of the Women's Health Initiative: Perspectives from the NIH	**Rossouw**, Finnegan, Harlan, Pinn, Clifford, McGowan	Gen.	10	Journal of the American Medical Women's Association. 50(2):50-5, 1995 Mar-Apr
103	The Women's Health Initiative: Recruitment Complete - Looking Back and Looking Forward (Guest Editorial)	**Rossouw**, Hurd	CT	10	Journal of Women's Health 8:3-5, 1999.
4	The Women's Health Initiative: Overview of the Nutrition Component	**Tinker**, Burrows, Henry, Patterson, Van Horn, Rupp	Gen.	10	Nutrition and Women's Health, pp. 510-542, 1996.
24	Estimation of the Correlation between Nutrient Intake Measures Under Restricted Sampling	**Wang**, Anderson, Prentice	Gen.	10	Biometrics, in press
88	Estimating Normal Hemogram Values for Postmenopausal Women	**Carleton**, Assaf, Miller	Gen.	9	
30	Completeness of Purchase Mailing Lists for Identifying Older Women	**Falkner**, Wactawski-Wende, Trevisan	CT	9	
63	Health Insurance as a Determinant of Cancer Screening in WHI OS Participants	**Hsia**, Kemper, Bowen, Zapka, Mason, Lillington, Limacher, Kiefe, Sofaer	OS	9	
12	Factors Associated with Insurance Status among Participants in the WHI	**Hsia**, Kemper, Sofaer, Kiefe, Zapka, Bowen, Mason, Limacher, Lillington	Gen.	9	
72	Post-Menopausal Bone Loss and its Relationship to Oral Bone Loss	**Jeffcoat**, Lewis, Reddy, Wang, Redford	Gen.	9	Periodontics 2000
61	WHI Halfway Paper (100K Paper)	**Langer**, Kotchen, Daugherty, Lewis, Elmer, Trevisan, Noonan, Hendrix, Adams-Campbell	Gen.	9	
17	Sexual Orientation and Health: Comparisons in the Women's Health Initiative Sample	**Valanis**, Charney, Whitlock, Wassertheil-Smoller, Bassford, Bowen, Carter	CT	9	
21	Factors Associated with Prevalence, Treatment and Control of Hypertension among Post-menopausal Women: Baseline Data from the Women's Health Initiative	**Wassertheil-Smoller**, Manson, Wong, Lasser, Kotchen, Langer, Grimm, Black, Psaty, Anderson, Francis	OS	9	
69	Correlates of Serum Lypocene in Older Women	**Casso**, White, Patterson, Agurs-Collins, Kooperberg, Haines	CT	8	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
105	Retention of Low Income and Minority Women in Clinical Trials: A Focus Group Study	**Johnson**, Williams, Fouad	CT	8	
40	The Health Impact of Domestic Violence in Older Women	**Mouton**, Furniss, Lasser, Rovi	OS	8	
93	Fat Intake in Husbands of Women in the Dietary Component of the Women's Health Initiative	**Shikany**	Gen.	8	
70	Correlates of Serum A- and G-Tocopherol in the WHI	**White**, Masaki, Chen, Shikany, Caan, Mare-Perlman, Wilson	CT	8	
112	Results of an Adjunct Dietary Intervention Program in the Women's Health Initiative	**Bowen**, Ehret, Pedersen, Snetselaar, Johnson, Tinker, Hollinger, Lichty, Bland, Sivertsen, Ockene, Staats, Beedoe	OS	7	
111	Effects of Fat Intake on Fat Hedonics: Cognition or Taste?	**Bowen**, Green, Vizenor, Vu, Kreuter, Rolls	OS	7	
76	Labeling as a Predictor of Dietary Maintenance	**Hopkins**, Burrows, Bowen, Tinker	CT	7	
85	Women's Health Initiative: Rationale, Design and Progress Report	**Johnson**, Anderson, Barad, Stefanick, McNagy	CT	7	
108	Cross-Sectional Geometry and Bone Mass in the Proximal Femur in African-American and White Postmenopausal Women	**Nelson**, Barondess, Hendrix, Beck	CT	7	
