



# CARE AIDE & LICENSED PRACTICAL NURSE PROVINCIAL HHR FORECAST AND PROFILE

January 20, 2010

## British Columbia HHR Planning is a collaborative process.



- The BC's HHR Strategy Council is headed by the Assistant Deputy Minister of Health Human Resources Directorate of the Ministry of Health. The council is composed of the Senior Vice President of HEABC and Vice Presidents of Human Resources of all Health Authorities.
- The HHR Data Group is chaired by HEABC and composed of representatives from the Ministry of Health and Health Authorities.
- Starting 2008, HEABC assumed responsibility for the Provincial HHR Forecast. HEABC is working in collaboration with the HR Data group, Health Authorities, Colleges, etc.. etc. Associations, etc..

# OUTLINE

Data Source

Definitions

Methodology

## Occupations

Care Aide

Licensed Practical Nurse

	Legal Sites	Operating Sites
HEABC	277	602
<b>Care Aide</b>		
Affiliates	93	108
Health Authorities	7	155
<b>Licensed Practical Nurses</b>		
Affiliates	99	116
Health Authorities	7	184

*Source: HSCIS 2008-Q4  
Includes HEABC and non-HEABC members*

## DATA SOURCE

The following data sources were used for each of the following sections of this package

### **Demographics**

- Health Sector Compensation Information System (HSCIS)

### **Inflow/Outflow**

- Health Sector Compensation Information System (HSCIS)

### **Recruitment**

- Recruitment & Retention Survey 2009
- Difficult-to-Fill Vacancy Survey (DTFVS)
- Health Sector Compensation Information System (HSCIS)

### **Retention**

- Recruitment & Retention Survey 2009
- Health Sector Compensation Information System (HSCIS)

### **Productivity**

- Health Sector Compensation Information System (HSCIS)

# DEFINITIONS

## Employee Count (Head Count)

- Unless noted otherwise, employee count refers to the number of individuals, within an occupation, who have worked in the public sector at a given year. This also includes workers who may have left their job (i.e., not working at the end of the year).

## Employee Count by Job Status

- An individual, may sometimes hold more than one position and/or job status in a given year. For example, a worker can be employed as a part-time nurse and from time to time take on casual work. In this case, this individual is counted once as a part-time worker and once as a casual worker (i.e., one count per person, per job status).
- An individual may also work different jobs but with the same status. For example, a nurse working part-time in two different health authorities. Given that we count each individual once per job status, this nurse will only be counted once as a part-time worker.

## Inflow

- This includes individuals who appeared in HSCIS one year but were not present the previous year. These individuals include new graduates, international and interprovincial hires, employees returning from leave and individuals transferring into different occupational groups.

## Outflow

- Includes all employees who voluntarily or involuntarily terminated their employment to retire, go on leave, or transfer into positions in different occupation groups.

# DEFINITIONS

## Difficult-to-Fill Vacancy

- A difficult-to-fill vacancy is a job that remains unfilled after three months of active recruitment.

## FTE

- Full-time equivalent (FTE) is calculated by dividing an employee's total regular paid hours in one calendar year by the number of standard work hours per year for a full-time employee. The collective agreements define the regular full-time hours for bargaining unit employees.

## Head count to FTE ratio

- A ratio above unity (ratio $>1$ ) signifies that a high number of employees is required to work the equivalent of 1 worker's full-time hours. A ratio of 1, implies that, on average, each employee works the equivalent of a full-time worker. The unusual case of a ratio below unity (ratio $<1$ ) indicates that, on average, the employees hired work more than what is considered to be typical full-time hours.

## Productive Hours

- Productive hours is defined as the number of paid hours worked by an employee. This includes regular paid hours and overtime hours, but excludes paid leaves.

# METHODOLOGY

## The Model

- Using a supply and demand model that incorporates a number of variables to estimate staffing needs in BC.
- These variables include positive flows into the system such as recruitment gains, and negative flows out of the system such as retirements and terminations. Other factors that need to be taken into consideration include the occupation specific demand growth rate for the period and the number of 90-days vacancies.

## Projected Demand Growth

- The projected growth rates for each occupation are estimated according to the growth rates of the service lines assigned to each occupation. Occupation with multiple service lines, the demand growth rate for the projection period will be estimated using weighted average growth rate weighed by the FTE number in each service line.

