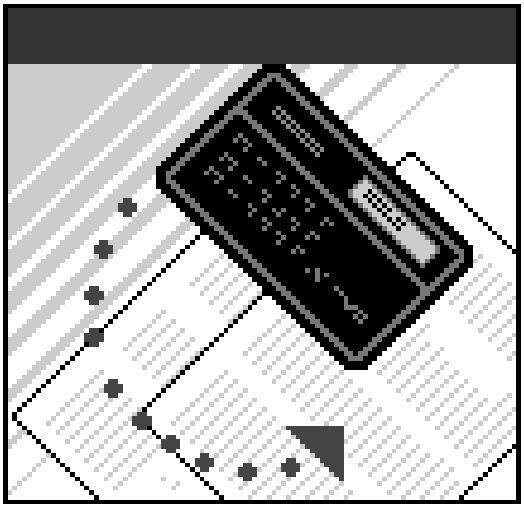
# REGIONAL HEALTH AUTHORITY GLOBAL FUNDING MANUAL

*2002/2003 Funding*



**March 19, 2002**
**Health Resourcing and Economics**
**Alberta Health & Wellness**

# RHA GLOBAL FUNDING MANUAL

## Overview

Regional Health Authority global funding for 2002/03 is $3.465 billion (March 19, 2002 Budget). This represents additional funding of $221.0 million from the previous year Forecast* - an increase of 6.8 per cent. This manual documents how this total global funding amount was allocated to regions. (Note: RHAs are expected to meet their ongoing operating and equipment requirements from their Global Funding allocation.)

*2001/02 Forecast funding components: April 2001 Budget, PWS salaries adjustment, additional physician compensation, impact of boundary changes, July 5 mid-year adjustment, October 18 mid-year reduction.

## Regional Health Authorities: Global Funding

(Excluding Province Wide Services)

| | | 2002/03 Global Funding Components | | | | | % change from 2001/02 Forecast |
|---|---|---|---|---|---|---|---|
| RHA | | Population Formula | Non-Formula | Import/ Export | Minimum Guarantee Adjustments | TOTAL | |
| | | | | | | | |
| 1 | Chinook | 192,917,866 | 10,563,738 | (7,395,862) | (1,010,174) | 195,075,567 | 2.8 |
| 2 | Palliser | 112,844,320 | 7,395,708 | (11,001,909) | (562,822) | 108,675,296 | 5.4 |
| 3 | Headwaters | 81,472,073 | 3,637,090 | (25,629,594) | (15,639) | 59,463,931 | 4.0 |
| 4 | Calgary | 938,197,982 | 69,986,335 | 82,826,640 | (5,624,002) | 1,085,386,954 | 8.7 |
| 5 | Region 5 | 69,683,746 | 3,444,767 | (21,422,452) | 612,627 | 52,318,690 | 3.6 |
| 6 | David Thompson | 211,474,594 | 12,302,187 | (14,149,919) | (1,079,708) | 208,547,154 | 7.1 |
| 7 | East Central | 134,405,055 | 14,073,023 | (18,766,120) | (668,296) | 129,043,661 | 3.4 |
| 8 | WestView | 84,212,245 | 5,904,887 | (33,721,637) | (290,872) | 56,104,622 | 5.7 |
| 9 | Crossroads | 53,754,620 | 2,543,386 | (12,365,079) | 135,880 | 44,068,808 | 2.2 |
| 10 | Capital | 936,312,205 | 70,121,386 | 149,712,641 | (5,960,585) | 1,150,185,647 | 7.6 |
| 11 | Aspen | 103,031,839 | 3,861,017 | (38,095,492) | (354,624) | 68,442,740 | 6.8 |
| 12 | Lakeland | 120,010,746 | 4,704,655 | (23,359,654) | 4,579,399 | 105,935,146 | 2.4 |
| 13 | Mistahia | 83,295,688 | 18,594,734 | (1,307,111) | (517,274) | 100,066,037 | 7.2 |
| 14 | Peace | 26,898,422 | 3,542,699 | (6,526,949) | 4,787,765 | 28,701,936 | 2.3 |
| 15 | Keeweetinok | 25,844,772 | 3,480,941 | (9,143,991) | 1,727,065 | 21,908,787 | 3.4 |
| 16 | Northern Lights | 27,498,099 | 7,342,839 | (4,241,526) | 3,271,709 | 33,871,121 | 4.5 |
| 17 | Northwestern | 17,301,206 | 3,893,800 | (5,411,984) | 969,551 | 16,752,574 | 2.7 |
| | TOTAL | 3,219,155,480 | 245,393,193 | 0 | 0 | 3,464,548,671 | 6.8 |

## TABLE OF CONTENTS

# *Population Formula Funding*

## Overview

In the past, health care funding in Alberta was directed to specific facilities, agencies or programs, and was largely determined by previous funding levels. Beginning in 1997/98, Alberta adopted a new method of funding regional health authorities based on population to ensure that each region receives its fair share of available health dollars.

Under Population Based Funding, a given amount of funding is allocated to each RHA according to their population and that population's estimated relative health care funding requirements taking into account the:

- age / gender composition of the population base
- socio-economic composition of the population base
- services provided by regions to residents of other regions

The size of the Population Formula Funding component ($3.219 billion) for 2002/03 was determined by total RHA Global Funding ($3.465 billion) less Non-Formula Funding ($0.245 billion).

## SUMMARY - 2002/03 Population Formula Funding

| RHA | 2002/03 Projected Population | Net* Per Capita Rate (rounded) | General Population Formula Allocation | PPP Allocation | TOTAL Population Formula Funding |
|---|---|---|---|---|---|
| **1. Chinook** | 151,478 | 1,222 | 185,093,622 | 7,824,244 | 192,917,866 |
| **2. Palliser** | 97,274 | 1,118 | 108,793,619 | 4,050,701 | 112,844,320 |
| **3. Headwaters** | 80,002 | 974 | 77,947,176 | 3,524,897 | 81,472,073 |
| **4. Calgary** | 989,015 | 909 | 899,306,747 | 38,891,236 | 938,197,982 |
| **5. Region 5** | 57,029 | 1,173 | 66,912,357 | 2,771,390 | 69,683,746 |
| **6. David Thompson** | 194,613 | 1,043 | 203,056,045 | 8,418,549 | 211,474,594 |
| **7. East Central** | 102,929 | 1,262 | 129,884,696 | 4,520,358 | 134,405,055 |
| **8. WestView** | 94,182 | 851 | 80,110,164 | 4,102,081 | 84,212,245 |
| **9. Crossroads** | 48,505 | 1,042 | 50,537,320 | 3,217,300 | 53,754,620 |
| **10. Capital** | 855,257 | 1,051 | 899,104,983 | 37,207,222 | 936,312,205 |
| **11. Aspen** | 95,504 | 1,032 | 98,527,407 | 4,504,432 | 103,031,839 |
| **12. Lakeland** | 99,351 | 1,153 | 114,570,681 | 5,440,065 | 120,010,746 |
| **13. Mistahia** | 90,982 | 871 | 79,215,789 | 4,079,899 | 83,295,688 |
| **14. Peace** | 24,639 | 1,040 | 25,620,411 | 1,278,011 | 26,898,422 |
| **15. Keeweetinok** | 27,416 | 863 | 23,663,180 | 2,181,592 | 25,844,772 |
| **16. Northern Lights** | 45,225 | 565 | 25,562,259 | 1,935,841 | 27,498,099 |
| **17. Northwestern** | 20,886 | 748 | 15,617,773 | 1,683,433 | 17,301,206 |
| **Total** | **3,074,287** | **1,003** | **3,083,524,230** | **135,631,250** | **3,219,155,480** |

*Net per capita rate variances reflect the different mix of each region's population.

# Population Formula Funding Methodology

## 1. Collect RHA Patient Activity Data

The first step of the Population Formula methodology is to collect comprehensive data on all RHA patient activity. For 2002/03 funding, 2000/01 was generally the most recent year for which provincial activity data was available. Data coverage of regional health service activities is relatively comprehensive, although a few gaps currently exist such as Adult Day Programs, C.H.O.I.C.E. program, and much of promotion/protection/ prevention (PPP) activity. Because of the limited PPP activity data, this sector is excluded from the general population formula, with the funding dollars allocated by a separate population-based funding allocation method.

**Acute hospital inpatient care** - for 2002/03 funding, activity data were obtained from the 2000/01 CIHI Inpatient Morbidity file. All acute care facilities in Alberta report monthly inpatient separations (nearly 350,000 records annually) to the Canadian Institute for Health Information (CIHI) through a standard set of data elements. CIHI groups the discharges into CMGs (Case Mix Groups) using the CMG methodology. Since 1997, a complexity overlay has been added for most CMG's and an age adjustment is made where warranted. This results in each inpatient separation being classified into one of approximately 4,500 types.

After Alberta Health and Wellness receives Alberta's annual file from CIHI, it subjects the file to several edits and converts the patient Personal Health Numbers (PHNs) to anonymous scrambled numbers to protect patient identity. Data record adjustments implemented by Health Resourcing include an adjustment for hospital transfers not identified on the CIHI file, and the inclusion of Lloydminster Hospital data (Alberta residents) from East Central. Also, Province Wide Services inpatient activity is identified and excluded for purposes of Population Formula Funding.

**Hospital based ambulatory care** - for the first two years of Population Funding (1997/98 and 1998/99), estimated expenditures for hospital-based ambulatory care were based on fee-for-service claims paid to physicians delivering day/night procedures, clinic and emergency services in hospitals. Although this was only a proxy of RHA expenditure for ambulatory care, it was the best interim information available. To address the data gap, Alberta Health and Wellness has actively pursued comprehensive ambulatory care activity and costing data collection.

With the implementation of the Ambulatory Care Classification System (ACCS), almost all acute care facilities in the province are now reporting ambulatory care activity data, although Calgary RHA is still lagging in comprehensive reporting.

One ACCS data adjustment required for population funding relates to cardiac angioplasty (PTCA) transfers being recorded in Capital Health Authority as an outpatient procedure. Since these are Province Wide Services they should not be included in the Population Based Funding calculations. For 2002/03 funding, all outpatient records where a PTCA was performed were identified and flagged as a Province Wide Service. Other Province Wide Services excluded from ACCS were dialysis records.

There has been a continual increase in the reporting of ACCS data. The 2000/01 ACCS data base contained 5.5 million records. However, the activity records are still not comprehensive.

