

Hidden Fragility: Closure among Child Care Services in BC

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Research repeatedly shows that high quality child care contributes to children's cognitive, social and emotional development (Peisner-Feinberg et al. 1999; NICHD 1994; Goelman and Pence 1988; Holloway and Reichhart-Erikson 1988; Howes 1990). Stability is one component of quality care (Helburn 1995; Howes and Hamilton 1993; Howes et al. 1992; Phillips et al. 2000; Hayes et al. 1990). Children in stable arrangements are more likely to receive sensitive and appropriate responses from their caregiver-teachers, enjoy more secure attachments, participate in higher developmental levels of play, foster stronger language skills and attain better primary school achievement.

This article examines the stability of the child care sector in British Columbia, Canada. The province makes an interesting case-study because net figures suggest there is relative stability, if not modest expansion, in its child care sector. There were 4,117 licensed providers in 1997. The figure in 2001 was 4,498. This 9 per cent increase in facilities produced a 10 per cent gain in the number of licensed spaces in the province (from 65,726 to 72,608).

Hidden behind the net figures, however, is a dramatic level of facility instability and closure. Nearly one-third of the 1,844 centres and one-half of the 2,273 family child care¹ (FCC) facilities that operated in 1997 closed by 2001.

A certain level of turnover is to be expected in all industries. The national annual closure rate for small businesses in Canada (between 5 and 499 employees) was 13 per cent in 1998. This rate is consistent with the annual closure rate for licensed FCC in BC, and considerably higher than the roughly 8 per cent annual turnover among licensed child care centres. Nonetheless, the child care closure rate is very worrisome because it is a human service industry for which evidence shows that the stability of relationships between care provider and recipient is integral to the service quality. The especially high closure rate for FCC facilities may merit particular concern since the large majority of infants and toddlers in licensed services in the province are cared for in this part of the sector. Disruptions in care arrangements and attachments during this period of childhood may have more serious long-term implications given that research tells us that children's development is especially sensitive to environmental stimuli during the first three years of life (Keating and Hertzman 1999; Norrie McCain and Mustard 1999; Shonkoff and Phillips 2000).

In this article we aim to explain some of the turnover in BC child care by linking facility closure information with two additional data sources. The first is the 1997 provincial survey of child care operators, which allows us to identify correlations between programs that continued to operate after four years and factors such as receipt of provincial government funding, enrolment, fees, and auspice. The second data source is Canadian Census information from 1996 and 2001 about unemployment, median income and the child population in BC towns, cities and local health areas. This information facilitates analysis of the relationship between regional socioeconomic or demographic trends and closure of child care services.

Facility instability is not a topic that receives much attention in the literature. We know of no studies about the instability of child care centres in Canada. In regards to the US sector, one article by Whitebook et al. (1998, 12-13) gives some attention to this issue as part of their follow-up examination of the 227 centres that made up the sample for the American *National Child Care Staffing Study* (Whitebook et al. 1990). Their article reports that centres which closed were more likely to be for-profit; pay lower wages; endure higher levels of staff turnover; employ fewer staff with college-level education and training; employ more staff who had been on the job for one year or less; and deliver lower quality services (Whitebook et al. 1998, 13).

Although relatively silent about facility closure, staff turnover has enjoyed considerable discussion in the literature about stability in child care centres (Helburn 1995; Whitebook et al. 1990, 1998; Whitebook and Sakai 2003; Doherty et al. 2000; Phillips et al. 2000; Manlove and Guzella 1997; Howes and Hamilton 1993). This focus is not surprising given alarming annual rates of staff turnover in regulated services. Reports indicate that the rates are 22 per cent in Canada (Doherty et al. 2000, 98) and 41 per cent in the US (Whitebook et al. 1990). These high levels of turnover are disturbing given that studies about stability indicate emotionally close, continuous relationships with care providers contribute to a child's sense of safety, trust, positive peer relationships and interest in exploring her environment.

Facility closure is one source of staff turnover in the child care sector (Whitebook and Sakai 2003, 286-88); but it should not be treated as one among many. When a centre terminates service-provision, the closure not only severs the specific relationship between child and caregiver-teacher, it withdraws the child from her entire care environment. This environment consists of a nexus of relationships that may include the centre's director, other staff, and other children – all of which are integrated within familiar physical surroundings. Thus, rather than confront the child with just one change in relationship as is the case with staff turnover within a centre that continues to operate, facility closure requires children to grapple with a series of simultaneous disruptions in their web of relations and care context.

The fact that facility closure is an especially disruptive source of staff turnover is recognized in the literature about the FCC sector in which provider turnover in almost all cases reflects a *de facto* closure. As Deery-Schmitt and Todd (1995) observe:

In a child care center, loss of staff does not necessarily result in a change of the child care setting itself. Rather, the child usually remains in the same setting and must only adjust to a new caregiver. In contrast, when a FCC provider leaves the profession, the child in the person's care will lose not only that specific caregiver but also that particular home setting as well. Thus, these children are forced to cope with two major changes instead of one.

Studies of FCC in the US estimate that the annual rate of staff turnover/facility closure for both regulated and unregulated providers is between 23 and 59 per cent in the US (Todd and Deery-Schmitt 1996, 352; Kontos 1992; Kontos et al. 1995). Studies of just regulated services report a considerably lower annual rate of roughly 12.5 per cent (Todd and Deery-Schmitt 1996, 373), which is consistent with the rate for licensed FCC in BC. Many factors that predict closure among centre-based providers also resemble factors that are significant in explaining FCC closure: for example, the provider's level of early childhood education training; her educational background more generally; job stress; satisfaction with profit; and tenure in the child care field (Todd and Deery-Schmitt 1996). One factor unique to the FCC sector, however, is that the

presence of the provider's own young children in the home/work environment also correlates with higher closure rates (ibid.).

The consensus in the child care stability literature is that research must include a longitudinal design (Todd and Deery-Schmitt 1996; Goelman and Guo 1998; Whitebook and Sakai 2003). Studies that responded to this call have so far relied on relatively modest sample sizes that range from 57 service providers to a group of facilities that number in the mid-200s (Whitebook et al. 1998; Whitebook and Sakai 2003; Todd and Deery-Schmitt 1996; Kontos et al. 1995; Bollin 1993). Our project advances extant stability research by examining a much larger sample of care facilities: over 1,100 centres and 1,400 FCC providers. These facilities represent approximately 60 per cent of all licensed centre-based and FCC services in the province of BC.