104	Promoting Adherence and Retention to Clinical Trials in Special Populations: A Women's Health Initiative Workshop	**Wilcox**, Shumaker, Bowen, Naughton, Rosal, Ludlam, Dugan, Hunt, Stevens	Gen.	7	
22	Prevalence of Pelvic Organ Prolapse and Urinary Incontinence in Women	**Clark**, Harris, Varner, Chang, Hendrix, Barnabei, Maddox, McTiernan, Francis, Nygaard	CT	6	
79	Databased Tracking and Statistical Models of the Clinical Trial Recruitment Process	**Creech**	CT	6	
34	The Relationship between Smoking Status, Body Weight, and Waist-to-Hip Ratio: the WHI	**Johnson**, Klesges, Hays, Manson, Curb, Black, Liu, Noonan	Gen.	6	
43	Sleep Complaints: Correlates and Co-Morbidities	**Kripke**, Freeman, Masaki, Brunner, Jackson, Hendrix, Carter	CT	6	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
19	Body Weight and Anthropometric Measures of Adiposity	**Manson**, Kotchen, Perri, Lewis, Johnson, Freed, Hall, Allen, Foreyt, Tinker, Noonan, Stefanick	Gen.	6	
62	Self-reported Urogenital Symptoms in Postmenopausal Women aged 50-79: WHI	**Pastore**, Hulka, Wells, Carter	Gen.	6	
73	Innovative Strategies for Monitoring and Enhancing Clinic Performance in the WHI Clinical Trial: The Creation of the Performance Monitoring Committee	**Pottern**, McTiernan, Shumaker, Naughton, Furberg, Rossouw, Prentice, Anderson, Lund, Tinker, Nance, Trevisan, Kotchen, Limacher, Brinson, Bonk, Feddersen	Gen.	6	
14	Psychosocial and Behavioral Correlates of Moderate Alcohol Consumption in Women	**Powell**, Hymowitz, Criqui, Ockene, Finnegan, Castro, Trevisan, Curb, Hunt, Noonan	CT	6	
53	Dietary, Physical Activity, and Exercise Patterns Among Diabetics	**Agurs-Collins**, Adams-Campbell, Passaro, Howard	Gen.	5	
49	Patterns of Use and Characteristics Associated with Hormone Replacement Therapy Among Postmenopausal Women	**Dunn**, Greenland, Woods, Stovall, Bartholow, Kemper	Gen.	5	
26	Special Populations Recruitment for the WHI: Success and Limitations	**Fouad**, Howard, Mouton, Talavera, Strickland, Thompson, Young, Lakin, Wang	Gen.	5	
38	The Relationship of Selected Dietary Components and Risk of Adenoma and Colorectal Cancer Among Postmenopausal Women: WHI	**Frank**, Agurs-Collins, Gams, Garland, Khandekar, Paskett, Wylie-Rosett, Carter	Gen.	5	
47	Is a "Too Low" Fat Diet a Marker of Health or Disease	**Gilligan**, Snetselaar, St. Jeor, Van Horn, Stefanick, Kotchen, Patterson	CT	5	
16	An Examination of the Differences in Total Energy and Several Nutrient Scores Derived from the FFQ vs. Estimates Based on Basal Metabolic Requirements and Food Record - Derived Scores in the WHI	**Hebert**, Beresford, Patterson, Chlebowski, St. Jeor, Coates, Elmer, Hartman, Prentice, Ebbeling	Gen.	5	
31	Comparisons between Never Smokers, Former Smokers, and Current Smokers in the WHI	**Hymowitz**, Ockene, Bowen, Robbins, Brunner, Shikany, Wagenknecht	OS	5	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
57	Regional Differences in Stroke Morbidity at Baseline in the WHI	**Johnson**, Hall, Oberman, Sheps, Hulka, Hays, Baum, Schenken, Burke, Limacher, Anderson, Jeppson	Gen.	5	
51	The Relationship of Quality of Social Support to Frequency of Cancer Screening Behaviors Among Postmenopausal Women	**Lane**, Taylor, Glanz, Elam, Klaskala, Powell, Messina, Smith	Gen.	5	