Consequently, for 2002/03 funding, and until comprehensive ACCS data are available, it was necessary to supplement the ACCS data stream with fee-for-service ambulatory care claim records (count of 286,194). This involved adding to the ACCS data file all fee-for-service ambulatory care related claims that could not be matched with an existing ACCS record. The added fee-for-service records account for 20 percent of the total ambulatory care expenditure used for 2002/03 funding.

**Continuing care** - activity data for long term care are derived primarily from Resident Classification System (RCS) data: all residents of provincial continuing care facilities (nursing homes and auxiliary hospitals) are classified once a year ("snapshot") using a standard format. The RCS data reported to Alberta Health and Wellness is client specific and includes demographic information and eight indicators/three domains which place a client into one of seven classification categories (A to G scale) representing increasing acuity levels or resources needed for care. RCS data used for 2002/03 funding were collected from the Fall 2000 classification involving approximately 13,000 residents (results from the Fall 2001 classification were not available in time). Activity added in also included some alternative care settings (assisted living, residential care, alzheimer centres, etc.). All such activity was converted to an A-G classification. However, separate rates were calculated for each setting.

**Home care** - activity data are from the Home Care Information System (HCIS): all RHAs report monthly home care data through a standard set of data elements. The data are client specific (with PHNs) and include demographic, client classification and service information (self-managed care and six service types - assessment, case co-ordination, direct professional, personal care, home support, indirect services). Services provided under the Children With Complex Health Needs program are excluded because these are funded through Province Wide Services. The activity data used for 2002/03 funding were the HCIS 1999/00 hours paid. HCIS data for 2000/01 were not available in time.

**Private clinics** - RHAs are responsible for funding and managing the facility fees associated with approved physician and oral surgical services provided outside of the public hospital setting. The largest categories of service offered by the private clinics to date have been cataract surgery, abortions and dental surgery. For 2002/03 funding, private clinics 2000/01 activity data (with attached PHNs) were provided by five regions - Capital, Calgary, Headwaters, David Thompson, Chinook.

## 2. Attach Relative Cost Weights

The next step in the Population Formula allocation methodology is to determine an RHA expenditure for each of the patient activities collected in step one. To derive expenditures, relative cost weights are first attached to each activity record. Because the available costing datasets are not comparable, the key is to have accurate *relative* costs (values) within a service category, which are properly weighted in step three. Costing is one area of the funding formula where improved data have been actively sought by Alberta Health and Wellness. A costing initiative has been put in place to collect Alberta patient-specific cost data for regional health services.

**Acute hospital inpatient care** - the valuation of this activity employs the CMG/RIW methodology. The RIWs (Resource Intensity Weights) attached by CIHI to each CMG separation are now exclusively calculated from Canadian (Alberta, Ontario, B.C.) costing records. Currently, Alberta supplies 58% of the costing records used by CIHI to calculate the RIWs, and therefore these RIWs largely reflect the Alberta cost structure.

**Hospital based ambulatory care** - relative cost weights for the ACCS activities are the average costs provided by the Alberta Costing Partnership, derived from 2000/01 cost information provided by three regions (Calgary, Crossroads, Edmonton), also blended with cost data from the previous year.

**Continuing care** - for each classification (A to G), the relative cost weights are based on the costs derived by Alberta Health and Wellness several years ago for the funding of traditional long term care spaces. For the 2002/03 funding, the relative cost weights used were:

A - $11,000.15
B - $14,334.50
C - $18,622.09
D - $21,924.53
E - $29,789.76
F - $36,055.62
G - $60,313.39

**Home care** - self-managed care was valued at actual costs, while cost weights for each of the six general service types were the 1999/00 provincial average cost rates calculated by adding up all provider costs (per hour) for all regions and dividing by the total number of providers:

- Assessment - $30.28
- Case Coordination - $29.96
- Direct Professional - $27.00
- Personal Care - $13.58
- Home Support - $12.54
- Indirect Services - $23.06

Only the direct provider costs were included in the calculations. Indirect costs (such as administration, travel costs, management and building depreciation) were not included because these costs are reported in varying degrees across regions and are not client specific.

**Private clinics** - the data provided by the regions includes activity fees which are used for the relative cost weights.

## 3. Scale the Relative Cost Weights

The intent of population funding is to develop capitation funding rates for different types of individuals which are reflective of relative health care needs. Relative health care needs are assumed to be reflected in historical relative health care expenditures for these types of

individuals. Therefore, the goal is to assign all regional health care expenditures to individual demographic groups for determination of capitation rates. However, the activity and cost weight data collected in steps one and two are not comparable or combinable. To achieve comparability, the relative cost weights in each sector are scaled according to pool size. A single scaling factor is applied to each sector's relative cost weights, so that when the scaled cost weights are added up across all activities they equal the total expenditure (or pool size) expected for that sector. This scaling is done only to achieve a proper weighting of the data.

Sector pool sizes are determined by the total dollars available for formula funding ($3,219 million) and the historical expenditure distribution across service areas. For 2002/03 funding, the expenditure distribution across service areas was based on the 1999/00 reported spending pattern of all regions combined, as determined from Management Information System (MIS) data. Commencing with the 1995/96 fiscal year, all RHAs are required to submit to Alberta Health and Wellness financial and statistical MIS data, by facility, which reconcile to the RHA's audited financial statements.

A program developed in the MIS-EDT system is used to assign the RHA financial data (operating expenditures) to the various funding pools/services. Excluded are such items as building amortization, unfunded pension accrual adjustment and ancillary operations. All cost allocations are done on a facility-specific basis and then added up to the RHA level. Improvements to the assignment of MIS data into the appropriate pools are ongoing. Based on the 1999/00 MIS distribution of RHA expenditures (reporting regions), the following funding pool sizes were used for 2002/03 funding:

| Activity | 2002/03 Funding Pool Size | % |
|---|---|---|
| Acute Inpatient | $1,482.9 M | **46.1** |
| Ambulatory Care | $709.5 M | **22.0** |
| Continuing Care | $615.0 M | **19.1** |
| Home Care | $262.7 M | **8.2** |
| PPP | $135.6 M | **4.2** |
| Private Clinics | $13.3 M | **0.4** |
| **TOTAL** | $3,219.2 Million | **100.0** |

These pool sizes should not be interpreted as targeted funding. Delineation of total funding into activity pools is done for funding calculation purposes (data weighting) only.

## 4. Calculate Capitation Rates for Various Demographic Groups

Based on the derived expenditures (individual service costs), funding capitation rates are developed for application to each region's population. If all types of individuals had the same level of health care need, equal per capita funding for regions would suffice. However, it is well established that significant variation in health needs results from variations in the population in regards to age, gender and socio-economic status. Old people, on average, require much more health care than younger people. Individuals on social assistance, on average, require more health care than someone of the same age and gender not on social assistance. Thus, the funding model develops capitation rates for various population groups with different age, gender and socio-economic characteristics.

To do this, all the individual patient activity expenditures (developed in the first three steps) are first assigned into one of 124 different demographic groups. How is this done? For each activity the individual is linked via the Personal Health Number (PHN) on the activity record to the Population Registry file (note: Alberta Health and Wellness actually uses scrambled PHNs to protect the identity of individuals at all times). Alberta Health and Wellness systems personnel help to ensure that valid identifiers exist for each record on the activity files. Where proper PHNs do not exist (less than one percent of all records), or where the PHN cannot be matched up to or found on the March 31 Population Registry, the records must be excluded from the calculation of the capitation funding rates (although they are used for the import/export adjustments wherever possible).

Linking to the Population Registry file allows each individual expenditure to be assigned to one of 124 demographic groups based on age (20 groupings), gender (2 groupings) and socio-economic status (4 groupings - welfare, aboriginal, premium subsidy, other).

**Appendix A** contains information on **population**: population data source, determining region of residence, the 124 demographic groups, and projected population.

The summed expenditure in each of these 124 groups is divided by the total projected Alberta population in that group to derive the provincial average per capita rate for that group. As mentioned previously, this approach assumes that historical health care utilization serves as a proxy measure of relative health care need, and that age, gender and socio-economic characteristics will be accurate predictors of variations in population health expenditure needs (or, more precisely, health expenditure risks).

The following table lists the 2002/03 funding capitation rate (rounded) for each of the 124 demographic groups. These capitation rates vary from a low of $186 per person (*age 10-14 female regular non-premium support*) to $24,966 per person (*age 90+ female*) - an amount 134 times greater!

## 2002/03 FUNDING CAPITATION RATES ($)

| Age | Sex | Regular | Premium Support | Aboriginal | Welfare |
|---|---|---|---|---|---|
| <1 | F | 2,106 | 2,512 | 3,051 | 2,818 |
| 1 - 4 | F | 334 | 473 | 717 | 593 |
| 5 - 9 | F | 199 | 242 | 283 | 351 |
| 10 - 14 | F | 186 | 245 | 220 | 310 |
| 15 - 19 | F | 313 | 409 | 730 | 947 |
| 20 - 24 | F | 444 | 549 | 1,211 | 2,369 |
| 25 - 29 | F | 640 | 603 | 1,148 | 2,921 |
| 30 - 34 | F | 668 | 691 | 1,112 | 3,070 |
| 35 - 39 | F | 517 | 633 | 962 | 3,014 |
| 40 - 44 | F | 437 | 585 | 984 | 3,268 |
| 45 - 49 | F | 477 | 623 | 1,295 | 3,661 |
| 50 - 54 | F | 611 | 866 | 1,620 | 3,743 |
| 55 - 59 | F | 764 | 1,057 | 2,268 | 3,871 |
| 60 - 64 | F | 937 | 1,413 | 2,287 | 4,567 |
| 65 - 69 | F | 1,755 | - | - | - |
| 70 - 74 | F | 2,732 | - | - | - |
| 75 - 79 | F | 4,452 | - | - | - |
| 80 - 84 | F | 7,874 | - | - | - |
| 85 - 89 | F | 13,694 | - | - | - |
| 90+ | F | 24,966 | - | - | - |
| <1 | M | 2,343 | 2,425 | 3,630 | 3,157 |
| 1 - 4 | M | 444 | 561 | 1,015 | 711 |
| 5 - 9 | M | 284 | 359 | 348 | 637 |
| 10 -14 | M | 221 | 297 | 237 | 382 |
| 15 - 19 | M | 244 | 321 | 391 | 669 |
| 20 - 24 | M | 215 | 267 | 438 | 2,634 |
| 25 - 29 | M | 205 | 264 | 546 | 2,995 |
| 30 - 34 | M | 230 | 327 | 654 | 3,505 |
| 35 - 39 | M | 256 | 465 | 812 | 3,241 |
| 40 - 44 | M | 299 | 534 | 940 | 3,063 |
| 45 - 49 | M | 385 | 673 | 1,293 | 3,442 |
| 50 - 54 | M | 501 | 1,079 | 1,198 | 3,838 |
| 55 - 59 | M | 717 | 1,276 | 1,586 | 4,249 |
| 60 - 64 | M | 1,077 | 1,759 | 2,127 | 4,775 |
| 65 - 69 | M | 1,952 | - | - | - |
| 70 - 74 | M | 3,056 | - | - | - |
| 75 - 79 | M | 4,831 | - | - | - |
| 80 - 84 | M | 7,507 | - | - | - |
| 85 - 89 | M | 12,383 | - | - | - |
| 90+ | M | 21,843 | - | - | - |

## 5. Apply Capitation Rates to Each Region's Projected Population

The 124 calculated capitation rates are applied to each region's projected population (see Appendix B) to determine the regional funding allocations. In other words, funding for each region is determined by multiplying the number of individuals in that region in each of the 124 demographic groups by the corresponding capitation rate (estimated provincial average health expenditures per person).

