COVID-19 and loss of a chance : an analysis of the legal framework of Belglium, the United State of America and Australia on the loss of chances for survival caused by diagnostic and medical delays because of the COVID-19 pandemic

COVID-19 and Loss of a Chance

An analysis of the legal framework of Belgium, the United States and Australia for the loss of chances of survival caused by diagnostic and medical delays because of the COVID-19 pandemic[1]

Sven LIEVENS[2]

Due to the COVID-19 pandemic, emergency departments, hospitals and individual healthcare professionals were completely overwhelmed. As a result, other medical activities, such as consultations with specialists, preventive screenings and effective surgeries, were postponed. Multiple studies, conducted in different parts of the world, show that this will lead to millions of undiscovered cancers and hundreds of additional deaths. It seems that patients have lost chances of survival. The question rises whether patients or their legal successors can claim damages because of that loss of a chance of survival.

This research finds that the loss of a chance doctrine is accepted in Belgium and a majority of the United States of America. Australia does not accept the doctrine, in line with the 2010 High Court Judgement of Tabet v. Gett. Once the doctrine is accepted in general, the likelihood that claims – based on the loss of a chance doctrine in situations as described above – are accepted, seems to be minimal. Taking into account the precautionary principle in rapidly changing situations, the contagiousness of the virus and the possible contributory negligence of the patient, the burden of proof to establish a causal link between a breach of the duty of care and the loss of a chance is rather hypothetical, however not impossible. Case-by-case assessment is once again the guiding principle.

Keywords

Loss of a chance of survival – Pandemic – Cancer – Medical backlogs – Standard of proof – Duty of care – Force majeure – Precautionary principle – Contributory negligence

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[2] The author is Research and Teaching Assistant at the University of Antwerp, preparing a PhD on the subject of the loss of a chance doctrine. Contact via sven.lievens@uantwerpen.be.

I. Medical backlog due to COVID-19

1. The COVID-19 Pandemic[3] impacted the whole world in an unprecedented fashion. Especially healthcare professionals, hospitals and emergency departments were completely overwhelmed. Also the consecutive 'waves' of infections with COVID-19 and the respective increase of patients disrupted the medical care system as a whole.[4] Across the world, hospitals stopped preventive screenings, e.g. on different types of cancer, cancelled consultations with healthcare professionals and postponed – sometimes very urgent – surgeries.[5]

2. Multiple studies show that the absence of screenings, medical consultations or effective surgeries will lead or in the meantime already have led to extreme forms of diseases that are very difficult to treat and eventually will lead to thousands of additional deaths. Those deaths are directly attributable to diagnostic delays as a consequence of the choices made during the pandemic.[6]

3. CHEN E.A. calculated that 9.4 million preventive (breast, colorectal and prostate) cancer screenings were not carried out in the United States because of the pandemic, in the short period of March until May 2020.[7] Another modelling predicts 33.890 excess deaths in the United States in a one year timeframe for newly diagnosed cancer patients who suffer from comorbidities, due to the significant drop in chemotherapy sessions and urgent referrals for early cancer diagnosis.[8] A study published in *The Lancet Oncology* estimates that for the United Kingdom alone approximately 3.500 additional deaths are to be expected within a timeframe of five years for breast, colorectal, oesophageal

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[3] World Health Organization, *WHO Director-General's opening remarks at the media briefing on COVID19 - March 2020*, available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020#:~:text=WHO%20has%20been%20assessing%20this,to%20use%20lightly%20or%20carelessly (accessed at 28 February 2023); Cuninotta, D & Vanelli, M 2020, "WHO Declares COVID-19 a Pandemic", *Acta Biomed,* vol. 91, no. 1, pp. 157-160.

[4] COVIDSurg Collaborative 2020, "Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans", *BJS*, vol.107, no. 11, pp. 1440–1449.

[5] Topf, MC, Shenson, JA, Holsinger, FC, Wald, SH, Ciafichi, LJ, Rosenthal, EL & Sunwoo, JB 2020, "Framework for prioritizing head and neck surgery during the COVID-19 pandemic", *Head & Neck*, vol. 42, no. 6, pp. 1159–1167, DOI: 10.1002/hed.26184TOPFET AL.1167; Freer, PE, "The Impact of the COVID-19 Pandemic on Breast Imaging", *Radiologic Clinics,* Vol. 59, no. 1, 1-11 Nodora, JN, Gupta, S, Howard, N, Motadel, K, Propst, T, Rodriguez, J, Schultz, J, Velasquez, S, Castañeda, SF, Rabin, B, Martínez, ME 2021, "The COVID-19 Pandemic: Identifying Adaptive Solutions for Colorectal Cancer Screening in Underserved Communities", *JNCI: Journal of the National Cancer Institute*, Vol. 113, no. 8, pp. 962–968.

[6] Unruh, L, Allin, S, Marchildon, G, Burke, S, Barry, S, Siersbaek, R, Thomas, S, Rajan, S, Koval, A, Alexander, M, Merkur, S, Webb, E & Williams, GA 2022, "A comparison of 2020 health policy responses to the COVID-19 pandemic in Canada, Ireland, the United Kingdom and the United States of America", *Health Policy*, Vol. 126, no. 5, pp. 427-437, 435.

[7] Chen, C, Haynes, K, Du, S, Barron, J & Katz, AJ 2021, "Association of Cancer Screening Deficit in the United States With the COVID-19 Pandemic", *JAMA Oncology*, vol. 7, no. 6, pp. 878-884. DOI: 10.1001/jamaoncol.2021.0884.

[8] Lai, AG, Pasea, L, Banerjee, A, Denaxas, S, Katsoulis, M, Hoong Chang, W, Williams, B, Pillay, D, Noursadeghi, M, Linch , D, Hughes, D, Forster, MD, Turnbull, C, Fitzpatrick, NK, Boyd, K, Foster, GR, Cooper, M, Jones, M, Pritchard-Jones, K, Sullivan, R, Hall, G, Davie C, Lawler, M & Hemmingway, H 2020, "Estimating excess mortality in people with cancer and multimorbidity in the COVID-19 emergency*", MedRxiv*, DOI: 10.1101/2020.05.27.20083287.

and lung cancer together.[9] A follow-up study for the UK investigates the economic impact of avoidable cancer deaths. This study concludes that the economic loss per capita is, in fact, greater than the costs caused by deaths directly attributable to COVID-19.[10] A study on Belgian cancer diagnoses during the first wave paints an equally bleak picture, showing as one of the key take-aways a 44% reduction in diagnosis of invasive tumors.[11] An Australian study displays 88 to 349 excess deaths in a five year timeframe, according to a shorter or longer delay, for the year 2020 only and considering solely the shifts from stage I/T1 to stage II/T2 cancers, while stating that "*the impact of stage progressions from stage II to stage III and from stage III to stage IV are likely to be associated with significant excess mortality and cost*".[12] Another study predicts 979 to 3968 additional deaths in Australia in the period 2020-2050, considering a 3 to 12 month disruption in colorectal screenings only, given that there are no catch-up screenings to minimize the disrupted screening periods due to the pandemic.[13]

4. These numbers especially focus on patients diagnosed with some form of cancer. Exactly the same exercise could be made for other diseases, such as cardiovascular disorders. Common to these studies is the fact that they are very dependent on a set of variables: which type(s) of diseases did the research take into account? Which timeframe did the researchers look at? In which stadium were the diseases already? Dependent on these variables, the conducted study will offer other results, which makes the studies not representative to make general statements on all cancer patients. For example, a study regarding the effects of a six months delay for colorectal cancer (stage I) treatment in the United States over a time frame of five years, will have completely other results than the impact study of a three month delay in treatment for all cancer types of a stage III over a one year time frame.

