

VACANCY TURNOVER SURVEY

October, 1981 to April, 1984

HHRU 84:7

Prepared by:

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VACANCY TURNOVER STUDY

Introduction

Early in 1981 following discussions with the Nurse Administrator's Association and with other interested persons we agreed to add two more dimensions to the HMRU Difficult-to-Fill Survey. The requested information was for Registered Nurses (RNs) only. Especially for this group, there was concern that the Difficult-to-Fill Survey underestimated the problem hospitals experienced day by day in maintaining a full nursing staff complement.

The added dimensions were total vacancies at a point in time and a calculation of staff turnover rates. It was also necessary to ask participating hospitals to report total numbers of RN positions in their establishments as this information is not available from other sources and it appears to change fairly often.

Definitions

(a) Vacancy Rate

This is the number of vacant positions per 100 filled and vacant positions, calculated at a given point in time. For a period of time, the vacancy rate is the average (arithmetic mean) of the rates at the beginning and end of the period.

(b) Turnover Rate

This is the total number of positions filled in a period per

100 positions, where the number of positions is the average (arithmetic mean) of the numbers at the beginning and end of the period. Filled positions are classified as either filled from within the hospital or from elsewhere.

The Study Sample

Data collection on a trial basis commenced in April of 1981 with a mailing to a study population of 88 acute care hospitals in British Columbia. In October, a sub-sample of 52 actively participating hospitals was selected which was judged to be representative, both geographically and by size of facility, of the total population, and the definitive study commenced.

Data has been collected in three-month periods and is now available for the 10 quarters between October, 1981 and April, 1984 inclusive. The results are reported herein.

Response Rates

Response rates by period of time for each of the six size groups are shown in Table 1. The overall response rate has been 69.4 percent, but broken down by period, the rate has decreased from a high of 86.5 percent in the first period to 44.2 percent in the last.

The original sampling ratio for large (300+ beds) to medium (100 to 299 beds) to small (< 100 beds) facilities, originally 1:2:3, stayed

reasonably stable until the fall of 1983, but several of the larger hospitals have ceased responding and the ratio has moved from 1:2:3 to 1:4:5 and then to 1:4:7 in the 1st quarter of 1984.

Results

Over the 10 quarterly periods between October, 1981 and April, 1984, the total vacancy rate for registered nurses in our sample of B.C. hospitals varied between two and four per 100 positions (Figure 1). During the same period of time the turnover rate behaved in a more erratic manner, moving up and down between lows of about five and highs of eight to twelve per 100 positions, reaching an absolute high in the 3rd quarter of 1983.

In the results that follow, vacancy and turnover rates are examined separately.

A. Vacancy Rates

Full-time vs Part-Time - The vacancy rates for full-time and part-time positions are shown in Figure 2. As can be seen, there is very little difference between the two. From an initial high point of about four vacancies per 100 positions in the 4th quarter of 1981, both rates fell abruptly in the next three months, then moved down more slowly to about two per 100 in the 3rd quarter of 1982. They remained at that point for a half year before moving up in the 2nd quarter of 1983. Here some divergence occurred, with the part-time rate rising abruptly to a somewhat higher point than the full-time rate, and remaining higher.

Metropolitan vs Non-Metropolitan B.C. - In Figure 3 we see that the high initial vacancy rate, its precipitous fall in the 1st quarter of 1982, and its rise beginning in the 2nd quarter of 1983, were apparently accounted for by events in metropolitan hospitals. Non-metropolitan rates remained comparatively stable, ranging between about 1.5 and 3 per 100 positions.

Size of Facility - Figure 4 displays the average vacancy rate and range of vacancy rates over the 10 quarterly periods, for the different sizes of hospitals (as measured by rated bed capacity). The overall average is 2.6 vacancies per 100 positions and ranges from a low of 1.8 to a high of 4.2. The largest average vacancy rate (3.6) occurred in hospitals with fewer than 50 beds. Next were the 400+ bed facilities with a rate of 3.1 per 100 positions --- with 1,382 average total positions reported, these facilities would have a dominant affect on the total rate. The 50-99 bed facilities had vacancy rates for a given period ranging all the way from 0.0 to 6.0 while the under 50 bed facilities ranged from 0.4 to 5.5. The high rates for these small facilities would pose a severe problem in their operation, but would have little effect on the total rate, given the small numbers of average total positions reported.

Nursing Care Areas - The highest average vacancy rates were reported for intensive care (3.5) and combined skills (3.8). These two areas, along with medicine and surgery, which had average rates close to the overall average but the largest average numbers of total positions reported, would all have major affects on the overall rates. Psychiatry

and administration had high average vacancy rates (3.4 and 4.0, respectively) but relatively small average numbers of reported positions.

B. Turnover Rates

Over the study period there were five inter-quarter periods of rising turnover rates and four of falling rates (Figure 6). When turnover rates are rising there are either increasing numbers of positions being filled from outside the hospital (filled from elsewhere), increasing numbers of internal transfers, including changes from casual to permanent staff (filled within), or decreasing number of positions (position deletions/new positions). When the turnover rate is falling one or more of these factors is also moving in the other direction.

The filled within rate moved up and down between a low of about two and a high of about seven per 100 positions. The filled from elsewhere rate varied between a low of about one to a high of about five per 100 positions and, in general, paralleled the filled within rate in all but three of the inter-quarter periods, i.e., where the rapidly rising filled within rates between the 1st and 3rd quarters of 1982 and between the 4th quarter of 1983 and 1st quarter of 1984 were accompanied by stable or rapidly falling filled from elsewhere rates. For these periods there emerges a picture of hospitals rapidly increasing their internal transfers, possibly accompanying a decrease in the number of positions, and a low, or return to a low, filled from elsewhere rate.

Also noteworthy is the relatively high filled from elsewhere rate between the 1st and 3rd quarters of 1983.

Full-Time vs Part-Time - The full-time and part-time turnover rates are displayed in Figure 7. Naturally enough, in view of the relatively large ratio of full-time to part-time positions reported (3.4:1), the total turnover rate closely follows the full-time rate. Notably, the part-time rate remained fairly stable at about eight per 100 positions from the 2nd quarter of 1982 through the 2nd quarter of 1983.

