

Children's Mental Health Need and Expenditures in Ontario:
Findings from the 2014 Ontario Child Health Study

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Abstract

Objective: To estimate the alignment between Ontario Ministry of Children and Youth Services (MCYS) expenditures for children's mental health services and population need, and to quantify the value of adjusting for need in addition to population size in formula-based expenditure allocations. Two need definitions are used: 'assessed need' as presence of mental disorder, and 'perceived need' as perception of need for professional help.

Methods: Child mental health need and service contact estimates (from the 2014 Ontario Child Health Study), expenditure data (from government administrative data) and population counts (from the 2011 Canadian Census) were combined to generate formula-based expenditure allocations based on a) population size and b) need (population size adjusted for levels of need). Allocations were compared at the service area and region level and for the 2 need definitions (assessed and perceived).

Results: Comparisons were made for 13 of 33 MCYS service areas and all 5 regions. The percentage of MCYS expenditure reallocation needed to achieve an allocation based on assessed need was 25.5% at the service area level and 25.6% at the region level. Based on perceived need, these amounts were 19.4% and 27.2%, respectively. The value of needs-adjustment ranged from 8.0 to 22.7% of total expenditures, depending on the definition of need.

Conclusion: Making needs-adjustments to population counts by using population estimates of child mental health need (assessed or perceived) provides additional value for informing and evaluating allocation decisions. This study provides much-needed and current information about the match between expenditures and child mental health need.

(Abstract 250 words)

Keywords Mental health need, Children, Services, Expenditures, Ontario, Funding formula

Introduction

The Ontario Ministry of Children and Youth Services (MCYS) was responsible for funding services addressing the mental health needs of children and youth aged 0 to 17 years (herein ‘children’) until August 2018.¹ Although additional services are provided by the Ministries of Health and Education (in primary care and hospital settings and in schools) and by private providers, advocacy, charity and self-help groups,² total expenditure allocations to children’s mental health services and the proportion of public and private sector allocations are unknown. Also unknown is Ontario’s overall capacity to care for children with mental health needs, as service planning and provision is not coordinated across sectors.³ Accordingly, this work focuses exclusively on MCYS expenditures to children’s mental health services and excludes expenditures in child welfare, primary care, hospitals, schools and private settings.

There are 5 MCYS administrative regions in Ontario (West, Central, East, North, and Toronto) comprised of 33 service areas geographically bounded in one or more Statistics Canada Census Divisions. Within service areas, MCYS contracts with individual service agencies who provide programs targeting early identification of mental health problems, as well as individual, family and group-based interventions for these problems.⁴ MCYS service areas and regions formed our target allocation units (TAUs) with individual agency expenditures aggregated to both the area and region levels.

To date, limited information is publicly available on how MCYS has approached expenditure allocation decisions although the introduction of a funding formula has been considered.^{5,6} Governments commonly use these types of formulas as they are believed to maximize the usefulness of tax dollars for the public good by distributing resources according to need thereby creating equitable capacities for care.⁷ Although formula-based allocations consider the principle of equity (distributing resources according to need), they do not consider the relationship between the allocation and outcomes (i.e., how expenditure allocations get used once distributed, service effectiveness etc.).

At a minimum, we expect children’s mental health need to be a function of the number of children living in a particular area. Beyond this, Bradshaw⁸ developed a typology of need that we can apply: normative (presence of mental disorder); felt (parent/youth subjective perception of a mental health problem); expressed (demand for mental health service); comparative (population inequities in mental health); medical (treatable disease) and social (restoring quality of life).⁹ With no single definition of need in children’s mental health and evidence that presence of disorder is only a partial determinant of service use,¹⁰ we defined the concept of need in two ways: assessed (the presence of mental disorder) and perceived (subjective perceptions of mental health need) based on data from a large population survey.