Strong representation from across the province permits our study to add a unique lens of analysis to the stability literature, one that is critical for examining facility closure rather than just staff turnover. This lens focuses on *macro* issues, such as provincial public policy, as well as socioeconomic trends and demographic shifts at the regional and community level. This lens has been relatively neglected in the literature in favour of meso and micro analytic lenses: the former examining facility characteristics such as auspice, wage rates, and staff turnover levels; the latter engaging with questions about an individual caregiver's level of education, training, and job satisfaction or stress. The macro level analysis is critical, however, because a facility's stability is not simply a matter of institutional policy or individual decisions; it may also be subject to the business cycle, socioeconomic adjustments and slow-moving, but nonetheless significant, demographic transitions over time, including the declining birth rate. Since our sample is broadly representative of all regions across the province, we are able to investigate these macro issues directly.

Method

Sample Characteristics

The sample consists of all the licensed child care centres and FCC providers who responded to the 1997 provincial child caregiver survey commissioned by the BC government (Unit for Child Care Research 1997). 1,101 (60 per cent) of the 1,844 centres that operated in 1997 completed the survey. 28 per cent of these facilities did not offer services in 2001 when the survey was repeated. This four-year closure rate is slightly below the 34 per cent rate for all licensed centres in the province, suggesting there may be a slight sample selection bias toward more stable centre-based facilities in our research.

1,433 (63 per cent) of the 2,273 licensed FCC facilities open in 1997 also participated in the provincial survey of that year. 47 per cent of these providers closed their businesses by 2001. This rate is essentially the same as the provincial rate of 48 per cent and, thus, the concerns about self-selection are less evident than in the centre-based sample.

Although the 1997 survey tool was not designed specifically for a study of stability within the child care sector, it collected a range of relevant service information, including data about facility

characteristics, staff/caregiver characteristics and the impact of public policy. The variables on which we focus are listed below in Table 1.

Table 1 about here.

Many of the variables in Table 1 are self-explanatory. Some, however, require additional explanation given their uniqueness in the BC context, especially the education and policy variables. A certified early childhood educator (ECE) in BC must register with the provincial ECE Registry. As part of this process, the ECE must submit proof that she has completed what is referred to as Basic ECE training from an approved post-secondary institution, completed 500 hours of work experience under the supervision of an ECE, and possess a valid first aid certificate. The Basic ECE training program is usually one year in duration. Some early childhood educators also specialize in care provision for children under three or those with special needs. Post-Basic training may result in either a certificate or a diploma, depending on the college. This training is usually, but not always, done through continuing education. The course and practicum work are typically equal to a second year of study.²

The provincial child care sector is supported by a series of modest (in international terms) public investments. The most significant is the provincial subsidy system, which delivers child care assistance to families with low incomes that can be used in regulated and unregulated care contexts. To be eligible for a child care subsidy, a family must meet labour force attachment and income requirements. The former require all parents in a family to either work for pay, seek work, or enroll in school/training; the latter require total household income to fall below an income threshold. Until 2001, the threshold was \$1,775 for a 3 person family in which the only, or both, parent(s) work for pay or are in school. The annual provincial subsidy budget for the period of 1997 to 2001 ranged between \$123 and \$125 million. This figure represents about two-thirds of annual provincial spending on child care.

In the time period under examination, the province delivered funds to enhance child care staff wages in non-profit and for-profit programs that met eligibility criteria under the wage supplement initiative (WSI) in 1997 and the compensation contribution program (CCP) thereafter. CCP paid wage supplements to licensed group providers according to a sliding scale that accounted for training. Teachers who had completed a basic ECE training program from a college/university and a post-basic ECE specialization in special needs or infant/toddler education were eligible for a supplement of \$1.6740 per hour. Caregivers with basic ECE training were eligible for a supplement of \$1.5345. Teachers who were in the process of completing a basic ECE certificate or who had completed at least one ECE course were eligible for a wage top-up of \$1.395 per hour. The CCP also included some funds for non-profit programs to assist with the additional costs of delivering infant and toddler care when applicable. The annual CCP budget grew from \$18 million to \$21.9 million between 1998 and 2001.

The infant toddler incentive grant (ITIG) delivered financial assistance to eligible centre-based and FCC providers until the CCP was introduced for centres. Following 1997, only FCC providers received ITIG. Caregivers who were members of a Child Care Resource and Referral Program (and hence regulated) were eligible to receive \$3/day for up to two enrolled children under the age of three. The FCC share of the ITIG budget was around \$2 million during the period of analysis.

The Child Care Resource and Referral (CCR) system is a non-profit provincially funded infrastructure designed to provide support, resources and referral services for child care providers and families who reside throughout the province. Local CCR programs participate in recruitment and training for both licensed and licensed-not-required FCC service providers, and develop child care operation manuals, training workshops and resource-lending services for the sector more generally. The annual provincial budget in 2001 was \$13.1 million.

Supported Child Care (SCC) refers to funds introduced in 1996 to help cover the additional costs of care for children with extra support needs in programs of parents' choices. The funding subsidizes consultation, training and extra staffing expenses for the care facility and also includes subsidy payments for eligible families of \$107 per month to assist with the cost of parent fees. The annual SCC budget increased from \$29.1 to \$36.7 million between 1998 and 2001.

There are some notable differences between the data collected about the centre-based and FCC samples. For instance, the centre survey not only asked about the presence and number of subsidized children in the facility; it also collected information about whether the centre charged parents an additional top-up to cover the difference between the provincial subsidy and centre fees. The same information was unfortunately not collected from FCC providers.