Metropolitan vs Non-Metropolitan B.C. - There was considerable variation between the metropolitan and non-metropolitan rates (Figure 8) but the ratio of positions reported for the two regional groups was close to unity (1.3:1). The metro rates moved up and down between a low of about five and a high of almost 15 per 100 positions, whereas the non-metro rate moved between four and a high of only nine per 100 positions. The principal component of all four peak turnover rates (4th quarter of 1981, 3rd quarter of 1982, 1st and 3rd quarters of 1983) is seen to be the metropolitan sub group of hospitals.

Size of Facility - The average turnover rates and range of turnover rates over the 10 quarterly periods, cross-classified by size of facility, are shown in Figure 10. The large 400+ bed facilities had an average turnover rate of approximately 11 per 100 positions and ranged from four to 17 per 100 positions. For 50 to 99 bed facilities, the rate ranged from two to 28 per 100 positions but there were, on average,

only 133 positions included in those calculations.

Nursing Care Areas - The nursing areas, medicine and intensive care, which represented almost 18 per cent of the average total positions, had average turnover rates of approximately 11 per 100 positions (Figure 10). Intensive care ranged from four to over 28 per 100 positions. At the other end of the scale, operating room nurses had an average turnover rate of less than five with a narrow range of only three to seven per 100 positions.

C. Comparison with Difficult-to-Fill Vacancy Rates

Data from the Difficult-to-Fill (DTF) Positions survey, showing the number of DTF vacancies per 100 beds remaining at the end of the month in 121 regularly responding facilities, is superimposed on total vacancy and turnover rates in Figure 11. DTF vacancies are those which have been vacant for at least 30 days and for which, during that period there has been active recruitment. This rate reached a high point of 1.51 DTF vacancies per 100 beds in December of 1981, from which point it fell abruptly and reached a low of 0.10 per 100 beds in June of 1982. Since that time it has been gradually rising and at the end of June, 1984, was 0.58 per 100 beds.

The steep drop in the curve, between the 4th quarter of 1981 and the 2nd quarter of 1982, documents the hiring "freeze" which occurred throughout B.C. hospitals following the imposition of budget restraints.

Discussion

As one would expect, the turnover rates are consistently higher than the vacancy rates as some vacated positions are never counted in point-of-time estimates. These data confirm that there is considerable movement of staff even in low vacancy rate situations, but these data also underestimate day to day staff changes as the use of casuals to fill existing positions is only reflected in the vacancy rates, and then only partially.

Survey data of this sort does not produce all the reasons why, especially for turnover. It is interesting, however, that when one examines the three rates together, their interdependence is quite obvious and consistent with what one would expect. As the number of absolute vacancies and difficult-to-fill vacancies decreased, so did the turnover rate, but once "the dust had settled" turnover increased -- albeit somewhat erratically. One wonders, however, how much the peaks and hollows are artifacts of the varying response rate.

Finally, it may be that those who are responsible for hospital staffing may wish to take a closer look at the turnover rates with a view to explaining particular problems and suggesting remedies. This area appears to be fruitful territory for an intervention study in a period when the creation of new positions is minimal and there is emphasis on staff development and retention.

Future of the Vacancy-Turnover Survey

There seems to be little to be gained from continuing this quarterly survey, especially in view of the diminishing response rate for large hospitals. We do, however, propose to maintain the now quarterly Difficult-to-Fill survey as this does appear to reflect the overall manpower situation in hospitals.

Table 1: Number of Respondent Facilities by Size of Facility and 3-Month Period

SIZE OF FACILITY (RATED BEDS)	NUMBER SURVEYED	NUMBER OF RESPONDENTS										AVERAGE RESPONSE (%)
		Oct./81 to Jan./82	Jan./82 to Apr./82	Apr./82 to Jul./82	Jul./82 to Oct./83	Oct./82 to Jan./83	Jan./83 to Apr./83	Apr./83 to Jul./83	Jul./83 to Oct./83	Oct./83 to Jan./84	Jan./84 to Apr./84	
400+ beds	6	4	2	2	4	3	4	2	2	1	0	40.0
300 - 399	3	2	2	2	3	2	3	3	3	2	2	80.0
200 - 299	8	8	7	6	6	6	6	5	4	6	3	71.2
100 - 199	9	6	7	7	5	7	6	7	6	5	4	66.7
50 - 99	6	5	5	5	5	4	4	1	1	2	1	55.0
< 50	20	20	20	20	20	12	13	17	14	14	13	81.5
Total	52	45	43	42	43	34	36	35	30	30	23	69.4
RESPONSE RATE	(%)	86.5	82.7	80.8	82.7	65.4	69.2	67.3	57.7	57.7	44.2	