In the absence of periodic general population surveys, the systematic collection of data on children’s mental health need would require significant time, resources and commitment to implement. It is therefore important to quantify how well a simple population-based allocation approximates a needs-based allocation. Small allocation differences would signify that using easily available population counts to generate expenditure allocations is more cost-effective and preferable. However, evidence from the Canadian health sector suggests these approaches can differ considerably.¹¹ In addition to understanding how MCYS expenditures align with population- and needs-based allocations, we also aim to quantify the value in adjusting for need over and above population size.

To our knowledge, this is the first study anywhere to use an allocation formula to evaluate expenditure allocations in children’s mental health. Only two studies in Canada have

examined allocations for children's mental health at all. In Québec, Blais and colleagues¹² reported no significant regional differences in need indicators, but large differences in mental health resources and services in 1992-93. In Ontario, Boyle & Offord¹³ reported large discrepancies in expenditures and service use that could not be explained by child mental health need.

The objectives of this study are to: 1) evaluate the extent to which expenditures for MCYS children's mental health services in Ontario are aligned with population- and needs-based expenditure allocations, 2) quantify the value of using a needs-based formula as opposed to a simple population-based formula, and 3) estimate the impact of the TAU and definition of child mental health need on our findings. We addressed three questions. First, what percentage of 2015-2016 MCYS expenditures would need to be reallocated to achieve a needs-based expenditure allocation? Second, what percentage of expenditures would need to be reallocated to move from a population-based allocation to a needs-based allocation? Finally, to what extent does the TAU and definition of need influence the results?

Methods

Data

This study combines aggregate data from: 1) the 2014 Ontario Child Health Study (OCHS);¹⁴ 2) MCYS expenditures for the 2015-16 fiscal year obtained from the Client Services Branch of MCYS; and 3) 2011 Census population counts of children.¹⁵ The 2014 OCHS is a province-wide, cross-sectional, epidemiologic study of child mental health. A probability sample of 6,537 households (50.8% response) with 10,802 4 to 17 year olds participated. Using the 2014 Canadian Child Tax Benefit file as the sampling frame, households were selected based on a complex 3-stage survey design that involved cluster sampling of residential areas and stratification by residency (urban, rural) and income (areas and households cross-classified by three levels of income). Data were collected during home visits by trained Statistics Canada interviewers from the person most knowledgeable about the child and by computer-assisted interview from children aged 12 to 17 years. Detailed accounts of the survey design, content, training and data collection are available elsewhere.^{14,16}

Concepts and Measures

CHILD MENTAL HEALTH NEED

Assessed need One randomly selected child from each family ($n = 6,537$) and their parent was interviewed using the *Mini International Neuropsychiatric Interview for Children and Youth (MINI-KID)*.^{17,18} Youth aged 12 to 17 years were also interviewed. Children meeting criteria for one or more disorders in the past 6 months¹⁹ according to parent or youth report were classified with assessed need. The remaining children ($n = 4,265$) were classified based on a total scale score from the *OCHS Emotional Behavioural Scales (OCHS-EBS)*²⁰ converted to a binary disorder classification. The *OCHS-EBS* are a 52-item checklist self-reported by parents about children of all ages and by youth aged 12 to 17 years to assess mental health disorder symptoms over the past 6 months. The *OCHS-EBS* demonstrate satisfactory reliability and validity when used as either dimensional²⁰ or categorical²¹ measures. A total scale score cut-off was selected and applied to produce a prevalence of one or more disorders that matched the same disorder prevalence assessed by the *MINI-KID*. Assessed need was coded as present (1) when the child was identified with one or more disorders based on parent or youth report; and otherwise, as absent (0).

Perceived need Perceived need was defined as positive responses to 2 sequenced questions that asked whether the parent (for ages 4 to 17) or youth (for ages 12 to 17) thought that, in the past 6

months, the child had any emotional or behavioural problems, and if yes, needed any professional help with these problems. Perceived need was coded as present (1) if the parent or youth answered yes to both questions; and otherwise, absent (0).