5. The studies discussed above are, in that regard, not that useful in the assessment of an individual case. Only in very specific cases the circumstances and variables under which the study was conducted,

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[9] Maringe, C, Spicer, J, Morris, M, Purushotham, A, Nolte, E, Sullivan, R, Rachet, B & Aggarwal, A 2020, "The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England, UK: a national, population-based, modelling study", *The Lancet Oncology* 2020, vol. 21, no. 8, pp. 1023-1034.

[10] Gheorghe, A, Maringe, C, Spice, J, Purushotham, A, Chalkidou, K, Rachet, B, Sullivan, R & Aggarwal, A 2021, "Economic impact of avoidable cancer deaths caused by diagnostic delay during the COVID-19 pandemic: A national population-based modelling study in England, UK", *European Journal of Cancer*, vol. 152, pp. 233-242.

[11] Peacock, HM, Tambuyzer, T, Verdoodt, F, Calay, F, Poirel, HA, De Schutter, H, Francart, J, Van Damme, N & Van Eycken, L 2021, "Decline and incomplete recovery in cancer diagnoses during the COVID-19 pandemic in Belgium: a year-long, population-level analysis", *ESMO Open*, vol. 6, no. 4, DOI: 10.1016/j.esmoop.2021.100197.

[12] Degeling, K, Baxter, NN, Jenkins, MA, Franchini, F, Gibbs, P, Bruce Mann, G, Mcarthur, G, Solomon, BJ & Ijzerman, MJ 2021, "An inverse stage-shift model to estimate the excess mortality and health economic impact of delayed access to cancer services due to the COVID-19 pandemic", *Asia-Pac J Clin Oncol.,* vol. 17, no. 4*,* 359–367.

[13] De Jonghe, L, Worthington, J, Van Wifferen, F, Iragorri, N, Peterse, EFP, Lew, JB, Greuter, MJE? Smith, HA? Feletoo, E, Yong, JHE, Canfell, K, Coupe, VMH & Lansdorp-Vogelaar, I 2021, "Impact of the COVID-19 pandemic on faecal immunochemical test-based colorectal cancer screening programmes in Australia, Canada, and the Netherlands: a comparative modelling study", *The Lancet Gastroenterology & hepatology*, vol. 6, no. 4, 304-314. See also: Luo, Q, O'Connell, DL, Qin Yu, X, Kahn, C, Caruana, M, Pesola, F, Sasieni, P, Grogan, PB, Aranda, S, Cabasag, CJ, Soerjomataram, I, Steinberg, J & Canfell, K 2022 "Cancer incidence and mortality in Australia from 2020 to 2044 and an exploratory analysis of the potential effect of treatment delays during the COVID-19 pandemic: a statistical modelling study", *Lancet Public Health*, vol. 7, no. 6, pp. 537–548, DOI: 10.1016/S2468-2667(22)00090-1.

will be very comparable with the individual situation of a potential claimant. Which conclusion could be drawn from a study on the amount of excess deaths of stage I lung cancer patients in Australia with a delayed treatment of six months, if you live in the United States, have already a stage II lung cancer and had only a delay of four months? This thought should warn judges for hasty generalizations and the instrumentalization of medical studies by claimants. What these studies correctly point out is the scale and importance of the topic. It shows that thousands of patients all over the world will be confronted with a worsened health status and that the consequences of this pandemic will be spread out over the coming decades. These studies calculating excess deaths in general, thus, do not form conclusive evidence that an individual patient has lost chances of recovery or survival.

II. Do patients lose chances of recovery or survival?

6. These studies seem to indicate that medical backlogs cause the loss of chances of recovery or survival of cancer patients. Is that assumption correct from a medical perspective or should we, again, warn for too hasty generalizations?

Often medical interventions are necessary to prevent worsening health conditions, because cancers are – in most cases – rapidly evolving in a negative way, studies show. Research of 2020 published in the *British Medical Journal* shows that even a four week delay of cancer treatment increases mortality for all seven types of cancer that were investigated.[14] The same goes for head and neck cancer where it is shown that a prolonged wait time for treatment is "likely to negatively affect the prognosis of the patients."[15] On the other hand, a recent investigation published in *JAMA Oncology,* devoted to the evolution of the chances of survival when cancer treatment was delayed during the COVID-19 pandemic, concludes that there are too many variables to draw absolute conclusions between delayed cancer treatment and net survival.[16] This last study emphasizes the absolute necessity of a case-by-case assessment whether a delay caused the diminution of chances of recovery or survival. Again, the studies that are referred to focus especially on cancer patients. Other medical conditions such as a knee replacement surgery will not be that urgent or might not be affected by a postponed medical intervention. This leads to the inevitable conclusion that the role of medical experts in potential claims will gain importance.[17] It will be the experts' task to (as far as possible) meticulously calculate which percentage of the chance of survival or recovery was lost – given the concrete delay, the specific disease and the

[14] Hanna, TP, King, WD, Thibodeau, S, Jalink, M, Paulin, GA, Harvey-Jones, E, O'Sullivan, DE, Booth, CM, Sullivan, R & Aggarwal, A 2020, *Mortality due to cancer treatment delay: systematic review and meta-analysis*, *BMJ*, 371:m4087, DOI: 10.1136/bmj.m4087.

[15] Coca-Pelaz, A, Takes, RP, Hutcheson, K, Saba, NF, Haigentz, JR, Bradford, CR, De bree, R, Strojan, P, Lund VJ, Mendenhall, WM, Nixon, IJ, Quer, M, Rinaldo, A & Ferlito, A 2018, "Head and Neck Cancer: A Review of the Impact of Treatment Delay on Outcome" *Adv Ther*, vol. 35, pp. 153–160, DOI: 10.1007/s12325-018-0663-7.

