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DO CELL PHONES PROVIDE AN EMERGING RISK FOR INSURERS? By Ingrid Sapona

The use of cell phones and the possibility of brain cancer and other health problems from radiation emitted by them has been in the news recently mainly because of the World Health Organization's International Agency for Research (IARC) announcement on May 31, 2011 that it has classified radiofrequency electromagnetic fields as "possibly carcinogenic to humans".[1] But, the idea that cell phones might cause brain cancer[2] has been the topic of speculation for years. Indeed, with estimates of 4.3 billion cell phone users world-wide (and about 21 million in Canada) [3], concern about whether exposure to electromagnetic fields (EMF) emitted by cell phones might be the next asbestos-type liability to hit the insurance industry has also been around for some time.

This paper will discuss some of the well-publicized scientific studies and public commentary on the possible link between cell phone use and cancer. It will then review some of the more prominent legal cases related to cell phones and EMF emissions, including a section that focuses on insurance issues in cell phone cases. Next the paper will discuss some parallels to asbestos claims. And finally, anecdotal evidence regarding how Canadian insurers view the risk is offered.

The IARC Research

The IARC is one of the most often quoted sources on the possible connection between cell phone use and brain cancer risk. The IARC's conclusions are significant because national health agencies often use them as support for actions they take to prevent or limit exposure to potential carcinogens. There have been a variety of IARC-generated pronouncements, but here we will focus on the two main ones:

1. The Interphone Study – the IARC's large study that was initiated in 2000 and reported on in May 2010; and
2. The IARC's Monograph Working Group's assessment, which was reported on May 31, 2011.

The Interphone Study

The Interphone Study (the Study) was an interview-based, case-control study that involved 13 international study centers (Canada was one of the 13). The study focused on tumours in tissue that absorb radiofrequency energy emitted by cell phones.[4] The objective of the

[1] http://www.iarc.fr/en/media-centre/pr.

[2] Self-reported clinical complaints – things like headache, fatigue, dizziness and difficulty concentrating – are not discussed here because, as Lloyd's Emerging Risks Team Report: "Electro-Magnetic Fields from Mobile Phones: Recent Developments", November 2010, version 2.0 (hereafter referred to as the Lloyd's Emerging Risks Team Report), notes in its Executive Summary: "So far there is no conclusive evidence to support the theory that EMF causes any of these problems." http://www.lloyds.com/~/media/Lloyds/Reports/Emerging%20Risk%20Reports/EMF%20Final%20November%202010.pdf.

[3] http://www.canadianunderwriter.ca/news/cellular-risk/1000396200

[4] See the May 17, 2010 WHO/IARC press release announcing the conclusions of the Interphone Study, http://www.iarc.fr/en/media-centre/pr/2010/pdfs/pr200_E.pdf (hereafter referred to as the Interphone Study).

Study was to determine whether mobile phone use increases the risk of brain tumours and tumours of the acoustic nerve and the parotid gland (the largest of the salivary glands).[5]

Because the interviews for the Study go back to 2000, the parameters for what constituted heavy use of a cell phone by participants are surprisingly low by today's standards. The median number of hours of use by Study participants was two to two-and-one-half hours of reported use per month[6], which means that on the high end, average cell phone use was five minutes/day. (The heaviest 10% of users, according to the Study, reported about 1640 hours of use over 10 years, which corresponds to about a half-hour per day.[7])

The results of the Study showed that regular cell phone users are at less risk of developing brain tumours (glioma or meningioma). Regular use was defined as an average of at least one call per week for more than six months. To the extent many commentators were surprised by this result (a conclusion of less risk), many commentators pointed to methodological limitations of the study, as well as the fact that participants were self-reporting.[8] Perhaps the most widely agreed on conclusion from the Study was the idea that the possible effects of long-term heavy use of cell phones requires further investigation.[9]

The IARC Monograph Working Group's Conclusions

On May 31, 2011 IARC's Working Group made the headline-grabbing announcement that it was classifying radiofrequency electromagnetic fields associated with wireless phone use as "possibly carcinogenic to humans (Group 2B)" based on an increased risk for glioma, which is a malignant type of brain cancer.[10] While at first blush this statement may sound like a major about-face from the conclusions of the Interphone Study, to understand the meaning of the conclusion it is necessary to understand the various categories into which carcinogenic agents are grouped by the IARC's Working Group.