Analysis

SELECTION AND EVALUATION OF TARGET ALLOCATION UNITS

Due to extensive clustering in the 2014 OCHS, we conducted an assessment of the coverage and representativeness of the data in each TAU to identify those areas and regions eligible for inclusion. Survey respondents were grouped according to the administrative boundaries and assessed for adequate coverage. Adequacy was defined as an unweighted sample size over 100, a weighted sample size over 20,000, and household weighted sample estimates of the percentage of lone-parent families within 5% of the 2011 Census and average income within 20%. Without existing guidelines for assessing coverage adequacy, cut-offs were selected based on statistical power requirements and observed differences between Census and survey estimates on socio-demographic variables.¹⁶

EXPENDITURE ALLOCATION FORMULAS

Population-based This formula divided total MCYS expenditures by the 2011 Census count of children aged 0 to 17 years in Ontario to estimate an average 2015-16 dollars per capita amount which came to $\$341,367,552 \div 2,683,795 = \127 . To generate total expenditure allocations for each TAU, this amount was multiplied by the number of children in each area.

Needs-based This formula included three steps—summarized for assessed need in Figure 1. The process outlined here for assessed need was repeated using perceived need for professional help as the definition of need. In step 1, we adjusted our formula for imperfect targeting of services by splitting overall expenditures between children with and without mental health need (assessed need based on the presence of mental disorder in the first expenditure allocation and perceived need in the second). This was done by estimating the proportion of children with and without mental disorder who had mental health agency service contact, based on parent responses to the question ‘In the past 6 months, did you, another family member or <child> see or talk to anyone from any mental health or addictions agency because of concerns about his/her mental health?’. Proportions were multiplied by 2011 Census population counts to estimate the numbers of children in the general population with and without mental disorder who had service contact (69,850 and 33,630 children, respectively). We also adjusted the formula for the differential number of service contacts among those with and without mental disorder in recognition that more resources may be required to serve those with a mental disorder versus those without. This was done by estimating the average number of service contacts based on parent responses to the question ‘In the past 6 months, how many times in total did you, another family member or <child> see or talk to anyone from this/these agency/ies about your concerns?’ These averages were multiplied by the number of children with and without mental disorder with service contact to estimate the total number of service contacts by children in the general population with and without disorder (204,661 and 64,570 contacts, respectively).

In step 2, we divided total expenditures ($\$341,367,552$) among service contacts ($204,661 + 64,570 = 269,231$), and multiplied that amount ($\$1,268$) by the number with and without disorder that had service contact. In step 3, we divided these totals among the total population of children in the population with and without disorder. This resulted in dollar per capita allocations of \$438 for children with mental disorder and \$39 for those without.

<u>Step 1</u>		
Total population (from 2011 Census)	2,693,795	
	<i>With mental disorder</i>	<i>Without mental disorder</i>
Proportion of the population with & without disorder	.22	.78
Total population with & without disorder	591,947	2,101,847
Proportion with & without disorder with service contact	.12	.02
Total population with & without disorder with service contact	69,850	33,630
Average number of contacts	2.93	1.92
Total number of contacts for those with & without disorder	204,660	64,569
Total number of service contacts	269,229	
<u>Step 2</u>		
Total expenditure	\$341,367,552	
Per contact expenditures for those with service contact	$\$341,367,552 \div 269,229 = \$1,268$	
...allocated to those with disorder	$204,660 \times \$1,268 = \$259,497,894$	
...allocated to those with without disorder	$64,569 \times \$1,268 = \$81,869,658$	
<u>Step 3</u>		
Per capita expenditures distributed in the total population		
...allocated to those with disorder	$\$259,497,894 \div 591,947 = \438.38	
...allocated to those with without disorder	$\$81,869,658 \div 2,101,547 = \38.95	

Figure 1. Outline of process used to generate dollar per capita allocations based on population size adjusted for child mental health need defined as the presence of mental disorder and weighted by the likelihood that children with and without mental disorder will be in contact with services. This example uses the assessed need definition and rounded estimates. The process was repeated using the perceived need definition.