[16] Harman, HE, Sun, Y & Devasia, TP 2020, "Integrated Survival Estimates for Cancer Treatment Delay Among Adults With Cancer During the COVID-19 Pandemic", *JAMA Oncol.,* Vol. 6, no. 12, pp. 1881-1889, DOI: 10.1001/jamaoncol.2020.5403

[17] Conomy, JP 2007, "Medical Expert Testimony" in S. Sanbar (ed.) *The medical malpractice survival handbook*, Elsevier, Philadelphia, pp. 245-255.

stage it already was in – by comparing the situation of that individual patient with or without the delay. On their turn, judges or juries will face the difficult task to critically assess those expert opinions as the "gatekeepers" of justice.[18]

III. The loss of a chance doctrine

7. Turning away from the more medical-technical assessment of the patients' situation, we can now focus on the legal side of the question: What might patients be claiming in courts? Can patients claim damages because they are suffering from a certain disease or might the heirs of a deceased patient be entitled to compensation for the death of their family member? The answer is negative in both cases. There is no causal link between the lack of (timely) treatment and the fact that the patient suffers from this medical condition or death. The cause of the medical condition is not the absence of medical intervention, it is often the result of unhealthy habits, an accident, social conditions or genetic predisposal.[19] In other cases the cause of the disease is still unknown. Only the aggravation of the health situation is causally linked to the lack of timely treatment. Therefore, the loss of a chance doctrine seems the most appropriate measure.

8. The loss of a chance doctrine is often used in tort law and medical law to compensate losing a chance to gain an advantage or to avoid a disadvantage instead of compensating a final injury itself, e.g.. a broken leg, incapacity to work or death.[20] In medical terms, we would speak of losing the chance of a more favorable outcome. According to this theory, losing an opportunity should also be compensable on the premise and in line with the demand of certainty of the injury, that it compensates real and existing chances, how minimal they may be, and not just sheer hopes. The compensation is intrinsically expressed in a certain percentage of the economical equivalent of the final damage (such as the broken leg or death). Making use of that theory, a patient who had a 60% chance of surviving a certain disease, but as a result of the medical backlog now only has a 20% chance of survival, should be awarded 40% of the economical equivalent of the final damage.

9. This doctrine combines two advantages. Firstly it avoids an all-or-nothing approach, the often criticized black-or-white analysis in tort law, thus the doctrine recognizes a lot of situations in grey zones.[21] Secondly and logically flowing from the first advantage: the loss of a chance doctrine is also a

[18] Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993); Shuman, DW 2001, "Expertise in Law, Medicine, and Health Care", *J Health Polit Policy Law,* vol. 26, no. 2, pp. 267–290, DOI: 10.1215/03616878-26-2-267.
[19] Link, BG, & Phelan, J 1995, "Social Conditions As Fundamental Causes of Disease", *Journal of Health and Social Behavior*, pp. 80–94, DOI: 10.2307/2626958.
[20] Kadner Graziano, T 2008, "Loss of a Chance in European Private Law. 'All or Northing' or Partial Liability in Cases of Uncertain Causation", *ERPL,* no. 6, pp. 1009-1043, 1021-1022.
[21] Study group on a European civil Code, *Principles, Definitions and Model Rules of European Private Law Draft Common Frame of Reference (DCFR)*, 1316; Kadner Graziano, T 2008, "Loss of a Chance in European Private Law. 'All or Nothing' or Partial Liability in Cases of Uncertain Causation", *ERPL,* no. 6, pp. 1009-1043, 1033.

more concrete approach of calculating damages, thus bringing the legal reality closer to the damage a patient actually suffered.

10. Embedding this theory in the broader field of tort law, however, caused some academic discussions. The question rises what compensating for the loss of a chance actually means.

A first approach is that the loss of a chance doctrine is an adjustment to the demand of a causal link. Compensating lost chances is, from that point of view, lowering the burden of proof[22] because claimants can already claim compensation when it is not certain[23] or not even probable[24] that the final damage is caused by the negligent behavior. This mindset is often used to criticize the loss of a chance doctrine or not to acknowlegde it in court, stating that the burden of proof is an instrument to establish a fair balance between both parties and by lowering this burden it would be too easy to claim compensation.[25]

The second approach sees the loss of a chance as a distinct kind of damage. It holds that the loss of a chance doctrine does not impact the causal link in the classical tort law theory, but that it protects a new specific asset, that in itself is worthy of compensation when negligently lost.[26] Reasoning that way, hypothetical positive ways in which the future might have unfolded are worth money and are compensable if they were lost because of the negligent behavior of a third party. This theory, then, is often used to endorse a claim based on the loss of a chance doctrine, denying that it is a simple trick to lower the standard of proof of the causal link.

Both theories lead to the total rejection or the complete acceptance of the loss of a chance doctrine in a certain country or substate, but it is often admitted that both legal concepts (damage and the causal link) are not always easily distinguished.[27]

In what follows, we will shortly assess the role that the loss of a chance doctrine plays in (A.) Belgium, (B.) Australia and (C.) the United States of America.

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[22] Vandenbussche, W 2017, *Bewijs en onrechtmatige daad*, Intersentia, Antwerpen, 588-589.

[23] In Belgium the standard of proof is high compared to the common law systems. Art. 8.5 BW states that, except where the law states otherwise, allegations should be proved with a reasonable degree of certainty.

[24] In the common law countries, such as the United States of America and Australia, the standard of proof in civil cases is known as *the balance of probabilities* or the *but for-test*, requiring that it is more probable than not that the negligent behavior caused certain damage. This requires a certainty of more than 50 %, which is considerably lower than the Civil law tradition demands. See: Nuninga, WT, Verheij, DJ, Kahn, C, Auvray, F & Borucki, C 2020, "Chances as Legally Protected Assets", *ERPL,* no. 2, pp. 375-405, 378-379.

[25] See for Australia: Tabet v Gett [2010] HCA 12, recital 152.

[26] Nuninga, WT, Verheij, DJ, Kahn, C, Auvray, F & Borucki, C 2020, "Chances as Legally Protected Assets", *ERPL,* no. 2, pp. 375-406; Fischer, DA 2001, "Tort Recovery for Loss of a Chance", *Wake Forest Law Review,* vol. 36, no. 3, 605-655, 607.

[27] The DCFR states that both concepts 'partially intersect': see art. VI.–4:101 DCFR in Study group on a European Civil Code, *Principles, Definitions and Model Rules of European Private Law Draft Common Frame of Reference (DCFR)*, 1413; Cornelis, L 1999, "Het goedbewaarde geheim van schade en causaal verband" in *Liber Amicorum Jozef Van den Heuvel*, Kluwer, Antwerpen, pp. 403-412.