FIGURE 1: TOTAL VACANCY AND TURNOVER RATES FOR REGISTERED NURSES IN B.C. HOSPITALS
OCTOBER, 1981 TO APRIL, 1984

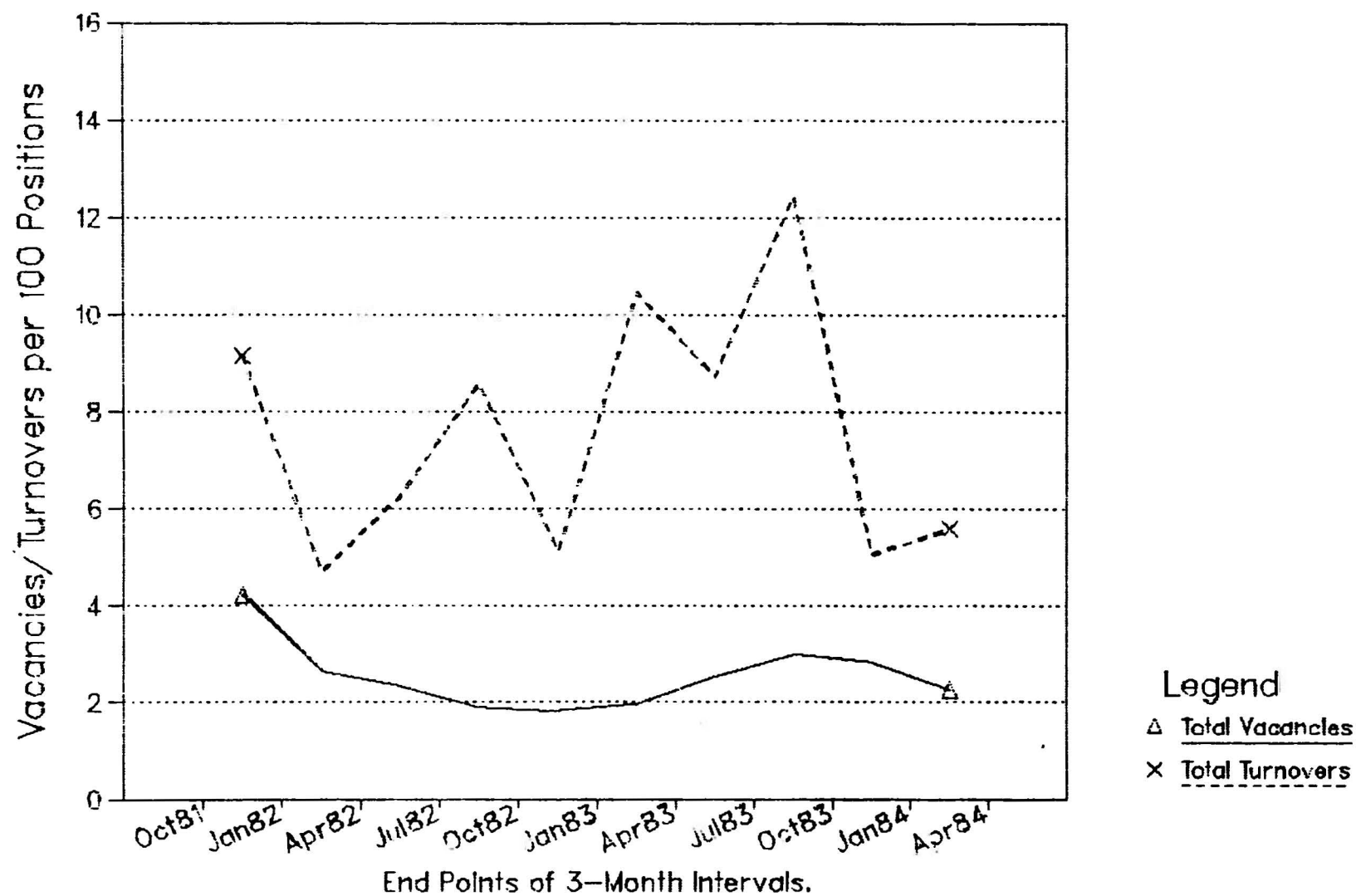


FIGURE 2: VACANCY RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, OCTOBER, 1981 TO APRIL, 1984