We then multiplied Census population counts from each TAU by the aggregate proportions of children with and without mental disorder in each TAU based on 2014 OCHS data (see Table 2 for assessed and perceived need estimates and population counts). We multiplied these numbers by the dollar per capita amounts to generate total expenditure allocations for each TAU.

STATISTICAL ANALYSIS

All survey estimates were weighted using standardized weights to reflect probability of selection. Total overall weighted estimates of both assessed and perceived child mental health need and service contact in addition to TAU-specific weighted estimates were generated. We did not adjust for age and sex as the age and sex distributions of MCYS services and expenditures are unknown and we expect age and sex differences in mental health need to be evenly distributed across the province. Population counts and MCYS expenditures are based on a 0 to 17 age group to align with the age group that MCYS agencies serve. Estimates of need are based on a 4 to 17 age group, the target population of the 2014 OCHS. However, excluding 0 to 4 year olds in our assessments of need would not affect prevalence estimates differently across TAUs. Our service area analysis included only expenditures and population counts from eligible service areas. Our regional analysis used expenditures and counts from all regions.

Our analysis compared needs-based expenditure allocations with 2015-16 MCYS expenditures and with population-based allocations. To quantify the amount of MCYS

expenditures that would need to be reallocated to achieve a needs-based expenditure allocation, we calculated the differences between allocations, summed the absolute differences and calculated this as a percentage of total expenditures. To quantify the value in adjusting for need in addition to population size, we followed the same procedure comparing needs-based allocations to population-based allocations. We then compared allocation differences at the service area and region levels and repeated the analysis using perceived need instead of assessed need.

Results

Thirteen service areas and all 5 regions met the adequacy criteria, shown in Table 1 along with estimates of need and child population counts. As Toronto is both a service area and region, we included it as a region only due to its size. Unweighted sample sizes are suppressed for confidentiality reasons.

Table 2 presents MCYS expenditures and the 3 formula-based expenditure allocations: a) population-based in the second column, b) assessed needs-based in the third column, and c) perceived needs-based in the fourth column. For example, in the West region, actual MCYS expenditures were \$72,246,178 compared with a population-based allocation of \$71,996,145, an assessed needs-based allocation of \$74,989,469 and a perceived needs-based allocation of \$81,388,441. Figures 2 and 3 graph the same information. For service areas, total MCYS expenditures ranged from \$2.2M (Haldimand-Norfolk) to \$22.1M (Peel). For regions, expenditures ranged from \$44.2M in the North to \$82.8M in the Central region.

Table 3 shows allocation differences, the sum of the absolute total differences and the percentage of total expenditures this amount represents. The percentages in columns one and two represent the proportion of MCYS expenditure reallocation required for a distribution commensurate to population size adjusted for need. These amounts were 25.5% and 25.6% for service areas and regions respectively, based on an assessed need definition and 19.4% and 27.2% respectively based on a perceived need definition. The percentages in columns three and four represent the allocation difference between population-based and needs-based allocations expressed as a percentage of total expenditures. Based on an assessed needs-based allocation, this difference was 11.9% and 8.0% of total expenditures for service areas and regions respectively. Based on a perceived needs-based allocation, this difference was 22.7% and 17.0% respectively.

Discussion

This study is the first to use a formula-based approach to: 1) evaluate the extent to which government expenditures to child mental health services align with the number of children and their levels of need, and 2) quantify the value of adjusting for need, over and above the number of children. Our findings suggest that 26% of MCYS expenditures would need to be reallocated to achieve a distribution commensurate to levels of assessed need in the population. To avoid penalizing areas with lower need, a policy option would be incremental funding adjustments over time to higher need areas (negative differences in Table 3). In our data, this represents 12.8% of expenditures, translating to new expenditures of \$18.4M across the 13 service areas or \$43.6M across the 5 regions in 2015-16 funds.