## 90-days vacancies

- The 90-days vacancies for 2009 were calculated based on the Difficult to Fill Vacancy Survey results. The number of 90-days vacancies for 2009 is simply the number of Difficult to Fill vacancies reported for each respective occupation at the end of 2008. Forecasted 90-days vacancies for the following years represent those positions (gaps) that were not filled from previous years.

## METHODOLOGY

### Recruitment gains

- The number of new hires was projected based on historical trend from HSCIS. New hires were projected using moving average (also known as rolling average) of four years. (i.e. the number of new hires for 2009 was calculated by taking the average of the total number of new hires of the past four years (2008, 2007, 2006, and 2005). Likewise, the projected new hires for 2010 were calculated by averaging the new hires from 2009, 2008, 2007, and 2006. )

### Termination

- Terminations were defined as individuals who exited the occupational groups that were under the age of 55. The number of terminations per year was projected using age-specific termination rates. This means that the average percentage of employees under the age of 55 who terminated over a four year period, 2004, 2005, 2006 and 2007 were calculated and applied to the projected aged population of health care workers in a given occupation for each of the years through to 2018.

### Retirement

- Retirements were defined as individuals who exited the occupational groups that were age 55 or over. The number of retirement per year was projected using age-specific retirement rates. This means that the average percentage of employees who were aged 55 and up that were terminated over a four year period, 2004, 2005, 2006 and 2007 were calculated and applied to the projected aged population of health care workers in a given occupation for each of the years through to 2018.

## CARE AIDE - HIGHLIGHTS

### Facts

- The proportion of employees in different job statuses was constant for the past three years. **44%** of the employees were casuals, **29%** were full-time employees and **26%** were part-time employees
- From 2006 to 2008, the total number of FTEs and employees grew. FTEs increased by **4.5%** from 2006 (8,122) to 2008 (8,491), while the number of employees increased by **5.3%** from 2006 (14,963) to 2008 (15,757).
- The head count to FTE ratio also increased for the past three years. In 2006, the head count to FTE ratio is **1.84**. In 2007, the ratio increased to **1.85** and in 2008, the ratio becomes **1.86**. The ratio increase indicated that more employees are required to work one full-time equivalent hours.
- In 2008, only **10%** of all productive hours were worked by casual care aides while **63%** were worked by the full-time care aides.

### Difficult-To-Fill Vacancies Survey

- In 2009 quarter 4, only **eight** difficult-to-fill (90-days) vacancies were reported for the care aides by the health authorities. This is a **43% drop** from 2008 quarter 4 (14) and **56% drop** from 2007 quarter 4 (18).

### Recruitment & Retention Survey

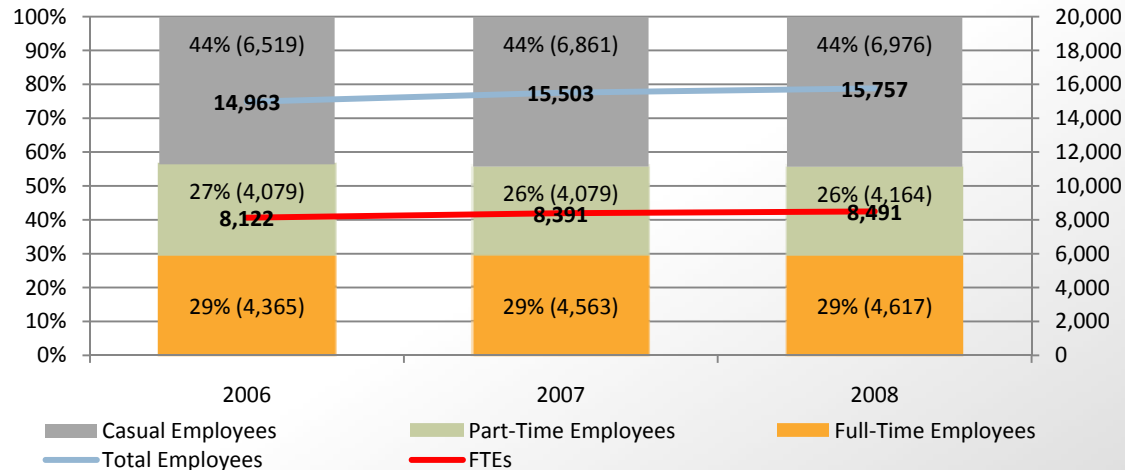
- For recruiting care aides, majority of the health authorities reported “**no problem**” or “**low problem**”. While majority showed the situation had been **less difficult** for the past two years.
- In retaining care aides, majority indicated ‘**no problem**’ for full-time and part-time employees, and ‘**low problem**’ for casual employees. The retention situation had been **less difficult** in the past two years.
- Overall, there is **no problem** in recruiting and retaining care aides.