Reflecting the fact that the scientific evidence linking a substance and cancer is rarely direct or indisputable, the Working Group categorizes possible carcinogens into four groups[11]:

- **Group 1 – the agent is carcinogenic to humans.** This category is generally used when there is *sufficient evidence of carcinogenicity* in humans.[12] (Note that all italics reflect the IARC's emphasis.)
- **Group 2** – this category is divided into two sub-groups:
    - **Group 2A – agents that are probably carcinogenic to humans.**[13]
    - **Group 2B – agents that are possibly carcinogenic to humans.** This means there is *limited evidence of carcinogenicity* in humans and less than *sufficient evidence of carcinogenicity* in experimental animals.[14]

[5] Id.
[6] Id.
[7] Id.
[8] See, for example, the commentary in Lloyd's Emerging Risks Team Report, supra note 2, at p. 7.
[9] Id. at p 8.
[10] See the May 31, 2011 press release regarding the IARC Working Group's conclusion, http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf (hereafter the IARC May 31, 2011 Press Release). A summary of the report has been published in The Lancet Oncology, Vol. 12, Issue 7, July 2011, http://www.thelancet.com/journals/lanonc/issue/vol12no7/PIIS1470-2045%2811%29X7126-7. (Hereafter referred to as The Lancet Summary.)
[11] Id. at p. 4-5.
[12] According to the press release, an agent may be place in Group 1 when evidence of carcinogenicity in humans is less than sufficient "but there is *sufficient evidence of carcinogenicity* in experimental animals and strong evidence in exposed humans that the agent acts through a relevant mechanism of carcinogenicity", [12] IARC May 31, 2011Press Release, supra note 10, at p. 4.
[13] Group 2A is used "when there is *limited evidence of carcinogenicity* in humans and *sufficient evidence of carcinogenicity* in experimental animals." As well, this group may be used when there is *inadequate evidence of carcinogenicity* in humans and *sufficient evidence of carcinogenicity* in experimental animals and strong evidence that the carcinogenicity is experimental animals and strong evidence that the carcinogenesis is mediated by a mechanism that also operates in humans." IARC May 31, 2011 Press Release, supra note 10, at p. 4.
[14] This group may also be used when there is inadequate evidence of carcinogenicity in humans but there is sufficient evidence of carcinogenicity in experimental animals. IARC May 31, 2011 Press Release, supra note 10, at p. 4.

- **Group 3 – the agent is not classifiable as to its carcinogenicity to humans.**[15] This category is use most commonly for agents where the evidence of carcinogenicity is *inadequate* in humans and *inadequate* or *limited* in experimental animals.
- **Group 4 – the agent is probably not carcinogenic to humans.** This category is for agents for which there is *evidence suggesting lack of carcinogenicity* in humans and in experimental animals.

Generally speaking, according to the Working Group's definitions, "sufficient evidence of carcinogenicity" means that "a causal relationship has been established between exposure to the agent and human cancer".[16] "Limited evidence of carcinogenicity" is defined as a positive association between exposure to the agent and cancer and the causal interpretation is considered "to be credible, but chance, bias or confounding could not be ruled out with reasonable confidence."[17]

To put it into perspective, it's useful to note that the Working Group's conclusions are based on its evaluation of available scientific literature on a given topic and that they issue IARC Monographs identifying environmental factors that can increase the risk of human cancer.[18] The types of environmental factors identified in IARC Monographs as posing increased risk of cancer to humans includes chemicals, occupational exposures, physical and biological agents, and lifestyle factors.[19]

The May 31, 2011 announcement received wide attention in the media, with many glossing over the fact that categorization of the risk into Group 2B means the causal connection is still somewhat tenuous. The summary of the Working Group's findings that appeared in The Lancet Oncology in July 2011 clarifies the basis for the conclusion, noting that "the Working Group concluded that there is "limited evidence in humans" for the carcinogenicity of RF-EMF, based on positive associations between glioma and acoustic neuroma and exposure to RF-EMF from wireless phones".[20] As well, it should be noted that the summary goes on to state that, "A few of the Working Group considered the current evidence in humans "inadequate"."[21] Subsequent to the IARC's announcement, the U.S. Food and Drug Administration (FDA) offered further perspective on agents that have been categorized by the IARC as falling into Group 2B, noting that the category includes coffee, extremely low frequency electromagnetic fields (power lines), and talc-based body powder.[22]