The issue of fee top-ups for subsidized parents is critical because subsidy rates in BC are below the actual mean cost of regulated care. The gap has grown steadily since 1994 when subsidy rates were frozen while mean parent fees in licensed services have increased substantially. Between 1993 and 2001, centre-based fees for infants and toddlers rose by roughly 15 per cent; fees for 3- to 5-year-olds grew by 21 per cent; and preschool fees increased by over 37 per cent. Only out of school fees experienced modest growth of 4 per cent, reflecting the success of a 2001 provincial government initiative to subsidize and cap fees for this type of care at \$7 per day.³ In the FCC sector, fee increases between 1993 and 2001 are consistently around 25 per cent for all age groups other than school age children. For children 6 and older, family provider fees grew by over 48 per cent (Unit for Child Care Research 1997; Forer and Hunter 2001). As of 2001, the gap between the provincial subsidy and mean monthly fee in full-day centre care ranged from \$120 to \$134 depending on the age of the child. In the FCC sector, the gap ranges from \$176 to \$207.

A second noteworthy difference between centre and FCC information is financial data. The 1997 survey asked FCC providers to calculate the share of their revenue that comes from the provincial subsidy system, ITIG, and parent fees, as well as the percentage of revenue used to pay for expenses. No comparable information is collected about child care centres. The 1993 provincial survey attempted to collect some financial information from centre-based facilities, but the quality of the data varied so significantly that the government decided not to repeat these questions in successive surveys. The dearth of budget information for centres is a substantial obstacle to analyzing closure rates in the sector since it is likely that facility turnover strongly correlates with profit among commercial services, and budget surpluses or deficits within the non-profit sector. We therefore expect that the lack of this data will limit the explanatory power of any regression model generated from the BC sample.

Although not designed specifically for an academic study of facility stability, the 1997 provincial child caregiver database shares many variables with previous academic research databases about staff turnover, including caregiver education, training, job tenure and tenure in the child care occupation more generally. The data set even includes information that allows us to distinguish between FCC services in which the provider simultaneously does, or does not, care for her own young children – a factor that Todd and Deery-Schmitt (1996) report is strongly related to FCC closure.

One significant difference between the BC sample and other academic data sets is that the former lacks information about caregiver job stress and satisfaction, including caregiver satisfaction with wage or profit. Previous research suggests that sources of stress and satisfaction interact with factors such as education and training to influence job attitudes, intentions to continue or leave employment, and actual turnover in both centre-based and FCC settings (Phillips et al. 1991; Manlove and Guzell 1997; Todd and Deery-Schmitt 1996). A second gap is the lack of quality data about the BC sample. Findings presented by Whitebook et al. (1998, 13) “suggest that quality plays a role in whether centers remain in business” after eight years in their US study. The quality of a service likely exerts a bi-directional influence on both supply and demand. The cost and human resource challenges involved in employing a full staff of well-trained caregivers that is necessary to deliver quality care may discourage operators from continuing in the child care business where profit margins are negligible. Conversely, parents may decline to use a service with poor quality care characterized in part by unstable and unskilled staff. In the absence of these two kinds of information, we again expect the resulting power of any regression model to be weaker than it otherwise would had the sample been designed specifically for our study purposes.

Plan of Analysis

We first compare facilities that closed with those that remained open between 1997 and 2001 according to the categorical and continuous variables listed above. The analysis is run separately for centre-based and FCC facilities.

This examination is supplemented by a comparison of centres and FCC services that closed and continued to operate in the light of their location. Facilities are compared according to their operation in rural (population < 10,000), small urban (10,000 – 45,000) or large urban (population > 45,000) settings. They are also analyzed against the macro socioeconomic and demographic trends in the local health areas (LHAs) in which they offer services. We look at three trends between 1996 and 2001: change in median income; change in the unemployment rate; and change in the child population age zero to four and five to nine. Changes to median income and unemployment are examined by sex.

There are 89 LHAs in BC. The LHA boundaries track public health service provision responsibilities in the province. We opt for the LHA divisions because there are very few problems of missing data in respect of income, unemployment and child population at this regional level. There is systematic missing data when the analysis focuses on smaller geographic areas such as cities or towns – what Statistics Canada typically categorizes as census subdivisions (CSDs).

Ultimately, however, child care demand and supply processes unfold within community boundaries because distance between care arrangement, school, home and place of employment all constrain the freedom that parents have to search for alternative care arrangements. While one may travel several hundred kilometers to make a purchase that does not recur regularly, say for a car or recreation vehicle, the same is not true of child care arrangements to which parents may travel five times a week or more. In response, we analyze a sub-set of CSDs in BC: those with names that match the town and city names associated with the license numbers listed for child care centres and FCC services. Within this subset, there is unfortunately missing median income data. The change in income variable used in the LHA analysis is therefore excluded from the CSD-level examination.

We build on these first series of comparisons by employing a binary logistic regression analysis to create the best explanatory models of facility closure, at both the LHA and CSD levels. The analysis includes survey, socioeconomic and demographic variables for which differences between facilities that closed and continued to operate are large enough to be potentially significant predictors of closure. These potentially significant variables are subjected to both “forward” and “backward” regressions in order to check the stability of the final model.

When these modeling techniques identify statistically significant predictors of closure, we report odds ratios to show the relationship between the values of each predictor (controlling for the other predictors) and the likelihood that a centre closed. Odds ratios are limited, however, because they do not permit one to contrast the relative influence of each predictor in the model. In response, we draw on work by Thomas and Zumbo (1996) to develop importance scores that facilitate direct comparisons. An importance score indicates the size of the effect of each significant predictor, with the total for all predictors adding to 100.

Results

Child Care Centre Closure

When centres that closed by 2001 are examined according to the selected categorical variables from the 1997 provincial child care survey, four groups of facilities stand out as having a particularly high percentage of closures: (1) centres that did *not* receive the provincial wage supplement (40 per cent closed); (2) centres in which subsidized families did not pay a fee top-up (39 per cent closed); (3) for-profit centres (37 per cent closed); and (4) centres in which no subsidized children were enrolled (35 per cent closed). The results for all variables are listed in Table 2.

Table 2 about here.

Table 3 compares centres that closed with those that remained open for the selected continuous variables from the 1997 survey. Centres that closed employed a smaller share of registered ECE staff and a higher share of staff with less than one year of experience in the field and/or one year of tenure in the centre. Facilities that closed were also licensed for 1.7 fewer years on average than those that continued to operate in 2001.

Table 3 about here.