A. Belgium and loss of a chance – Acceptance in a wide variety of domains

11. Although not (yet)[28] specifically mentioned in its Civil Code, Belgium accepts the loss of a chance doctrine in a wide variety of domains.[29] It was the Court of Cassation, the highest Belgian court, that paved the road for the doctrine from the 1930s onwards[30], in imitation of its French counterpart. Claimants are thus eligible for compensation when they meet four conditions: (i) a real chance of gaining an advantage or avoiding a disadvantage must be (ii) definitely lost (iii) caused by (iv) a negligent act of a third party.[31] In medical cases the theory was expressly accepted in the pioneer judgement of 1984[32] and, after a period of confusion[33], was reconfirmed in 2008.[34]

B. Australia and loss of a chance – Only accepted in financial cases, not in medical claims

The Australian High Court decided not to accept the loss of a chance doctrine in medical cases, making reference to the above described argument about lowering the burden of proof.[35] In the 2010 Judgement of *Tabet v. Gett*, a six year old girl named Reema Tabet was not entitled to compensation although the paediatrician, Dr. Gett, did not order a CT-scan in time, losing critical time and resulting in irreversible brain damage. Although it was clear that Reema Tabet lost chances of recovery, Chief Justice Kiefel J. stated that *the requirement of causation is not overcome by redefining the mere possibility, that such damage as did occur might not eventuate, as a chance and then saying that it is lost when the damage actually occurs. Such a claim could only succeed if the standard of proof were lowered, which would*

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[28] Art. 6.23 Legislative Proposal containing book 6 "Extra-contractual liability" of the Civil Code, *Parl.St. Kamer* doc 55 3213/001, 107-112; Grotius-Pothier onderzoeksgroep 2020, "Een rechtsvergelijkende analyse van de Belgische hervorming van het buitencontractuele aansprakelijkheidsrecht: enkele suggesties voor wetgever en rechter", *TBBR,* no. 3, pp. 122-159, 146-149.

[29] Weyts, B 2014, "Compensation for the Loss of Also Small Chances in (Belgian and French) Tort Law", *ERPL*, no. 6, pp. 1065-1068; Nuninga, WT, Verheij, DJ, Kahn, C, Auvray, F & Borucki, C 2020, "Chances as Legally Protected Assets", *ERPL,* no. 2, pp. 375-405, 381-382; Ronse, J & De Wilde, L 1984, *Schade en schadeloosstelling*, Story-Scientia, Gent, pp. 83-93.

[30] Cass. 19 oktober 1937, *Pas.* 1937, I., 298; Cass. 26 september 1949, *Arr. Cass.* 1950, 19.

[31] Weyts, B 2014, "Compensation for the Loss of Also Small Chances in (Belgian and French) Tort Law", *ERPL*, no. 6, pp. 1065-1068; Vansweevelt, T & Weyts, B 2009, *Handboek buitencontractueel aansprakelijkheidsrecht,* Intersentia, Antwerpen, pp. 641-649; Goldman, S & Jafferali, R 2019, "La perte d'une chance à la croisée des chemins - Évolutions et applications jurisprudentielles", *TBBR*, no. 4, pp. 191-211, 201-203.

[32] Cass. 19 January 1984, *Arr. Cass.* 1983-1984, 585, *RGAR* 1986, nr. 11.084; Callens, S 2003, "Medical Civil Liability in Belgium. Four Selected Cases", *European Journal of Health Law*, Vol. 10, no. 2, 115-133, DOI: 10.1163/092902703769681588; Vansweevelt, T 2022, "De aansprakelijkheid van de arts en het ziekenhuis voor eigen gedrag" in Vansweevelt T & Dewallens F (eds.), *Handboek gezondheidsrecht volume II,* Intersentia, Antwerpen, pp. 1325-1326.

[33] Cass. 1 april 2004, *Arr.Cass* 2004, 549;Vansweevelt, T & Weyts, B 2009, *Handboek buitencontractueel aansprakelijkheidsrecht,* Intersentia, Antwerpen, pp. 644-647.

[34] Cass. 5 juni 2008, *Arr.Cass.* 2008, 1462; Lierman, S 2008, "Het Hof van Cassatie, het paard 'Prizrak' en het verlies van genezings- en overlevingskansen: een duurzame liaison à trois", *RW,* Vol. 72, no. 19, pp. 795-799; Bocken, H 2009, "Verlies van een kans. Het cassatiearrest van 5 juni 2008. Vervolg en (voorlopig?) slot", *NJW,* no. 194, pp. 2-12; Weyts, B 2014, "Compensation for the Loss of Also Small Chances in (Belgian and French) Tort Law", *ERPL*, no. 6, pp. 1065-1068, 1066-1077; Boone, I & Ronsijn, K 2015, "Vergoeding voor het verlies van een kans na het arrest Prizrak", *VAV*, Vol. 2015, afl. 4, pp. 4-22, 4-10.

[35] Tabet v Gett [2010] HCA 12, recital 152.

require a fundamental change to the law of negligence.[36] Considering *inter alia* a risk of shifting the balance in favor of claimants and afraid of encouraging more defensive medicine, the High Court rejected the loss of a chance doctrine in those medical cases.[37]

12. Using an, in my opinion quite shaky, intrinsic value argument, the High Court of Australia does accept the loss of a chance doctrine in financial cases, where commercial opportunities were lost.[38] In that field, it follows the case law of the United Kingdom.[39]

C. The United States and loss of a chance – The divided States? Heterogenous situation

13. The United States of America are divided on the question whether to allow claims based on the loss of a chance doctrine. According to a study carried out by REMINGTON SLAMA, 27 states have so far accepted the loss of a chance doctrine, twelve other States rejected the theory and the thirteen other States do not have a clear stance on the subject yet.[40] The famous *Matsuyama v. Birnbaum* case stated in that regard that there is "*a substantial and growing majority of the States that have considered the question, have indorsed the loss of chance doctrine, in one form or another, in medical malpractice actions."*[41] It is mostly in medical cases that the doctrine was accepted. To be eligible for compensation in the U.S., four similar conditions should be met. Claimants have to prove that (i) a duty of care (ii) was breached and (iii) caused (iv) the loss of a more favorable medical outcome.[42] Both the above discussed theories are used in practice, where a minority sees it as a way of relaxing or lowering the standard of proof and a majority of the accepting states see the lost chance as a form of a distinct compensable injury.[43]

IV. Impact of the standard of proof

14. An element that should be taken into account in the analysis of the acceptance rate of the loss of a chance doctrine, is the general standard of proof that should be met in civil cases.[44] Both seen as a distinct kind of damage or as a technique of lowering the standard of proof, the loss of a chance doctrine is intrinsically a subsidiary mechanism. After all, claimants will only use the loss of a chance doctrine,