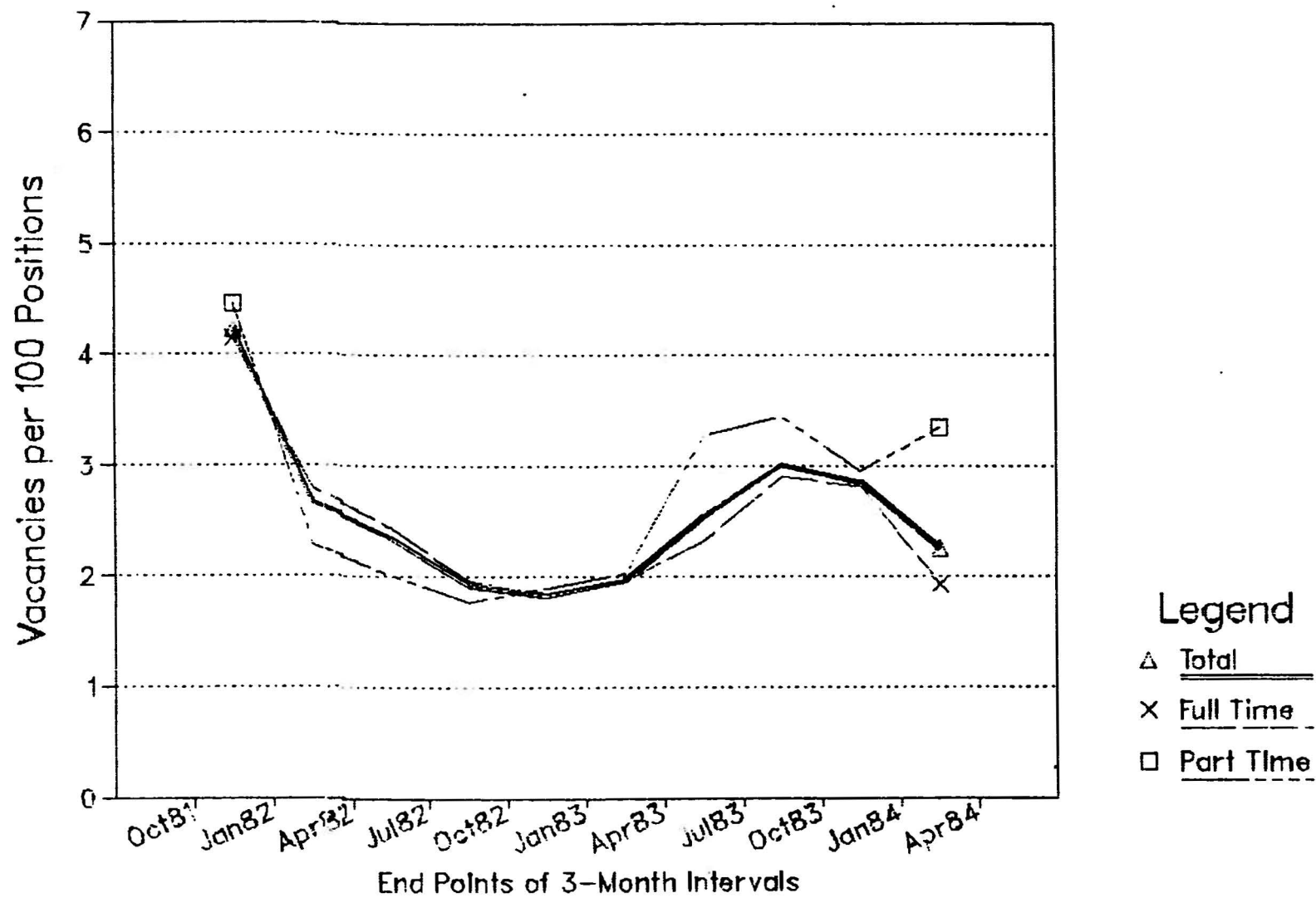


FIGURE 3: VACANCY RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, BY HMRU REGION, OCTOBER, 1981 TO APRIL, 1984

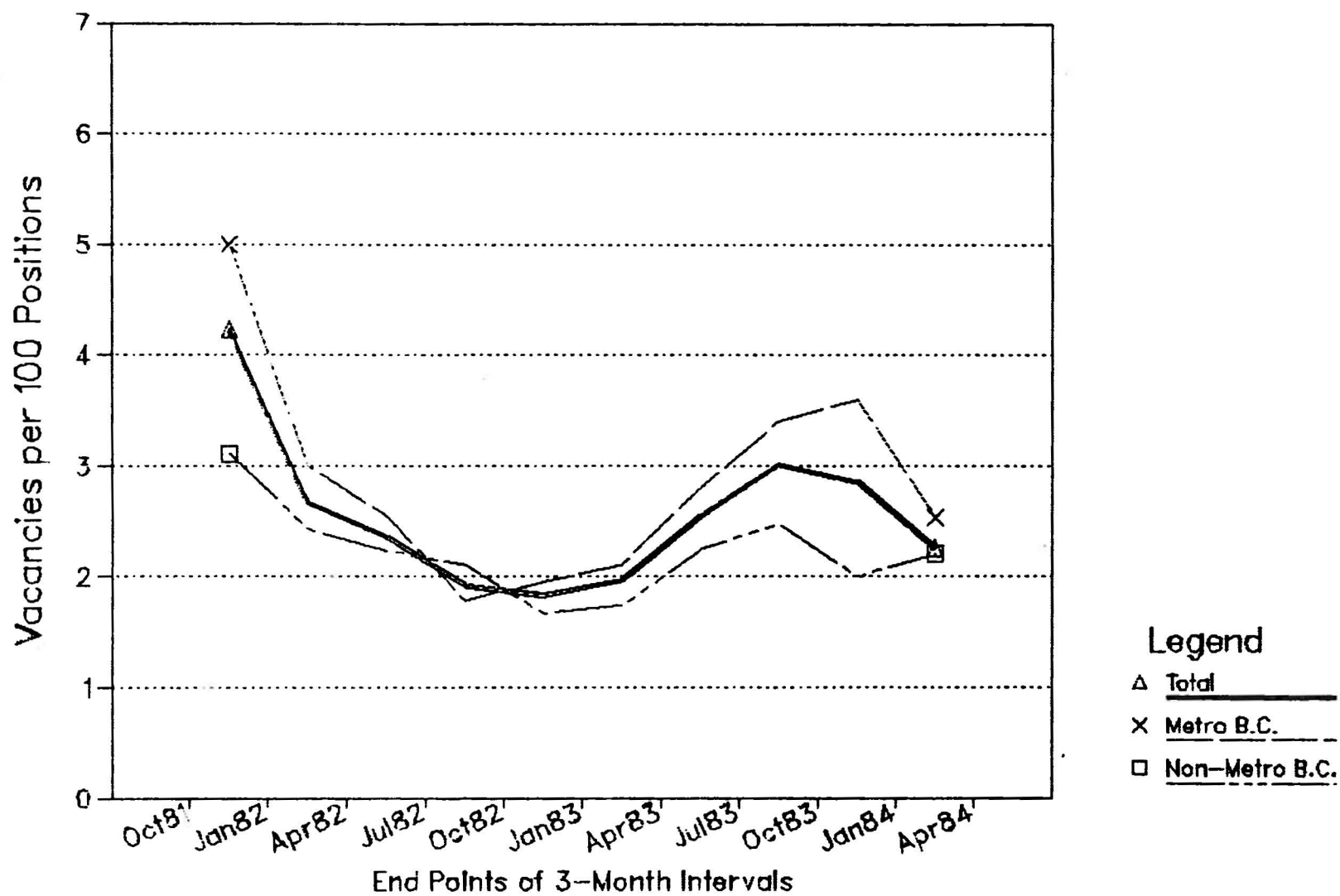


FIGURE 4: AVERAGE VACANCY RATES AND RANGE OF VACANCY RATES OVER THE 10 QUARTERLY PERIODS BETWEEN OCTOBER, 1982 AND APRIL, 1984 - BY SIZE OF FACILITY (RATED BEDS)