Because the capitation rates vary by demographic group, and because the demographic composition differs by region, a different *overall* per capita funding level occurs for each Regional Health Authority. For example, the northern regions tend to have the lowest overall per capita funding because of their younger populations, while East Central and Chinook regions get the highest per capita funding because of their higher proportion of seniors. East Central has over 14 per cent of its population age 65+, while Northern Lights has only 2 per cent of its population over 65.

## 6. Protection, Prevention and Promotion Allocation

The Protection, Prevention and Promotion funding pool covers:

- ***Health Protection*** - immunizations, communicable disease control, chronic disease programs, environmental health, dental health, community relations, sexual and reproductive care.
- ***Community Health Services*** - community health nursing, family planning, health promotion/education, breast screening, drug awareness, mental heath promotion, pre-natal teaching, public health, nutrition, school health, etc.

Because of the limited data on promotion/protection/prevention activity, this sector is excluded from the general population formula. A separate allocation of the dollars in this funding pool is made based on a modified population formula.

The first step in the funding allocation methodology is to split the PPP pool ($135.6 million) into four broad age group categories. The proportions were based on the judgement of those involved with these programs:

| | % Split | Sub-pools ($) |
|---|---|---|
| Age 0-14 | 40% | 54,252,500 |
| Age 15-64 | 17% | 23,057,313 |
| Age 65+ | 13% | 17,632,062 |
| All ages | 30% | 40,689,375 |
| **Total** | **100%** | **135,631,250** |

Next, for each RHA, the socio-economic population numbers in each of the four broad age groups are weighted according to the scheme below. Again, this weighting scheme (relative utilization by socio-economic group) was estimated based on the judgement of those involved with this health service area:

| | Weighting |
|---|---|
| Non Subsidy | 1 |
| Subsidy | 2 |
| Aboriginal | 5 |
| Welfare | 5 |

Finally, each region's share of the four funding sub-pools for each region is determined by its share of the estimated provincial weighted population. This led to the following allocations of the Protection, Promotion and Prevention pool:

**2002/03 Protection, Promotion and Prevention Pool Allocation**

| RHA | PPP Allocation | % Share |
|---|---|---|
| **1. Chinook** | 7,824,244 | 5.8 |
| **2. Palliser** | 4,050,701 | 3.0 |
| **3. Headwaters** | 3,524,897 | 2.6 |
| **4. Calgary** | 38,891,236 | 28.7 |
| **5. Region 5** | 2,771,390 | 2.0 |
| **6. David Thompson** | 8,418,549 | 6.2 |
| **7. East Central** | 4,520,358 | 3.3 |
| **8. WestView** | 4,102,081 | 3.0 |
| **9. Crossroads** | 3,217,300 | 2.4 |
| **10. Capital** | 37,207,222 | 27.4 |
| **11. Aspen** | 4,504,432 | 3.3 |
| **12. Lakeland** | 5,440,065 | 4.0 |
| **13. Mistahia** | 4,079,899 | 3.0 |
| **14. Peace** | 1,278,011 | 0.9 |
| **15. Keeweetinok Lakes** | 2,181,592 | 1.6 |
| **16. Northern Lights** | 1,935,841 | 1.4 |
| **17. Northwestern** | 1,683,433 | 1.2 |
| **Total** | **135,631,250** | 100.0 |

# *Non-Formula (Line Items) Funding*

## Overview

Some of RHA Global Funding is provided outside of the population formula. There are several reasons for having non-formula line items:

- where sufficient data does not exist for a proper population formula allocation
- to compensate for geographical variances in expenditure needs beyond that determined from differences in regional demographic composition
- to compensate RHAs for geographical variances in unit costs, because the formula provides the same per capita funding rates to each RHA
- where targeted funding is desirable.

For many of the non-formula items, the general practice has been to maintain their historical funding levels, with volume and price increases incorporated into the general formula funding pool.

Non-formula funding totalled $245.4 million for 2002/03, or 7.1 per cent of total RHA Global funding. Eliminated for 2002/03 was the No Loss provision. Rolled into population formula funding from the previous year were Broda Funding, Diagnostic and Treatment Funding, Salary Increases and STD Education and Contact Tracing funding.

## 2002/03 Non-Formula Funding

| RHA | Community Laboratory Services | Community Rehab Services | Assured Asccess | MRI Operating | Acute Care Coverage |
|---|---|---|---|---|---|
| **1. Chinook** | 2,785,715 | 2,320,892 | 807,334 | 839,000 | 874,024 |
| **2. Palliser** | 1,954,192 | 1,389,419 | 1,952,101 | 572,000 | 503,368 |
| **3. Headwaters** | 1,054,995 | 967,198 | 539,748 | 0 | 0 |
| **4. Calgary** | 24,839,171 | 12,130,037 | 0 | 6,750,000 | 5,482,900 |
| **5. Region 5** | 662,046 | 762,366 | 1,490,389 | 0 | 0 |
| **6. David Thompson** | 3,142,017 | 2,657,874 | 423,417 | 1,433,000 | 877,589 |
| **7. East Central** | 1,706,976 | 1,696,452 | 2,314,823 | 0 | 0 |
| **8. WestView** | 1,721,884 | 1,299,481 | 1,268,083 | 0 | 0 |
| **9. Crossroads** | 696,799 | 617,026 | 23,603 | 0 | 289,047 |
| **10. Capital** | 25,227,369 | 12,750,133 | 0 | 7,619,000 | 5,999,500 |
| **11. Aspen** | 921,014 | 1,363,117 | 1,293,131 | 0 | * |
| **12. Lakeland** | 948,819 | 1,098,894 | 1,370,926 | 0 | 0 |
| **13. Mistahia** | 1,132,151 | 1,244,205 | 3,767,639 | 635,000 | 583,470 |
| **14. Peace** | 267,896 | 365,606 | 1,731,481 | 0 | 0 |
| **15. Keeweetinok** | 277,370 | 343,668 | 2,338,908 | 0 | 0 |
| **16. Northern Lights** | 901,146 | 578,044 | 862,489 | 0 | 390,102 |
| **17. Northwestern** | 182,234 | 343,668 | 3,658,292 | 0 | 0 |
| **TOTAL** | **68,421,796** | **41,928,080** | **23,842,365** | **17,848,000** | **15,000,000** |

continued…

## 2002/03 Non-Formula Funding (continued)

| RHA | Diagnostic Imaging Adjustment | Other Physician Compensation | Alternate Payment Plan | Cost of Doing Business | Geographic Adjustment |
|---|---|---|---|---|---|
| **1. Chinook** | 1,311,676 | 620,932 | 527,347 | 0 | 0 |
| **2. Palliser** | 828,803 | 455,359 | 33,654 | 0 | 0 |
| **3. Headwaters** | 796,145 | 120,626 | 0 | 0 | 0 |
| **4. Calgary** | 0 | 4,758,614 | 6,125,189 | 0 | 0 |
| **5. Region 5** | 694,024 | 105,203 | 0 | 0 | 0 |
| **6. David Thompson** | 2,087,487 | 845,613 | 63,549 | 0 | 0 |
| **7. East Central** | 1,029,475 | 169,435 | 0 | 0 | 0 |
| **8. WestView** | (7,861) | 11,916 | 0 | 225,382 | 1,500,000 |
| **9. Crossroads** | 528,715 | 81,589 | 0 | 0 | 0 |
| **10. Capital** | 0 | 4,197,014 | 4,812,488 | 0 | 0 |
| **11. Aspen** | 300,615 | 55,877 | 0 | 0 | 0 |
| **12. Lakeland** | 977,637 | 317,268 | 0 | 0 | 0 |
| **13. Mistahia** | 2,172,349 | 394,570 | 0 | 5,005,862 | 5,829,387 |
| **14. Peace** | 558,863 | 81,047 | 0 | 1,386,235 | 0 |
| **15. Keeweetinok** | 379,848 | 56,122 | 0 | 1,054,715 | 0 |
| **16. Northern Lights** | 691,633 | 180,548 | 18,994 | 1,681,872 | 2,672,156 |
| **17. Northwestern** | 330,419 | 48,267 | 0 | 805,822 | 0 |
| **TOTAL** | **12,679,828** | **12,500,000** | **11,581,221** | **10,159,888** | **10,001,543** |

continued…

## 2002/03 Non-Formula Funding (continued)

| RHA | Rosehaven | Action for Health | Outpatient Ambulance Transfers | STD/TB Clinics | Emerging Drugs |
|---|---|---|---|---|---|
| **1. Chinook** | 0 | 234,596 | 464,971 | 0 | 0 |
| **2. Palliser** | 0 | 169,175 | 269,674 | 0 | 0 |
| **3. Headwaters** | 0 | 149,583 | 211,200 | 0 | 0 |
| **4. Calgary** | 0 | 1,169,533 | 590,178 | 1,150,000 | 676,922 |
| **5. Region 5** | 0 | 124,568 | 165,068 | 0 | 0 |
| **6. David Thompson** | 0 | 279,197 | 571,225 | 0 | 0 |
| **7. East Central** | 7,526,628 | 178,150 | 319,143 | 0 | 0 |
| **8. WestView** | 0 | 167,585 | 250,294 | 0 | 0 |
| **9. Crossroads** | 0 | 115,618 | 119,839 | 0 | 0 |
| **10. Capital** | 0 | 1,032,069 | 559,822 | 1,200,000 | 676,922 |
| **11. Aspen** | 0 | 169,666 | 242,520 | 0 | 0 |
| **12. Lakeland** | 0 | 173,576 | 331,631 | 0 | 0 |
| **13. Mistahia** | 0 | 163,799 | 250,632 | 0 | 0 |
| **14. Peace** | 0 | 88,801 | 58,636 | 0 | 0 |
| **15. Keeweetinok** | 0 | 90,913 | 80,167 | 0 | 0 |
| **16. Northern Lights** | 0 | 109,757 | 0 | 0 | 0 |
| **17. Northwestern** | 0 | 83,413 | 15,000 | 0 | 0 |
| **TOTAL** | **7,526,628** | **4,500,000** | **4,500,000** | **2,350,000** | **1,353,844** |