Conclusions Regarding the Current Scientific Evidence

Based on the scientific evidence to date, many would say that about the only conclusion that can be drawn is that it's not clear whether cell phone use causes cancer.[23] Of course, there are groups who believe there's incontrovertible evidence that cell phones pose health risks[24] and others who believe that current evidence of a correlation is lacking[25] or inconclusive.[26]

But even those who do not believe there is sufficient current evidence of any ill effects believe that further study is appropriate, particularly regarding long-term heavy use of cell phones and the impact on cell phone use by younger people.[27] The FDA, for example,

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[15] Id. at p. 5. Group 3 is generally for agents that do not fall into other groups.
[16] IARC May 31, 2011 Press Release, supra note 10, at p. 5.
[17] Id. at p. 6.
[18] Id. at p. 4.
[19] Id.
[20] See The Lancet Summary, supra note 10.
[21] Id.
[22] http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm
[23] The U.S. Federal Communications Commission has come to this conclusion, for example. See their answer to the question "Can radiofrequency radiation cause cancer", http://transition.fcc.gov/oet/rfsafety/rf-faqs.html#Q2
[24] See, for example, articles and postings on: www.environmentalhealthtrust.org One of the newsletter articles on the web site ("New Studies Reveal Stunning Evidence that Cell Phone Radiation Damages DNA, Brain, & Sperm"), for example, claims new independent studies prove that signals from cell phones disrupt DNA, impair brain function, and lower sperm count.
[25] The U.S. Food and Drug Administration, for example, believes "the weight of scientific evidence does not show an association between exposure to radiofrequency from cell phones and adverse health outcomes." http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm
[26] This is the conclusion of the U.S. Federal Communications Commission, http://transition.fcc.gov/oet/rfsafety/rf-faqs.html#Q2

has said, "there is consensus that additional research is warranted to address gaps in knowledge, such as the effects of cell phone use over the long-term and on paediatric populations."[28] Indeed, a number of long-term international studies are underway, including the International Cohort Study on Mobile Phone Users (the so-called COSMOS study), which will follow about 300,000 adult cell phone users in Europe for 20 to 30 years, and the MOBI-KIDS study, which is investigating the relationship between exposure to radiofrequency energy from communications technology and brain cancer in young people.[29]

Law Suits Related to Cell Phones and EMF Emissions

In this section we discuss some of the more prominent cases involving cell phone EMF claims.

Product Liability-Based Cases

Newman v. Motorola[30] is one of the few cases in which a court ruled on evidence related to the causal link between cell phone use and brain cancer. The case was a product liability case in which the plaintiff, a physician, claimed his use of a cell phone manufactured by the defendant caused his brain cancer. The threshold issues were whether the use of a wireless phone can cause cancer (general causation), and whether the plaintiff's use of his Motorola phone caused his cancer (specific causation). At the conclusion of discovery, Motorola brought a pre-trial motion to have the plaintiff's expert evidence on the issue of causation excluded.

The U.S. District Court for the District of Maryland granted Motorola's motion concluding that the plaintiff's experts' "reasoning, theories, and methodology have not gained general acceptance in the scientific community, as demonstrated by numerous national and international scientific and governmental published reports finding no sufficient proof that use of handheld cellular phones causes human brain cancer, and by the array of established, experienced, and highly credentialed experts called to testify by the defense."[31] The District Court's decision was affirmed by the 4th Circuit Court of Appeal.[32]

Murray v. Motorola Inc.[33] involved separate complaints against multiple defendants, including cell phone manufacturers, distributors, promoters, service providers, industry associations, and standard-setting entitles. The plaintiffs claimed they suffered illness and injury, including brain cancer or tumours, as a result of using cell phones produced, sold, or promoted by the defendants. The cases were combined into a single case heard in the Superior Court in the District of Columbia. The causes of action were based on various theories, including: intentional fraud and misrepresentation and strict product liability.