### Forecast

- The projected 10 years demand growth for care aides is **2.67%**. With this estimated growth, there will be deficit in staffing employees every year from 2009 to 2018. By 2018, there will be cumulative staffing shortage of **4,510**.
- The forecast however assumes historical employee staffing pattern and hours distribution for all job statuses.

## CARE AIDE – DEMOGRAPHICS

### Number of Active Employees - By Job Status & Year



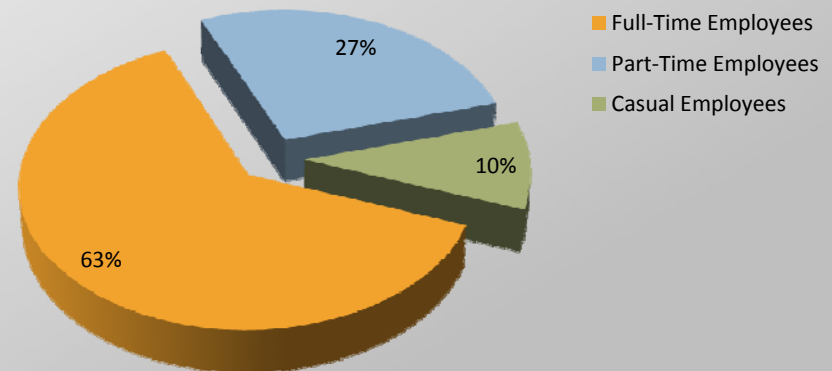
Source: HSCIS 2005-Q4, 2006-Q4, 2007-Q4, 2008-Q4

Employees holding multiple jobs statuses have been counted more than once (one count per job status)

Active employees are employees who received more than \$0 of paid worked within a given year.

### Distribution of Productive Hours by Job Status (2008)

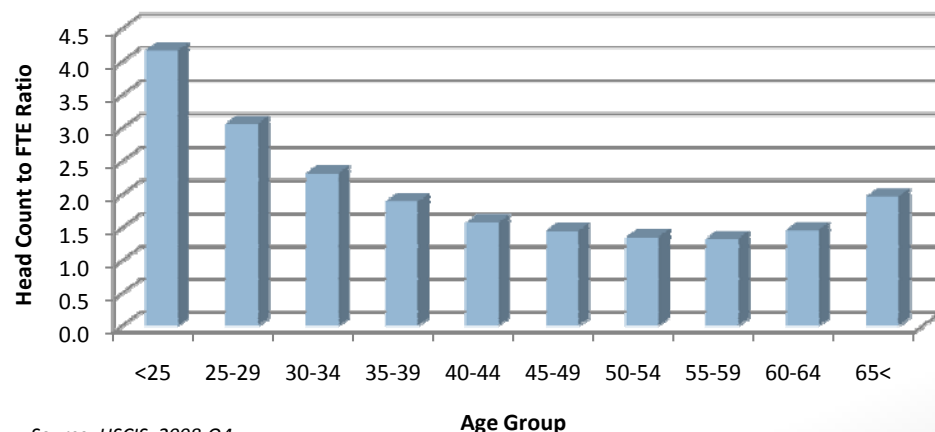
Source: HSCIS 2008-Q4



- The proportion of casual, part-time and full-time care aides had been constant for the past three years.
- In 2008, 44% of the employees (casuals) were working 10% of all productive hours. While 29% of the employees (full-time) were working 63% of the productive hours.

