

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1955 REPORTS**

**REPORT OF THE COMMITTEE ON ACCIDENT AND
SICKNESS EXPERIENCE IN PLANS INSURED
ON THE GROUP BASIS**

**GROUP WEEKLY INDEMNITY INSURANCE AND
GROUP HOSPITAL AND SURGICAL
EXPENSE INSURANCE**

THIS is the eighth annual report on the continuing study of the morbidity experience of Group Weekly Indemnity insurance and Group Employee and Dependent Hospital and Surgical Expense insurance.

This year's report covers all plans studied in the two previous reports with the exception that Hospital Expense insurance plans providing five times the daily benefit for miscellaneous hospital charges have been omitted because of the decreasing importance of this type of plan. Three new Hospital Expense insurance plans are included for the first time:

- a) Employee, 70-day, 10×, 10×, Reimbursement plan
- b) Employee, 70-day, 10×, 20×, Reimbursement plan
- c) Employee, 70-day, 14 + 20×, 20×, Fixed Benefit

This year all tables of exposures, claims and annual claim costs are based on the combined 1952-1954 policy years' experience.

For six out of the nine contributing companies, the crude annual claim costs shown in this report have been derived from the experience of the three policy years ending in the calendar years 1952 through 1954. For the remaining three companies, the experience of the three policy years ending July 1, 1951 through June 30, 1954 has been used for that purpose.

In compiling this report, the Committee has included the available experience of employer-employee groups regardless of size. The experience of insured groups outside of the continental United States, and of trusteeship and association cases insuring employees of the member employers, and of union cases, whether or not insurance depends on continued employment, have been excluded. The data for Group Weekly Indemnity insurance, contained in Tables 1, 2, and 8, exclude the experience of plans written under State Cash Sickness laws.

Data in this report for Weekly Indemnity insurance and Employee Hospital Expense insurance are based on the experience of groups in those industrial classifications which the contributing companies individually

TABLE 1
 COMBINED 1952-54 POLICY YEARS' EXPERIENCE
 GROUP WEEKLY INDEMNITY INSURANCE
 WITH 6 WEEKS MATERNITY BENEFIT
 NONRATED INDUSTRIES

FEMALE PERCENT	NUMBER OF EXPERIENCE UNITS	WEEKLY INDEMNITY EXPOSED	CLAIMS	ANNUAL CLAIM COST*	NUMBER OF EXPERIENCE UNITS	WEEKLY INDEMNITY EXPOSED	CLAIMS	ANNUAL CLAIM COST*
13-WEEK PLANS								
1st Day Accident and 4th Day Sickness					4th Day Accident and 4th Day Sickness			
<11%	3,036	10,841,990	6,628,625	\$.61	394	2,521,750	1,479,009	\$.59
11- 21	1,193	5,192,220	3,473,087	.67	181	2,824,950	2,145,837	.76
21- 31	569	3,218,270	2,599,585	.81	69	219,900	146,634	.67
31- 41	243	1,483,230	1,280,773	.86	56	336,450	279,530	.83
41- 51	161	699,100	616,355	.88	23	65,420	60,640	.93
51- 61	91	311,840	286,914	.92	23	92,990	97,599	1.05
61- 71	72	294,580	288,208	.98	18	55,490	44,785	.81
71- 81	29	94,950	92,211	.97	9	41,480	42,549	1.03
81- 91	26	145,140	89,767	.62	5	10,600	8,377	.79
91-100	9	2,890	2,044	.71	2	6,290	1,354	.22
Total	5,429	22,284,210	15,357,569	.....	780	6,175,320	4,306,314	.....
1st Day Accident and 8th Day Sickness					8th Day Accident and 8th Day Sickness			
<11%	8,157	35,065,290	17,333,294	\$.49	1,307	9,953,080	4,853,049	\$.49
11- 21	3,727	17,977,480	10,469,618	.58	648	6,706,240	4,209,538	.63
21- 31	1,971	9,521,810	6,100,269	.64	389	13,301,840	8,965,198	.67
31- 41	1,256	7,191,140	5,704,403	.79	330	3,743,020	2,537,303	.68
41- 51	882	4,793,680	3,939,276	.82	214	2,072,770	1,827,986	.88
51- 61	655	3,544,010	3,038,346	.86	159	1,012,890	864,941	.85
61- 71	429	1,459,950	1,336,772	.92	124	671,680	561,721	.84
71- 81	313	881,600	814,184	.92	108	350,170	309,261	.88
81- 91	173	487,270	512,592	1.05	76	354,640	354,162	1.00
91-100	45	100,430	84,344	.84	26	55,660	75,741	1.36
Total	17,608	81,022,660	49,333,098	.....	3,381	38,221,990	24,558,900	.....
26-WEEK PLANS								
1st Day Accident and 8th Day Sickness					8th Day Accident and 8th Day Sickness			
<11%	1,875	25,032,280	17,470,433	\$.70	323	7,382,250	4,848,175	\$.66
11- 21	615	9,443,750	6,626,810	.70	152	3,681,060	2,504,009	.68
21- 31	288	4,048,200	3,458,222	.85	71	2,951,430	2,084,933	.71
31- 41	149	2,914,030	2,855,029	.98	40	372,470	317,407	.85
41- 51	96	923,500	950,864	1.03	40	1,134,850	1,235,417	1.09
51- 61	65	588,400	558,618	.95	17	94,860	95,412	1.01
61- 71	26	185,300	239,599	1.29	11	121,890	148,547	1.22
71- 81	13	181,430	262,965	1.45	1	6,670	2,666	.40
81- 91	1	1,050	1,878	1.79	1	8,860	5,208	.59
91-100 . . . . .	.....	.....	.....	.....	.....	.....	.....	.....
Total	3,128	43,317,940	32,424,418	.....	656	15,754,340	11,241,774	.....