The gist of the plaintiffs' claims was that cell phones the defendants manufactured or promoted were unsafe because they emitted a dangerous level of radiofrequency radiation, regardless of the fact the radiation emitted was within the FCC-set limits.[34] In other words, the plaintiffs claimed that even if the phones comply with FCC rules, they may still be deemed unreasonably dangerous under state law.[35]

The plaintiffs also alleged that the cell phone companies deliberately suppressed studies that would leave no room to dispute that the thermal effects of radiofrequency radiation can cause tissue destruction, a precursor to cancer, and that by doing so the defendants "set about to co-op [sic] the federal agencies which had the jurisdiction to force the industry to prove the safety of cell phones".[36]

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[27] See, for example, the National Cancer Institute's fact sheet on cell phones and cancer risk, http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones/print
[28] http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm
[29] Id.
[30] 218 F. Supp. 2d 769 (D. Md. 2002).
[31] See page 21 of the on-line version of the case, which can be found at: http://news.findlaw.com/wsj/docs/cellphone/**newmanmotorola**93002mem.pdf
[32] 78 Fed. Appx. 292 (4th Cir. 2003). The appellate court decision can be found at: http://pacer.ca4.uscourts.gov/opinion.pdf/022424.U.pdf.
[33] 982 A. 2d 764 (D.C. 2009). This case can be found on-line at: http://www.law.com/jsp/article.jsp?id=1202435189919&slreturn=1&hbxlogin=1
[34] This wording is based on the summary set forth at page 3 of the appellate court decision found at: http://www.law.com/jsp/article.jsp?id=1202435189919&slreturn=1&hbxlogin=1
[35] See page 6 of the appellate court decision found at: http://www.law.com/jsp/article.jsp?id=1202435189919&slreturn=1&hbxlogin=1
[36] Id at p. 2.

As well, the plaintiff's alleged that the defendants were aware of solutions that could have eliminated the health hazards of radiation from cell phones, but because they were unwilling to sacrifice profits, the defendants did not adopt safely measures or warn users of potential risks or methods for minimizing their exposure to radiation to avoid injury.

The defendants filed a motion to dismiss, claiming that the plaintiff's claims are preempted by federal law. The Superior Court judge agreed with the defendants, concluding that if the complaints were allowed to go ahead and the plaintiffs were successful in persuading a jury that the phones emit unreasonably dangerous levels of radiation even though they are within the FCC's guidelines, the results would undermine the FCC's policy decisions about cell phone safety. The plaintiff's appealed the decision.

The D.C. Court of Appeals affirmed the Superior Court's conclusion that the plaintiff's claims that are premised on allegations that cell phones that are within FCC-set limits are unreasonably dangerous is barred under the doctrine of collateral pre-emption. However, claims relating to phones purchased before 1996 (which was when the FCC began issuing safety guidelines) were not pre-empted, nor were claims that defendants made affirmative misrepresentations or material omissions with respect to the manufactured phones' EMF emission rates.

Given the outcome of *Murray v. Motorola,* Lloyd's Emerging Risks Team has suggested that the decision implies a possible "state of the art" defence for manufacturers such that if they can prove that at the time of manufacture a cell phone meets applicable government standards, the manufacturer cannot be liable for bodily harm caused by EMF exposure.[37]