There is substantial variation in the alignment of needs-based allocations with MCYS expenditures. For example, these differences were small in the West and East regions and large in the Central, North and Toronto regions. The higher MCYS expenditures in the North might

reflect greater service delivery costs. This could also be the case in Toronto, along with comparatively lower levels of need due to the high proportion of immigrants in the Toronto region (83% in our sample) whose children have been found to have lower levels of mental health need.^{19,22} Lower levels of MCYS expenditures in the Central region may be due to expenditure allocations falling behind population growth. Census population counts for this region show a 19% population increase from 2006 to 2016 compared to growth ranging from 0 to 9% in the other regions for the same period.^{23,24}

Is there value in making needs-adjustments to population counts when evaluating allocation decisions? Our findings suggest that there is. Depending on the definition of need used, the difference between needs-based and population-based allocations ranged from 8 to 23% (15% on average) or from \$17,240,440 to \$58,025,938 (\$33,881,979 on average) in 2015-16 dollars which is consistent with previous findings from the health care sector¹¹. This suggests that going from population to needs-based allocations would have considerable value based on the reallocation estimates.

If Ontario proceeds with a formula-based funding approach, efforts should be made to include needs-adjustments. Implementing adjustments for child mental health need means confronting 2 challenges. The first is achieving consensus on the definition and measurement of child mental health need. The second is identifying a cost-efficient method for obtaining reliable population estimates of need for MCYS service areas.

In reference to the first challenge, child mental health need was defined as the presence of mental disorder identified by parents or their children. Acknowledging that many service providers do not use DSM disorder classifications to define child mental health need, we replicated our analysis using parent and child subjective perceptions of need for professional help with emotional or behavioural problems. Compared to assessed need, perceived need more directly captures mental health concerns and is associated more closely with actual service demand.²⁵ Differences between assessed and perceived need in their patterns of recommended expenditures indicate that a consensus on the definition and measurement of child mental need is a prerequisite for developing a needs-based formula.

In reference to the second challenge, decision makers must devise strategies to minimize the costs of obtaining reliable estimates of child mental health need associated with data collection, sampling and survey timing. Periodic in-person, household surveys like the 2014 OCHS would provide affordable and reliable estimates at the provincial level but not at the individual service area level—producing reliable estimates at the service area level could be more costly. One difficulty for policymakers is that sampling small areas is more informative for service planning and evaluation because it can identify differences in need not discernible by sampling large areas. In addition, the interval between surveys—5, 10 or 20 years—will influence overall cost. However, the ideal interval for discerning population changes in child mental health need has not been identified.

Limitations

This study is not without limitations. One, limited sample size and coverage restricted the analysis to 13 of the 33 MCYS service areas in Ontario. The regional replication of our findings provides confidence that the interpretation of our findings apply to the other 20 areas, and that a general formula-based approach can be applied to other provinces and jurisdictions. Two, a 4-year gap exists between the 2014 OCHS and the 2011 Census. However, correlations between variables assessing the same phenomena in the 2014 OCHS and the 2011 Census are high, obviating concerns about census timing.¹⁶ More relevant and not addressable here are concerns

about the quality of the Census data due to extensive non-response.²⁶ Three, reliance on MCYS expenditures excluded resources contributed by other sectors (namely health and education) for the reasons outlined in the introduction. Understanding the distribution of service expenditures across sectors and the capacity to care these resources create, is an important area for further research when such information can be made available. Finally, this work focused only on service expenditures and puts aside important issues about service costs, effectiveness, efficiency and outcomes that warrant exploration. Despite these limitations, we think this work provides a useful approach to using 2014 OCHS data to inform and evaluate government expenditure allocation decisions that could be modified to incorporate other estimates of need or additional relevant information. The availability of the 2014 OCHS data presents numerous opportunities for similar and further work in this much-neglected area.