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[36] Tabet v Gett [2010] HCA 12, recital 152.
[37] Tabet v Gett [2010] HCA 12, recital 59 and 102; Allan, S & Blake, M 2018, *Australian Health Law*, Lexisnexis, Chatswood, pp. 278-279; Cockburn, T & Butler, D 2018, "Negligence" in White, B, Mcdonald, F & Willmott, L, *Health Law in Australia,* Thomson Reuters, Sydney, pp. 362-364.
[38] Norton, J 2019, "Treating chance consistently: Recasting the approach to causation and damage in negligence", *Melbourne University Law Review* Vol. 42, no. 3, pp. 954–992, DOI: 10.3316/ielapa.968566183323419.
[39] Court of Appeal 12 May 1995, *Allied Maples Group Ltd v Simmons & Simmons*, WLR 1995, I, 1602; House of Lords 2 juli 1987, *Hotson v East Berkshire Area Health Autority,* AC 1987, 750.
[40] Slama, R 2020, "So You're Telling Me There's a Chance: An Examination of the Loss of Chance Doctrine Under Nebraska Law", *Neb. L. Rev.*, vol. 99, no. 4, pp. 1014-1039, 1016.
[41] Matsuyama v Birnbaum, 452 Mass. 1, 7 (2008);
[42] Miller, RD 2006, *Problems in Health Care Law*, Jones and Bartlett publishers, Sudbury, 588.
[43] Slama, R 2020, "So You're Telling Me There's a Chance: An Examination of the s a Chance: An Examination of the Loss of Chance Doctrine Under Nebraska Law", *Neb. L. Rev.*, vol. 99, no. 4, pp. 1014-1039, 1022-1026.
[44] See footnote 23-24.

when they cannot prove a causal link between the negligence and the final damage itself. If they could prove that causal link, they would economically be better off, because that would cover 100% of the final damage caused, a feature that the loss of a chance doctrine exactly misses. Therefore, it is often used as a subsidiary claim, after arguing that the negligent act itself caused the final damage (e.g. the death of the patient).

15. The standard of proof could be translated as the level of certainty a judge must have in order to classify a claim as being true.[45] Since an absolute, that means 100%, certainty can almost never be reached, the general level of proof is lowered to another level. How certain a judge must be, depends on the balance that is struck between claimants and defendants and differs between countries.

16. Belgium, for example, requires a reasonable degree of certainty in general civil cases, except in cases where the law provides otherwise.[46] Parliamentary papers stipulate that this reasonable degree signifies a conviction beyond all reasonable doubt.[47] The Belgian standard work of VANDENBUSSCHE gives numerical substance to that notion by requiring a 90% certainty in general civil cases, emulating Swiss law.[48] If a judge, thus, is convinced that nine out of ten times the claim would be correct, it should be regarded as legally true. Below that threshold, say for instance that a judge thinks that eight out of ten times the same result would be reached, the claim should be dismissed. This means there is a small interval of 10%, where the societal reality jumps towards the legal reality. The judge, being 90% sure of a certain event, will decide on a specific matter and assign in his judgement, with 100%, that e.g. the negligence caused the damage. In some cases, however, the standard of proof is lowered by the law itself. Art. 8.6 Belgian Civil Code states that, without prejudice to the obligation of all parties to cooperate in the taking of evidence, a party who bears the burden of proving a negative fact may be satisfied with proving the probability of that fact. The same applies to positive facts for which, because of their very nature, it is not possible or reasonable to require certain (understood as 90%, see above) proof. This means that all negative facts, being things that did not happen, or positive facts, that are very difficult to prove, may be proven with probability. The parliamentary *travaux preparatoires* quantified that specific wording with a 75% certainty.[49] Probability in the Belgian law of proof clearly differs from the wording probability in common law systems.

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[45] Vandenbussche, W 2019, "Dealing with Evidentiary Deficiency in Tort Law", *International Journal of Procedural Law*, vol. 9, no. 1, pp. 50-74, 58-59.
[46] Art. 8.5 Belgian Civil Code.
[47] Wetsontwerp van 31 oktober 2018 houdende invoeging van boek 8 “bewijs” in het nieuw Burgerlijk Wetboek, *Parl.St. Kamer* 2018-19, doc. 54-3349/001, 16.
[48] Vandenbussche, W 2017, *Bewijs en onrechtmatige daad*, Intersentia, Antwerpen, pp. 618-620. See also: Vandenbussche, W 2019 "Dealing with Evidentiary Deficiency in Tort Law" *International Journal of Procedural Law*, vol. 9, no. 1, 2019, pp. 50-74.
[49] Wetsontwerp van 31 oktober 2018 houdende invoeging van boek 8 “bewijs” in het nieuw Burgerlijk Wetboek, *Parl.St. Kamer* 2018-19, doc. 54-3349/001, 17.

17. The United States and Australia on the other hand use another standard of proof, for instance to establish a causal link between negligent behavior and certain damage. There the balance of probabilities is the guiding principle.[50] The standard of proof, consequently, lies at 'more than 50%', which is sensitively lower than the civil law systems.[51] This makes it considerably easier to prove something as a claimant in civil cases. As soon as a judge thinks that it is more probable than not that a certain event caused a specific consequence, the claim is granted and/or compensation should be paid. Returning to our previous thought about the interval, the common law gap in that regard is 49,999%. Viewed in perspective, a judge who is convinced that with a certainty of 49% the negligence was not the cause of the damage, should however state in a judgement that the negligence was in fact the cause of the damage, thus jumping from a 51% personal belief about societal reality towards a 100% legal certainty about the cause of the damage.

18. The logical consequence of a lower standard of proof is that it narrows down the scope of the loss of a chance doctrine. That is due to its subsidiary nature, since it is economically more interesting to claim 100% of the damages than only a fraction of the amount. A comparative example makes that statement crystal clear. If a doctor breaches his duty of care and thus acts negligently upon a patient, that patient might encounter physical damage. However, medicine is not an exact science and the damage might also be caused by a natural side effect of a particular surgery. Well, if that patient claims damages under the American or Australian tort law, he can more easily establish the causal link between the negligent act of the physician and the final damage than it would be under Belgian law. Say that there is 70% certainty that the negligent act caused the damage, then under the 'but for-test' a causal link is established and 100% of the damage will be compensated by the liable party. Under Belgian law, however, neither the general standard of proof nor the exception in art. 8.6 Civil Code will be met, resulting in no compensation at all. Consequently, the loss of a chance doctrine comes into play, resulting in a compensation that is a fragment of the total amount of damage, being the chance that is lost to gain a more favorable outcome.

19. It can be said that the different standards of proof in Common Law and Civil Law countries also correspond with the two advantages the loss of a chance doctrine entails (see *supra,* nr. 9). Nevertheless, as above admitted, both advantages are often intertwined. In Common Law systems, where the standard of proof is rather low, defendants might be confronted with the idea that a 51% certainty about a causal link results in an obligation to pay 100% of the damages. This is a fertile ground for feelings of unfairness and corresponds with the need and demands for more precise and accurate calculation of the

[50] Steel, S 2017, *Proof of causation in Tort Law*, Cambridge University Press, Cambridge, pp. 50-51; Infantio, M 2021, "Causation theories and causation rules" in Bussani, M & Sebok, AJ, *Comparative Tort Law. Global Perspectives*, Edward Elgar Publishing, Cheltenham, pp. 264-283, 279.