* Per \$1.00 of exposure.

rate standard for premium purposes; tables covering these plans are headed "Nonrated Industries." Data for Surgical Expense insurance, Employee or Dependent, and for Dependent Hospital Expense insurance are based on the experience of groups regardless of industrial classification; tables covering these plans are headed "All Industries."

The term "experience unit" is defined as a policy year's experience of an insured group.

Weekly Indemnity plans are described by the use of three figures. The first and second are the days on which benefits begin in the case of disabilities due to accident or sickness, respectively; the third is the maxi-

TABLE 2
 GROUP WEEKLY INDEMNITY INSURANCE
 NONRATED INDUSTRIES
 SECULAR TREND
 STANDARDIZED MORBIDITY RATIOS
 Base: 1952-54 Policy Years' Experience

Policy Year Experience	1-4-13 and 4-4-13 Plans	1-8-13 and 8-8-13 Plans	1-8-26 and 8-8-26 Plans	All Plans
1947.....	105%	101%	106%	103%
1948.....	96	97	102	99
1949.....	95	96	95	96
1950.....	91	94	98	95
1951.....	92	94	92	93
1952.....	98	99	100	99
1953.....	102	102	98	101
1954.....	99	99	101	100

imum number of weeks of benefit. For example, a 1-4-13 plan provides for payments to begin on the first day of disability due to accident and on the fourth day of disability due to sickness, with a maximum period, in either case, of 13 weeks. Under all plans studied, a total maximum period of 6 weeks applies to all disabilities due to any one pregnancy.

The first term of the description of an Employee Hospital Expense plan shows the maximum nonmaternity benefit duration, 31 days or 70 days. The second term covers the total maternity benefit for any one pregnancy: 10× indicates that benefits for all hospital charges including room and board are limited to 10 times the maximum daily benefit; 14 + 10× indicates a daily benefit up to a maximum of 14 days and in addition a maximum for all hospital charges other than room and board of 10 times the daily benefit. The third term shows the maximum for all non-maternity hospital charges other than room and board: 20× indicates a