## CARE AIDE – HEAD COUNT TO FTE RATIO & PRODUCTIVE HOURS

### Head Count to FTE Ratio



Source: HSCIS, 2008-Q4

- The age based head count to FTE ratio shows the number of employees required to work one full-time equivalent hours.
- For employee group younger than 25 years of age, four employees were required to work one full-time equivalent hour. (This might be a result of bigger portion of casuals and part-time in the age group).
- The employee within the 55-59 age group worked the greatest number of regular hours, where only 1.33 employee was needed to work one full-time equivalent hour.

### Difficult-To-Fill Vacancies Survey

	2006-Q4	2007-Q4	2008-Q4	2009-Q3
Difficult to Fill Vacancies	16	18	14	8

Source: Difficult-to-Fill Vacancy Survey, 2005-Q4, 2006-Q4, 2007-Q4, 2008-Q4

- The Difficult-To-Fill Vacancies survey showed that the number of 90-days vacancies had dropped significantly from 2007 and 2008. At 2009 quarter 3, only eight care aides' 90-days vacancies were reported from all health authorities.
- In 2008, only 16.9% of all care aides were aged 55 and over.

### Percentage of employees aged 55 and over

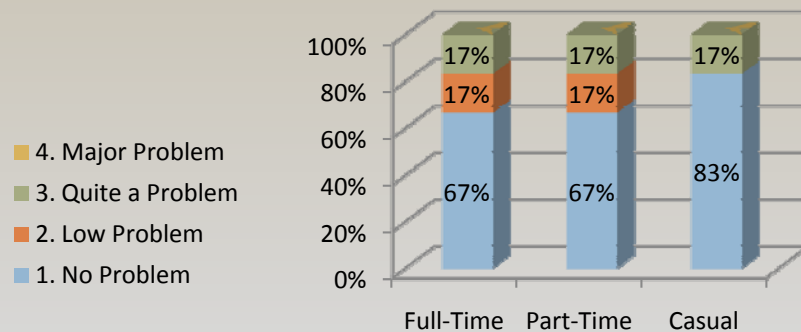
	55-59	60-64	65 & over	55 & over
% of total employees	10.9%	5.2%	0.8%	16.9%

Source: HSCIS 2008-Q4

This table includes all individuals who have worked in 2008

# CARE AIDE – RECRUITMENT & RETENTION SURVEY 2009

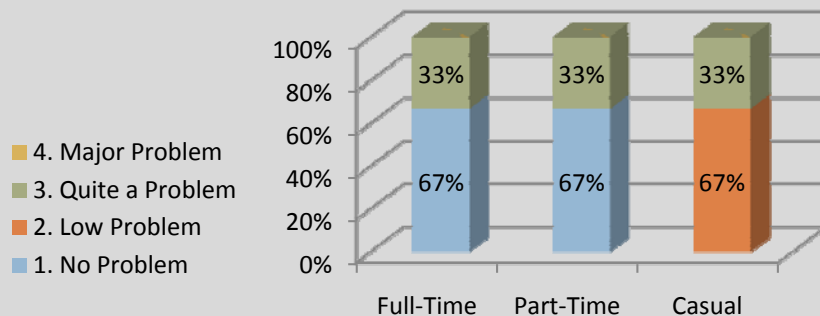
## Current Recruitment Situation



### Recruitment

- Majority of the respondent reported '**no problem**' in recruiting care aides.
- All respondents reported that it was either '**less difficulty**' or '**about the same**' to recruit care aides in the past two years.
- Survey shows that '**undesirable shift schedule**' is the most frequent reason chosen for recruitment difficulty.

## Current Retention Situation



### Retention

- The majority of the health authorities responded '**no problem**' in retaining full-time and part-time employees, while there is a '**low problem**' in retaining casual care aides.
- All respondents in the survey stated that it is '**less difficult**' to retain care aides for the past two years.
- Survey shows '**Level of pay**' has been the most common reason for retention difficulty.