[51] Clermont, KM & Sherwin, E 2002, "A Comparative View of Standards of Proof" *American Journal of Comparative Law,* vol. 50, no. 2, pp. 243-276; Schweizer, M 2016, "The civil standard of proof—what is it, actually?", *The International Journal of Evidence & Proof*, Vol. 20, no. 3, pp. 218-220.

damages. Doing so by using the loss of a chance doctrine, the legal reality – as established in the judgement or verdict – is brought closer to the societal reality of the patient that suffered harm. In Civil Law countries, with rather high standards of proof, the disadvantage of an all-or-nothing approach becomes more clear. Quantitatively speaking, a claimant might be able to prove his allegation with 89% certainty, his claim under the Belgian standard of proof will still be rejected, thus ending up without compensation within a binary all or nothing-approach. After all, in that example a claimant can prove to a very high degree that his allegations are correct, but receives no compensation at all.

V. Loss of a chance due to medical backlogs caused by the COVID-19 pandemic

20. In what follows the loss of a chance doctrine will be applied to the specific situation of cancer patients who saw their medical intervention postponed due to the medical backlogs caused by the COVID-19 pandemic. It will become clear in this non-extensive first approach that claimants have to overcome quite numerous and difficult hurdles to see their claims succeed in court. First of all, the research will dive into (A.) the duty of care of physicians in both Belgium and the United States. Since the Australian legal system rejects the loss of a chance doctrine in medical cases, this legal system remains further unmentioned. In a second step, we will assess whether there was a breach of the duty of care (B.) taking into account the precautionary principle, the pandemic as force majeure, the contagiousness of the virus, the existence and effectiveness of vaccines, the mortality rates of COVID-19 and cancer, etc. In a third section (C.), the idea of the lost chance will be shortly explored, taking into account the medical studies as discussed above. The last part (D.) will examine the causal link, discussing contributory negligence of patients, the nature of the medical intervention that was postponed and linking back to the standard of proof.

21. Considering the enumeration above, regarding all the variables as to whether cancer patients are entitled to compensation via the loss of a chance doctrine, it is not the aim of this paper to provide conclusive answers on the success rate of such a claim in a specific situation. This article aims to list all relevant variables and how they influence the success rate of such a claim in a specific situation.

22. This paper only laterally discusses the role of the public authorities in compensation claims via the loss of a chance doctrine. Since federal and sub-state governments issued many binding rules or non-binding guidelines regarding the percentage of hospital beds that should be kept free for COVID-19 patients, hospitals and individual physicians might not be blamed for certain decisions.[52] It is, however, a meticulous work to elaborate on all legal documents coming from both the executive government and parliament both on federal and sub-state level throughout the whole pandemic. Nevertheless, in practice those instructions from the public authorities should be taken into account in assessing potential breaches

[52] For a Belgian overview: Buelens, W 2022, "Aansprakelijkheid van ziekenhuizen in tijden van COVID-19", *RW*, vol. 86, afl. 19, pp. 722-744.

of the duty of care by healthcare practitioners and in the overall assessment of the feasibility of such compensation claims.

A. Existence of a duty of care

23. Physicians owe their patients a duty of care.[53] This duty can be embedded in the four principles approach, requiring respect for autonomy, beneficence, non-maleficence and justice.[54] Those same principles are enshrined in the Universal Declaration on Bioethics and Human Rights.[55] Nevertheless, they do not entail an absolute right to receive care. Except for life-threatening urgent care[56], a healthcare professional can choose to conclude a healthcare treatment agreement or not.[57] Once, they have entered that agreement, the doctor owes his patient a duty of care within the scope of that agreement.[58]

B. Breach of the duty of care

24. Several elements should be taken into account to assess whether there has been a breach of the duty of care. Since the pandemic within countries changed on a daily basis, a meticulously concrete assessment should be made of the specific situation of a potential claimant.

1. General principles

25. The duty of care is broken when a physician does not administer the degree of reasonable care that the patient's condition requires, judged from the viewpoint of a reasonable, prudent healthcare professional acting under similar circumstances and in a similar practice.[59] This course of action is called the standard of care and is formed by predominant practice and professional consensus on how to act.[60]

26. It may not be disregarded that healthcare professionals were facing a very contagious virus causing a pandemic, altering the duty of care. SIMONDS and SOKOL state that doctors do not only have

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[53] Thompson, IE 1987, "Fundamental ethical principles in health care", *Br Med. J (Clin Res Ed),* vol. 295, no. 6611, pp. 1461–1465, DOI: 10.1136/bmj.295.6611.1461.

[54] Beauchamp, TL 2007, "The 'Four Principles' Approach to Health Care Ethics", in Ashcroft, R, Dawson, A, Draper, H & Mcmillan, J, *Principles of Health Care Ethics,* John Wiley & Sons, Chichester, pp. 3-10; Simonds, AK & Sokol, DK 2009, "Lives on the line? Ethics and practicalities of duty of care in pandemics and disasters", *Eur. Resp. J.*, vol. 34, pp. 303-309.

[55] See especially art. 4, 5 and 10 of the Universal Declaration on Bioethics and Human Rights; Scher, S & Kozlowksa, K 2018, *Rethinking health care ethics*, Springer, Singapore, pp. 47.

[56] Art. 422*bis* Belgian Criminal Code; MILLER, R.D. 2006, *Problems in Health Care Law*, Jones and Bartlett publishers, Sudbury, 287-292.

[57] Principle VI. of the Principles of Medical Ethics of the American Medical Association states: A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical care. (own emphasis); MILLER, R.D. 2006, *Problems in Health Care Law*, Jones and Bartlett publishers, Sudbury, 280-287.

[58] Hall, MA, Bobinski, MA & Orentlicher, D 2007, *Health care law and Ethics*, Aspen Publishers, New York, pp. 159-163.

[59] MILLER, R.D. 2006, *Problems in Health Care Law*, Jones and Bartlett publishers, Sudbury, 591-592; HARRIS, CE 2007 "Negligence" in S. Sanbar (ed.) *The medical malpractice survival handbook*, Elsevier, Philadelphia, 168.