TABLE 3
COMBINED 1952-54 POLICY YEARS' EXPERIENCE
EMPLOYEE GROUP HOSPITAL EXPENSE INSURANCE
NONRATED INDUSTRIES

FEMALE PERCENT	NUMBER OF EXPERIENCE UNITS	DAILY BENEFIT EXPOSED	CLAIMS	ANNUAL CLAIM COST*	NUMBER OF EXPERIENCE UNITS	DAILY BENEFIT EXPOSED	CLAIMS	ANNUAL CLAIM COST*
10X REIMBURSEMENT PLANS								
31 Day, 10X Maternity Benefit					31 Day, 14+10X Maternity Benefit			
<11%	1,946	2,032,524	2,549,438	\$1.25	512	543,759	686,701	\$1.26
11- 21	946	1,130,043	1,452,681	1.29	265	488,813	685,308	1.40
21- 31	636	808,364	1,108,850	1.37	106	290,089	370,495	1.28
31- 41	391	611,889	874,318	1.43	84	435,211	606,280	1.39
41- 51	303	307,527	480,317	1.56	68	74,198	113,841	1.53
51- 61	244	305,766	530,818	1.74	66	102,330	177,204	1.73
61- 71	217	224,451	402,926	1.80	39	100,893	160,842	1.59
71- 81	120	190,193	339,430	1.78	15	69,347	141,178	2.04
81- 91	82	103,546	209,128	2.02	9	7,095	17,016	2.40
91-100	23	26,961	60,688	2.25	3	6,502	14,082	2.17
Total	4,908	5,741,264	8,008,594		1,167	2,118,237	2,972,947	
70 Day, 10X Maternity Benefit								
<11%	253	368,281	461,323	\$1.25				
11- 21	124	131,399	181,673	1.38				
21- 31	77	84,328	121,062	1.44				
31- 41	37	58,074	88,565	1.53				
41- 51	41	57,159	99,474	1.74				
51- 61	38	60,298	104,422	1.73				
61- 71	23	85,700	152,278	1.78				
71- 81	7	4,410	9,656	2.19				
81- 91								
91-100	1	517	881	1.70				
Total	601	850,166	1,219,334					
20X REIMBURSEMENT PLANS								
31 Day, 10X Maternity Benefit					70 Day, 10X Maternity Benefit			
<11%	774	824,845	1,200,674	\$1.46	288	449,445	730,464	\$1.63
11- 21	361	618,125	958,052	1.55	161	520,890	976,830	1.88
21- 31	213	265,598	411,626	1.55	121	105,194	185,890	1.77
31- 41	129	184,376	292,492	1.59	25	31,626	57,468	1.82
41- 51	81	113,824	201,363	1.77	18	14,880	27,796	1.87
51- 61	61	93,381	183,599	1.97	38	97,952	195,534	2.00
61- 71	43	49,478	104,370	2.11	18	43,820	80,861	1.85
71- 81	19	21,174	39,352	1.86	5	9,528	16,351	1.72
81- 91	15	28,680	71,789	2.50	2	1,329	1,751	1.32
91-100	1	298	516	1.73				
Total	1,697	2,199,779	3,463,833		676	1,274,664	2,272,945	

* Per \$1.00 of exposure.

TABLE 3—Continued
 COMBINED 1952-54 POLICY YEARS' EXPERIENCE
 EMPLOYEE GROUP HOSPITAL EXPENSE INSURANCE
 NONRATED INDUSTRIES