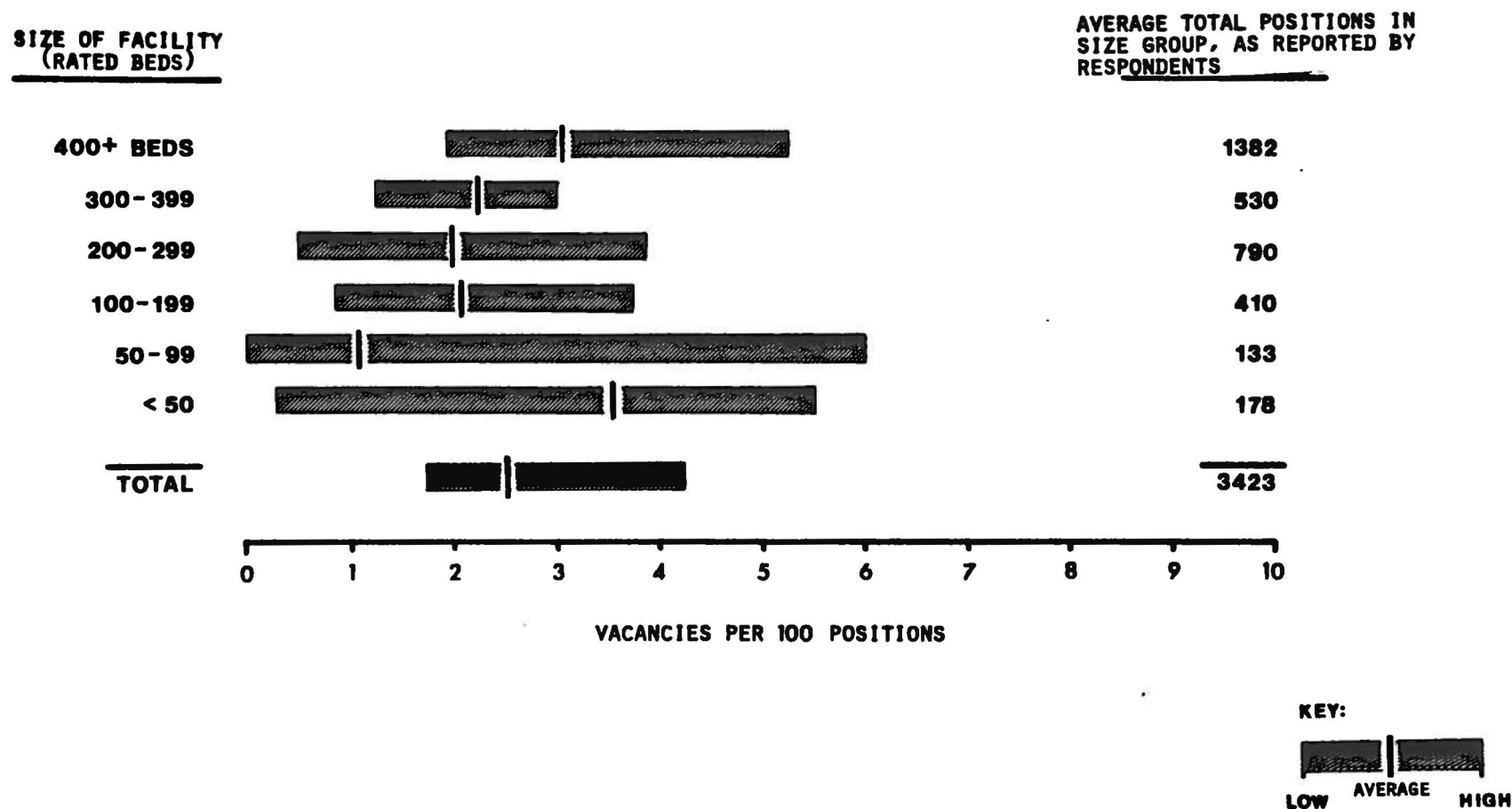


FIGURE 5: AVERAGE VACANCY RATES AND RANGE OF VACANCY RATES OVER THE 10 QUARTERLY PERIODS BETWEEN OCTOBER, 1982 AND APRIL, 1984 - BY NURSING CARE AREA

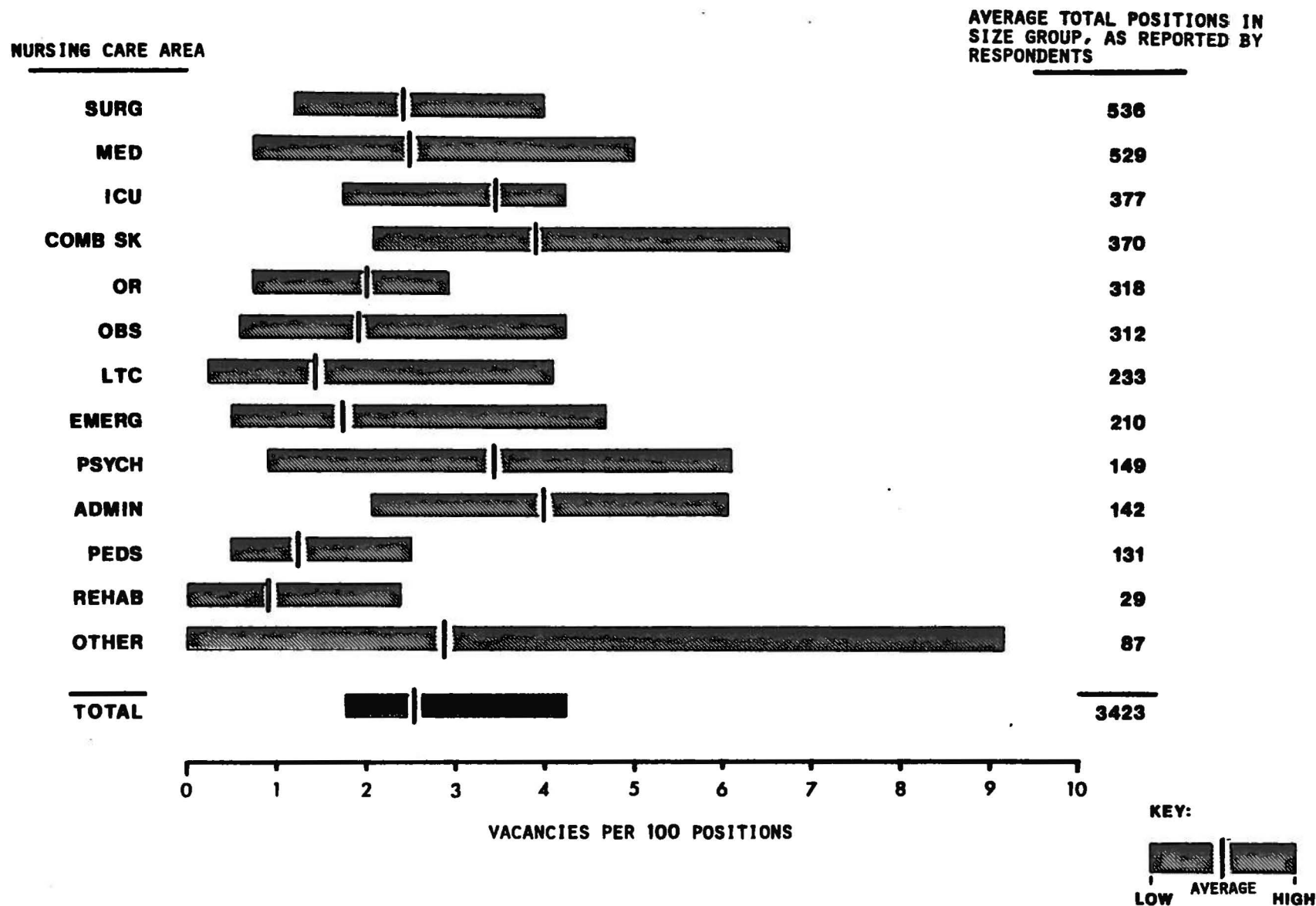


FIGURE 6: TURNOVER RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, BY TYPE OF RECRUITMENT, OCTOBER, 1981 TO APRIL, 1984