74	Baseline Characteristics of the WHI-OS Breast Cancer Survivor Cohort	**Paskett**, Sherman, Andersen, Hays, McDonald, Naughton	OS	5	
36	Prevalence of Silent MI	**Sagar**, Kotchen, Wong, Graettinger, Burke, Van Vorhees, Carter	CT	5	
52	Nutrient Intake of Women with Diabetes in the WHI Observational Study Cohort	**Tinker**, Gams, Lee, Smith, West, Snetselaar, Caggiula	Gen.	5	
13	Cardiovascular and other Physiological Correlates of Depression	**Wassertheil-Smoller**, Talavera, Campbell, Shumaker, Ockene, Robbins, Dunbar, Greenland, Cochrane, Noonan	Gen.	5	
41	Determinants of Fasting Hyperinsulinemia	**Manson**, LaCroix, Haan, Rodrigues, Wagenknecht, Johnson, Allen, Hendrix	Gen.	4	
20	Correlates of Endogenous Sex Hormone Concentrations in WHI	**McTiernan**, Wactawski- Wende, Chen, Meilahn, La Valluer, Cummings, Hiatt, Baum, Hulka, Wang, McNagny	CT	4	
23	A Comparative Analysis of Predictors of Recruitment for Hispanic and Caucasian Women in the WHI	**Talavera**, Fouad, Howard, Satterfield, Schenken, Simon, Porter, Bonk, Hunt, Wang, Corbie-Smith	Gen.	4	
68	Reliability and Physiologic Correlates of the Physical Activity Questionnaire in the WHI	**White**, Casso, Wang, Stefanick, Siscovick, Cauley, Strickland, Rebar, Rodrigues, Going, Frid	CT	4	
45	Socio-demographic Determinants of Folic Acid Intake	**Beresford**, Kritchevsky, Vitolins, Wodarski, Patterson	Gen.	3	
44	Effect of Hysterectomy with Ovarian Reservation on Cardiovascular Morbidity and Mortality	**Brzyski**, Barnabei, Barad, Guidice, Satterfield, Margolis, McNeeley	CT	3	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
75	Do Ethnic Differences in Lean and Fat Mass Contribute to Ethnic Differences in Bone Mineral Density (BMD)?	**Cauley**, Jackson, McGowan, LaCroix, Nevitt, Lewis, Ko, Margolis, Snetselaar	CT	3	
25	Hormone Replacement Therapy Effects on the Resting ECG	**Greenland**, Daugherty, Frishman, Kadish, Limacher, Schwartz	CT	3	
59	Dietary and Supplemental Calcium Intake and the Occurrence of Kidney Stones in Postmenopausal Women Residing in the Kidney Stone Belt	**Hall**, Oberman, Watts, Johnson, Paskett, Hays, Limacher	Gen.	3	
81	The Prevalence of Urinary Incontinence in WHI Women	**Hendrix**, Clark, Ling, Dugan, Salmieri, Hurtado, McNeeley, Laube, McTiernan, Francis	Gen.	3	
80	Insulin Resistance and Weight Change in Postmenopausal Black and White Women	**Howard**, Adams-Campbell, Passaro, Black, Stevens, Wagenknecht, Rodrigues, Safford, Allen	Gen.	3	
91	Adherence to NCEP Lifestyle Guidelines by Hyperlipidemic Women in the OS	**Hsia**, Frishman, Rosal, Stefanick, Howard, Snetselaar, Cochrane	OS	3	
84	Research Staff Turnover and Participant Adherence in the WHI	**Jackson**, Chlebowski, Huber, Boe, Granek, Snetselaar, Meyer, Milas	CT	3	
56	Psychometric Evaluation of the Urinary Incontinence Scale	**Levine**, Shumaker, Naughton, Kaplan, Bowen	Gen.	3	
55	The WHI Sleep Disturbance Scale: Scoring and Psychometric Evaluation	**Levine**, Shumaker, Naughton, Kaplan, Kripke, Bowen	Gen.	3	
42	Risk of Bacterial Endocarditis in Postmenopausal Women Undergoing Endometrial Biopsy	**Limacher**, Barnabei, Bassford, Parsons, Smith, Schatz, McNeeley	CT	3	