# CARE AIDE - FORECAST

## Projected Annual Care Aide Employment Need

Trended Scenario	Projections					
	2009	2010	2011	2012	2013	2018
Number of Staff, Beginning of Year (A)	14,166	14,263	14,259	14,226	14,166	13,990
<b>DEMAND</b>						
Number of Vacancies, Beginning of Year	14	296	689	1,121	1,591	3,985
Demand (2.67%) (B)	379	389	399	410	421	480
<b>Total Demand (C)</b>	<b>393</b>	<b>685</b>	<b>1,088</b>	<b>1,531</b>	<b>2,012</b>	<b>4,465</b>
<b>RECRUITMENT GAINS</b>						
New Hires	2,498	2,427	2,407	2,391	2,431	2,413
<b>Total Recruitment Gains (D)</b>	<b>2,498</b>	<b>2,427</b>	<b>2,407</b>	<b>2,391</b>	<b>2,431</b>	<b>2,413</b>
<b>EMPLOYEE LOSSES</b>						
Terminations	1,838	1,862	1,867	1,870	1,863	1,851
Retirements	562	569	573	580	580	607
<b>Total Employee Losses (E)</b>	<b>2,401</b>	<b>2,431</b>	<b>2,441</b>	<b>2,451</b>	<b>2,443</b>	<b>2,458</b>
<b>Supply (Gains - Losses) (F) = (D-E)</b>	<b>97</b>	<b>(4)</b>	<b>(34)</b>	<b>(60)</b>	<b>(12)</b>	<b>(45)</b>
<b>Number of Staff, End of Year (G) = (A+F)</b>	<b>14,263</b>	<b>14,259</b>	<b>14,226</b>	<b>14,166</b>	<b>14,154</b>	<b>13,945</b>
<b>Yearly Gap (Supply - Demand) (H) = (F-B)</b>	<b>(282)</b>	<b>(393)</b>	<b>(433)</b>	<b>(470)</b>	<b>(433)</b>	<b>(525)</b>
<b>Staffing Surplus or (Gap) (I) = (F-C)</b>	<b>(296)</b>	<b>(689)</b>	<b>(1,121)</b>	<b>(1,591)</b>	<b>(2,024)</b>	<b>(4,510)</b>

**Data**

-HSCIS 2005-Q4, HSCIS 2006-Q4, HSCIS 2007-Q4, HSCIS 2008-Q4, HEABC  
- Difficult to Fill Vacancy Survey Reports 2005-Q4 to 2008-Q4, HEABC

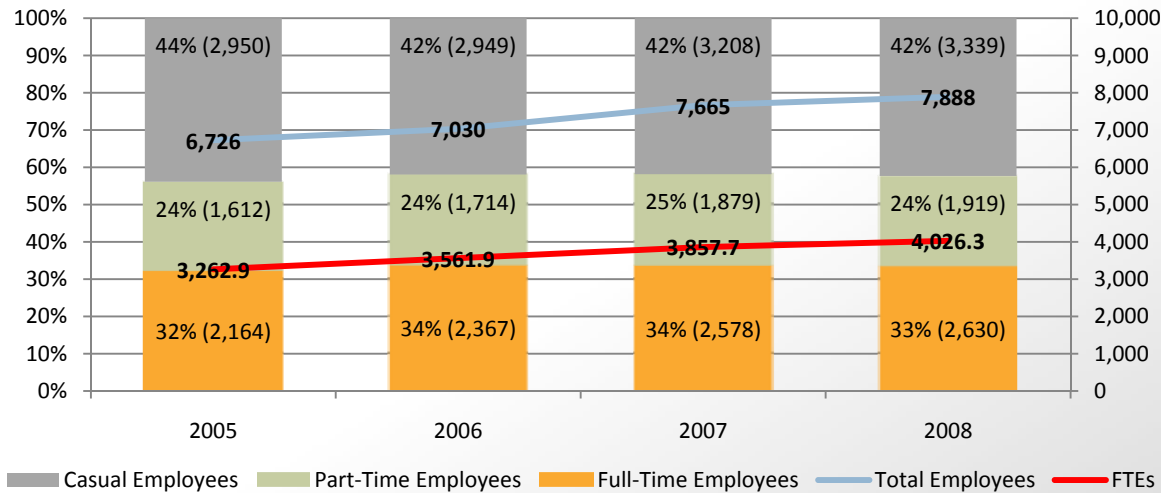
**Note**

- Includes all employees. Employees with multiple job statuses were counted once  
- If staffing gap is negative, this number will be carried forward to the following year as vacancies

- Based on historical care aides' staffing pattern, the total new hires will not be able to meet the total number of employee needs. (i.e. employee loses and the projected demand growth)
- As a result, there will be a yearly gap in staffing, which carry over to the following year as vacancies. In 2009, it is estimated to have 282 yearly staffing gap. In 2013, this number will increase to 433.