continued…

## 2002/03 Non-Formula Funding (continued)

| RHA | Education Centre | Costing Project | 1-800 AIDS Hotline | Cost Adjustment Factor | TOTAL NON-FORMULA |
|---|---|---|---|---|---|
| **1. Chinook** | 0 | 80,000 | 0 | (302,750) | **10,563,738** |
| **2. Palliser** | 0 | 0 | 0 | (732,038) | **7,395,708** |
| **3. Headwaters** | 0 | 0 | 0 | (202,406) | **3,637,090** |
| **4. Calgary** | 600,000 | 80,000 | 0 | 5,633,792 | **69,986,335** |
| **5. Region 5** | 0 | 0 | 0 | (558,896) | **3,444,768** |
| **6. David Thompson** | 0 | 80,000 | 0 | (158,781) | **12,302,187** |
| **7. East Central** | 0 | 0 | 0 | (868,059) | **14,073,023** |
| **8. WestView** | 0 | 0 | 0 | (531,877) | **5,904,887** |
| **9. Crossroads** | 0 | 80,000 | 0 | (8,851) | **2,543,386** |
| **10. Capital** | 0 | 80,000 | 120,000 | 5,847,067 | **70,121,385** |
| **11. Aspen** | 0 | 0 | 0 | (484,924) | **3,861,017** |
| **12. Lakeland** | 0 | 0 | 0 | (514,097) | **4,704,655** |
| **13. Mistahia** | 0 | 80,000 | 0 | (2,664,330) | **18,594,734** |
| **14. Peace** | 0 | 0 | 0 | (995,864) | **3,542,699** |
| **15. Keeweetinok** | 0 | 0 | 0 | (1,140,769) | **3,480,941** |
| **16. Northern Lights** | 0 | 0 | 0 | (743,901) | **7,342,840** |
| **17. Northwestern** | 0 | 0 | 0 | (1,573,315) | **3,893,800** |
| **TOTAL** | **600,000** | **480,000** | **120,000** | **0** | **245,393,193** |

# Non-Formula RHA (Line Items) Funding - Description

## Community Laboratory Services ($68,421,796)

Alberta's laboratory service system was restructured in July 1995 to consolidate lab testing services under RHA authority (excluding services provided by the Provincial Laboratories of Public Health). It became the responsibility of regions to provide lab testing services either through direct service delivery or contractual arrangements with private providers or other RHAs. Lab tests for non-hospital patients (physician referrals), until then reimbursed through the AHCIP fee-for-service E-code, were de-listed, and $65.2 million from the AHCIP E-schedule transferred to RHA funding. Regional allocations of this amount were based on the distribution of physician requests for lab services by resident region (where the test originated) prior to restructuring. These allocations have continued. Difficulties in collecting comprehensive data for this activity have not made formula funding possible.

## Community Rehabilitation Services ($41,928,080)

The Community Rehabilitation Program was implemented in July 1995 to replace physical therapy services provided on a fee-for-service basis, and consolidate several rehabilitation services into the regional system. Physical therapy was de-listed from the AHCIP, and RHAs became responsible for the management and delivery of community based rehabilitation services - physiotherapy, audiology, occupational therapy, respiratory services and speech-language pathology - in accordance with the provincially established CRP policy framework.

At that time, funding of $40.3 million - from the physical therapy budget of the AHCIP, plus the existing speech-language pathology budget in health units, plus additional reallocated dollars - was reallocated to regions. The determined distribution of this funding among RHAs was considered to be equitable, with a large portion of the dollars allocated on the basis of the provincial average utilization by age group. The relative age-specific weights, calculated from 1992-93 data (the last year before capping strategies affected utilization), were applied to the region specific population (1991 Census).

This distribution of dollars has continued. Efforts are continuing to collect comprehensive data through ACCS, at which point this can be rolled into the population formula.

## Assured Access ($23,842,365)

Assured Access funding is provided in recognition of the greater service delivery costs associated with sparsely populated areas. Regions receive an additional percentage of the per capita funding rate for each of their residents living outside of population circles (50-kilometer radius) with a population concentration of at least 5,000.

Measurement of the 5,000 population threshold is based on the most recent Census data (currently the 1996 Census). Circles (50 km radius) are drawn around:

1. All municipalities (as defined by the Census Subdivisions types "City" and "Town") with a population of over 5,000.
2. Sherwood Park and Fort McMurray (Census Subdivision type "Specialized Municipality").
3. Population "hubs" (the largest municipality in an area with a population of 1,000 - 5,000) where a 50 kilometer radius catchment area captures a population of 5,000 or more, within the same region. The population count for the catchment area is the 1996 Census Enumeration Area population counts (Statistics Canada, *GeoRef, 1996 Census,* 92F0085XCB) as assigned to geographical points designated by Statistics Canada as the Enumeration Area Representative Point (centroid).

Rather than a circle, Edmonton, Calgary and other major centres have their municipal boundaries extended outward by 50 and 80 kilometers.

The population outside of the 50 kilometer radius and 80 kilometer radius which qualify for an Assured Access adjustment is also the census enumeration area count. Special consideration was given to the Crossroads region as no enumeration area representative points for that region fall within their identified 50+ kilometer buffer area. To accommodate this anomaly, rather than an Enumeration Area count, the remote population for Crossroads is the pro-rated portion of the remote township population, based on Statistics Canada TRM (Township/Range/Meridian) Counts. This required a pro-ration of five different townships. Also, population was estimated for non-enumerated areas in Peace, Keeweetinok Lakes and Lakeland.

No changes are planned to these factors until more recent census data is made available.

All regions contain some identified remote population except Calgary and Capital (see table below). The regions with the highest percentage of remote population are Northwestern (49%), Peace (30%) and Keeweetinok Lakes (22%).

## Remote Population

| RHA | Population 50-80 km from designated centres | Population 80+km from designated centres | Total Remote Population |
|---|---|---|---|
| **1. Chinook** | 2,580 | 386 | 2,966 |
| **2. Palliser** | 3,137 | 2,484 | 5,621 |
| **3. Headwaters** | 2,191 | 25 | 2,216 |
| **4. Calgary** | 0 | 0 | 0 |
| **5. Region 5** | 5,192 | 498 | 5,690 |
| **6. David Thompson** | 1,510 | 124 | 1,634 |
| **7. East Central** | 8,717 | 447 | 9,164 |
| **8. WestView** | 5,265 | 0 | 5,265 |
| **9. Crossroads** | 98 | 0 | 98 |
| **10. Capital** | 0 | 0 | 0 |
| **11. Aspen** | 5,369 | 0 | 5,369 |
| **12. Lakeland** | 5,692 | 0 | 5,692 |
| **13. Mistahia** | 4,111 | 5,766 | 9,877 |
| **14. Peace** | 4,837 | 1,176 | 6,013 |
| **15. Keeweetinok Lakes** | 1,707 | 4,002 | 5,709 |
| **16. Northern Lights** | 571 | 1,505 | 2,076 |
| **17. Northwestern** | 4,135 | 5,527 | 9,662 |
| **Total** | **55,112** | **21,940** | **77,052** |

The calculation of the 2002/03 funding adjustments for remote population was changed from the previous year. Normally, adjustments are calculated as a set percentage of the provincial overall per capita population funding rate. For individuals residing beyond 50 but less than 80 kilometers from a designated population centre, the adjustment is equal to 25 percent of the average capitation rate. For individuals in locations more than 80 kilometers away, the adjustment is calculated as 50 percent of the per capita funding rate.

For 2002/03 funding, the shift of considerable funding from non-formula funding into formula funding significantly increased the provincial per capita population formula funding rate. If the previous Assured Access funding adjustment calculation was maintained, the Assured Access funding adjustment would have been increased by 24.9 per cent, clearly not an appropriate result.

Therefore, for 2002/03, Assured Access funding was calculated by applying a growth rate to the 2001/02 Assured Access funding allocations (including the growth component applied to total non-formula funding). This growth rate was 12.35%, which was the increase in total Health Authority global funding from the 2001/02 Comparable Budget.

## MRI Operating ($17,848,000)

The same MRI Operating funding allocations for 2001/02 (based on the number of scans expected of each of the six providing RHAs) are maintained for 2002/03 funding, with the intent to roll this into the population formula in future years.

## Acute Care Coverage ($15,000,000)

Eight RHAs are to receive on a continuing basis (starting 2001/02) $15 million to address patient coverage needs in acute care hospitals. Funding may be used for expansion of existing programs, and/or establishment of new programs and services involving physicians, nurses, clinical assistants, medical residents and/or nurse practitioners.

## Diagnostic Imaging Adjustment ($12,679,828)

Formula funding provides each region with the provincial average Diagnostic Imaging (DI) funding. However, because of varying regional access to private DI clinics, where the DI is paid for from the physician fee-for-service pool, some regions require less than the provincial average DI expenditure, while other regions require more. The DI Adjustment was originally intended to compensate for the different population needs for RHA Diagnostic Imaging services (as measured from radiology fee-for-service claims), and to make RHA decisions on provision of DI services cost-neutral. For 2001/02 funding, the negative adjustments for Calgary and Capital were removed, and this practice has been continued for 2002/03 funding.

## Other Physician Compensation ($12,500,000)

For 2001/02, following the April 24, 2001 Budget, an amount of $11.0 million for "other physician compensation" was provided to RHAs. Most of this ($9.9 million) was for Laboratory physicians, with the distribution as recommended in January 2002 by the Council of CEOs: allocated to the 8 RHAs directly engaged in the provision of lab services prorated by funded FTE positions as reported in a PHAA survey. An additional $1.5 million has been added for 2002/03.

## Alternate Payment Plan ($11,581,221)

With regionalization, Alberta Health contracts with individual physicians were divested to the regions (Calgary, Capital, Chinook, David Thompson, Palliser, Northern Lights), along with special funding to cover the contracts. An additional $1.4 million has been added for 2002/03.