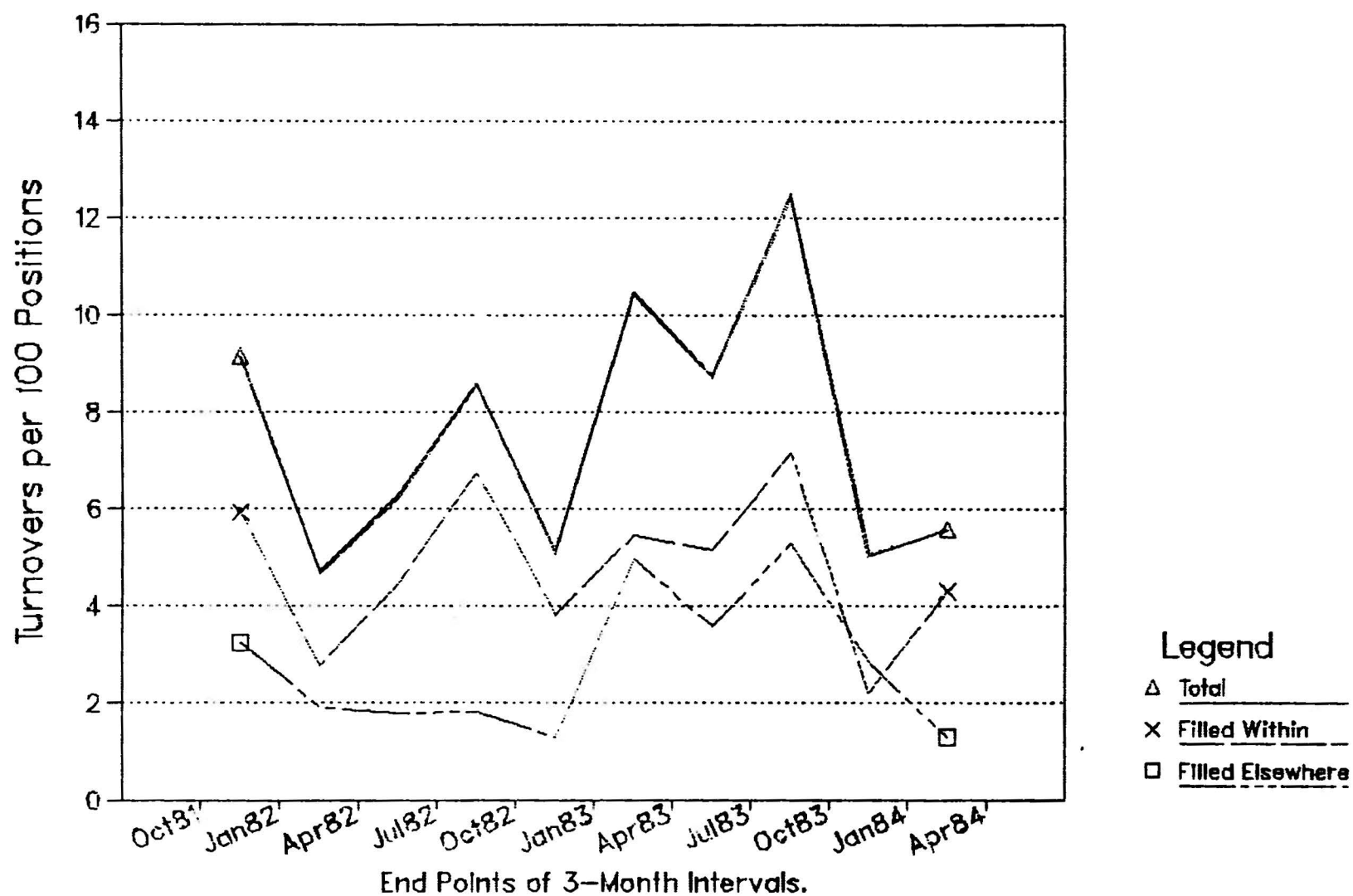


FIGURE 7: TURNOVER RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, OCTOBER, 1981 TO APRIL, 1984

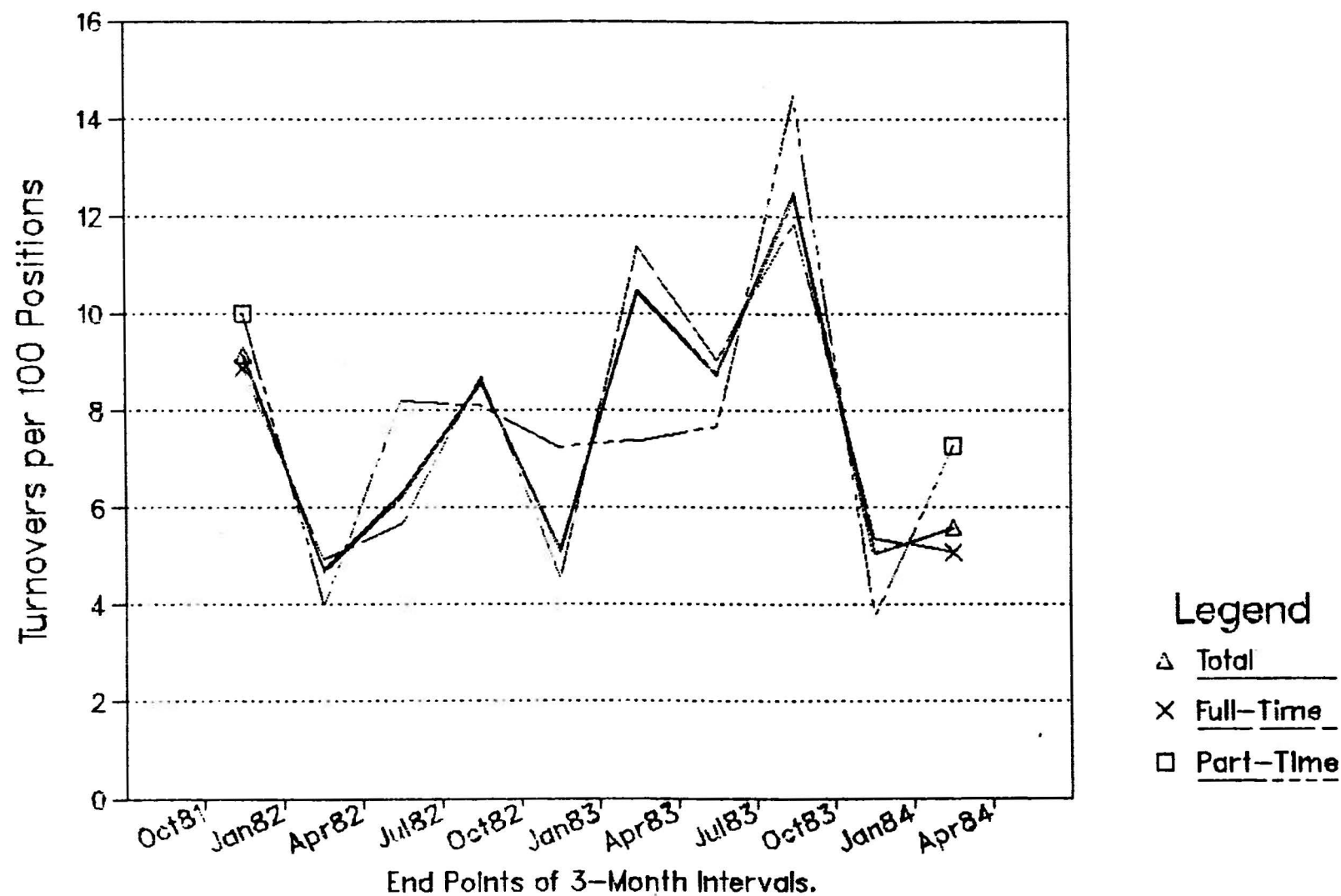


FIGURE 8: TURNOVER RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, METROPOLITAN VS NON-METROPOLITAN REGIONS, OCTOBER, 1981 TO APRIL, 1984