66	Physical Activity and CVD in Women: the Role of Moderate vs. Vigorous Exercise	**Manson**, LaCroix, Greenland, Oberman, Perri, Siscovick, Sheps, Mouton	OS	3	
83	Physical Activity and Risk of Breast Cancer in Postmenopausal Women: the Women's Health Initiative	**McTiernan**, Wilcox, Coates, Woods, Ockene, Adams-Campbell, White, Kooperberg	Gen.	3	
67	Association of Yogurt Consumption to Breast and Colorectal Cancers Among WHI Participants in the OS	**Mossavar-Rahmani**, Vitolins, Parker, Wodarski, Herbert, Caan, Himes, Garland, Kristal	OS	3	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
58	Influence of Race and Sunlight Exposure on Distribution of Bone Density among Postmenopausal Women in the Southeast	**Oberman**, Burke, Hays, Hulka, Johnson, Lewis, Limacher, Schenken	Gen.	3	
98	Patterns of Antioxidant Supplement Use in Participants in the Women's Health Initiative	**Shikany**, Dunn, Patterson, Anderson, Agurs-Collins	Gen.	3	
90	Passive Smoke Exposure in Childhood and Adulthood and Prevalent Coronary Heart Disease in Women Enrolled in the WHI	**Wagenknecht**, Frishman, Wong, Ockene, Snetselaar	OS	3	
87	Incidence and Correlates of Hip and Knee Replacement in the WHI	**Wallace**, White, Chang, Nevitt, LaCroix, Kaplan, Danchimah, Sturm	Gen.	3	
100	Outcomes of Six Month Recall Mammography for Abnormal Findings on Screening Mammograms	**Yasmeen**, Robbins, Romano, Chlebowski, Lane, Khandekar	Gen.	3	
107	Physical Activity Throughout the Life Course: The Women's Health Initiative	**Evenson**	OS	2	
92	Comparison of Self-report, Discharge Diagnosis, and Adjudication of Cardiovascular Events in the WHI	**Heckbert**, Hsia, Kooperberg, McTiernan, Curb, Barbour, Gaziano, Safford, Psaty, Frishman	Gen.	2	
94	The Modifying Effect of Socio-Cultural Status on Risk Factors for Type 2 Diabetes in Older Mexican American Women	**Parra-Medina**	OS	2	
46	Relationship between Adherence to a Low-fat Diet and Mental Health in Women	**Pleuss**, Bowen, Hoelscher, Thomson, Schectman	Gen.	2	
95	The Effects of Becoming a Widow on Health Behaviors and Health Status in Postmenopausal Women: The Women's Health Initiative	**Wilcox**, Evenson, Wassertheil-Smoller, Mouton, Cochrane, Loevinger	OS	2	

Table 8.1 (Continued)

MS ID	Title	Authors	Data Focus	Stage	Reference
78	Association Between Nutritional Factors and Bone Mineral Density in an Ethnically Diverse Population of Older Women	**Wolf**, Cauley, Stone, Nevitt, Simon, Lewis, LeBoff, Jackson, Wactawski-Wende	Gen.	2	

Stage
2= Approved
3= Writing group approved
4= Analysis proposed
5= Analysis in progress
6= Draft manuscript
7= Final manuscript submitted to P&P and PO
8= Final manuscript approved by P&P and PO
9= Submitted
10= In press/published

Table 8.2
Ancillary Studies

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
9	An investigation of oral hard tissue status in relation to skeletal bone mineral density measures and osteoporosis	Marjorie Jeffcoat	Al Oberman	yes	N/A	none	OS	650	no	6/1/95 - 5/31/02	funded
11	Validation and Exploration of Sleep and Mood Predictors	Daniel Kripke	Robert Langer	yes	N/A	none	OS	600	yes	8/1/95 - 7/31/99	funded
13	Prevalence and Correlates of Lumbar Spinal Stenosis	Lewis Kuller	Lew Kuller	yes	N/A	none	CT	150	no	12 year study	funded