Characteristics of the regional and community settings in which centres operate also differ modestly according to mean comparisons of facilities that closed and remained open. Closure was more common in rural communities with populations under 10,000 compared to small and large urban areas (36 per cent closed in rural communities compared to 30 and 26 per cent in the urban areas). Higher closure rates also occurred in LHAs with somewhat larger gains in median female income and more significant drops in the total population of children age zero to nine. At the CSD level, centres were more likely to close if they were located in towns and communities with slightly more dramatic decreases in female unemployment, a larger decline in the number of children zero to four, and more modest growth in children age five to nine. Table 4 summarizes the mean comparisons for socioeconomic (SES) and demographic variables.

Table 4 about here.

Finally, Table 5 lists significant predictors of centre closure at the LHA and CSD levels, as identified by binary logistic regressions. At the LHA level, regression techniques point to six statistically significant items: receipt of wage supplement; auspice; the presence of subsidized children; the share of staff that are registered ECE; the per cent change in median female income; and whether the centre charges subsidized parents a top-up fee. At the CSD level, the same first four factors are also statistically significant. However, the imposition of fee top-ups drops out as a predictive factor in the CSD level model, as does the per cent change in median female income since this variable was not included in the regression due to missing data. In place of these two factors, the per cent change in female unemployment enters the equation as a statistically significant predictor.

Table 5 about here.

Odds ratios are reported for both the LHA and CSD models. The ratios show the relationship between the values of each predictor in a model (controlling for other predictors) and the likelihood that a centre did not close. In the LHA model, the interpretation of the 1.79 ratio for receipt of Wage Supplement is that centres receiving the supplement were 79 per cent more likely to remain open compared to centres that did not receive provincial wage assistance. Similarly, the .57 odds ratio for auspice signals that the probability of a commercial centre running in 2001 was 57 per cent of the probability that non-profit facilities would still operate. Working down the LHA odds ratio list, facilities with subsidized children were 97 per cent more likely to remain open than those without subsidized children; and facilities that charged subsidized families a top-up fee were 59 per cent more likely to survive into 2001 compared to those that set fees for very low-income families at the provincial subsidy rate. The odds ratios for categorical variables in the CSD table should be read in the same fashion.

The interpretation of odds ratios for continuous variables is different. The .973 ratio for female median income in the LHA model signals that a one per cent increase in median income for women correlates with a 2.7 per cent decrease in the likelihood that a centre remained open into 2001. The 1.004 ratio for Registered ECE staff indicates that for each a one per cent increase in

the percentage of staff with this qualification there is a corresponding 0.4 per cent increase in the probability that a center stayed open. Again, the odds ratios for continuous variables in the CSD model should be read in the same way.

Since odds ratios do not permit direct comparisons of the influence of each predictor in the two models, Table 5 also lists importance scores for each variable. Importance scores rank each significant predictor according to the size of their effect, with the total of all predictors adding to 100. The LHA and CSD models both rank the same two predictors as the most important: (1) receipt of the wage supplement and (2) centre auspice. At the LHA level, these factors each account for roughly one-third of the predictive power of the model. In the CSD model, receipt of wage supplement accounts for more than half of the model's predictive power, and auspice another quarter. The other variables appear to form a second tier of importance, each accounting for 12 per cent or less of the predictive power in the models.

Although the goodness of fit of the LHA model was a rather low .09 based on the Nagelkerke Pseudo-R² statistic, the findings are relatively robust given that the survey tool was not specifically designed for our stability study.⁴ The six predictors in the LHA model cumulatively had a sensitivity of 12.1 per cent (i.e. 12.1% of centres that closed could be correctly predicted by the model). The Pseudo-R² statistic for the CSD model was also low at .09. Its sensitivity is 9.4 per cent.

FCC Facility Closure

The results for FCC facilities are reported in the same format as the centre results above. A review of the FCC facilities against the categorical variables from the 1997 provincial child care survey shows that providers who expected to terminate their services within three years unsurprisingly formed the category of facilities with the highest closure rate. Since we have no supplementary information to explain why providers formed this expectation, the variable offers little insight into the factors that contribute to the provider's future plans or facility turnover more generally. We therefore exclude this item from the regression analyses below.

The four remaining categories of FCCs with the highest levels of closure are (1) providers under age 35 (59 – 72 per cent closed); (2) providers who rented their property (67 per cent closed); (3) those who operated in small urban areas (54 per cent closed); and (4) FCCs who cared for their own children (53 per cent closed). The results for all categorical variables are listed in Table 6.

Table 6 about here.

Table 7 compares centres that closed with those that remained open for the remaining continuous variables from the 1997 provincial FCC survey. Time factors represent the most notably different means. Centres that closed were licensed for 1.2 fewer years on average and were operated by people who had been working in the field for an average of nearly two fewer years.

Table 7 about here.

There was modest variation between FCC facilities that closed and survived according to characteristics of their regional or community settings. A higher share of FCC providers in small urban communities closed compared to those in rural or large urban areas (54 per cent versus 51 and 44 per cent respectively). Table 8 shows that FCC services were also more likely to shut down by 2001 if they operated in LHAs which witnessed slightly lower drops in unemployment and a greater decline in the total population of children under nine. FCCs located in CSDs with less dramatic decreases in unemployment, especially female unemployment, were again more likely to close.

Table 8 about here.

Table 9 summarizes the results of the binary logistic regressions conducted for both the LHA and CSD geographic boundaries. Both modeling strategies singled out the same five statistically significant predictors of facility closure: the FCC property is rented not owned; it is operated by a younger caregiver; a greater number of the caregiver's children count in enrollment; neither volunteers nor students work in the facility; and the facility is not fully enrolled. The LHA level regression also identified a sixth significant predictor: the per cent change in the number of children age zero to four in the region.

Property ownership and caregiver age emerged as the most important predictors in both the LHA and CSD models, with the former accounting for more than a third of the models' predictive power. The remaining significant items represent a second tier of predictors with importance scores no higher than 14.

The goodness of fit of the LHA model is again modest at 0.10, based on the Nagelkerke Pseudo- R^2 statistic. The sensitivity of the model was good, with 49 per cent of closed facilities being correctly classified. The Pseudo- R^2 statistic for the CSD model is 0.09, with fairly high model sensitivity of 51 per cent of closed facilities classified correctly.