# LICENSED PRACTICAL NURSE - DEMOGRAPHICS

## Number of Active Employees - By Job Status & Year

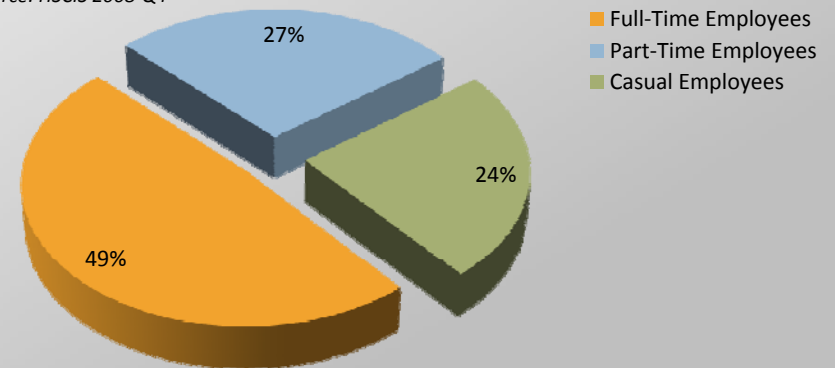


Source: HSCIS 2005-Q4, 2006-Q4, 2007-Q4, 2008-Q4  
 Employees holding multiple jobs statuses have been counted more than once (one count per job status)  
 Active employees are employees who received more than \$0 of paid worked within a given year.

- The proportion of casual, part-time and full-time LPNs had been relatively stable for the past three years. Comparing 2008 to 2005, the proportion of casual LPNs decreased while the full-time LPNs increased.
- In 2008, 24% of all productive hours were by casual LPNs, 27% were by part-time employees and 49% were by full-time LPNs.

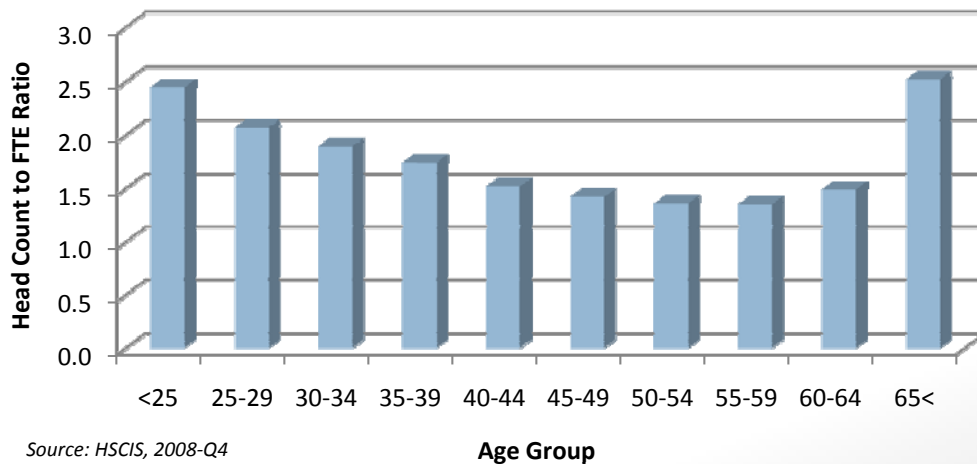
## Distribution of Productive Hours by Job Status (2008)

Source: HSCIS 2008-Q4



# LICENSED PRACTICAL NURSE – HEAD COUNT TO FTE RATIO & PRODUCTIVE HRS

## Head Count to FTE Ratio



Source: HSCIS, 2008-Q4

- The age based head count to FTE ratio shows the number of employees required to work one full-time equivalent hours.
- For employee group younger than 25 years of age and greater than 65, roughly 2.5 employees were required to work one full-time equivalent hour. (This might be a result of bigger portion of casuals and part-time in the age group).
- The employee within the 55-59 age group worked the greatest number of regular hours, where only 1.35 employee was needed to work one full-time equivalent hour.