FEMALE PERCENT	NUMBER OF EXPERIENCE UNITS	DAILY BENEFIT EXPOSED	CLAIMS	ANNUAL CLAIM COST*	NUMBER OF EXPERIENCE UNITS	DAILY BENEFIT EXPOSED	CLAIMS	ANNUAL CLAIM COST*
10X FIXED BENEFIT PLANS								
	31 Day, 14+10X Maternity Benefit				70 Day, 14+10X Maternity Benefit			
<11%	2,254	2,907,495	3,994,612	\$1.37	731	1,263,720	1,873,934	\$1.48
11- 21	1,295	2,139,959	2,948,621	1.38	469	812,958	1,237,079	1.52
21- 31	655	1,135,954	1,650,476	1.45	245	265,315	433,850	1.64
31- 41	502	688,424	1,108,087	1.61	165	360,592	574,449	1.59
41- 51	328	542,340	873,098	1.61	111	116,776	207,066	1.77
51- 61	233	270,785	500,427	1.85	78	89,372	162,724	1.82
61- 71	169	347,216	696,253	2.01	64	102,645	200,746	1.96
71- 81	135	184,497	377,507	2.05	37	23,544	54,383	2.31
81- 91	50	96,193	204,073	2.12	15	10,780	23,946	2.22
91-100	18	16,319	34,496	2.11	1	330	554	1.68
Total	5,639	8,329,182	12,387,650	.....	1,916	3,046,032	4,768,731	.....
20X FIXED BENEFIT PLANS								
	31 Day, 14+20X Maternity Benefit				70 Day, 14+20X Maternity Benefit			
<11%	282	417,258	620,524	\$1.49	221	616,798	1,065,364	\$1.73
11- 21	174	511,237	936,944	1.83	131	480,013	831,423	1.73
21- 31	103	162,138	295,109	1.82	64	103,222	227,719	2.21
31- 41	50	147,779	292,964	1.98	43	107,712	216,334	2.01
41- 51	39	107,721	216,034	2.01	23	24,165	56,942	2.36
51- 61	33	44,351	96,775	2.18	26	64,774	140,516	2.17
61- 71	15	16,301	37,982	2.33	16	13,983	32,479	2.32
71- 81	5	4,462	12,442	2.79	6	5,660	12,069	2.13
81- 91	3	1,681	4,650	2.77	3	1,615	3,597	2.23
91-100								
Total	704	1,412,928	2,513,424	.....	533	1,417,942	2,586,443	.....

* Per \$1.00 of exposure.

maximum of 20 times the daily benefit. Under Reimbursement plans, hospital charges are paid up to the maximum benefits provided; under Fixed Benefit plans the daily benefit is paid for each day of confinement without regard to the actual charges.

Trend of Experience

In order to analyze the secular trend underlying the experience under the plans studied, standardized morbidity ratios were obtained for those policy years for which data were available. These ratios are presented in Tables 2 and 7.

TABLE 4
COMBINED 1952-54 POLICY YEARS' EXPERIENCE
EMPLOYEE GROUP SURGICAL EXPENSE INSURANCE
WITH OBSTETRICAL BENEFITS
ALL INDUSTRIES

FEMALE PERCENT	\$150 SCHEDULE				\$200 SCHEDULE			
	Number of Experience Units	Maximum Indemnity Exposed Per \$150 Basic Unit	Claims	Annual Claim Cost*	Number of Experience Units	Maximum Indemnity Exposed Per \$200 Basic Unit	Claims	Annual Claim Cost*
<11% . . .	8,306	2,260,153	7,266,600	\$3.22	7,262	2,036,395	8,671,825	\$4.26
11- 21 . . .	4,688	1,333,355	5,105,907	3.83	3,746	1,153,817	5,849,658	5.07
21- 31 . . .	2,842	1,145,129	4,845,731	4.23	1,953	676,105	3,577,371	5.29
31- 41 . . .	1,999	755,706	3,491,628	4.62	1,154	351,025	2,047,957	5.83
41- 51 . . .	1,394	405,637	2,061,426	5.08	831	359,380	2,194,112	6.11
51- 61 . . .	1,089	313,890	1,655,027	5.27	614	179,531	1,219,431	6.79
61- 71 . . .	816	214,578	1,185,315	5.52	447	97,476	738,747	7.58
71- 81 . . .	556	133,194	873,720	6.56	230	73,376	488,629	6.66
81- 91 . . .	350	83,787	543,996	6.49	112	29,290	213,693	7.30
91-100 . . .	67	12,887	107,125	8.31	28	4,136	31,679	7.66
Total . . .	22,107	6,658,316	27,136,475	.....	16,377	4,960,531	25,033,102	.....

* Per basic unit exposed.