Farina v. Nokia, Inc. et al[38] was a class action against numerous cell phone manufacturers and retailers. Faria represented a class consisting of "all past, current, and future Pennsylvania purchasers and lessees of cell phones who have not been diagnosed with an injury or illness resulting from their cell phone usage."[39] The plaintiffs were seeking to require manufactures to provide headsets with all cell phones. According to the 3rd Circuit Court of Appeal, "Faria's claim rested on the allegation that defendants warranted that their cell phones were safe to operate, but that those phones were, in fact, unsafe to operate without headsets because of their emission of RF radiation despite the fact that their emission levels were in compliance with FCC standards."[40]
The U.S. District Court dismissed Farina's complaint and the 3rd Circuit affirmed the District Court's decision. Farina's claim was rejected on the basis that it is pre-empted by regulations promulgated by the FCC.[41] According to the 3rd Circuit, "Allowing juries to impose liability on cell phone companies for claims like Farina's would conflict with the FCC's regulations. A jury determination that cell phones in compliance with the FCC's SAR guidelines were still unreasonably dangerous would, in essence, permit a jury to second guess the FCC's conclusion on how to balance its objectives."[42] Faria has petitioned the U.S. Supreme Court for review of the case, arguing that he is not challenging the FCC's determination about the level of radiofrequency radiation that requires an environmental assessment or environmental impact statement before a phone may be marketed. Instead, he argues he is seeking a remedy for the manufacturer's misrepresentations about the safety of their phones, given that no one yet knows whether claims about safety of cell phones are true.[43]

[37] See Lloyd's Emerging Risks Team Report, supra note 2, at p. 16.
[38] 578 F. Supp. 2d 740 (E.D. Pa. 2008).
[39] This is the 3rd Circuit Court of Appeals' description, which can be found on page 2 of the decision as reported at: http://caselaw.findlaw.com/us-3rd-circuit/1542287.html
[40] Id. at p. 16.
[41] Id. at p. 2.
[42] Id at p. 19.
[43] See pages 2-3 of the Reply Brief for the Petitioner submitted to the Supreme Court in May 2011. The brief can be found at: http://www.citizen.org/documents/Farina-v-Nokia-Reply-Brief.pdf

Disability/Workers' Compensation Cases

To date there has been one successful disability claim based on long-term used of a cell phone. An Italian executive, Innocenzo Marcolini, sought compensation from the Italian Labour Insurance (INAIL) claiming that as a result of his extensive use of a cell phone and cordless phone on the job, he developed a benign tumour of the trigeminal nerve. The tumour was operated on, but the consequences to his quality of life were terrible. The labour tribunal awarded Marcolini partial compensation, concluding there was a causal link between his disability and his work-related use of the cell and cordless phone.[44]

Insurance Issues in Cell Phone Cases

In this section we look at some of the specific insurance issues that have been triggered by cases involving claims related to radiation emitted by cell phones.

Insurer's Duty to Defend

At issue in *Nokia, Inc. v Zurich American Insurance Co.* was an insurer's duty to defend under a commercial general liability (CGL) policy. Various class actions were brought against Nokia seeking damages for alleged biological injury from exposure to allegedly harmful radiation emitted by cell phones it manufactured. (One of the underlying cases Nokia called on Zurich to defend was *Farina v. Nokia*.)

Nokia tendered defense in one of the cases to Zurich American Insurance under its CGL policies. Zurich agreed to defend Nokia, but reserved the right to later contest its obligations. Zurich ultimately sought a declaration that it had no duty to defend or indemnify Nokia. The Texas trial court granted Zurich's motion for summary judgement. Nokia won on appeal but the insurer appealed to the Texas Supreme Court arguing it had no duty to defend because the complaints in the underlying cases did not state claims for bodily injury or seek damages because of bodily injury. (The plaintiffs' complaints in the underlying cases did not use the term "bodily injury"; instead, they use the phrase "biological injury".)

The 7-2 majority decision of the Supreme Court of Texas concluded that "… the biological injuries alleged by the plaintiffs potentially state a claim for bodily injuries under the policies, much like the subclinical injuries alleged by plaintiffs who have been exposed to asbestos."[45] On the issue of whether the plaintiffs in the underlying action were seeking damages, the majority found that they were, concluding that, "… although each of the complaints seeks compensation for the cost of headsets, they also assert that the plaintiffs have been injured and seek damages based on their physical exposure to radiation (citation omitted)."[46]

The two Texas Supreme Court justices who dissented agreed with the insurance company's argument that none of the damages sought were "because of" bodily injury. According to the dissent, the plaintiffs in the underlying cases meticulously avoided any claims for personal injuries. As the dissenting justices saw it, "There are claims for headsets and their value, and claims for other unspecified damages. There are no claims for personal injury damages. The Court cites no example, and there is none. … Class counsel alleges very carefully that using cell phones without headsets can cause bodily injury, and therefore they want headsets or their value. This is not a claim for damages because of bodily injury."[47]