Table 9 about here.

Discussion

Results from the child care centre models tell a very powerful policy story. Public expenditure matters for stability, and hence quality, in this part of the sector. Centres that received provincial wage assistance and cared for children from families who had provincial fee assistance were less likely to close after four years compared to those that did not enjoy these forms of public support.

The role of public expenditure in facility stability underscores the financial reality of the child care market. Caregiver wages or earnings represent roughly 80 per cent of the cost of centre-based service delivery. There is therefore a direct trade-off between affordable fees for parents and facility revenue in the absence of public funding. The amount of after-tax income the average family can afford to allocate for child care is the rate-limiting step in this market regardless of whether this level of compensation reflects the personal and public value of the service that parents are buying. Care facilities can raise their fees only so far before they push

their services out of reach for the vast majority of their potential clientele. It may be for this reason that the presence of low-income subsidized families predicts centre stability. Since the provincial assistance is highest for licensed centre-based care, the subsidy system renders this option more affordable for low-income families than, say, the option to hire an in-home nanny or licensed FCC. The result is that subsidized families emerge as an important clientele pool for centres.

The revenue/cost margins are very limited among this clientele group, however – a fact to which the fee top-up variable in the LHA model points. Centres that charged top-ups were 59 per cent more likely to survive compared to those that maintained fees for low-income families at subsidy levels which have not increased since 1994. While the top-up secures centre stability and, thus, contributes to service quality, it often comes at a significant cost for low-income families. A fee top-up of \$100 a month positions many sub-LICO families to make intolerable choices between provision of food, clothes, care, etc. for themselves and their children.

The financial reality of the child care market is also illuminated by the finding that auspice predicts centre stability. The finding that commercial centres were more likely to close their businesses within four years reflects that child care is not a profitable venture in most cases when left to the machinations of the private market. Non-profit child care centres may be better positioned to tolerate the limited margins since their operators are not motivated by monetary profit and are more likely to be partnered with community centres, churches, post-secondary institutions and other service organizations that may actually subsidize the child care facility.

The policy/financial items in the centre models intersect with the variable for percentage of Registered ECE staff to suggest that service quality is implicated in facility stability. While the BC sample does not include any direct measurements of quality, research has identified the characteristics of a care facility that lead to quality care and positive outcomes for children (for example Goelman et al. 2000; Helburn 1995). This literature finds that the “most powerful” predictor of quality in preschool settings is “the wage received by the observed teacher” (Goelman et al., 2000: 63); and that a caregiver’s “level of ECCE-specific education... contribute[s] significantly to a program’s level of quality” (Goelman et al., 2000: 82). A recent comprehensive evaluation of Quebec’s child care system also shows that commercial facilities are considerably more likely to deliver poorer quality services (Japel and Tremblay 2004).

In the light of these research results, the inclusion of wage assistance, staff qualifications and auspice in the centre-based models lends support for the conclusion that quality service provision contributes to centre stability. Further research is necessary to confirm this conclusion and also to determine the direction(s) of influence exerted by quality. Is it the case that parents more regularly reject lower quality care options or that the cost and challenges of providing quality care drives facility operators out of the market regardless of demand?

Although the Pseudo-R² statistics for the centre-based regressions are modest, the models nonetheless align very closely with the only US-based examination of centre closure. Our findings from BC share with Whitebook et al. (1998) results which show that closure is more common among facilities that are for-profit, employ fewer staff with college-level training, and

deliver lower quality services. The wage supplement variable in our model can also be viewed as a proxy for the Whitebook et al. finding that centre stability correlates with higher wages.

It is noteworthy, however, that our study does not find that centre stability correlates with lower levels of staff turnover, or with the number of staff on the job for less than a year, as the Whitebook (1998, 13) team reports. Our research therefore does not lend support for the view that staff turnover begets facility turnover. This is an interesting implication of our model since one might have assumed that provincial wage assistance produced more generous compensation packages in some centres which in turn mitigated the kind of staff turnover that undermines a centre's ability to remain in business.

The centre-based models that emerged from our study differ substantially from the FCC models. The latter do not tell a policy story. Receipt of provincial operating funds from the infant/toddler grant did not make a difference in terms of FCC stability, nor did the presence of subsidized children. The FCC analysis also offers no reason to believe that quality factors into FCC stability. Caregivers with higher education and/or more professional development did not have statistically significant lower closure rates.

Similar to the centre analysis, however, there is a financial theme that runs through the FCC models. Property ownership is the most important predictor of stability in the FCC sector. This variable is likely a proxy for the relative economic well-being of the household unit in which the family child caregiver is a member. In Canada, 90 per cent of family child care providers are either married or living with a spousal partner (Doherty et al. 2000b, 28). If we assume that spousal units which own their home are better off economically, then FCC providers in such units may not financially need to provide as great a share of household income compared to FCC providers who are members of a spousal unit that rents their residence and, thus, enjoys less household income.

Enrollment levels and the number of one's own children who count in enrollment are also statistically significant financial predictors of stability in the FCC sector. A service that endures regular vacancies will suffer the sort of revenue losses that put continued business operation at risk. Similarly, if one's own children count in the maximum enrollment permitted under licensing standards, then a family child caregiver again stands to earn less revenue compared to providers who do not care for their own young children.

Interestingly, US research by Todd and Deery-Schmitt (1996, 369) casts some doubt about the latter analysis. In their small sample of 57 FCCs, they examined whether caring for one's own young children reduced FCC incomes and resulted in less satisfaction with profit and higher levels of job stress. Although they found no significant differences in gross income or profits between FCCs that care for their own children versus those that do not, they did find that providers who care for their own young children were significantly less satisfied with their profits and experienced more job-related stress.

Thus, rather than posing direct financial challenges, the Todd/Deery-Schmitt results suggest that caring for one's own children is a significant predictor of FCC closure because of the added stress this arrangement can create for the caregiver. Two hypotheses exist in the literature to

account for this additional stress. One suggests that caring for one's own children poses more challenging discipline problems when coupled with caring professionally for other people's children. The second suggests that providers who care for their own children internalize more hostile views about working-mothers and thus have more difficulty interacting with client parents (Todd and Deery-Schmitt 1996, 355).

