statisticians, start your engines

emerging opportunities for expertise in class action suits

by Ruth M. Corbin, ICD.D., Ph.D., LL.M.

A class action is a lawsuit brought on behalf of a large group of people whose complaints against an offending party contain common issues of law or fact. Class action suits have long been big business in the United States, glamorized by movies such as *Erin Brockovich* and *Michael Clayton*. Although the Canadian experience with class action suits has reflected a much more reserved attitude, the number of such suits has steadily grown in the last two decades. A 2007 decision by the Ontario Court of Appeal, reviewed in this article, showcases expanded opportunities for statisticians to assist the courts in resolving issues of damages in the multi-faceted array of class action causes making their way through the courts.

Here are just a few of the categories of class action complaints launched in Canadian courts in the past twenty years:

- allegedly defective products (faulty clothes dryers sold by Westinghouse, Kelvinator and Frigidaire; defective Toshiba laptop computers)
- products shown to cause harm (class action suits against Baxter, Dow Corning, and even Health Canada regarding silicone breast implants; a $700 million class action against Pfizer for a birth control drug alleged to cause osteoporosis; a suit against Merck for damaging side effects of arthritic drug VIOXX)
- financial misrepresentation (investor actions against Nortel Networks for misrepresenting the financial situation of the company; consumer suits against life insurance companies for misrepresenting the benefits of "vanishing premium" policies)
- institutional neglect (claims arising from tainted water in Walkerton, sexual and physical abuses in residential schools, and hepatitis C infection from blood transfusions).

Typical class actions involve thousands or millions of people. One of the earliest steps required is to "certify" a class. Certification of a class permits claims of all the affected individuals to be heard in a single trial, represented by as few as one member of the class and by a law firm working with that person to represent the class in court.

"We have decided to recall our new drug because of its common side effects: lawsuits"

CALCULATING DAMAGES

If the plaintiffs in a class action eventually succeed at trial, the defendant is responsible for damages, including, typically, a payout to every member of the affected class or population. If different members of the class are awarded different payouts, a calculation must be performed for each person.

As social researchers will know, the process of measuring everyone in any population is called a census. Statistical sampling provides a cost-effective replacement for a census. Sampling can sometimes produce a result which is more accurate than the result that would arise if one attempted to measure everyone in the population. How can that be? The reason is that the process of finding and measuring everyone in a population is subject to all kinds of human error. That kind of error can be much better controlled with a rigorous, representative, random sampling process.

But if only a sample of the population is taken, there is a chance that the measurement derived from the sample could be an imperfect estimate of the measure for the whole population. That is unavoidable. However, rigorous sampling produces a more accurate result than one might think. For example, a properly-drawn sample as small as 500 from a large population of even hundreds of thousands of people would provide an estimate which would deviate from the true population measurement by at most four per cent. Larger samples produce

even tighter estimates. Rigorous sampling offers tremendous benefits over census-taking.

News of this efficiency has recently attained high profile in courts of law. The May 2, 2007, decision of the Ontario Court of Appeal in *Markson v. MBNA Canada Bank*[1] is regarded by many to be a milestone decision for the field of class action suits, and highlights expanding opportunities for statistical experts to assist the courts.

COURT THROWS OPEN DOOR TO SAMPLING

Customers of MBNA sought to establish a class action over the high interest rates charged by MBNA on cash advances – sometimes exceeding the maximum allowable 60 per cent under the *Criminal Code.* (The interest rate would vary depending on how quickly an advance was paid off.) Lawyers for MBNA had successfully argued before a lower court that a class action suit was impractical because there were eight million transactions at issue, and MBNA's organization of its data base made it impossible to analyze them electronically. More specifically, MBNA argued that proof of its liability turned on assessing, for every client who had been given a cash advance, and for every such transaction, whether a criminal rate of interest had been paid. Complicating the fact that there were eight million such transactions after 2000 was the fact that MBNA had not maintained electronic data for the period before January 2000. The expense of any database creation exercise would far exceed the collective benefit to the class members. Therefore, argued MBNA's lawyers, a class action was an impractical route for resolving the problem, and no class should be certified.

The Ontario Court of Appeal (OCA) overturned the decision of the lower court, observing that subsection 23(1) of the *Class Proceedings Act*, properly interpreted, permits statistical sampling of a class. Subsection 23(1) reads as follows:

"For the purposes of determining issues relating to the amount or distribution of a monetary award under this *Act*, the court may admit as evidence statistical information that would not otherwise be admissible as evidence, including information derived from sampling, if the information was compiled in accordance with principles that are generally accepted by experts in the field of statistics."[2]

The *Act* goes further, stating that Statistics Canada data, or other "record of statistical information purporting to be prepared or published under the authority of the Parliament of Canada or the legislature of any province or territory of Canada, may be admitted as evidence without proof of its authenticity."

That means that proof of every single individual's loss is not needed. The aggregate damages can be estimated through sampling. Moreover, section 24 of the *Act* allows for individual damage awards to be calculated by way of a class "segmentation" of victims, again avoiding the formidable task of assessing damages case by case. The OCA's decision effectively precludes any defence of "impracticality" where accurate individual records of some kind are available for reasonable extrapolation.

Legal pundits suggest that the first significant beneficiaries of the *MBNA* decision will be the parties to the current employee lawsuit against CIBC for unpaid overtime. The class members for that action include thousands of current and former non-management, non-unionized CIBC employees who worked at some time in front-line customer service. The plaintiff group is seeking a whopping $600 million – about 25 per cent of CIBC's recent annual profits.

It is defendants in a class action suit who incur the expense of damage calculations. Assuming the MBNA decision is not overturned on appeal to the Supreme Court of Canada, defence lawyers will find an able group of social science professionals capable of providing cost-effective solutions for the calculation of damages through established sampling methodology. Opening the door to sampling also has the potential to facilitate worthy class actions for plaintiffs by removing the barrier of impracticality. Damage calculation by skilled sampling is one aspect of the stressful class action litigation process where, arguably, both parties to the dispute can benefit.

THE CALL FOR SPECIAL EXPERTISE

Experts seeking to assist the courts in this field will need more than a basic appreciation of random sampling and confidence intervals. Data cleaning, decisions on missing data and sampling strata, weighting and appropriate adjustments for weighting and stratification in error calculations are all required. The CIBC case provides a ready example of the formidable complexities: figuring out unpaid overtime for thousands of employees and long-gone employees in different branches with different reporting policies, at different levels of pay. The complexity is exacerbated by the allegation of the representative plaintiff that CIBC had discouraged overtime reporting, implying that the bulk of the allegedly unpaid overtime has no foundation in written records. Clearly, any analyst on the case will need to start with an insightful planning and discovery process regarding the ways in which information can be validly reconstructed, sensibly organized, and then reliably sampled. No easy program is available on the Internet for the painstaking analyses required. And once the complexities are conquered, the final challenge will be to communicate a clear, straightforward and accurate result to the stakeholders. For passionate statistical experts, it's all music to the ears.

[1] 2007 ONCA 334.

[2] *Class Proceedings Act*, 1992, S.O. 1992, c.6 s. 23(1).

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