As noted in *Nokia v. Zurich American Insurance*[48], other courts have also considered the issue of an insurer's duty to defend in cases based on claims of injury at the cellular level related to alleged harm from cell phone radiation. And, though some courts have come to the

[44] Various reports of this decision can be found on-line. See, for example: http://www.4us2be.com/health-fitness/its-official-the-court-blames-mobile-phone-use-for-disability/ It should be noted that this case apparently is subject to review by the Italian Supreme Court, but apparently the review will be based on the legitimacy of the review process, not on the facts.
[45] 268 S.W.3d 487 (2008) at p. 393.
[46] Id. at p. 494-495.
[47] Id. at p. 503.
[48] Id. at p. 492-493.

conclusion there is no duty to defend [49], "[f]or the most part, courts that have considered this issue have concluded that allegations of harm at a biological or cellular level satisfy the "bodily injury" requirement so as to implicate CGL defense obligations."[50]

Insurance Issues Relating to Medical Monitoring

Another type of claim that has been brought in the U.S. in class action suits alleging radiofrequency radiation exposure is claims for medical monitoring. Such claims are to recover the cost of medical testing to detect and prevent the onset of possible future illness and are often included when an individual has been "… exposed to high levels of a harmful substance known to increase the likelihood of future illness."[51] Such claims have interesting insurance ramifications including whether, and to what extent, they might fall within general liability insurance coverage.

Whether a claim for medical monitoring would fall within a CGL policy's defense or indemnity obligations hinges on three issues[52]:

1. Whether the medical monitoring claim alleges "bodily injury" within the scope of the coverage;
2. Whether injury occurred during the policy period; and
3. Whether the form of relief sought constitutes damages that the policyholder is obligated to pay.

It seems that most U.S. courts have concluded that allegations of harm at a biological or cellular level as a result of cell phone use satisfy the bodily injury requirement, which means that insurers have a defense obligation.[53] Whether the claims seeking medical monitoring allege bodily injury sufficient to trigger coverage, however, is not clear.[54]

The issue of whether the injury occurred during the policy period is especially thorny in a claim for medical monitoring, given that such claims are made in a context of an illness that has not yet materialized.[55] Whether claims for medical monitoring constitute damages typically centers on whether damages refers to legal damages only or whether it also covers equitable relief.[56] Courts have come to different conclusions on these issues, so a case-by-case analysis is required.[57]

Despite the fact that health care is generally government funded in Canada, claims for medical monitoring have been brought in Canada on various theories, including the fact that provincial health care plans may be subrogees[58], that certain services and treatments are not covered by provincial health care plans, and that there is a risk that some services may not be government funded in the future.[59]

Parallels to Asbestos Claims

The concern in the insurance industry about the possibility of cell phones giving rise to the next asbestos-type exposure was described quite succinctly by Lloyd's Emerging Risks Team when it said: "if (EMF) is proven to cause cancer, then the injuries may not become clear

[49] See, for example, the cases referred to by the dissent in *Nokia v. Zurich American Insurance*, 268 S.W.3d 487 (2008) at p. 504.
[50] See "Medial Monitoring and General Liability Insurance: An Uncertain Prognosis for Converge", by Bryce L. Friedman, Simpson Thacher & Bartlett LLP, http://www.stblaw.com/content/Publications/pub1069.pdf
[51] Id.
[52] Id. at p. 3.
[53] Id. at p. 5.
[54] Id. at p. 6.
[55] Id. at p. 8.
[56] Id.
[57] Id. at p. 9.
[58] In Ontario, for example, in any personal injury case, under the *Health Insurance Act*, R.S.O. 1990, c.H.6, Ontario Health Insurance Plan has a statutory right of subrogation to recover for any services provided. See, "Up in Some, What Role Should Litigation Play in Funding Canada's Health Care?", by Jeff Berryman, Health Law Journal, Vol. 12, 2004, http://www.law.ualberta.ca/centres/hli/userfiles/BERRYMAN.pdf
[59] See: "Medical Monitoring in North America: Does this Horse Have Legs?", by David I. W. Hamer, Defense Counsel Journal, January 2010, which can be found at: http://findarticles.com/p/articles/mi_hb6661/is_201001/ai_n52370533/pg_5/?tag=mantle_skin;content

until many years after the exposure due to similarly long latency periods. The danger with EMF is that, like asbestos, the exposure insurers face is underestimated and could grow exponentially and be with us for many years."[60]