## Cost of Doing Business ($10,159,888)

In recognition of the high cost of travel, supplies and utilities for remote RHAs located more than 300 kilometers from a major city (generally applies to the five Northern regions), a special funding adjustment is provided equal to 25 percent of the region's estimated supplies budget (estimated at 20 percent of their total budget). The Jasper area of WestView has been included in this funding adjustment since 2000/01.

## Geographic Adjustment ($10,001,543)

This funding supplement combines the following three adjustments made in previous years: *Secondary Services* ($1.0 million to Mistahia and Northern Lights each to maintain necessary secondary services), *Structural Deficits* ($7.0 million to recognize structural deficits in WestView, Mistahia and Northern Lights due to unique circumstances within those regions), and *ICU Funding* ($0.5 million to Mistahia and Northern Lights each).

## Rosehaven Care Centre ($7,526,628)

The Rosehaven facility in East Central (Camrose) provides 100 beds and a specialized service for people with geriatric psychiatry or behavior management needs. From 1947 to 1992, Rosehaven operated as one of five provincial mental health hospitals. In December 1992, operations transferred to *The Bethany Group*, and Rosehaven began to operate as an auxiliary hospital under the continuing care system. Alberta Health agreed to fund 137 auxiliary beds on a Case Mix Index basis.

Funding of $6.6 million was provided to Rosehaven for 1995/96. With the implementation of population based funding in 1997/98, Rosehaven was included as a non-formula item in East Central's RHA global funding. Formula funding has not been possible because the Resident Classification System is not applicable. About 70 percent of the people served by this program are from outside East Central region. However, an October 2000 Alberta Health and Wellness letter confirmed Rosehaven as a provincial resource in the continuing care system. The funding increases for Rosehaven have not kept up with inflation, and so a small adjustment has been made to 2002/03 funding.

## Action for Health ($4,500,000)

Action for Health are health promotion initiatives for which targeted funding is desirable. RHAs are required to submit an annual plan and report on actual expenditure to ensure this money gets spent for its intended purpose. Each region is allocated a base amount of $60,000, with the remaining $3.48 million distributed on the basis of March 31, 2001 RHA population.

## Outpatient Ambulance Transfers ($4,500,000)

RHA expenditures on inter-hospital outpatient ambulance transfers are built into the population funding formula. However, the provision of provincial average funding to each RHA is not appropriate for these activities because of the strong geographic dimension (i.e. some rural regions have higher than average expenditure needs, while regions such as Northwestern and Northern Lights have needs well below the provincial average). This non-formula funding item is intended to compensate for variances from the provincial average in RHA expenditure needs. The amounts provided for 2001./02 have been maintained until further analysis is conducted.

## STD/TB Clinics ($2,350,000)

The TB and STD (Sexually Transmitted Diseases) clinics in Calgary and Capital are provincial in scope, with data only partially collected through ACCS.

## Emerging Drugs ($1,353,844)

Funding to Calgary and Capital for emerging drugs provides a bridging measure to help pay for new, expensive therapies not yet covered by a publicly funded drug program. This also funds HIV viral load testing.

## Education Resource Centre (for Continuing Care) ($600,000)

The Education Resource Centre in Calgary provides educational support for staff in nursing homes, auxiliary hospitals and home care sites in Alberta (provincial focus). One-third of its funding is from the Calgary Health Region, one-third from Capital and one-third from all other RHAs. Previously, regions flowed the money to Calgary Health Region to consolidate fiscal accountability in one place. To simplify the financing process, beginning in 2001/02 the entire amount is included in a non-formula payment to Calgary.

## Costing Project ($480,000)

Limited funding support is provided to six regions (Chinook, Calgary, David Thompson, Crossroads, Capital, Mistahia) participating in the Alberta Costing Partnership.

## 1-800 AIDS Hotline ($120,000)

Funding is provided to Capital for the operation of the 1-800 AIDS hotline.

## Cost Adjustment Factor ($0)

The Cost Adjustment Factor (formerly Size and Complexity) compensates regions for their higher than average service delivery costs.

The funding formula applies the same per capita funding rates to each RHA's population groups, assuming service delivery costs are the same across RHAs. Three adjustment factors (Cost of Doing Business, Assured Access, Teaching & Research) have then been made after the fact in an attempt to recognize cost factors outside of RHA control which result in additional service delivery costs in some regions. An issue for RHA funding has been the lack of science behind the measured impact of these cost adjustment factors. Consequently, Alberta Health and Wellness, in consultation with RHAs, undertook to construct a methodology for statistically measuring RHA cost adjustment factors. Essentially, this methodology has quantified, through regression analysis, the impact of various factors (such as provider distance and population density) on regional cost variances per adjusted weighted inpatient separation (MIS determined).

Although further analysis is required to determine the appropriate size of cost adjustment factors, the study results (statistically valid) can be used to determine a distribution of the adjustment factors impact across RHAs. Therefore, in implementing the results, a portion of the current adjustment factors is replaced with the new distribution from the study findings. (Because the study did not address the volume side of the inpatient pool or other envelopes of spending, it was decided to only replace a portion - $27.5 million, or 40% - of the current adjustment factors.) The portion of the current adjustment factors to be replaced is their inpatient portion (75% of

Assured Access, 50% of Cost of Doing Business, 90% of Teaching & Research), halved to reflect the fact that the quantity side of expenditure was not measured.

Using an implementation option that allocates cost adjustment funding only to regions with costs above the provincial average (based on their weighted cost shares), the new distribution of the $27.5 million is $12.0 million (43.8%) for Calgary and $15.4 million (56.2%) for Capital. Partially adjusting the three historical adjustments factors (Assured Access, Cost of Business, Teaching & Research) with this new distribution would be complicated, particularly since the current Teaching & Research adjustment factor resides in the Province Wide Services funding pool. Therefore, the three historical adjustment factors were left as is, with the new Cost Factors Adjustment reflecting the net impact of moving to the newly determined distribution for the $27.5 million, i.e. each region's Cost Adjustment Factor is the difference between its portion of the $27.5 million and the new portions (going to Calgary and Capital only) - see table below.

| | Replacement Portion of Historical Adjustment Factors | New Size & Complexity Distribution | Cost Adjustment Factor (Net) |
|---|---|---|---|
| **Chinook** | 302,750 | 0 | (302,750) |
| **Palliser** | 732,038 | 0 | (732,038) |
| **Headwaters** | 202,406 | 0 | (202,406) |
| **Calgary** | 6,393,395 | 12,027,186 | 5,633,792 |
| **Region 5** | 558,896 | 0 | (558,896) |
| **David Thompson** | 158,781 | 0 | (158,781) |
| **East Central** | 868,059 | 0 | (868,059) |
| **WestView** | 531,877 | 0 | (531,877) |
| **Crossroads** | 8,851 | 0 | (8,851) |
| **Capital** | 9,590,092 | 15,437,160 | 5,847,067 |
| **Aspen** | 484,924 | 0 | (484,924) |
| **Lakeland** | 514,097 | 0 | (514,097) |
| **Mistahia** | 2,664,330 | 0 | (2,664,330) |
| **Peace** | 995,864 | 0 | (995,864) |
| **Keeweetinok** | 1,140,769 | 0 | (1,140,769) |
| **Northern Lights** | 743,901 | 0 | (743,901) |
| **Northwestern** | 1,573,315 | 0 | (1,573,315) |
| **TOTAL** | **27,464,346** | **27,464,346** | **0** |

# *Import/Export Funding Adjustments*

## Overview

Since population formula funding is allocated solely according to the population which resides in a region, an import/export adjustment must be made to the allocations to compensate for health care services provided to individuals who cross regional boundaries to receive services. Such activity accounts for over twelve percent of all regional health care activity in the province. An amount of $411.0. million is the total valuation of import/export activity identified for 2002/03 funding.

## Import/Export Funding Methodology

### 1. Identification of Import/Export Activity

The first step in calculating import/export adjustments is to identify import/export (inter-regional) services from the activity data sets used for population formula funding. For 2002/03 funding, this was primarily 2000/01 data. As previously mentioned, current data coverage of regional health service activities is relatively comprehensive, with only a few gaps currently existing. While comprehensiveness is not critical to the capitation rate calculation where a good sample of activity data would be sufficient, comprehensiveness is important to import/export calculation which is only calculated on actual recorded activities.

Import/exports are identified for each of the following service categories:

- hospital inpatient (including subacute)
- hospital ambulatory care
- continuing care
- home care
- private clinics

An import/export is identified for any activity where the region of service (as determined by the facility number or service location on the file) is different from the region of patient residence. For services where the region of patient residence is not determinable, it is assumed that they are local cases and not subject to import/export adjustment.

For hospital inpatient services, given that Calgary's forensic psychiatry program has received a funding adjustment outside of Population Based Funding, excluded from import/export are all forensic psychiatry cases from the Peter Lougheed hospital.

For continuing care, identification of import/export is somewhat more complicated than for other

regional services. For residents who are classified twice by the Resident Classification System in different facilities, only the second classification is considered. Also, the region of residence for import/export (but not for general funding allocation) is defined as the region in which the person lived (mailing address) one year prior to their admission to the continuing care facility system. For funding purposes, it was possible to check prior residency for registrations going back to April 1, 1984, which covers the large majority of continuing care residents. For those records that had a provider RHA identifier differing from the RHA patient identifier one year prior to admission, an import/export service is identified. For resident records that did not have an Alberta Health Care Insurance Plan registration number one year prior to admission, it is assumed that the patient moved to Alberta and thus no import/export identification is made.

## 2. Valuation of Import/Export Activity

Once the import/export services have been identified, the next step is to value them. Because the valuation methodology generally used is the relative cost weights scaled by sector pool size, general volume as well as price increases are incorporated into the total import/export valuation.

**Hospital inpatient activity** - the same methodology used in determining the funding capitation rates (RIWs scaled by pool size) is used to value identified import/export services. However, as the import/export activity does not require age gender and socio-economic identification, the total volume is slightly higher than that used for capitation funding, resulting in a slightly lower valuation. The dollar multiplier for 2000/01 import/export inpatient RIW was $3,664.41.

**Ambulatory care activity** - again, the same methodology used for the funding capitation rates (costs scaled by pool size) is used to value identified import/export services. Since it was still necessary to supplement Ambulatory Care Classification System (ACCS) data with physician fee-for-service data (explained on page 7), a combined file means that similar services could be valued differently depending on the degree to which a region has complied with ACCS reporting.

