T. Tamura, I. Mizukura. Home healthcare network in the elderly. Gerontechnology 2008; 7(2):221. The home healthcare network contains secured network data protocols, measurement devices, and interface equipment for linking the devices[1,2]. We installed the system in around 100 households in Japan, inhabited by 240 subjects with metabolic syndromes, and report on the major findings and some problems in data analysis. **Methods** Data were obtained during a 24 month period. Each family received a blood pressure monitor, a weight scale with a body-fat monitor, a heart rate monitor, and some other devices (*Figure 1*). For 240 subjects in different areas like Sapporo, Osaka and Kobe, the physiological parameters were monitored. Informed consent was obtained from each individual. During the study period, medical and paramedical staffs intervened occasionally, while the data for each subject were collected via the Internet. **Results and discussion** The system worked without any problems. Table 1 shows the total performance of the study. Pedometers, blood pressure manometer, body weight scale and urine sugar monitor were used at 50634 times, 48372 times, 44908 times and 35292 times during about one year by 100 families respectively. The participation rate of measurement is about 60%. In the body weight measurement, 117 subjects measured more than 100 times in one year. In Osaka field test 39 subjects had measured more than 100 times out of 20 families (1.95 person per family) and in Sapporo 78 subjects had done so out of 70 families (1.1 persons per family). The level of involvement is obviously different from in Osaka field with interventions by physicians and in Sapporo field with web competition without interventions. The simple devices such as scale, BP blood pressure monitor and urine Sugar monitor can easily used and received acceptable data. Further on the intervention of physician and paramedical staff gives motivation for the monitoring in the elderly. In the first 12 months the users with and without diseases participated in the monitoring, but the healthy subjects left the system. Some users participated again when the healthy condition became worse. From the obtained data we can observe the seasonal changes in the body weight and blood pressure. Additionally, changes in food intake clearly went together with changes in sodium and potassium concentration. The reply to the users using Internet also gave good communication for both users and physicians. Overall, the system could be accepted by users, and further studies are needed to develop the devices with simple operation.

References

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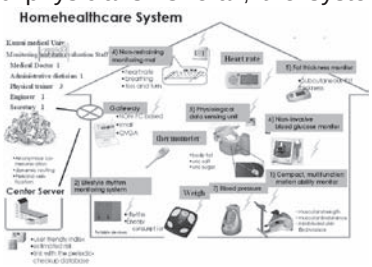

Figure 1 A typical experimental set-up

Table 1: Data collection; NMT=number of measurement times; NES=number of subjects measured more than 10 times using the device; BW=body weight; BP=blood pressure; MAM=Motion Ability Monitor

Device name	unit	Sapporo-71 families			Osaka -20 families			Kobe–10 families		
		samples	NES	average	samples	NES	average	samples	NES	average
BW scale	NMT	27,280	106	257	15,940	48	332	1,686	13	130
BP meter	NMT	31,878	120	266	15,225	48	317	1,224	10	122
Urine sugar	NMT	17,613	67	263	17,679	49	361			
Urine Na^+,K^+	NMT				4,965	7	709			
3-D acc.	NMT				21,121	20	1,056			
Pedometer	Hour	26,014	108	241	3,499	20	175	1,089	9	121
Monitoring	Hour				18,250	21	869			
MAM	NMT				33,330	6	1,282			
Body fat	NMT	2,314	11	210						
ECG	NMT				2,194	7	313			