[60] Hall, MA, Bobinski, MA & Orentlicher, D 2007, *Health care law and Ethics*, Aspen Publishers, New York, pp. 317.

duties towards patients, but also a duty to protect oneself from undue risk, a duty to one's family, to colleagues whose workload will elevate in his absence and a duty to the broader society.[61] It is therefore crucial to balance the direct effects to possible care for patients in the future[62] and SOKOL pleads in that regard for tolerant patients, that acknowledge doctors multiple roles in society, their fears and concerns to face a severe risk themselves.[63] At the same time, CLARK stipulates the crucial role of healthcare professionals, as they are the only group of experts who can respond to this pandemic. Based on a free choice of the individual to enter the medical professional field and a more general social contract between patients and doctors, CLARK holds that there are imperative reasons that healthcare professionals should help even during infectious outbreaks.[64]

2. *Force majeure and frustration of contract*

27. Given the scarcity of resources and medical personnel[65], it is also is an untenable position that every patient should be helped immediately.[66] The pandemic can be seen as a form of force majeure, also known in the common law system as the doctrine of frustration.[67] Therefore it is necessary that the event is unforeseeable, unavoidable, uncontrollable, adversely affecting the fulfillment of contractual obligations and not substantially attributable to one of the parties.[68] This doctrine certainly seems to apply to the first wave of COVID-19, that caught the world by surprise. Question rises whether the same applies to the next waves, since the pandemic, then, is not unforeseeable anymore.

Above all, it is the difficult situation hospitals faced that needs to be acknowledged. It is impossible for healthcare systems to develop more capacity in a few months. After all, training professional healthcare providers takes years, and the demands for medical equipment were globally exceeding the supply.

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[61] Simonds, AK & Sokol, DK 2009, "Lives on the line? Ethics and practicalities of duty of care in pandemics and disasters", *Eur. Resp. J.*, vol. 34, pp. 303-309, 304.
[62] American Medical Association n.d., *Physicians Responsibilities in Disaster Response & Preparedness*, AMA Code of Medica Ethics, viewed 24 February 2023; Ruderman, C, Tracy, CS, Bensimon, CM, Bernstein, M, Hawryluck, L, Shaul, RZ & Upshur, REG 2006, "On pandemics and the duty to care: whose duty? Who cares?, *BMC Medical Ethics*, 2006, vol. 7, nr. 5, DOI: 10.1186/1472-6939-7-5.
[63] Sokol, DK 2006, "Virulent Epidemics and Scope of Healthcare Workers' Duty of Care, *Emerging Infectious Diseases*, vol. 12, no. 8, pp. 1238-1241.
[64] Clark, CC 2005, "In Harm's Way: AMA Physicians and the Duty to Treat", *Journal of Medicine and Philosophy*, Vol. 30, no. 1, pp. 65-87, DOI: 10.1080/03605310590907066.
[65] Vansweevelt, T 2022, "De aansprakelijkheid van de arts en het ziekenhuis voor eigen gedrag" in Vansweevelt, T & Dewallens, F (eds.), *Handboek gezondheidsrecht volume I*, Intersentia, Antwerpen, 1235-1238.
[66] Dolgin, JL & Shepherd, LL 2009, *Bioethics and the law,* Aspen Publishers, New York, pp. 551-555: See also the accurate example, given in 2009, about a shortage of ventilators during a pandemic.
[67] Berger, K., & Behn, D. 2019-2020, "Force Majeure and Hardship in the Age of Corona: Historical and Comparative Study", *McGill Journal of Dispute Resolution*, vol. 6, no. 4, pp. 79-130.
[68] Hanna, TP, Evans, GA & Booth, CA 2020, "Cancer, COVID-19 and the precautionary principle: prioritizing treatment during a global pandemic", *Nature Reviews Clinical Oncology*, Vol. 17, no. 5, pp. 268–270, DOI: 10.1038/s41571-020-0362-6; Hansen, S 2020, "Does the COVID-19 outbreak Constitute a Force Majeure Event? A Pandemic Impact on Construction Contracts", *Journal of Civil Engineering Forum*, Vol. 6, no. 2, pp. 201-214 DOI: 10.22146/jcef.54997.

3. *Precautionary principle*

28. Another element that should be regarded in the assessment of a breach of the duty of care is the precautionary principle, stating that when there are threats of serious damage, prevention must prevail over scientific uncertainty.[69] In the early stages of the pandemic, the effects of COVID-19 infections were scientifically unclear. The few signals were that hospitals and emergency departments became completely overwhelmed, all over the world. At those moments, it is in line with the precautionary principle to postpone other, less urgent treatments, and focus in a preventive manner on the threat of serious damage. In this way, the medical world integrates a 'better safe, than sorry'-approach in their triaging of patients.[70]

4. *Features linked to COVID-19*

29. Interdependent with the above mentioned factors of force majeure and the precautionary principle, are the features that are intrinsically linked to the COVID-19 virus. First of all, the virus has always been contagious. According to the variant that was dominant in a certain area at a certain time, the contagiousness of the disease rose or fell down. Linking back to cancer patients, no such danger exists, since cancer is not caused by a contagious virus. Secondly, the gravity of the pandemic alters in the light of the existence of effective vaccines. In December 2020 the first vaccines were administered outside a clinical trial setting, both in the USA and Belgium. After that it took over a year to vaccinate the majority of a population, with follow-up 'booster'-vaccines. With those vaccines, the mortality rates[71] of COVID-19 patients dropped and approximately 14.4 million lives were saved from December 2020 until December 2021.[72]

5. *Role of governments*

30. As referred to above[73], a fundamental element in the assessment of the conduct of healthcare professionals are the governmental guidelines and binding rules on triaging of patients. If hospitals were obliged or recommended to reserve hospital beds for COVID-19 patients, it cannot be regarded as negligent behavior if healthcare professionals act in that way. After all, a reasonable and prudent healthcare professional complies with the rules issued by the government.

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[69] Goldstein, BD 2001, "The Precautionary Principle Also Applies to Public Health Actions", *Am J Public Health.* Vol. 91, no. 9, pp. 1358-1361, DOI: 10.2105/AJPH.91.9.1358.

[70] Meßersmidt, K 2020, "COVID-19 legislation in the light of the precautionary principle", *The Theory and Practice of Legislation*, vol. 8, no. 3, pp. 267-292, DOI: 10.1080/20508840.2020.1783627; Carducci, A, Federigi, I & Verani, M. 2020, "Covid-19 Airborne Transmission and Its Prevention: Waiting for Evidence or Applying the Precautionary Principle?", *Atmosphere*, Vol.11, nr. 7, pp. 710, DOI: 10.3390/atmos11070710.

[71] Ioannidis, JPA 2021, "Infection fatality rate of COVID-19 inferred from seroprevalence data, *Bull World Health Organ*, Vol. 99, no. 19, pp. 19-33F.

[72] Watson, OJ, Barnsley, G, Toor, J, Hogan, AB, Winskill, P & Ghani, AC 2022, "Global impact of the first year of COVID-19 vaccination: a mathematical modelling study", *The Lancet Infectious Diseases*, Vol. 22, no. 9, pp. 1293-1302.

[73] See *supra* recital 22.