Conclusion

This study combines estimates from general population survey data, Census data and government expenditures data to compare needs-based allocations with actual MCYS expenditures and a population-based allocation. Our findings suggest that an expenditure reallocation was needed in 2015-16 to ensure resources were distributed according to need. They also suggest there is value in including estimates of need, in addition to population size, in formula-based expenditure decisions.

The lack of needs-based approaches to expenditure decisions in children's mental health reflects the lack of available data required for this. Policymakers would benefit from identifying data collection opportunities or exploring the potential usefulness of alternative indicators of need that are systematically collected. Availability of this data would provide an opportunity to inform and evaluate funding allocation decisions and establish much-needed understanding about the funding required to serve children with mental health needs and their families. Ensuring the usefulness of this data would also require addressing certain challenges including: 1) achieving consensus on the definition of mental health need; 2) finding commitment, resources and capacity within governments to collect and use this kind of data; and 3) coordinating initiatives and funding across the various sectors involved with children's mental health.

Data Access. Data access available through Statistics Canada Research Data Centres.

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Table 1. Table of number of children, prevalence of assessed and perceived need by selected service areas and regions and summary statistics of coverage evaluation comparing weighted survey estimates with 2011 Census estimates of proportion of lone parent families and household income.

MCYS Region and Service Area	No. children 0 to 17	% children with mental health need		Weighted sample size (rounded to base 50)	Coverage Evaluation	
		Assessed	Perceived		Absolute % difference in estimates of lone parent families	Absolute % difference in estimates of household income ^a
West	568,135	23.4	32.0	108,050	1	9
Haldimand-Norfolk	22,255	31.2	22.1	23,300	3	9
Niagara	83,590	26.3	30.2	127,950	2	9
Middlesex	90,385	20.9	37.6	29,300	2	7
Central	940,505	21.8	25.9	750,950	1	7
Dufferin/Wellington	60,175	24.8	31.6	33,650	2	0
Waterloo	113,435	24.4	17.9	147,750	1	6
Halton	119,390	14.1	38.3	57,650	3	16
York	238,150	15.2	32.8	138,700	4	3
Peel	313,990	18.3	28.6	233,800	2	8
East	535,130	23.7	31.1	485,200	3	10
Lanark/Leeds and Grenville	31,450	30.0	38.0	43,900	5	11
Hastings/Prince Edward/Northumberland	45,190	21.8	25.7	26,850	3	7
Durham	141,325	19.2	27.2	136,550	1	11
Ottawa	182,170	21.3	50.4	132,400	3	11
North	161,260	33.6	46.7	108,050	2	6
Nipissing/Parry Sound/Muskoka	32,890	34.9	38.4	29,000	1	15
Toronto	488,765	15.5	17.9	388,250	3	12

^aAbsolute differences in income were calculated by subtracting the 2014 OCHS income estimate from the 2011 Census income estimate and then dividing this amount by the 2011 Census income estimate to generate a proportion. Multiplying by 100 gives a %. (E.g., \$18,000-\$20,000=\$2000, \$2,000/\$20,000= 0.1, 0.1 x 100 = 10%)

Table 2. Table of total expenditures and allocations for selected service areas and regions.