14	High Density Lipoprotein Metabolism	Scott Going, Tamsen Bassford	Tom Moon	yes	N/A	none	OS	200	no	7/1/94 - 6/30/96	funded
15	The Relationship between Osteopenia and Periodontitis	Jean Wactawski-Wende	Maurizio Trevisan	yes	yes	none	OS	1300	no	9/16/96 - 9/15/00	funded
17	Domestic Violence in Older Women	Charles Mouton	Norm Lasser	yes	yes	none	OS	1000	no	10/25/94 - 10/24/96	funded
24	Cross-ethnic Comparisons of Skeletal Health of Postmenopausal Women in San Diego County	Diane Schneider	Robert Langer	yes	yes	none	OS	168	no	1/3/95 - 1/2/97	funded
25	Ankle-Arm Blood Pressure Index Measurement	Kamal Masaki	David Curb	yes	yes	none	OS	2700	no	2/96 - 1/98	funded
31	Eye Care Use	Robert Kleinstein	Al Oberman	yes	yes	none	OS	300	no	N/A	funded
33	The Association of HRT with Abdominal and Total Body Fat in Postmenopausal Women	Charlotte Mayo	Al Oberman	yes	yes	none	OS	690	no	7/31/95 - 3/31/96	funded

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
34	Ethnic Differences in Hip Bone Geometry by DXA and QCT	Dorothy Nelson	Susan Hendrix	yes	yes	none	HRT	330	no	12/1/96 - 12/31/02	funded
36	Hormone Replacement Therapy and Changes in Mammographic Density	Barbara Hulka	A. McTiernan	yes	yes	ALL	HRT	NA	no	1/98 - 12/07	funded
39	The Effects of HRT on the Development and Progression of Dementia	Sally Shumaker	Curt Furberg	yes	yes	all except #18	HRT	4800	no	5/1/96 - 4/30/02	funded
40	Ethnic and age differences in use of Mammography	S. Wassertheil-Smoller	S. Wassertheil-Smoller	yes	yes	none	All	All	no	N/A	funded
44	Estrogen and Vaginal pH	Anthony Schaeffer	Philip Greenland	yes	N/A	none	HRT	100	yes	4/1/96 - 3/31/01	funded
47	Effect of diet intervention on motivation to make other health-related changes	Langer/Lo	Robert Langer	yes	yes	none	DM	150	no	5/1/96 - 4/30/97	funded
48	Prostate Ca Survey of Spouses of WHI Screened Women	Sylvia Smoller	Sylvia Smoller	yes	yes	none	All	1607	no	2/1/96 - 6/30/96	funded
50	Nutrition Practice Guidelines for Maintaining Low-Fat Dietary Change in Post Menopausal Women	Beth Burrows	Ross Prentice	yes	yes	none	DM	200	no	10/1/96 - 9/30/97	funded
56	Behavioral and psychosocial predictors of dietary change in postmenopausal women	Joan Pleuss	Alice Thomson	yes	yes	none	DM	260	no	9/1/96 - 8/31/98	funded
57	Hispanic Women's Advocacy and Retention Strategies	Cheryl Ritenbaugh	Cheryl Ritenbaugh	yes	yes	none	OS	120	no	9/1/96 - 8/31/98	funded
60	Fat Intake in Husbands of WHI Dietary Arm Participants	James Shikany	Al Oberman	yes	yes	none	DM Partners		no	12/1/96	funded

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
61	Longitudinal Assessment of Memory Functioning in the WHI Clinical Trial	Beth Ober	Mary Haan	yes	yes		HRT	110	no	6 year study	funded
62	Prevention of age-related maculopathy in the WHI HRT CT: WHI-SE	Mary Haan	Mary Haan	yes	no		HRT	3300	no	9 year study	funded
63	Development and Evaluation of Eating Style Index	Pam Haines		yes	yes		OS	800	no	10/1/96 - 6/30/99	funded
65	Incidence of Benign breast disease in the DM CT - Pilot	Tom Rohan	A. McTiernan	yes	yes	all	DM	200	no	4/1/98 - 6/30/99	funded
67	Prevalence and Natural History of Autoimmune Thyroid Disease is Postmenopausal Women	Marjita Zakarija	Marianna Baum	yes	N/A	51	OS Blood Comp	1040	yes	7/97 - 3/31/05	funded