Of course, the current scientific evidence regarding a connection between cell phone use and cancer is far from being as definitive as the scientific link between asbestos and mesothelioma.[61] And, even if exposure to EMF from cell phones is linked to brain cancer, unlike mesothelioma cases which most disagree agree is likely caused by exposure to asbestos, brain cancer can be attributed to many different causes and exposures.

If it is ever scientifically determined that EMF does cause cancer, as Lloyd's points out, one of the difficult insurance issues that would arise in an EMF-based claim would relate to apportioning liability, given that a claimant might have used different cell phones at different times and given that there are many other possible causes for brain cancer.[62] Apportioning liability has often up come in asbestos cases where claimants might have been exposed to asbestos in more than one workplace, for example. In some cases employers were joint and severally liable, in other cases employers were severally liable but not jointly liable. In some cases governments have intervened with a legislative solution, such as the U.K.'s *Compensation Act 2006*, which mandates that for asbestos cases all parties are jointly and severally liable.[63]
Another issue that has arisen in asbestos cases that is likely to be crucial in an EMF case is the issue of when the insurance contract is triggered. To decide this, courts may be called on to determine when a claimant is considered to have sustained brain cancer, which the asbestos cases show can be difficult.[64]

The Canadian Insurance Landscape

If a product liability-type action were brought in Canada against a business in the cell phone supply chain (for example, a manufacturer, cell phone service provider, cell phone retailer, etc.) it's likely the business would look to its CGL policy, as most such policies cover product liability, unless there are specific exclusions in the policy.

There is anecdotal evidence that some Canadian underwriters consider EMF risks when they provide CGL quotes. One underwriter I spoke to in researching this paper, for example, made it clear that they have had an "EMF strategy" since 2004 because they believe EMF poses potential exposure that is severe, uncontrollable, and unpredictable. As a result, they include specific exclusions for EMF. Another underwriter admitted that at this point the scientific evidence is confusing and contradictory, but said that they prefer to be pro-active because they do not want to get caught in an asbestos-like situation and so they also consider EMF when quoting.

However, not all Canadian underwriters are adopting such a cautious approach. At least one specialty insurer that provides insurance to companies in the high tech sector is of the view that, given the current scientific evidence related to EMF, at this point there is no quantifiable exposure so it does not take it into account.

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[60] See, Lloyd's Emerging Risks Team Report, supra note 2, at p. 17.

[61] According to CancerHelp UK, for example, "By far the main cause of mesothelioma is exposure to asbestos. Between 7 and 8 out of every 10 people diagnosed with mesothelioma (70 to 80%) say they have been in contact with asbestos, http://cancerhelp.cancerresearchuk.org/type/mesothelioma/about/mesothelioma-risks-and-causes BC Cancer believes that 60 -70% of mesothelioma cases stem from exposure to asbestos, http://www.bccancer.bc.ca/PPI/TypesofCancer/Mesothelioma/default.htm

[62] Lloyd's Emerging Risks Team Report, supra note 2, at p. 17-18.

[63] Id. See also http://www.legislation.gov.uk/ukpga/2006/29/contents

[64] In the asbestos cases some have argued that the critical turning point was when a blood supply is established to the tumour, and some have argued it is at the time of exposure, for example. See Lloyd's Emerging Risks Team Report, supra note 2, at p. 18-19.

And finally, even if there is no consensus regarding product liability exposure for EMF emitted by cell phones, it's clear that some companies in the cell phone business are looking to insure against the possible risk and some insurance products are being offered to protect such businesses. The marketing material for one specialty commercial product describes a policy it has that was used to offer run-off cover including EMF to a large technology company that manufactured cell phones for just one year and then discontinued doing so.