	2006-Q4	2007-Q4	2008-Q4	2009-Q3
Difficult to Fill Vacancies	30	34	44	26

Source: Difficult-to-Fill Vacancy Survey, 2005-Q4, 2006-Q4, 2007-Q4, 2008-Q4

	55-59	60-64	65 & over	55 & over
% of total employees	8.5%	3.7%	0.3%	12.5%

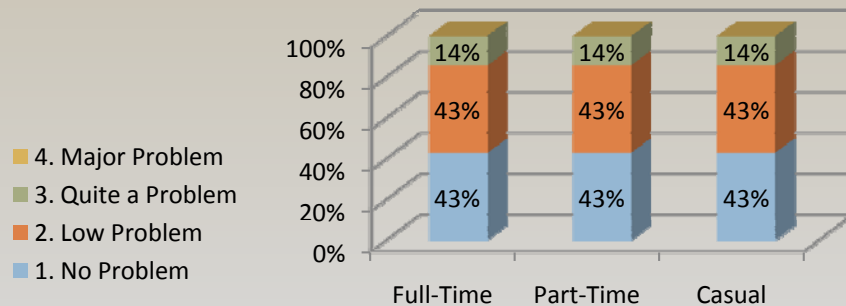
Source: HSCIS 2008-Q4

This table includes all individuals who have worked in 2008

- The Difficult-To-Fill Vacancies survey showed that the number of 90-days vacancies were the lowest at 2009 quarter 3, where only 26 were reported. This is a drop of 41% from 2008 quarter 4.
- In 2008, only 12.5% of all LPNs were aged 55 and over.

# LICENSED PRACTICAL NURSE – RECRUITMENT

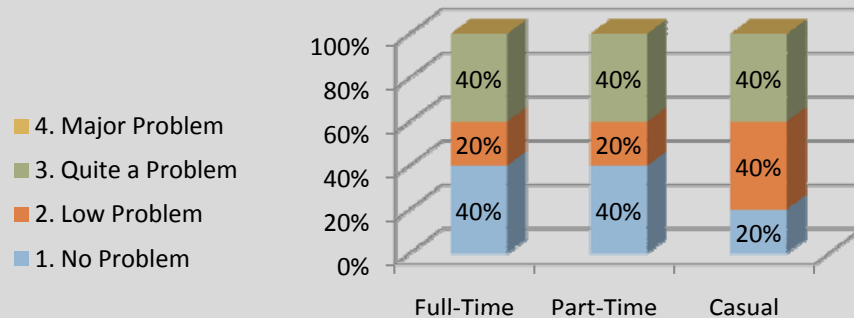
## Current Recruitment Situation



## Recruitment

- Over 85% of the health authorities indicated ‘**no problem**’ or ‘**low problem**’ in recruiting LPNs.
- The survey showed the recruitment situation had ‘**stayed about the same**’, while one health authority stated that it is ‘**less difficulty**’ to recruit for the past two years.
- Lack of training** and **low number of applicants** are the most frequent reasons for recruitment difficulties. **Undesirable shift schedule** and **working hours** are other common reasons.

## Current Retention Situation



## Retention

- Majority of the health authorities showed in the survey that it is ‘**quite a problem**’ or ‘**low problem**’ in retaining LPNs.
- Half of the respondents indicated that it is ‘**more difficult**’ in retaining LPNs for the past two years.
- One of the authority indicated there is ‘**no problem**’ in retaining LPNs and the retention situation had **got better** in the past two years.
- ‘**Workload/stress**’ had been identified as the most common reason for difficulty in retaining LPNs.