68	Coronary artery calcification detected with Ultrafast CT as an indication of CAD in OS participants	Judith Hsia	Judith Hsia	yes	yes	51	OS	782	no	1/1/97 - 12/31/05	funded
70	The Prevalence & Prognostic Importance of Myocardial Ischemia During Daily Life, & its Relationship to Migraine Status:WHI	David Sheps	David Sheffield	yes	yes	10	OS	3200	no	9/1/97 - 8/31/00	funded
72	Ethnicity, Body Composition, Bone Density and Breast Cancer	Zhao Chen	Cheryl Ritenbaugh	yes	yes	none	OS	800	no	9/1/97 - 8/30/02	funded
73	Psychosocial and Cultural Determinants of NIDDM in Latinas	Deborah Parra-Medina	Robert Langer	yes	yes	3	OS	228	yes	5/1/97 - 4/30/98	funded

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
74	The Effectiveness of Individual Versus Group Behavioral Strategies to Increase Participants Adherence	Lois Wodarski	Maurizio Trevisan	yes	yes	none	DM	50	no	7/1/97 - 9/30/97	funded
75	Adherence to Dietary Modification in the WHI	Milagros C. Rosal	Judith Ochene	yes	N/A	6 (does not specify which CC's)	DM	480	no	9/1/97 - 8/30/02	funded
76	Tailored Messages to Enhance Adherence of Older Women to Dietary Programs for Breast Cancer control	Rowan Chlebowski	Linda Lillington	yes	yes	none	DM	28	no	9/1/97 - 8/13/98	funded
78	Community Strategy to Retain Women Enrolled in Research	Mona Fouad		yes	N/A	none	CT	40	no	7/1/97 - 9/30/97	funded
82	Extension of Bone Mineral Density Assessment in WHI Native American Women	Zhao Chen	Cheryl Ritenbaugh	yes	yes	none	OS	200	no	7/1/97 - 6/30/01	funded
84	Apolipoprotein E genotype, ERT use, and fat-soluble vitamin intake: Effects on Cognitive Function in Older Women	Julie E. Dunn	Philip Greenland	yes	yes	none	DM+OS	260	yes	11/98 - 12/03	funded
86	A Pilot Study to Determine the Sensitivity of Form 39 to Impaired Executive Control Function (ECF) as measured by the CLOX: an Executive Clock-Drawing Task	M.J. Polk	Robert Schenken			none	HRT	50	no	N/A	funded
93	The Epidemiology of Venous Disease	Michael Criqui		yes	no		OS	725	no	3/11/98 - 6/30/99	funded

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
95	Work organization, psychological distress, and health among minority older women	Beatriz Rodriguez		yes	N/A	none	OS	500	no	7/23/97 - 7/22/98	funded
99	GENNID Study	Rowan Chlebowski		yes	yes	none	ALL	40	yes	12/1/98 - 3/31/00	funded
101	Women's Health Oral History Project	Catherine (Kit) Allen	Catherine Allen	yes	yes	none	DM+HRT +OS	50	no	1/99 - 12/00	funded
102	Quality of Life Improvements and Willingness to Pay: An Investigation of Selective Estrogen Receptor Modulators	Mona Fouad	Albert Oberman		yes	none	OS	120	no	10/98 - 9/98	funded
116	National validation and quality assurance of vitamin D absorption from CaD tablets	Cedric Garland				none	CaD	300	yes	7/20/99-11/31/99	funded
117	Risk Factors for Dry Eye Syndrome in Postmenopausal Women	Kelley A. Kinney	Rebecca Jackson		yes	none	OS	400	no	9/99-8/02	funded
28	Perspectives on Aging	S. Wassertheil-Smoller	S. Wassertheil-Smoller	yes	yes	none	OS	NA	no	5 year follow-up	pending
52	Endogenous Sex Hormones and Breast Cancer in Older Women	Anne McTiernan	A. McTiernan	yes	yes	All	OS	782	yes	7/1/99 - 6/30/04	pending
58	Enrollment of Hispanic Women in Prevention Trials	Edward Trapido	Marianna Baum	yes	yes	none	All	120	no	9/1/96 - 8/31/99	pending