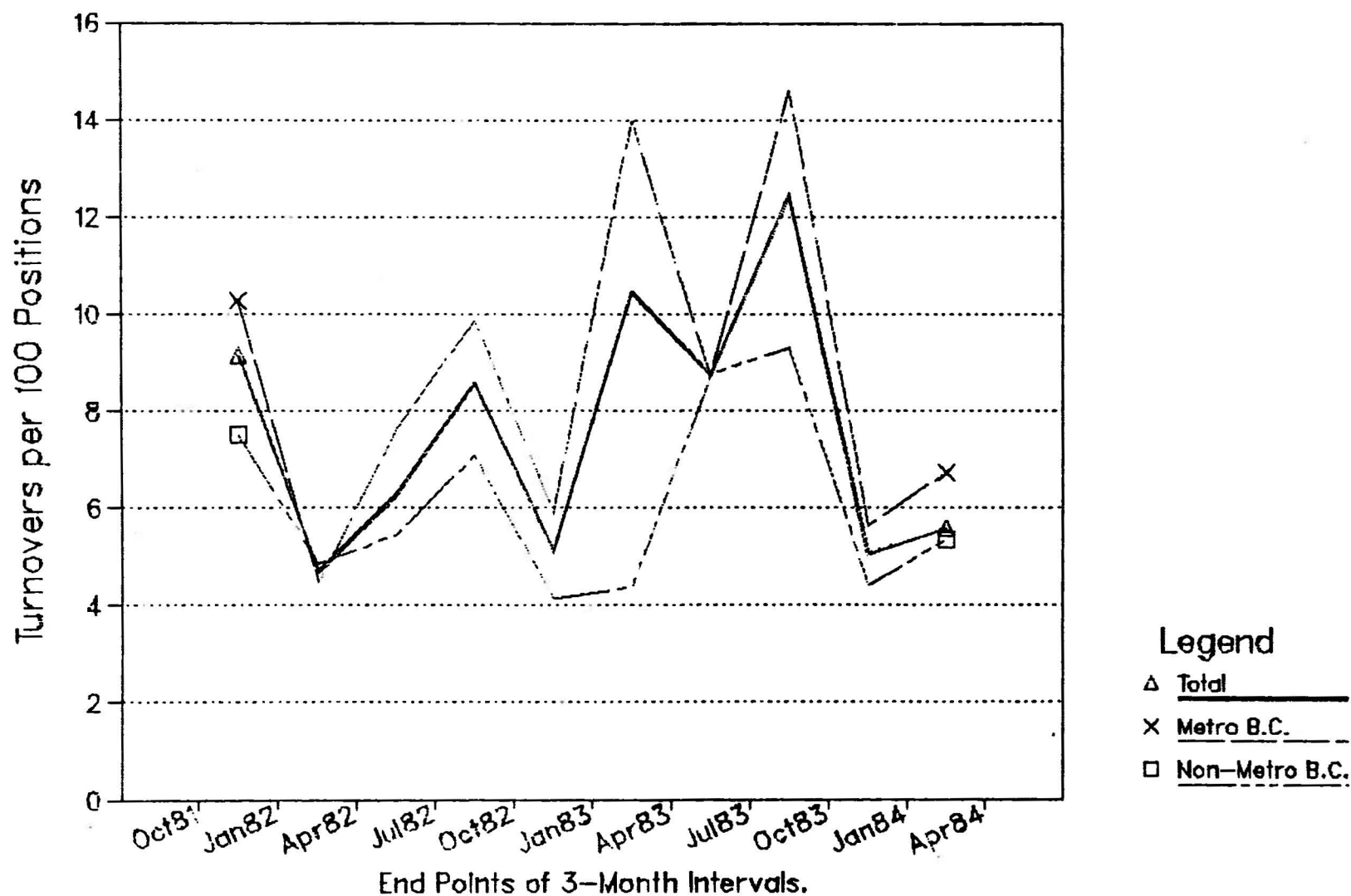


FIGURE 9: AVERAGE TURNOVER RATES AND RANGE OF TURNOVER RATES OVER THE 10 QUARTERLY PERIODS BETWEEN OCTOBER, 1982 AND APRIL, 1984 - BY SIZE OF FACILITY (RATED BEDS)