MCYS Region and Service Area	MCYS expenditures	Population-based allocation	Assessed needs-based allocation	Perceived needs-based allocation
West	\$72,246,178	\$71,996,145	\$74,989,469	\$81,388,441
Haldimand-Norfolk	\$2,172,879	\$2,180,762	\$2,983,205	\$3,087,113
Niagara	\$9,424,423	\$8,190,963	\$9,864,967	\$11,600,549
Middlesex	\$14,521,891	\$8,856,804	\$9,060,159	\$10,032,389
Central	\$82,878,481	\$119,184,232	\$118,144,457	\$110,887,754
Dufferin/Wellington	\$4,674,442	\$5,896,533	\$6,796,540	\$6,959,004
Waterloo	\$9,823,075	\$11,115,468	\$12,675,822	\$13,583,433
Halton	\$14,182,012	\$11,698,997	\$9,336,397	\$11,387,454
York	\$17,897,615	\$23,336,260	\$19,449,850	\$16,242,701
Peel	\$22,097,003	\$30,767,802	\$28,857,068	\$21,746,378
East	\$65,614,461	\$67,813,630	\$71,225,966	\$74,821,183
Lanark/Leeds and Grenville	\$5,725,664	\$3,081,778	\$4,093,527	\$4,277,347
Hastings/Prince Edward/Northumberland	\$7,370,543	\$4,428,157	\$4,659,232	\$6,210,662
Durham	\$9,477,283	\$13,848,402	\$13,387,925	\$14,227,762
Ottawa	\$21,281,697	\$17,850,793	\$18,507,710	\$19,204,827
North	\$44,240,846	\$20,435,457	\$27,734,040	\$33,048,576
Nipissing/Parry Sound/Muskoka	\$5,827,074	\$3,222,883	\$4,803,200	\$5,915,981
Toronto	\$76,387,586	\$54,537,865	\$49,273,620	\$41,221,598

Table 3. Table of allocation differences and reallocations at the service area and region level.

MCYS Region and Service Area	Difference between MCYS expenditures vs:		Difference between population-based allocation vs:	
	Assessed needs-based allocation	Perceived needs-based allocation	Assessed needs-based allocation	Perceived needs-based allocation
West				
Haldimand-Norfolk	-\$810,326	-\$914,234	\$802,443	\$906,351
Niagara	-\$440,544	-\$2,176,126	\$1,674,003	\$3,409,586
Middlesex	\$5,461,732	\$4,489,502	\$203,355	\$1,175,586
Central				
Dufferin/Wellington	-\$2,122,098	-\$2,284,562	\$900,007	\$1,062,471
Waterloo	-\$2,852,747	-\$3,760,358	\$1,560,355	\$2,467,965
Halton	\$4,845,615	\$2,794,558	-\$2,362,599	-\$311,543
York	-\$1,552,235	\$1,654,914	-\$3,886,409	-\$7,093,558
Peel	-\$6,760,065	-\$350,625	-\$1,910,735	-\$9,021,425
East				
Lanark/Leeds and Grenville	\$1,632,137	\$1,448,317	\$1,011,749	\$1,195,569
Hastings/Prince Edward/Northumberland	\$2,711,311	\$1,159,881	\$231,075	\$1,782,505
Durham	-\$3,910,642	-\$4,750,479	-\$460,477	\$379,360
Ottawa	\$2,773,987	\$2,076,870	\$656,916	\$1,354,034
North				
Nipissing/Parry Sound/Muskoka	\$1,023,874	-\$88,907	\$1,580,317	\$2,693,098
Total absolute differences				
Reallocation	\$36,897,314	\$27,949,334	\$17,240,440	\$32,853,051
(percentage of total expenditures)	25.5%	19.4%	11.9%	22.7%
Regions				
West	-\$2,743,291	-\$9,142,263	\$2,993,325	\$9,392,297
Central	-\$35,265,976	-\$28,009,273	-\$1,039,775	-\$8,296,479
East	-\$5,611,505	-\$9,206,722	\$3,412,336	\$7,007,553
North	\$16,506,806	\$11,192,280	\$7,298,583	\$12,613,119

Toronto	\$27,113,966	\$35,165,988	-\$12,664,468	-\$20,716,490
Total absolute differences	\$87,241,545	\$92,716,516	\$27,408,487	\$58,025,938
Reallocation (percentage of total expenditures)	25.6%	27.2%	8.0%	17.0%

Figure 2. Graph of allocations to MCYS service areas based on expenditures, population-based allocations and needs-based allocations.