**Continuing care** - the values attached to identified import/exports are the Resident Classification System A to G cost weights (see page 8) scaled by pool size (factor of 1.392), less the long term care capitation funding rate already received by the service region because that person is included in that region's resident population. As mentioned previously, for Population Formula allocation, patients in continuing care facilities are considered as residents of the region in which the facility is located. However, for import/export identification, the region of residence is defined as the region where the person lived one year prior to their admission to the continuing care facility system. Therefore, because the region where the facility is located is already the recipient of the general Population Formula Funding (capitation rate) for that person, the long term care component is adjusted out of all import compensation it also receives.

**Home care** - the values attached to identified import/exports do not employ the same methodology (cost weights scaled by pool size) as used for other service sectors. This has been the practice because the scaling factor (representing the relationship between pool size and total costed activity) is exceedingly large, indicating a less than full activity set. Therefore, the 1999/00 provincial average cost rates (see page 8) for each of the six general service activity

types, adjusted by a 3.0 percent inflation factor, were used for the valuation of home care import/export activity.

**Private clinics** - the values attached to identified import/exports are the actual fees identified in the data sets received from the regions.

## 3. Application of Import/Export to Regional Funding Allocations

The value of each identified import/export activity is allocated to the region where the service is provided (import), and deducted from the funding of the region where the patient comes from (export). Thus, summed import/export adjustments over all seventeen regions is zero - total imports (positive) equal total exports (negative). However, individual RHAs have a net positive or negative adjustment depending on whether they are a net-exporter or net-importer of regional health services. Both Capital and Calgary RHAs service a significant degree of activity from the other regions, and therefore receive a large *positive* net import/export adjustment ($149.7 million and $82.8 million, respectively). All other regions receive a *negative* net import/export adjustment.

## 4. 2002/03 Import/Export Results

There was a large change in import/export funding compared to previous year 2001/02 funding (April 24, 2001 Budget). Total valued activity increased from $321.1 million to $411.0 million, an increase of 28.0 per cent. This was the result of a 24.3 per cent increase in count (number of import/export services) and a 3.0 per cent increase in rate.

The large increase (24.3%) in count was almost entirely due to an increase in ACCS reporting. There were an additional $1.3 million ACCS records submitted for 2000/01 compared to the previous year. Ambulatory care import/export activity used for funding increased by 153,650 services, compared to an increase of only 1,541 services for all other import/export activity.

Despite a 29.0 per cent increase in pool size for 2002/03 funding, the average rate attached to import/export activity increased by only 3.0 per cent, due to a variety of complicating factors including a smoothing technique used in 2001/02 funding and no update to pool size distribution for 2002/03 (including the distribution between ACCS and the fee-for-service supplement).

## 2002/03 Import/Export Funding Adjustments

| | Inpatient | | | Ambulatory Care | | |
|---|---|---|---|---|---|---|
| **RHA** | **Import** | **Export** | **Net** | **Import** | **Export** | **Net** |
| **1. Chinook** | 6,805,606 | 12,175,435 | **(5,369,829)** | 3,613,835 | 5,488,570 | **(1,874,736)** |
| **2. Palliser** | 3,377,728 | 11,056,890 | **(7,679,162)** | 1,715,985 | 5,097,506 | **(3,381,521)** |
| **3. Headwaters** | 3,110,517 | 19,433,782 | **(16,323,265)** | 2,120,803 | 9,659,829 | **(7,539,025)** |
| **4. Calgary** | 65,106,501 | 11,512,292 | **53,594,209** | 30,815,123 | 6,717,105 | **24,098,018** |
| **5. Region 5** | 3,486,635 | 18,330,199 | **(14,843,563)** | 1,666,154 | 7,805,376 | **(6,139,222)** |
| **6. David Thompson** | 12,900,618 | 21,546,485 | **(8,645,867)** | 6,004,115 | 9,944,768 | **(3,940,653)** |
| **7. East Central** | 6,449,425 | 19,432,718 | **(12,983,294)** | 2,474,520 | 8,604,162 | **(6,129,642)** |
| **8. WestView** | 2,014,988 | 24,919,791 | **(22,904,803)** | 2,380,245 | 11,010,793 | **(8,630,548)** |
| **9. Crossroads** | 4,452,196 | 13,646,184 | **(9,193,988)** | 2,024,944 | 5,308,366 | **(3,283,422)** |
| **10. Capital** | 124,627,685 | 16,241,667 | **108,386,018** | 50,458,538 | 9,855,198 | **40,603,339** |
| **11. Aspen** | 3,626,653 | 28,768,508 | **(25,141,854)** | 2,166,277 | 13,261,892 | **(11,095,614)** |
| **12. Lakeland** | 6,343,729 | 25,864,687 | **(19,520,958)** | 4,252,274 | 10,067,036 | **(5,814,762)** |
| **13. Mistahia** | 7,508,470 | 8,446,151 | **(937,681)** | 3,324,107 | 4,438,131 | **(1,114,024)** |
| **14. Peace** | 2,273,674 | 7,364,194 | **(5,090,521)** | 1,091,836 | 2,418,985 | **(1,327,149)** |
| **15. Keeweetinok** | 1,113,466 | 7,730,693 | **(6,617,227)** | 745,709 | 2,775,633 | **(2,029,925)** |
| **16. Northern Lights** | 1,245,500 | 4,115,594 | **(2,870,094)** | 1,158,509 | 2,274,784 | **(1,116,275)** |
| **17. Northwestern** | 300,789 | 4,158,910 | **(3,858,121)** | 318,800 | 1,603,639 | **(1,284,839)** |
| | **254,744,179** | **254,744,179** | **0** | **116,331,772** | **116,331,772** | **0** |

continued next page ….

**Import / Export** (continued)

| | Continuing Care | | | Home Care | | |
|---|---|---|---|---|---|---|
| **RHA** | **Import** | **Export** | **Net** | **Import** | **Export** | **Net** |
| **1. Chinook** | 1,184,066 | 1,179,718 | **4,348** | 195,232 | 244,783 | **(49,551)** |
| **2. Palliser** | 1,034,490 | 887,516 | **146,975** | 185,636 | 70,143 | **115,493** |
| **3. Headwaters** | 802,157 | 2,200,436 | **(1,398,279)** | 156,778 | 297,210 | **(140,433)** |
| **4. Calgary** | 6,440,559 | 3,089,825 | **3,350,735** | 1,245,573 | 648,091 | **597,482** |
| **5. Region 5** | 1,277,441 | 1,202,257 | **75,184** | 77,103 | 247,462 | **(170,359)** |
| **6. David Thompson** | 2,562,803 | 3,641,438 | **(1,078,635)** | 345,963 | 447,534 | **(101,571)** |
| **7. East Central** | 2,631,095 | 2,166,709 | **464,387** | 346,977 | 296,173 | **50,804** |
| **8. WestView** | 429,773 | 2,340,743 | **(1,910,970)** | 133,655 | 220,425 | **(86,770)** |
| **9. Crossroads** | 1,030,590 | 751,905 | **278,686** | 87,758 | 153,867 | **(66,109)** |
| **10. Capital** | 7,460,810 | 7,617,248 | **(156,439)** | 846,057 | 1,217,973 | **(371,916)** |
| **11. Aspen** | 1,592,745 | 2,956,317 | **(1,363,573)** | 282,944 | 568,483 | **(285,539)** |
| **12. Lakeland** | 3,532,873 | 1,860,207 | **1,672,666** | 704,506 | 216,268 | **488,239** |
| **13. Mistahia** | 1,183,254 | 547,327 | **635,927** | 323,099 | 111,400 | **211,699** |
| **14. Peace** | 758,137 | 748,160 | **9,977** | 31,966 | 127,476 | **(95,510)** |
| **15. Keeweetinok** | 285,531 | 660,261 | **(374,731)** | 9,909 | 61,052 | **(51,143)** |
| **16. Northern Lights** | 6,718 | 188,672 | **(181,954)** | 7,120 | 15,267 | **(8,147)** |
| **17. Northwestern** | 0 | 174,304 | **(174,304)** | 5,588 | 42,256 | **(36,668)** |
| | **32,213,043** | **32,213,043** | **0** | **4,985,863** | **4,985,863** | **0** |

continued next page ….

**Import / Export** (continued)

| | Private Clinics | | | TOTAL | | |
|---|---|---|---|---|---|---|
| **RHA** | **Import** | **Export** | **Net** | **Import** | **Export** | **Net** |
| **1. Chinook** | 47,620 | 153,714 | **(106,094)** | **11,846,358** | **19,242,221** | **(7,395,862)** |
| **2. Palliser** | 0 | 203,693 | **(203,693)** | **6,313,839** | **17,315,748** | **(11,001,909)** |
| **3. Headwaters** | 57,100 | 285,691 | **(228,591)** | **6,247,354** | **31,876,949** | **(25,629,594)** |
| **4. Calgary** | 1,291,116 | 104,920 | **1,186,196** | **104,898,873** | **22,072,233** | **82,826,640** |
| **5. Region 5** | 0 | 344,492 | **(344,492)** | **6,507,333** | **27,929,785** | **(21,422,452)** |
| **6. David Thompson** | 5,054 | 388,247 | **(383,193)** | **21,818,553** | **35,968,472** | **(14,149,919)** |
| **7. East Central** | 0 | 168,376 | **(168,376)** | **11,902,017** | **30,668,137** | **(18,766,120)** |
| **8. WestView** | 0 | 188,546 | **(188,546)** | **4,958,660** | **38,680,297** | **(33,721,637)** |
| **9. Crossroads** | 0 | 100,246 | **(100,246)** | **7,595,488** | **19,960,567** | **(12,365,079)** |
| **10. Capital** | 1,298,845 | 47,207 | **1,251,638** | **184,691,934** | **34,979,294** | **149,712,641** |
| **11. Aspen** | 0 | 208,912 | **(208,912)** | **7,668,619** | **45,764,112** | **(38,095,492)** |
| **12. Lakeland** | 0 | 184,840 | **(184,840)** | **14,833,383** | **38,193,038** | **(23,359,654)** |
| **13. Mistahia** | 0 | 103,033 | **(103,033)** | **12,338,930** | **13,646,041** | **(1,307,111)** |
| **14. Peace** | 0 | 23,746 | **(23,746)** | **4,155,612** | **10,682,561** | **(6,526,949)** |
| **15. Keeweetinok** | 0 | 70,965 | **(70,965)** | **2,154,614** | **11,298,605** | **(9,143,991)** |
| **16. Northern Lights** | 0 | 65,056 | **(65,056)** | **2,417,846** | **6,659,372** | **(4,241,526)** |
| **17. Northwestern** | 0 | 58,052 | **(58,052)** | **625,177** | **6,037,161** | **(5,411,984)** |
| | **2,699,735** | **2,699,735** | **0** | **410,974,593** | **410,974,593** | **0** |