It would be misleading, however, to associate the predictive power for FCC closure that attaches to caring for one's own children simply with added job stress. Caring for one's own children can also be a source of great satisfaction. In fact, Doherty et al. (2000b, 40) report that two-thirds of family child care workers in Canada identify a desire to care personally for their children while also earning income as a reason for their becoming a family child care provider. In the light of this information, there is reason to believe that the presence of one's own children in the facility is a predictor of FCC closure because providers terminate their businesses when (some of) their children reach school age. This line of analysis is supported by the fact that the age category in which the caregiver falls is also a significant predictor of closure. As FCCs exit life course stages when they are most likely to have preschool children, closure within the sector increases.

The final significant predictor of FCC closure – the presence of volunteers or students – speaks to the issue of isolation in the sector. Family child care providers work long hours, typically with limited support from, or interaction with, other adults. Anecdotal evidence suggests that the resulting social marginalization is a source of stress that accentuates other reasons to leave the sector, including low earnings. Against this backdrop, volunteer or student involvement likely mitigates the isolation and stress characteristic of single-handedly making important child-rearing decisions and thus contributes to lower closure rates. This interpretation is also supported by the finding that FCCs with paid staff were less likely to close than facilities without staff, although this variable did not prove to be statistically significant in the regressions.

The centre-based and FCC models have significant implications for the current child care policy context in BC. The period 1997 to 2001 was one in which public investment in child care increased. By 2001, the government had introduced the *Child Care BC Act* (SBC 2001, c. 4), which established a plan to subsidize the cost of child care for all children regardless of parental income. Despite this growing commitment to child care, our study reveals that there was still dramatic instability.

Following an election in 2001, the sector was subject to a number of policy changes that have undone much of the progress made in the previous four years. In addition to abandoning the plan for a universal child care program, the government cut \$24 million annually from the subsidy budget in 2002 (only to return about \$5 million in the next two years). These savings were achieved by reducing the monthly income threshold above which the child care subsidy is clawed back for employed or student parents. The initial budget cuts decreased the provincial subsidy caseload by approximately 1,500 families. Another 9,000 of the roughly 20,000 families that continued to receive subsidies saw the value of their public assistance decline considerably (Kershaw 2004). Our findings indicate that cuts to the subsidy budget of this magnitude can be expected to exert a destabilizing influence on licensed child care centres in the province.

The provincial government also restructured and reduced child care operating grants. In 2003 the government consolidated four grant mechanisms into one Child Care Operating Fund (CCOF) and reduced total provincial operating funding by \$14.5 million (23%) annually. In contrast to the Compensation Contribution Program, the CCOF no longer includes a specific wage enhancement for employees that increases in value according to the caregiver's level of education (Kershaw 2004). Facilities are now free to allocate operating funds how they choose. Our study cannot distinguish whether there is something specific about receipt of wage assistance that contributes to stability, or whether an infusion of operating funding more generally would have the same impact. We can conclude, however, that facilities which suffer wage assistance reductions due to the \$14.5 million annual cut are at greater risk of closure in the near future.

The CCOF imposes cuts on a minority of service providers. Of the approximately 2,200 centres in existence when the change was introduced, 880 (or 40 per cent) received less operating funding. The remaining centres and another 2,400 family day care providers enjoyed a funding increase. The centres that incurred reductions provide 28,000 (or 38 per cent) of the province's 73,000 licensed spaces (Kershaw 2004).

CCOF extends grants for the first time to family child care services in respect of care provided to children older than age three. Licensed family providers are now entitled to a daily grant of \$60 per child aged three to five and \$31 per child in grades one and up. Family providers who care for children under three also benefit from a daily grant increase of \$18 per child compared to the former Infant/Toddler Incentive Grant (ITIG) (MCAWS, 2002b). Unfortunately, our results provide no reason to believe this funding will improve stability within the FCC sector since receipt of provincial grants did not register as a statistically significant predictor of closure.

The macro lens we brought to our study reveals that public policy is an important factor in centre (but not FCC) stability. The same lens shows that the regional or community setting in which a facility operates does not exert as substantial an influence on closure rates. The few demographic and socioeconomic trends that enter the regression models consistently fall into the second tier of importance scores.

Although less important, there is evidence that a decline in the number of children under age five in a LHA undermines FCC stability somewhat, presumably because it weakens demand for the services. Regional and community settings also affect centre-based services. As women's income and unemployment opportunities improve in a LHA or town/city, there is an increased probability that centres in that area will close. We interpret this result to indicate that centre-based staff and directors are leaving their child care employment in search of more lucrative positions in other occupations as job prospects in the community improve. Increases in female income may also enable families to rely more on in-home nannies, which would reduce demand for centre services. More research is needed to verify these speculative assumptions.

Our analysis of socioeconomic trends may be most interesting for what it did not find. A deteriorating economic climate in a region or town/city does not correlate with higher rates of closure for either centres or FCCs. One might have expected that child care facilities would be especially vulnerable to closure in some of the resource-based towns across BC that have been

adversely impacted by disruptions to the logging industry as a result of the soft-wood lumber dispute with the US, or by dramatically lower fish stocks. There is no evidence in our study, however, to suggest that growth in unemployment or decreases in median incomes at either the LHA or CSD level affect facility stability by mitigating demand for child care services. Rather, the child care sector in the province is fragile regardless of the economic climate.

This hidden, but pervasive, fragility in BC child care reflects Canada's status as an international laggard in terms of child care policy. Other than Quebec, Canadian provinces collectively fall to the bottom of international reports about public investment in child care. A 1998 comparison of 21 OECD countries shows that only the US, Japan and Spain spend less than Canada per child on family cash benefits and services when measured as a percentage of per capita GDP (Bradshaw and Mayhew 2003, 23). In terms of child care specifically, Canada ranks last regarding the share of three- and four-year-olds in licensed child care or education. Just 23 per cent of Canadian children in this age category use such services, well behind the next worst country, the UK, where the corresponding figure is 42 per cent of children. By contrast, in France all three- and four-year-olds are in child care or education, as are over 90 per cent in Denmark, the Netherlands, New Zealand and Spain (Bradshaw and Finch 2002, table 5.1). This international perspective lends reason to believe that dramatic levels of instability will continue to plague the BC child care sector so long as the combined provincial/federal level of public investment remains out of step with the emergent norm among other affluent democracies in the OECD.