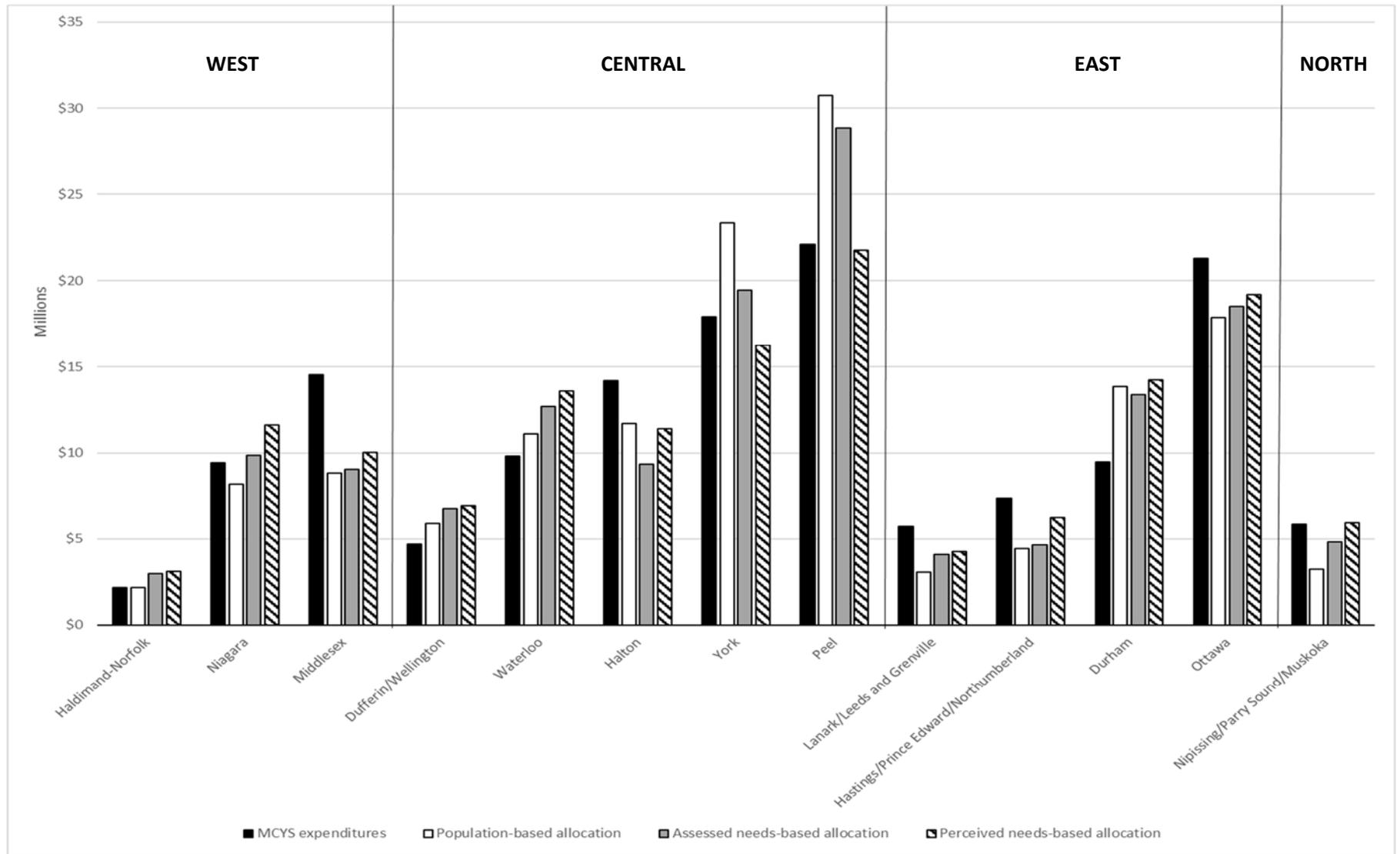


Figure 3. Graph of allocations to MCYS regions based on expenditures, population-based allocations and needs-based allocations.