The standardized morbidity ratio is of the type introduced in last year's report. The ratio for any year was calculated as follows: the crude claim cost for that year was applied (by female percentage groups, in the case of employee plans) to the accumulated 1952-1954 exposure and the resulting total of calculated claims was divided by the corresponding actual claims of the accumulated 1952-1954 experience. The ratios for policy years 1947 through 1953 differ from those shown in the 1954 report for these policy years because in the 1954 report the 1948-1952 exposure was

TABLE 5
 COMBINED 1952-54 POLICY YEARS' EXPERIENCE
 DEPENDENTS GROUP HOSPITAL EXPENSE INSURANCE
 ALL INDUSTRIES

Plan Identification	Number of Experience Units	Daily Benefit Exposed	Claims	Annual Claim Cost*
Reimbursement Plan with No Maternity Benefit 31 Day, 10×.....	1,029	1,395,672	3,678,203	\$2.64
Reimbursement Plans with 9 Months Maternity Waiting Period and 10× Daily Benefit for Maternity				
31 Day, 10×.....	8,948	7,906,600	25,194,392	3.19
70 Day, 10×.....	1,078	1,515,254	5,662,129	3.74
31 Day, 20×.....	2,936	3,016,642	11,389,219	3.78
70 Day, 20×.....	1,037	2,281,062	8,944,495	3.92

* Per \$1.00 of exposure.

TABLE 6
 COMBINED 1952-54 POLICY YEARS' EXPERIENCE
 DEPENDENTS GROUP SURGICAL EXPENSE INSURANCE
 ALL INDUSTRIES

PLAN	\$150 SCHEDULE				\$200 SCHEDULE			
	Number of Experience Units	Maximum Indemnity Exposed Per \$150 Basic Unit	Claims	Annual Claim Cost*	Number of Experience Units	Maximum Indemnity Exposed Per \$200 Basic Unit	Claims	Annual Claim Cost*
No Obstetrical Benefits.....	1,917	401,588	3,642,884	\$ 9.07	1,748	443,665	4,890,923	\$11.02
With Obstetrical Benefits 9 Months Waiting Period..	10,988	2,422,758	30,464,560	12.57	12,102	2,527,213	36,419,367	14.41

* Per basic unit exposed.

TABLE 7
GROUP HOSPITAL AND SURGICAL EXPENSE INSURANCE
SECULAR TREND
STANDARDIZED MORBIDITY RATIOS
Base: 1952-54 Policy Years' Experience

POLICY YEAR EXPERIENCE	EMPLOYEE HOSPITAL EXPENSE NONRATED INDUSTRIES				EMPLOYEE SURGICAL EXPENSE		
	31, 10X, 10X, Reimb. and 31, 14+10X, 10X, F.B.	Other 10X Plans	All 20X Plans	All Plans	\$150 Schedule	\$200 Schedule	Both Schedules
1947.....	74%				80%		
1948.....	76				85		
1949.....	81				88		
1950.....	86				90		
1951.....	90				92	92%	92%
1952.....	94	97%	98%	96%	97	96	97
1953.....	100	101	101	100	102	100	101
1954.....	105	103	101	104	102	103	102

POLICY YEAR EXPERIENCE	DEPENDENT HOSPITAL EXPENSE			DEPENDENT SURGICAL EXPENSE		
	All 10X Plans	All 20X Plans	All Plans	\$150 Schedule	\$200 Schedule	Both Schedules
1947.....	80%			88%		
1948.....	85			92		
1949.....	89			95		
1950.....	92			97		
1951.....	95			101	102%	101%
1952.....	97	98%	98%	100	98	99
1953.....	101	102	101	99	101	100
1954.....	102	99	101	101	100	101

NOTE: Includes plans with or without maternity or obstetrical benefits.