# *Minimum Guarantee Adjustments*

## Overview

To provide greater stability in funding for regions, each RHA was guaranteed a minimum funding increase from their previous year's cash funding (2001/02). An RHA's minimum guaranteed increase is equal to their population growth and aging impact (overall provincial population growth was constrained to 1.5%) plus 1 per cent. This guarantee required that seven regions (RHAs 5, 9, 12, 14, 15, 16, 17) receive funding top-ups (positive minimum guarantee adjustments totalling $16.1 million), the money for which was re-distributed on a proportional basis from the other ten RHAs (negative minimum guarantee adjustments).

| | 2001/02 Forecast | MINIMUM GUARANTEE CALCULATION | | | |
|---|---|---|---|---|---|
| | | Population Growth/Aging Impact | Plus 1% | Total Minimum Guarantee | Guaranteed Minimum Funding |
| | $000 | % | % | % | $000 |
| **1. Chinook** | 189,734 | 0.99 | 1.0 | **1.99** | 193,510 |
| **2. Palliser** | 103,151 | 2.19 | 1.0 | **3.19** | 106,442 |
| **3. Headwaters** | 57,194 | 2.78 | 1.0 | **3.78** | 59,356 |
| **4. Calgary** | 998,941 | 3.01 | 1.0 | **4.01** | 1,038,999 |
| **5. Region 5** | 50,478 | 2.46 | 1.0 | **3.46** | 52,225 |
| **6. David Thompson** | 194,702 | 1.71 | 1.0 | **2.71** | 199,978 |
| **7. East Central** | 124,810 | 1.16 | 1.0 | **2.16** | 127,506 |
| **8. WestView** | 53,086 | 2.57 | 1.0 | **3.57** | 54,981 |
| **9. Crossroads** | 43,130 | 1.01 | 1.0 | **2.01** | 43,997 |
| **10. Capital** | 1,069,393 | 2.54 | 1.0 | **3.54** | 1,107,250 |
| **11. Aspen** | 64,105 | 1.68 | 1.0 | **2.68** | 65,823 |
| **12. Lakeland** | 103,453 | 1.27 | 1.0 | **2.27** | 105,801 |
| **13. Mistahia** | 93,359 | 2.49 | 1.0 | **3.49** | 96,617 |
| **14. Peace** | 28,068 | 0.99 | 1.0 | **1.99** | 28,627 |
| **15. Keeweetinok** | 21,192 | 2.14 | 1.0 | **3.14** | 21,857 |
| **16. Northern Lights** | 32,427 | 3.16 | 1.0 | **4.16** | 33,776 |
| **17. Northwestern** | 16,310 | 1.44 | 1.0 | **2.44** | 16,708 |

Note: the addition of $2.9 million in non-formula funding after the minimum guarantee adjustments were calculated resulted in the seven regions requiring minimum guarantee funding top-ups to receive total funding slightly above their guaranteed minimum funding amounts

# FUNDING COMPONENTS COMPARISON

| 2001/2002 FUNDING (Apr.24/01) | 2002/2003 FUNDING (Mar.19/02) |
|---|---|
| **Activity Data**<br>1. *hospital inpatient*: 1999/00 Morb File CMGs<br>2. *ambulatory care*: combined 1999/00 ACCS (4.2 million records) and FFS (0.3 million records)<br>3. *continuing care*: Fall 2000 Resident Classification plus non traditional care spaces in Capital<br>4. *home care*: 1999/00 HCIS<br>5. *private clinics*: 1999/00 data from five regions | **Activity Data**<br>1. *hospital inpatient*: 2000/01 Morb File CMGs<br>2. *ambulatory care*: combined 2000/01 ACCS (5.5 million records) and FFS (0.3 million records)<br>3. *continuing care*: Fall 2000 Resident Classification plus non traditional care spaces in Capital<br>4. *home care*: 1999/00 HCIS<br>5. *private clinics*: 2000/01 data from five regions |
| **Relative Cost Weights**<br>1. *hospital in-patient*: CIHI RIW 2000<br>2. *ambulatory care*: ACP ACCS average costs based on two years (99/00, 98/99 blended) cost records of Chinook, Calgary, Capital and some from Mistahia; FFS fees; smoothening employed<br>3. *continuing care*: A to G values increased by 3%<br>4. *home care*: 1999/00 HCIS average direct costs<br>5. *private clinics*: 1999/00 fee data from five regions | **Relative Cost Weights**<br>1. *hospital in-patient*: CIHI RIW 2001<br>2. *ambulatory care*: ACP ACCS average costs based on two years (00/01, 01/02 blended) cost records of Calgary, Crossroads, Capital; FFS fees; no smoothening<br>3. *continuing care*: same A to G values as previous year<br>4. *home care*: 1999/00 HCIS average direct costs<br>5. *private clinics*: 2000/01 fee data from five regions |

| | |
|---|---|
| **Pool Size (for scaling relative cost weights)**<br>1. total formula funding pool = $2,495 million<br>2. based on 1999/00 MIS pool distribution, and 80.3/19.7 ACCS/FFS supplement split | **Pool Size (for scaling relative cost weights)**<br>1. total formula funding pool = $3,219 million<br>2. distribution same as previous year |
| **PPP Allocation**<br>Allocation based on regional age and socio-economic composition with corresponding utilization weighting | **PPP Allocation**<br>Same methodology as previous year. |
| **Non-Formula (Line Items) Funding**<br>*No Loss* ($20.2 million): provided directly to regions. | **Non-Formula (Line Items) Funding**<br>1. *No Loss*: eliminated.<br>2. *Broda, Diagnostic & Treatment, Salary Increases, STD Education & Tracing*: rolled into formula funding.<br>3. *Assured Access*: amounts increased by 12.35% from previous year.<br>4. *Other Physician Compensation*: additional funding of $1.5 million<br>5. *Alternate payment Plan*: additional funding of $1.4 million<br>6. *Rosehaven*: additional funding of $0.5 million<br>7. *Cost Adjustment Factor*: (formerly *Size and Complexity*) results of new methodology partially implemented |
| **Import/Export**<br>1. Identified activity based on 1999/00 data.<br>2. Inpatient RIW multiplier of $3,087. | **Import/Export**<br>1. Identified activity for hospital inpatient, ambulatory care and private clinics updated to 2000/01 data; large increase (24%) in ambulatory care import/export count because of increased ACCS reporting.<br>2. Inpatient RIW multiplier of $3,664. |
| **Minimum Guarantee**<br>Guarantee set at 7.6% for each RHA over their Adjusted Base budget for 2000/01. | **Minimum Guarantee**<br>Each RHA guaranteed an increase in funding (from their 2001/02 Forecast budget) equal to their population growth and aging impact (ranges from 0.99% for Chinook and Peace to 3.01% for Calgary) plus 1%. |

# POPULATION

## Population Data Source

The official population data source for the funding model - as chosen several years ago by a Ministerial Committee on Funding - is the AHCIP *Population Registry* file. The Registry file includes all known residents of Alberta that have been determined to be eligible for Health Care Insurance coverage. This excludes some residents, such as the RCMP and military service personnel whose health care is paid for by the Federal Government.

Included on the Registry file are the resident's:

- address
- gender
- date of birth
- some socio-economic elements (e.g. eligibility for premium assistance, coverage as a member of Health Canada's Treaty Indian group)

Individuals receiving social service benefits - one of the four socio-economic groups used for Population Based Funding - are identified from a data file received from Alberta Family and Social Services for March 31 (only those individuals listed in specific support categories).

Various sources are used to maintain the registrations data, and information is updated daily. Alberta Health and Wellness currently processes retroactive changes to the file as far back as 24 months when notified "after the fact". The base population data used in calculating the 2002/03 funding capitation rates was the active Registry population as of March 31, 2001 (as seen four months later at July 31). The four month lag for adjustments is necessary to allow for the retroactive adjustments. All registrations with the necessary data elements are included in the calculation of the expenditure and funding capitation rates, but only active registrations with identified age, gender, socio-economic status and RHA residence are used for funding allocation. Thus, a registration record without an RHA or age identifier would be excluded.

There is general satisfaction with using health care registration population, compared to the alternative of incorporating Statistics Canada population data. However, with the registrations data there is an issue of correct residency.

## Population Residency

When Alberta's RHAs were originally formed, there was a requirement to be able to assign each Alberta health care registrant to an RHA based on the residency of the registrant. After reviewing various options to achieve this requirement, it was determined that using the postal codes from registrant mailing addresses provided the most viable, although not totally foolproof, option. A mailing address is required to register for basic health services. A physical address

field is available in the population registry, but it is not a mandatory field and not fully utilized. Consequently, registrant postal codes (as at March 31) are used to determine region of residence for purposes of regional funding allocation.

For residents of continuing care facilities, the postal code is set to the postal code of the facility. For 2002/03 funding the Resident Classification System survey from the fall of 2000 was used for residency determination as of March 31, 2001. For health care registrants out of province (sabbatical leave, temporary employment, etc.) who only have their out-of-province address recorded in the Registry file, the last known Alberta postal code obtained from the Statistical Registration History Master is used to determine residency for Population Based Funding purposes. For registrations with Bad Address Flags, the flag is ignored and the region of residence becomes the location of the bad address postal code.

Assignment of postal codes to an RHA is not a simple or straightforward task.. There are approximately 70,000 active postal codes in use in Alberta. However, all of Alberta is not neatly divided up into postal code areas - postal codes only specify to Canada Post where mail is to be delivered, which includes rural post office boxes which are accessed by individuals over an undefined geographic area.

Assignment of each postal code to a region by Alberta Health and Wellness is based on the "representative points" which Statistics Canada assigns to each postal code to refer to a specific geographic location (a coordinate proxy for the postal code location). For rural areas, one representative point is normally associated with each census enumeration area (in the absence of any cluster, the point is placed at the visual centre of the enumeration area), and thus it can simply be a matter of determining which census enumeration areas fall into which RHA. Where one postal code covers a large geographical area (i.e. multiple representative points) located within two or more RHAs, all registrants are assigned to a single RHA on a "best assumption" basis. In general, assignment of postal codes to a region is less reliable for rural areas where postal codes, in many cases, cover mail delivery points over a large geographical area. It is also recognized that postal code may not be the most appropriate residency indicator for Population Based Funding in cases where addresses are maintained by family, but the dependant's address is different.