6. *Intermediate conclusion*

31. It may be very clear that, to establish a breach of the duty of care, a claimant must have concrete data, that at the specific time that its cancer treatment was postponed, this delay was not what other reasonable prudent healthcare professionals would have done, regarding all circumstances and practices. Taking into account the scarcity of resources in healthcare, the pandemic as force majeure or frustration of the healthcare agreement, the precautionary principle requiring doctors to be 'better safe than sorry', the mortality rate of the virus stemming from the contagiousness of COVID-19 and vaccination of the population, it renders potential claims of cancer patients *quasi* hypothetical.

C. Damage: a lost chance of survival or recovery

32. Proving a breach of the duty of care is not the only hurdle claimants are facing. Cancer patients will have to prove that they suffered actual damage, by losing the chance of survival – claims lodged by the heirs of the deceased patient – or by losing chances of recovery. As discussed above (*supra* nr. 6), numerous studies have indicated that in a majority of cancer treatments, postponement leads to deterioration. However, it is necessary to establish this on an individual basis, requiring an expert to calculate which survival/recovery rate a patient would have had if he was treated immediately, comparing that to the survival/recovery rate the patient has/had at that moment the delayed treatment began. If for instance a cancer patient has a 80% survival rate of a stage I lung cancer, but as a result of postponement of treatment, he only has a 35% survival change, the patient may claim damages for the lost chance, being 80% - 35% = 45%.

D. Causal link

33. The last essential condition to claim damages is to establish the causal link between the breach of the duty of care and the lost chance. Belgium, adhering to the equivalence theory, requires the breach of the duty of care to be a *condicio sine qua non*.[74] Only if the concrete damage would have been exactly the same without the breach of the duty of care, the causal link is dismissed. The American causality system requires a two-step reasoning.[75] In a first step, a 'cause in fact' is established, using the 'but for'-test. In a second step, a judge must assess whether the cause in fact also forms a 'legal' or 'proximate cause', thus linking the damage sufficiently close to the fault.[76] A cause is proximate or legal if the harm suffered by the patient was reasonably foreseeable given the negligent actions of the healthcare

[74] Callens, S 2003, "Medical Civil Liability in Belgium. Four Selected Cases", *European Journal of Health Law*, vol. 10, no. 2, pp. 115-133. DOI: 10.1163/092902703769681588; Weyts, B. 2014, "Compensation for the Loss of Also Small Chances in (Belgian and French) Tort Law", *ERPL*, no.6, pp. 1065-1068; Samoy, I., Borucki, C & Keirse, A 2019, "The role of Belgian and Dutch tort law in the legal battle against damages as a result of smoking behaviour, *Utrecht Law Review,* pp. 78-98, DOI: 10.36633/ulr.542.

[75] Swischer, PN 2007, "Causation Requirements in Tort and Insurance Law Practice: Demystifying Some Legal Causation Riddles",*Tort Trial & Ins. Prac. L.J.*, vol. 43, no. 1, pp. 1-34.

[76] Weyts, B. 2003, *Fout van het slachtoffer in het buitencontractueel aansprakelijkheidsrecht*, Intersentia, Mortsel, 268-269.

professional.[77] This condition of proximity makes it more difficult to establish a causal link in the court of the United States of America in comparison with the more lenient Belgian causality system.

34. First of all, the nature of the medical intervention is of paramount importance to establish a causal link between the breach of a duty of care and the lost chance. It is self-evident that the causal link between the absence of preventive screening of breast cancer and the fact that the claimant developed breast cancer and lost chances of survival is not as easily proven as the postponement of a concretely planned double mastectomy and the worsening health situation of a patient that stems from that. The more concrete a medical intervention was planned, the easier the causal link between the postponement thereof and a deterioration of health can be established.

35. That finding is intertwined with the role of the patient itself and raises questions about contributory and comparative negligence.[78] Would the patient have undergone chemotherapy if the doctors had advised so? Would the patient go to the hospital during a pandemic, risking infection with COVID-19? There is no certainty about the conduct of the patient regarding its disease. If healthcare providers can substantiate the fact that the patient was not willing to undergo surgery or chemotherapy, than the percentage of damages might be reduced.[79]

36. As a last element, reference should be made to what has been discussed under part IV. The standard of proof will in practice play a huge role in whether there is still room for claims based on the loss of a chance doctrine (see *supra* nr. 18). If a causal link is already established by the preponderance of the evidence, recourse to the loss of a chance doctrine is less needed than in a civil law system such as Belgium, requiring a reasonable degree of certainty.

VI. Conclusion

37. This paper discussed the role of the forgotten cancer patients in the pandemic. It departed from the bleak picture that the pandemic caused intense medical backlogs, resulting in long waiting lists and annulled or postponed medical interventions all over the world. We discovered that cancer patients in the majority of cases lost chances of survival or recovery, meaning that during the extra time they did not receive care, their health situation deteriorated. Question rises whether those patients could claim damages under the loss of a chance doctrine, since this doctrine steps away from the traditional 'all or nothing-approach'. Focusing on Belgium, Australia and the United States, this paper made clear that only in Belgium and a majority of the United States of America, the loss of a chance doctrine is accepted in medical cases. After that we discussed the link of the loss of a chance doctrine with the standard of

[77] Scordato, MR 2022, "Three kinds of fault: Understanding the Purpose and Function of Causation in Tort Law", *University of Miami Law Review,* vol.77, no. 1, pp. 149-212, 159.
[78] Sanbar, S 2007, "Medical Malpractice Defenses" in S. Sanbar (ed.) *The medical malpractice survival handbook*, Elsevier, Philadelphia, 265.
[79] Miller, RD 2006, *Problems in Health Care Law*, Jones and Bartlett publishers, Sudbury, 619-621.

proof, that differs between common law and civil law, thus rendering it a different scope. In a final part, we applied the conditions that govern the loss of a chance doctrine in both Belgium and the United States on the specific case of those forgotten cancer patients in the pandemic. In a non-extensive approach we discovered several difficult hurdles that claimants have to overcome. It is far from evident to prove a breach of the duty of care. The pandemic as force majeure or frustration of contract, the precautionary principle, the contagiousness and mortality rate of the virus, etc. are all elements that play in favor of healthcare professionals. Next to that, the damage must be certain, which will be the task of medical expertise based on the knowledge set forth in the above studies. Last but not least, a causal link between the negligent act and the damage must be established, which is dependent on the nature of the medical intervention that was annulled or postponed and might be influenced by the potential contributory or comparative negligence of the patients themselves.

38. We conclude that cancer patients face a very difficult task when they want to be compensated for the lost chances of survival or recovery. Under Australian law, medical claims based on the loss of a chance are not admitted. Under Belgian law and in the majority of the United States a claim is theoretically possible, but is in practice far from evident. A meticulously concrete and individual assessment of the cancer patient's situation will once more be the guiding principle.