ADDENDUM:

Exposure to Radiation

When talking about exposure to radiation, it's important to distinguish between ionizing radiation, which is the type one gets from x-rays, and non-ionizing, which is the type attributable to mobiles. Ionization, which is where "electrons are stripped away from their normal locations in atoms and molecules"[65] can permanently damage tissue, including DNA.[66] Radiofrequency energy is not great enough to cause ionization, according to the U.S. Food and Drug Administration.[67] Large amounts of radiofrequency energy can, however, increase body temperatures and cause tissue damage.[68] Ionizing radiation has definitively been linked to brain tumours[69]; whether non-ionizing radiation causes cancer is subject to dispute.

The Specific Absorption Rate (SAR) is the rate at which radiation is absorbed by the human body. The maximum SAR allowable for cell phones is set by various governments, based on the limits recommended by the International Commissions for Non-Ionizing Radiation Protection (ICNIRP) and the Institute of Electrical and Electronic Engineers (IEEE).[70] The Canadian SAR limit, which is set by Industry Canada, is the same as the U.S.: 1.6 watts per kilogram (W/kg), which means all cell phones, must be rated below that level.

The SAR rating of cell phones on the market is not well known by consumers.[71] Anecdotal evidence indicates that people buying and selling cell phones are often unaware of the specific SAR rating for particular models.[72] Groups advocating greater consumer awareness regarding possible cell phone dangers are lobbying governments to require cell phone manufacturers to provide safety warnings.[73]

Types of Brain Tumours Commonly Associated with EMF

While there are many different types of brain tumours, the two most common ones considered with respect to EMF are glioma and meningioma. Giomas are "not a specific type of cancer but are a term used to describe tumours that originate in glial cells … (which)…

[65] http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116282.htm
[66] Id.
[67] Id.
[68] Id.
[69] http://health.nytimes.com/health/guides/disease/brain-tumor-adults/risk-factors.html#
[70] See, Lloyd's Emerging Risks Team Report, supra note 2, at p. 5.
[71] The Environmental Working Group, a lobbying group that advocates on behalf of public health and the environment, has compiled a list of SAR ratings (based on information provided by cell phone carriers) for all cell phones. The list can be found on their web site at: http://www.ewg.org/cellphoneradiation/Get-a-Safer-Phone?allphones=1
[72] Id.
[73] On July 19, 2011 the San Francisco Board of Supervisors voted unanimously in favour of an ordinance that requires cell phone consumers to be informed, at the point of sale, about cell phone radiation risks and about suggestions for safer use. The ordinance fell short of lobbyists' attempts to require disclosure of specific radiation levels for cell phones. http://www.environmentalhealthtrust.org/content/press-release-san-francisco-unanimously-upholds-cell-phone-radiation-%E2%80%98right-know%E2%80%99-law-despit

are the building block cells of the connective, or supportive, tissue in the central nervous system."[74] Glial cells are cells that surround and support nerve cells.[75] Meningioma is a type of slow-growing tumour that forms on the thin layers of tissue that cover and protect the brain and spinal cord (the meninges).[76] Most meningiomas are benign.[77]

Precautions When Using Cell Phones

Here are some do's and don'ts that can help ensure you are exposed to the minimal amount of EMF from you cell phone[78]:

- Find out what your cell phone's SAR rating is. The lower the SAR rating, the better.
- The further the phone is from you head the better – yes, that means exposure is less if you text or use a hands free device.
- Bluetooth devices include a wireless transmitter, but such transmitters operate at a much lower power than cell phones.[79]
- Cell phones only emit EMF when they're turned on – so if you're not using it (but it's in your pocket or on your belt) – keep it turned off.
- Use the phone only where reception is good (where the signal is strong) – the better the reception the lower the power the phone transits at.

- END -

[74] http://health.nytimes.com/health/guides/disease/brain-tumor-adults/risk-factors.html
[75] http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones/print
[76] See Lloyd's Emerging Risks Team Report, supra note 2, at p. 22 (the Glossary).
[77] Id.
[78] Most of these suggestions come from: the WHO's Fact Sheet No. 193: Electromagnetic fields and public health: mobile phones, published June 2011, http://www.who.int/mediacentre/factsheets/fs193/en/
[79] http://transition.fcc.gov/oet/rfsafety/rf-faqs.html#Q2