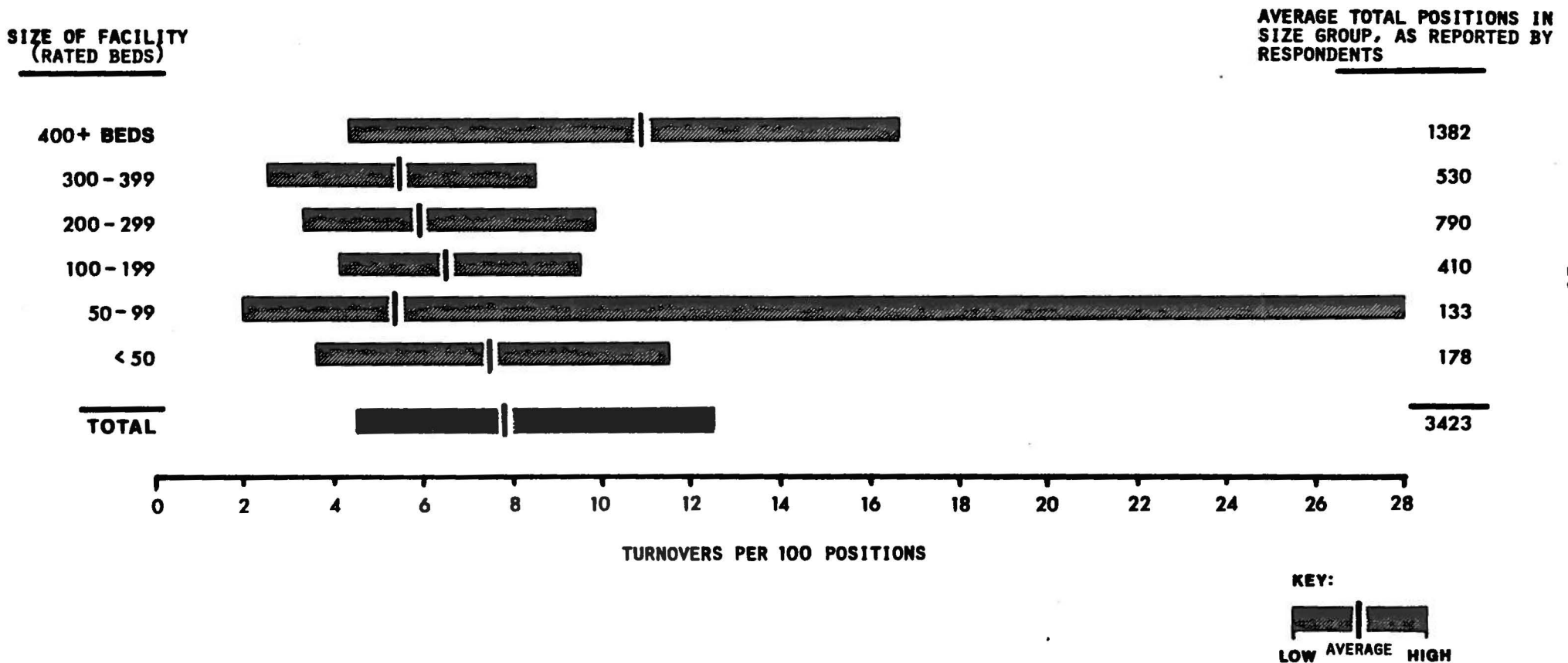


FIGURE 10: AVERAGE TURNOVER RATES AND RANGE OF TURNOVER RATES OVER THE 10 QUARTERLY PERIODS BETWEEN OCTOBER, 1982 AND APRIL, 1984 - BY NURSING CARE AREA

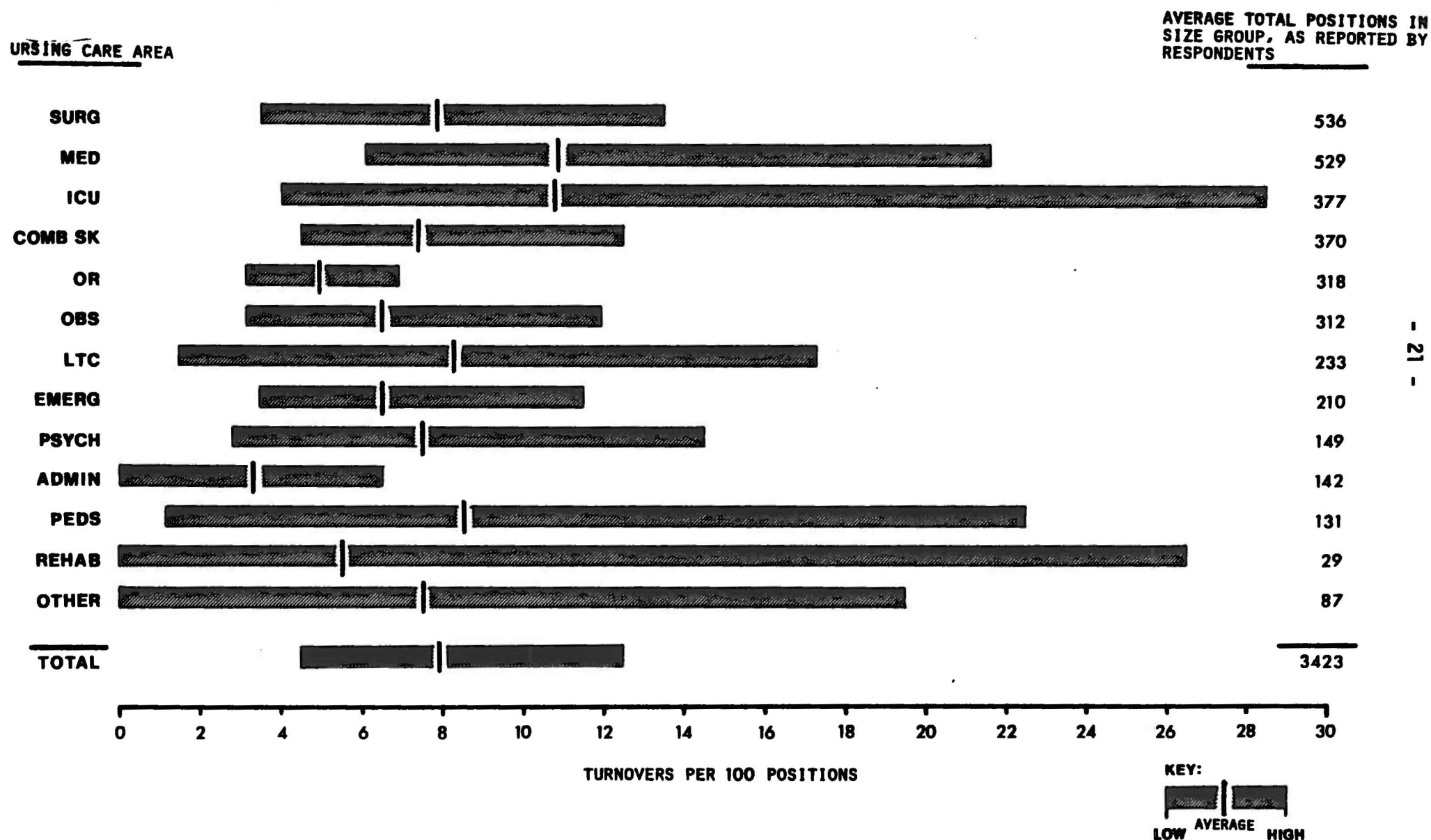


FIGURE 11: TOTAL VACANCY AND TURNOVER RATES FOR REGISTERED NURSES IN B.C. HOSPITALS, OCTOBER, 1981 TO APRIL, 1984