TABLE 8
ANALYSIS OF MALE AND FEMALE EXPERIENCE
ALL EXPOSURE SIZES

PLAN	1952-54 POLICY YEARS' EXPERIENCE				1954 LEVEL OF CLAIM COSTS		PARAMETER RATIO
	Exposure Size Groupings				Male Parameter	Female Parameter	
	0-7		0-9				
	Amount Exposed	Female Percentage of Total Exposure	Female Percentage of Total Exposure				
Group Weekly Indemnity Insurance							
1-4-13.....	<11% 8,288,200 Σ 15,239,290	15	16	.564	1.282	227%	
4-4-13.....	<11% 1,558,140 Σ 3,234,140	17	15	.648	1.055	163	
1-8-13.....	<11% 21,801,940 Σ 50,996,340	21	20	.452	1.237	274	
8-8-13.....	<11% 5,554,910 Σ 16,182,500	25	23	.455	1.248	274	
1-8-26.....	<11% 10,561,420 Σ 17,843,190	14	14	.659	1.351	205	
8-8-26.....	<11% 1,813,630 Σ 3,592,420	18	16	.632	1.333	211	
Employee Hospital Expense							
31 Day, 10×, 10×, Reimbursement.....	<11% 1,706,709 Σ 4,531,770	25	25	1.267	2.080	164	
31 Day, 14+10×, 10×, Reimbursement.....	<11% 398,013 Σ 1,095,385	24	26	1.163	2.172	187	
70 Day, 10×, 10×, Reimbursement.....	<11% 251,831 Σ 620,854	24	24	1.150	2.245	195	
31 Day, 10×, 20×, Reimbursement.....	<11% 729,496 Σ 1,684,881	21	20	1.404	2.238	159	
70 Day, 10×, 20×, Reimbursement.....	<11% 306,471 Σ 725,150	18	19	1.673	2.394	143	
31 Day, 14+10×, 10×, Fixed Benefit.....	<11% 1,818,064 Σ 5,063,542	24	23	1.321	2.405	182	

TABLE 8—Continued

PLAN	1952-54 POLICY YEARS' EXPERIENCE				1954 LEVEL OF CLAIM COSTS		PARAMETER RATIO
	Exposure Size Groupings				Male Parameter	Female Parameter	
	0-7		0-9				
	Amount Exposed	Female Percentage of Total Exposure	Female Percentage of Total Exposure				
Employee Hospital Expense —Continued							
70 Day, 14+10×, 10×, Fixed Benefit	<11% Σ	711,024 1,838,946	21	19	1.474	2.279	155%
31 Day, 14+20×, 20×, Fixed Benefit	<11% Σ	329,883 927,467	21	20	1.487	3.044	205
70 Day, 14+20×, 20×, Fixed Benefit	<11% Σ	276,332 651,853	19	16	1.576	3.134	199
Employee Surgical Expense							
\$150 Schedule	<11% Σ	1,338,526 3,770,972	25	23	2.935	8.035	274
\$200 Schedule	<11% Σ	1,196,012 2,886,754	21	20	3.961	9.869	249

used in the base; however, the trends shown in the 1954 and in this year's report are consistent.

The analysis of the experience of the Employee Hospital and Surgical Expense insurance plans continues to show an upward trend.

Male and Female Costs

As in the two previous reports, male and female parameters have been derived for the employee plans, together with a parameter ratio (female parameter divided by male parameter), which are shown in Table 8. The parameters were derived from the 1952-1954 policy year experience of exposure size groups 0-7 included in Tables 1, 3, and 4 and were adjusted to reproduce the level of crude claim costs of all exposure size groups for the 1954 policy year. The 1953 report discussed the considerations underlying these parameters and described their calculation in detail.

As brought out in that discussion, the parameters in Table 8 are the result of the composite experience of groups whose claim costs vary widely as a result of such influences as geographical location, industrial classification, age distribution, etc. The resulting lack of homogeneity also produces variations and inconsistencies when male and female costs are derived or compared.

Dispersion of Claim Costs

Previous reports have discussed the dispersion of crude claim costs of groups included in these studies. While no attempt was made to measure the fluctuations present in the figures in this report, nevertheless, the data underlying this year's tables were subject to the same influences. Accordingly, it must be recognized that many groups might have significantly different claim costs from the averages shown in this report.

Contributing Companies

The following companies contributed experience for the investigation covered in this report:

Aetna Life Insurance Company
Connecticut General Life Insurance Company
Continental Assurance Company
Equitable Life Assurance Society
John Hancock Mutual Life Insurance Company
Metropolitan Life Insurance Company
Occidental Life Insurance Company of California
Prudential Insurance Company of America
The Travelers Insurance Company