Table 1
Variables from 1997 provincial child caregiver survey

Centre Variables

Facility characteristics

of years licensed
vacancies
regular closures
unplanned closures in past 3 years
Auspice
service type
staff unionized/not unionized
staff turnover
any practicum students
society/owner operates other child care facilities
fees

Staff characteristics

% of staff who are Registered ECE
% of staff with Post-Basic Under 3
% of staff with Post-Basic Special Needs
% of staff with no ECE training
% of staff earning less than \$20k
% of staff earning more than \$40k
% of part-time staff
% of staff employed less than 1 year
% of staff employed 5+ years
% of staff in field less than 1 year
% of staff in field 5+ years

Public Policy factors

any subsidized children
subsidized parents pay top-up
aware of wage supplement
received wage supplement
Involved with CCRR
aware of transition to SCC
know who to call for SCC info
SCC consultant serves community

Family Child Care Variables

Facility characteristics

of years licensed
Vacancies
regular closures
unplanned closures in past 3 years
property owned/rented
% of revenue from parent fees
% of revenue going to expenses
any paid staff
any volunteer or student help
cares for own children
of own children
total # of children enrolled
of years expect to remain open
any children require additional support
extended hours

Caregiver characteristics

registered ECE: yes/no
Post-Basic Under 3: yes/no
Post-Basic Special Needs: yes/no
age
ECE workshops in past year: yes/no
ECE conferences in past year: yes/no
other professional development: yes/no
years of work experience in child care

Public Policy factors

any subsidized children
% of revenue from subsidies
aware of infant/toddler grant
received infant/toddler grant
% of revenue infant/toddler grant
involved in CCRR

Table 2
Comparison of Centres that Did and Did Not Close, by Categorical Variables

<i>Facility Characteristics</i>		# of Centres	% of Centres	% of Centres that Closed
Vacancies during business week of survey	None	401	38.0	24.9
	Some	665	62.0	29.3
Regular closures	Yes	694	65.7	28.1
	No	362	34.3	27.3
Unplanned closures in past 3 years	Yes	237	22.0	30.8
	No	842	78.0	26.6
Auspice	Non-profit	645	61.5	22.0
	Commercial	403	38.5	37.2
Unionized	Yes	151	14.3	25.8
	No	907	85.7	28.1
Any practicum students	Yes	346	32.1	24.9
	No	733	67.9	29.3
Society/owner operates other child care facilities	Yes	282	26.1	26.2
	No	798	73.9	28.6
<i>Public Policy Factors</i>				
Any subsidized children	Yes	875	83.4	26.4
	No	174	16.6	35.1
Subsidized parents pay top-up	Yes	769	77.9	25.5
	No	90	9.1	38.9
Aware of wage supplement	Yes	998	92.1	27.1
	No	86	7.9	32.6
Received wage supplement	Yes	739	68.8	21.7
	No	335	31.2	40.3
Involved with CCRR	Yes	197	18.4	27.2
	No	872	81.6	29.9
Aware of transition to SCC	Yes	903	84.0	26.9
	No	172	16.0	31.4
Know who to call for SCC info	Yes	863	80.7	26.9
	No	207	19.3	30.9
SCC consultant serves community	Yes	630	59.4	27.9
	No	60	5.7	18.3
	Don't know	370	34.9	28.9

Table 3
 Mean Comparisons of Centres that Did and Did Not Close, by Continuous Variables

	Mean for Centres that Closed	Mean for Centres that Did Not Close
<i>Facility Characteristics</i>		
# of years facility has been licensed	7.5	9.2
Staff turnover rate in past 12 months	19.1	21.0
Monthly fees: Infant care	\$656.76	\$678.76
Monthly fees: Toddler care	\$605.36	\$618.53
Monthly fees: Group 3-5 care	\$446.50	\$455.57
Monthly fees: Preschool 2 days/week	\$68.99	\$67.83
Monthly fees: Preschool 3 days/week	\$94.51	\$92.34
Monthly fees: Out of School am	\$109.31	\$101.35
Monthly fees: Out of School pm	\$187.81	\$194.28
Monthly fees: Out of School am/pm	\$239.95	\$237.48
Monthly fees: Out of School summer	\$428.45	\$414.48
<i>Staff Characteristics</i>		
% of staff who are Registered ECE	49.7	56.8
% of staff with Post-Basic Under 3	9.8	9.6
% of staff with Post-Basic Spec. Needs	9.8	9.2
% of staff with no ECE training	13.0	12.1
% of staff earning less than \$20k	66.5	62.2
% of staff earning more than \$40k	2.2	1.1
% of part-time staff	51.2	47.6
% of staff employed less than 1 year	31.7	26.6
% of staff employed 5+ years	31.8	32.0
% of staff in the field less than 1 year	14.7	11.7
% of staff in the field 5+ years	54.8	56.0

Table 4
 Mean Comparisons of Centres that Did and Did Not Close for SES and Demographic Variables

	Mean for Centres that Closed	Mean for Centres that Did Not Close
<i>LHA Level</i>		
% change in male median income 1996-2001	8.1	7.8
% change in female median income 1996-2001	15.7	14.6
% change in unemployment 1996-2001	-11.1	-11.4
% change in male unemployment 1996-2001	-8.0	-8.6
% change in female unemployment 1996-2001	-14.1	-14.2
% change in # of children 0-4, 1996-2001	-12.9	-11.3
% change in # of children 5-9, 1996-2001	-1.3	0.3
<i>CSD level</i>		
% change in unemployment 1996-2001	-6.1	-6.2
% change in male unemployment 1996-2001	-1.0	-1.6
% change in female unemployment 1996-2001	-12.2	-10.7
% change in # of children 0-4, 1996-2001	-9.0	-6.3
% change in # of children 5-9, 1996-2001	3.4	8.7

Table 5
 Significant Predictors of Centre Survival, Based on Binary Logistic Regression