83	Thrombotic, Inflammatory, and Genetic Markers for Coronary Heart Disease in Postmenopausal Women: A WHI Umbrella Study	Paul Ridker	JoAnn Manson	yes	yes	none	OS	1300	yes	7/1/99 - 6/30/03	pending

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
90	Biochemical and genetic determinants of fracture in postmenopausal women	Cummings and Jamal	Charles Kooperberg	yes	yes	none	OS	910	yes	6 or 7/99 sub	pending
92	Fasting glucose in baseline plasma from all CT participants	Barbara Howard					CT		no	N/A	pending
97	Modeling serum markers for cost-effective ovarian cancer screening	Garnet Anderson		yes	yes	all	OS	720	yes	4/1/00 - 3/31/04	pending
98	Bone mineral density as a predictor for periodontitis	Jean Wactawski-Wende		yes	N/A	none	OS	1000	yes	5/1/99 - 4/30/02	pending
100	Genetic, Biochemical and Behavioral Determinants of Obesity	Jennifer Hays	Jennifer Hays	yes	yes		OS	775	yes	4/1/99 - 3/31/01	pending
103	Effects of Hormone Replacement Therapy on Cognitive Aging: Women's Health Initiative Study of Cognitive Aging (WHISCA)	Sally Shumaker		yes			HRT	1800	no	4/1/99 - 3/31/05	pending
104	Tamoxifen Prevention: Is it acceptable to women at risk?	John Robbins	John Robbins	yes	yes	none	OS	150	no	7/1/99 - 6/30/01	pending
105	Xanthophyll Pigments in the Diet, Blood and Ocular Macula and Relationship to Age-Related Eye Disease in the Women's Health Initiative	Julie Mares-Perlman	Catherine Allen	yes	yes	4 others to participate, Ids unknown	OS Blood Comp	2880	yes	4/1/00 - 3/31/04	pending
106	Gene-Diet Interactions in Human Breast Cancer Risk	Jennifer Hu	Electra Paskett	no		none	OS Blood Comp	800	yes	6/1/99 - 5/31/03	pending
107	Hashimoto's Thyroiditis in Postmenopausal Women	Margita Zakarija		yes	yes	51	OS Blood Comp	2900	yes	4/1/00 - 3/31/05	pending

Table 8.2 (Continued)

AS #	Title	Study's PI(s)	WHI Investigator	Initial D&A Approval	Initial PO Approval	ID#s of Other Participating Clinics	Study Popu-lation	Sample Size	Speci-mens?	Funding Dates	Funding Status
108	Gene-environment effects and colorectal cancer	Rowan Chlebowski/ Henry Lin	Rowan Chlebowski Harbor UCLA	yes		all	OS Blood Comp	2000	yes	4/1/00 - 3/31/05	pending
109	Serum xenoestrogens and the risk of breast cancer	Vanessa Barnabei	Jane Kotchen	yes		none	OS Blood Comp		yes	12/99 - 12/01	pending
110	Sex steroid hormones and risk of coronary heart disease: A nested case control study	Kathryn Rexrode/JoAnn Manson	JoAnn Manson	yes		33	OS Blood Comp	700	yes	4/1/00 - 3/31/03	pending
111	Role of Inflammation in Acute Myocardial Infarction in Women	David Brown	S. Wassertheil-Smoller	yes		all	OS Blood Comp	750	yes	2/1/00 - 1/31/02	pending
112	Motivators and Barriers to Exercise in Older Women	Mary Haan/Carol Parise	Mary Haan	yes	yes	none	OS	1100	no	9/1/99 - 9/30/00	pending
113	Some Aspects of Mediterranean Diet in Relation to Risk of Chronic Diseases among Postmenopausal Women	Iman Hakim	Tamsen Bassford	yes	yes	none	OS	1000	yes	8/1/99 - 7/31/02	pending
114	Effects of Hormone Replacement Therapy on Cardiac Function and Ischemia	Mary Haan	John Robbins	yes		1 other to participate, ID unknown	HRT	300	no	7/1/99- 6/30/04	pending
115	Diabetes In Postmenopausal Women	Barbara V. Howard	Barbara V. Howard			all	OS	93726	yes		pending