# LICENSED PRACTICAL NURSE – FORECAST

## Projected Annual Licensed Practical Nurse Employment Need

Trended Scenario	Projections					
	2009	2010	2011	2012	2013	2018
Number of Staff, Beginning of Year (A)	6,612	6,848	7,015	7,163	7,284	7,750
<b>DEMAND</b>						
Number of Vacancies, Beginning of Year	44	0	3	29	85	581
Demand (2.48%) (B)	165	170	174	178	183	207
<b>Total Demand (C)</b>	<b>209</b>	<b>170</b>	<b>177</b>	<b>207</b>	<b>268</b>	<b>788</b>
<b>RECRUITMENT GAINS</b>						
New Hires	1,324	1,275	1,269	1,256	1,281	1,270
<b>Total Recruitment Gains (D)</b>	<b>1,324</b>	<b>1,275</b>	<b>1,269</b>	<b>1,256</b>	<b>1,281</b>	<b>1,270</b>
<b>EMPLOYEE LOSSES</b>						
Terminations	930	963	985	1,005	1,021	1,088
Retirements	158	145	136	129	128	129
<b>Total Employee Losses (E)</b>	<b>1,088</b>	<b>1,108</b>	<b>1,121</b>	<b>1,134</b>	<b>1,149</b>	<b>1,217</b>
<b>Supply (Gains - Losses) (F) = (D-E)</b>	<b>236</b>	<b>167</b>	<b>148</b>	<b>122</b>	<b>132</b>	<b>54</b>
<b>Number of Staff, End of Year (G) = (A+F)</b>	<b>6,848</b>	<b>7,015</b>	<b>7,163</b>	<b>7,284</b>	<b>7,417</b>	<b>7,804</b>
<b>Yearly Gap (Supply - Demand) (H) = (F-B)</b>	<b>71</b>	<b>(3)</b>	<b>(26)</b>	<b>(56)</b>	<b>(51)</b>	<b>(153)</b>
<b>Staffing Surplus or (Gap) (I) = (F-C)</b>	<b>27</b>	<b>(3)</b>	<b>(29)</b>	<b>(85)</b>	<b>(136)</b>	<b>(734)</b>

**Data**

-HSCIS 2005-Q4, HSCIS 2006-Q4, HSCIS 2007-Q4, HSCIS 2008-Q4, HEABC

- Difficult to Fill Vacancy Survey Reports 2005-Q4 to 2008-Q4, HEABC

**Note**

- Includes all employees. Employees with multiple job statuses were counted once

- If staffing gap is negative, this number will be carried forward to the following year as vacancies

- Based on historical LPNs' staffing pattern, the total new hires will not be able to meet the total number of employee needs starting 2010. (i.e. employee loses and the projected demand growth)
- At 2010, there will be a yearly gap in staffing, which carry over to the following year as vacancies. In 2010, it is estimated to have 3 yearly staffing gap. In 2013, this number will increase to 51.

## LICENSED PRACTICAL NURSE - HIGHLIGHTS

### Facts

- The proportion of employees in different job statuses had been relatively stable for the past three years. Roughly **42%** of the employees were casuals, **34%** were full-time employees and **24%** were part-time employees.
- From 2005 to 2008, the total number of FTEs and employees grew every year. Number of FTEs increased by **23.3%** from 3,263 in 2005 to 4,026 in 2008, while the number of employees increased by **17.3%** from 6,726 in 2005 to 7,888 in 2008.
- The head count to FTE ratio is the lowest in 2008 within the past four years. At 2005, the head count to FTE ratio is **2.06**. This ratio dropped to **1.96**. The drop in head count to FTE ratio indicates employees on average are working more hours in 2008.
- In 2008, only **24%** of all productive hours were worked by casual LPNs while **49%** were worked by the full-time LPNs.

### Difficult-To-Fill Vacancies

- In 2009 quarter 3, there are **26** difficult-to-fill vacancies reported by health authorities for LPNs in Difficult-To-Fill Vacancy Survey. This is the lowest within the previous four years. In 2008 quarter 4, the difficult-to-fill vacancy number for LPN is **44**.

### Recruitment & Retention Survey

- In recruitment, majority of the health authorities reported “**no problem**” or “**low problem**”. The majority showed the situation had been ‘**stayed the same**’ for the past two years.
- In retention, majority indicated in the survey that it is ‘**quite a problem**’ or ‘**low problem**’ to retain LPNs. Half of the respondents indicated that it is **more difficult** to retain LPNs in the past two years.
- Overall, there is **no problem** in recruiting LPNs while are some problems in retaining LPNs.

### Forecast

- The projected 10 years demand growth for LPNs is **2.48%**. With this estimated growth, there will be deficit in staffing employees every year from 2010 to 2018. By 2018, there will be cumulative staffing shortage of **734**.
- The forecast however assumes similar historical staffing patterns and hour distributions for all job statuses.

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If you have any questions and/or clarification on this document, please contact Research & Knowledge Management at the Health Employers Association of BC.

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