Predictor	<i>B</i>	S.E.	Odds Ratio	Importance Score
<i>LHA Model</i>				
Received wage supplement	.582	.197	1.789	35.6
Auspice	-.569	.190	.566	33.5
% change in female income 96-01	-.028	.013	.973	8.8
Subsidized children enrolled	.676	.366	1.967	7.5
% of staff with Registered ECE	.004	.002	1.004	7.4
Subsidized parents pay top-up	.466	.261	1.594	7.0
<i>CSD Model</i>				
Received wage supplement	.751	.183	2.119	53.8
Auspice	-.418	.177	.658	24.2
Subsidized children enrolled	.500	.212	1.649	12.3
% of staff with Registered ECE	.003	.002	1.003	5.2
% change in female unemployment 96-01	.007	.005	1.007	4.6

Table 6
Comparison of FCC Facilities that Did and Did Not Close, by Categorical Variables

<i>Facility Characteristics</i>		# of Centres	% of Centres	% of Centres that Closed
Vacancies during business week of survey	None	724	51.5	42.5
	Some	683	48.5	52.4
Regular closures	Yes	1015	71.5	46.9
	No	405	28.5	48.6
Unplanned closures in past 3 years	Yes	415	29.4	50.6
	No	998	70.6	45.9
Property	Owned	1224	85.9	44.2
	Rented	181	12.7	66.7
Any paid staff	Yes	481	33.8	41.1
	No	944	66.2	49.2
Any volunteer or student help	Yes	395	30.9	40.3
	No	885	69.1	50.3
Own children count in enrollment	Yes	797	55.9	52.7
	No	630	44.1	40.6
Any children require additional support	Yes	199	14.1	45.2
	No	1213	85.9	47.8
Extended hours	Yes	330	23.2	44.2
	No	1094	76.8	48.4
Age of caregiver	20-24	29	2.0	72.4
	25-34	408	28.6	58.6
	35-44	619	43.4	45.6
	45-55	405	21.4	32.8
	Over 55	65	4.6	50.8
Expect to stay open	Under 1 year	55	3.7	92.5
	1 – 3 years	240	16.9	67.9
	Over 3 years	699	49.3	35.3
	Don't know	426	30.0	50.2
<i>Caregiver Characteristics</i>				
Registered ECE	Yes	202	14.1	50.5
	No	1226	85.9	46.9
Post-Basic Under 3	Yes	40	2.8	50.0
	No	1388	97.2	47.3
Post-Basic Special Needs	Yes	23	1.6	47.8
	No	1405	98.4	47.4
ECE workshops in past year	Yes	928	74.6	46.3
	No	316	25.4	49.7
ECE conferences in past year	Yes	296	23.9	44.3
	No	941	76.1	48.0
Other professional development in past year	Yes	394	32.1	47.5
	No	833	67.9	46.9
<i>Public Policy Factors</i>				
Any subsidized children	Yes	926	66	47.2
	No	478	34.0	48.3
Aware of infant/toddler grant	Yes	1349	94.5	47.1
	No	78	5.5	51.3
Received infant/toddler grant	Yes	1044	77.4	45.9
	No	304	22.6	51.0
Involved with CCRR	Yes	1331	96.8	47.3
	No	44	3.2	50.0

Table 7
 Mean Comparisons of FCC Facilities that Did and Did Not Close, by Continuous Variables

	Mean for Centres that Closed	Mean for Centres that Did Not Close
<i>Facility Characteristics</i>		
# of years facility has been licensed	3.6	4.8
% of revenue from parent fees	68.8	71.4
% of revenue going to expenses	24.3	22.9
# of own children who count in enrollment	1.1	0.9
Total # of children enrolled	7.3	7.7
<i>Caregiver Characteristics</i>		
Years of work experience in child care field	8.6	10.5
<i>Public Policy Factors</i>		
% of revenue from subsidies	24.3	22.9
% of revenue from infant/toddler grant	4.0	4.3

Table 8
 Mean Comparisons of FCC s that Did and Did Not Close for SES and Demographic Variables

	Mean for Centres that Closed	Mean for Centres that Did Not Close
<i>LHA Level</i>		
% change in male median income 1996-2001	7.1	7.2
% change in female median income 1996-2001	15.4	15.2
% change in unemployment 1996-2001	-11.6	-13.8
% change in male unemployment 1996-2001	-7.8	-10.9
% change in female unemployment 1996-2001	-15.8	-17.1
% change in # of children 0-4, 1996-2001	-14.8	-13.4
% change in # of children 5-9, 1996-2001	-3.4	-1.2
<i>CSD level</i>		
% change in unemployment 1996-2001	-5.3	-6.4
% change in male unemployment 1996-2001	0.7	0.8
% change in female unemployment 1996-2001	-10.3	-12.9
% change in # of children 0-4, 1996-2001	-11.2	-11.1
% change in # of children 5-9, 1996-2001	0.6	1.4

Table 9
 Significant Predictors of FCC Survival, Based on Binary Logistic Regression

Predictor	<i>B</i>	S.E.	Odds Ratio	Importance Score
<i>LHA Model</i>				
Property is owned	1.029	.184	2.799	34.5
Age group of caregiver	.203	.079	1.225	17.5
% change in # of children 0-4	.034	.009	1.009	14.0
# of own children enrolled	-.152	.067	.859	11.6
Volunteers or students used	.402	.129	1.495	11.4
Facility is full	.370	.118	1.448	11.0
<i>CSD Model</i>				
Property is owned	.947	.181	2.577	37.0
Age group of caregiver	.239	.078	1.269	24.0
Volunteers or students used	.401	.128	1.494	13.3
# of own children enrolled	-.148	.067	.862	13.2
Facility is full	.363	.117	1.437	12.6

Endnotes

¹ Family child care refers to providers who deliver services from their own residences.

² The terms “Basic” and Post-Basic” that are used to describe ECE training in BC are ironic given that the field struggles to justify demands for pay equity in recognition that quality child caregiving is not just a basic skill that anyone can foster with limited training, nor something that women do ‘naturally’.

³ The operating funding for Out-of-School services (titled the Funding Assistance Program) was cancelled a year after its introduction following the election of a new government.

⁴ Models in child care studies regularly have explanatory power in the range of 0.1 to 0.2 (for example NICHD 2003).

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