While improvements have been explored in determining residency for the health care registrants, it should be remembered that the financial impact from misassigned residents is minimal, on average, for any region as a result of the import/export mechanism of regional funding. For example, even if a region does not receive Population Based Funding for one of its actual residents, it would receive an import funding adjustment for all health services which it provides to that individual. The import/export mechanism, described later in the manual, compensates regions for residents serviced from outside of their identified region.

## Population groups

Altogether, there are 124 population groups identified for Population Based Funding. These are the result of:

- *twenty* age groups: (<1,1-4,5-9,10-14,15-19,20-24,25-29,30-34,35-39,40-44,45-49,50-54,55-59,60-64,65-69,70-74,75-79,80-84,85-89,90+)
- *two* gender groups: (male, female)
- *four* socio-economic groups:
  - aboriginal (Treaty Status) under age 65
  - welfare (those receiving social assistance during the year) under age 65
  - subsidy (those with subsidized health care premiums) under age 65
  - other (this group represents the majority of Albertans including all persons age 65+)

Composition by socio-economic group:

| | | | |
|---|---|---|---|
| 28 | aboriginal | (under age 65) groups | [14 age groups x 2 gender groups] |
| + 28 | welfare | (under age 65) groups | [14 age groups x 2 gender groups] |
| + 28 | subsidy | (under age 65) groups | [14 age groups x 2 gender groups] |
| + 40 | other | groups | [20 age groups x 2 gender groups] |

**= 124 population groups**

Each of these groups must be mutually exclusive for the funding model. The Registry file can only include one age or gender per individual, but it is possible that an individual could belong to more than one socio-economic group. For such cases, a decision hierarchy is imposed with the following order: aboriginal, welfare, subsidy, other.

Per capita rates (estimated annual health expenditures per person) are most sensitive to the *age* factor. Age groups one to nineteen years have an average per capita health expenditure rate (not including PPP) of $299, compared to the average rate of $5,094 for the sixty-five and over age group which is seventeen times higher! Various age group rates are shown below:

| ***age*** | ***average per capita rate ($)*** |
|---|---|
| < 1 | 2,361 |
| 1-19 | 299 |
| 20-44 | 479 |
| 45-64 | 794 |
| 65-69 | 1,852 |
| 70-79 | 3,635 |
| 80-89 | 9,681 |
| 90+ | 24,129 |

Because of the sensitivity to age, the three regions with the youngest population (average age) - Northwestern, Keeweetinok Lakes, Northern Lights - are recipients of low overall per capita funding rates, while the regions with the oldest population - East Central, Capital, Region 5 - receive relatively high overall per capita formula funding.

*Gender* is a less important determinant of health expenditure, but accounts for significant differences in the child-bearing years. On average, females in the child-bearing years incur about twice as much health care expenditure as males in the same age group.

In addition to age and gender, health expenditure needs also vary significantly by *socio-economic status* (note: the Population Formula is structured on the premise that socio-economic status is only a good predictor of health needs for the population under 65 years of age). The capitation rates are highest for those in the *welfare* group (about 6.3 times higher, on average, than the regular non premium subsidy group), followed by *aboriginal* (about 1.9 times higher than the regular group), and then *subsidy* (about 1.4 times higher than the regular group).

## POPULATION COMPOSITION
### (by socio-economic status)

As of March 31, 2001

| | Registration Population – percentages | | | | | |
|---|---|---|---|---|---|---|
| | | Under 65 | | | | |
| | Age 65+ | Aboriginal | Welfare | Premium Support | Regular | Total |
| RHA | % | % | % | % | % | % |
| 1. Chinook | 13.2 | 7.4 | 2.9 | 13.2 | 63.3 | 100.0 |
| 2. Palliser | 12.8 | 0.7 | 2.0 | 11.2 | 73.3 | 100.0 |
| 3. Headwaters | 10.3 | 5.1 | 1.4 | 9.5 | 73.8 | 100.0 |
| 4. Calgary | 9.0 | 1.2 | 2.1 | 9.3 | 78.4 | 100.0 |
| 5. Region 5 | 12.6 | 5.7 | 2.6 | 11.9 | 67.2 | 100.0 |
| 6. David Thompson | 11.1 | 1.9 | 2.8 | 11.3 | 72.9 | 100.0 |
| 7. East Central | 14.4 | 0.7 | 1.9 | 13.3 | 69.7 | 100.0 |
| 8. WestView | 8.0 | 3.7 | 1.8 | 9.1 | 77.3 | 100.0 |
| 9. Crossroads | 10.1 | 20.1 | 2.3 | 10.2 | 57.3 | 100.0 |
| 10. Capital | 10.8 | 2.4 | 3.6 | 11.2 | 71.9 | 100.0 |
| 11. Aspen | 10.9 | 4.2 | 2.5 | 12.6 | 69.7 | 100.0 |
| 12. Lakeland | 12.1 | 10.6 | 2.4 | 11.7 | 63.3 | 100.0 |
| 13. Mistahia | 7.9 | 4.1 | 2.0 | 11.6 | 74.4 | 100.0 |
| 14. Peace | 10.1 | 7.3 | 2.4 | 12.8 | 67.4 | 100.0 |
| 15. Keeweetinok | 5.5 | 35.6 | 2.1 | 7.8 | 49.1 | 100.0 |
| 16. Northern Lights | 2.0 | 9.0 | 1.1 | 5.6 | 82.3 | 100.0 |
| 17. Northwestern | 3.8 | 30.9 | 1.2 | 15.4 | 48.7 | 100.0 |
| **Province** | **10.2** | **3.6** | **2.6** | **10.7** | **72.9** | **100.0** |

## Projected Population

Population formula funding applies capitation funding rates to each region's projected population for the funded year. For 2002/03 funding, this required a projection of the most recently available population data (March 31, 2001) to September 30, 2002 (mid-point of fiscal year).

Projected annual growth rates for the population (registered persons by age, gender and socio-economic group) in each RHA were based on the historical growth rates from March 31, 2000 to March 31, 2001, scaled by the same factor to produce an overall population increase equal to the forecasted population growth of 1.5% for 2002/03.

# COST ADJUSTMENT FACTOR METHODOLOGY

**(Formerly "Size and Complexity" Adjustments)**

## Issue

Determining the **funding pool** and the **allocation methodology** for "size and complexity" adjustment.

## Background

- Alberta's health regions are funded primarily by the population based funding formula, which incorporates regional demographics, socio-economic factors and are adjusted for imports and exports.
- Currently several non-population based adjustments are allocated to the Regional Health Authorities. These include adjustments for Assured Access, Cost of Doing Business and Teaching & Research.
- Last year, another adjustment was introduced for Size and Complexity. This adjustment was allocated to the Calgary Health Region and the Capital Region Health Authority. This was an interim adjustment pending an analysis of the adjustment factors.
- Alberta Health and Wellness carried out a study in conjunction with the Regional Health Authorities to develop a more accurate methodology to determine the size and allocation of the regional adjustments to compensate for justifiable cost differences in delivering health services.

## Methodology

- The study took into account all adjustment factors and focussed on the inpatient costs due to the significance of the funding pool and the availability of data. The volume side of the inpatient pool and or other envelopes of funding need to be addressed.
- A statistical technique known as Hierarchical Linear Modeling (HLM) was employed in the study. This approach captures the structure of the health system in Alberta where patient cases are performed in hospitals, which are managed by the regions, which in turn are part of the provincial health system.
- A three level model structure was used for the analysis:

  Level 1 model answered " why certain cases in each hospital are more expensive than others?"

  Level 2 model answered " why certain hospitals in each region are more expensive than others?"

  Level 3 model answered "why certain regions within the province are more expensive than others?"
- Following the literature review and the Technical Group's suggestions, the model tested a number of potential variables, including:
  1. Patient demographic, geographic and case factors at the case level;

2. Hospital and proximity factors at the hospital level; and
3. Regional demographics, proximity and health system characteristics at the regional level.

- Data for the study were derived from the MIS and morbidity files and case weights, as measured by the Resource Intensity Weights (RIW) came from the Canadian Institute for Health Information (CIHI). The study was based on data for the fiscal years 1998-1999 and 1999-2000.
- The HLM methodology appeared to be a proper approach and found significant variables at all levels of the model.

## Size of the Adjustment

- The Technical Group proposed that about $27.5 million could be allocated as an interim adjustment pool size based on the empirical findings of the study. This amount is related to the inpatient portion of the current adjustment factors.

- The following approach was used in determining the size of the adjustment:

| Non-Population Adjustment | Current Size of Adjustment | Percentage Allocated Using Size and Complexity | Prorated Allocation |
|---|---|---|---|
| Assured Access | $20.9m | 75% | $15.7m |
| Cost of Doing Business | $8.6m | 41% | $ 3.5m |
| Size and Complexity | $5.0m | 100% | $ 5.0m |
| Teaching & Research | $34.6m | 90% | $31.1m |
| Total Divided by 2 | | | $27.7m |

- The study as it stands focussed on inpatient costs. Inpatient volumes need to be considered as well. Until the inpatient volume component of the study is complete, the Technical Group suggested dividing the total amount of the adjustment pool by two to recognize that expenditures are composed of costs and volumes.

## Allocation Methodology

- The model produces estimates of average cost per separation by region. A methodology on how to allocate money to regions demonstrating higher costs needs to be developed and applied.

- The following allocation methodologies were identified.
  1. Allocate to all regions based on their share of total provincial expenditures. **All regions receive a share of funding.**
  2. Allocate to regions on the margin based on their share of total provincial expenditures only recognising costs above those in the minimal cost region(s). **All regions except minimal cost producer(s) receive a share of funding.**

3. Combine options 1 and 2, e.g. (50% * Option 1 Allocation) + (50%* Option 2 Allocation). This option recognizes that it may be appropriate to fund all regions but relatively low cost regions should receive proportionately less funding than their weighted share.
4. Allocate to **only those regions with higher costs than the provincial average** based on their share of provincial expenditures. The argument for this option is that the funding formula allocates funding based on provincial average costs, so only costs in excess of provincial average costs should be funded.

In consideration of the Technical Group's input and based on the following factors, the Ministry made a decision to compensate only those regions that have costs above the provincial average (i.e. option 4):

- the principle of population based funding is based on the provincial average utilization and costs;

- the adjustments are made on the margin i.e. on incremental size of the pool rather than on the total size of the inpatient pool.

**Next Steps**

Completion of the Phase 2 of the study that would include the inpatient volume analysis - Target date May 2002. Attempts will also be made to develop overall Regional Cost Differential Index.