Why we must stay in the European Atomic Energy Community
Leaving would threaten our supply of essential medical isotopes, putting patients at risk

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Few Londoners could have missed the headline on the front of the Evening Standard on 10 July 2017: “Cancer patients in Brexit scare.” The headline arose from a warning by the Royal College of Radiologists that the UK’s proposed withdrawal from Euratom (the European Atomic Energy Community) threatened the supply of some widely used medical radioisotopes. Government ministers dismissed it, describing it as scaremongering.

The Euratom treaty was signed by the original members of the European Economic Community (EEC) in 1957, with the UK acceding to it when it joined the EEC in 1973. Euratom, the EEC, and the European Coal and Steel Community formed what came to be referred to as the European Communities. All three were brought together in 1992, in the Maastricht treaty, when the European Union was created. Euratom retained a distinct legal identity, reflecting sensitivities about nuclear power at the time, but it is still subject to the European Court of Justice. This is where the problem lies.

Euratom barely featured in the Brexit referendum campaign. An 86 page House of Lords report on science and Brexit, published in April 2016, mentioned it only in passing.1 A similar report from the House of Commons Science and Technology Committee, in November 2016, did not mention it at all.2 Subsequently, Dominic Cummings, the former campaign director of Vote Leave (the official campaign for Brexit), described politicians seeking to withdraw from Euratom as “morons.”3

Since the referendum the prime minister, Theresa May, has offered her own interpretation of what people were voting for, such as leaving the single market and customs union, even though neither appeared on the ballot paper. But including withdrawal from Euratom seems somewhat of a stretch, given it appeared only as a footnote to the explanatory notes accompanying the parliamentary bill to invoke Article 50, signifying the UK’s intention to leave the EU. Withdrawal was, however, inevitable, once May had rejected any role for the European Court of Justice in the UK’s future relations with the EU.4

Medical implications
But does this matter for health? The UK government, after an apparently superficial reading of the Euratom treaty, argues that it covers only fissile materials such as uranium.3 Certainly, this is its main focus. But one of the most widely used medical isotopes, technetium 99m (Tc-99m), is produced in nuclear reactors. Consequently, many of the extensive and detailed regulations that stem from the treaty cover medical isotopes, as set out in annex 1 of Article 4 of the treaty.

Tc-99m produces gamma rays with comparable energy to x rays, and it has a very short half life of six hours. This means that it must be generated on site, from its parent isotope, molybdenum 99. However, this too has a short half life—66 hours—and is produced in only a few specialised reactors throughout the world. None of them are in the UK, which obtains material processed in the Netherlands, Belgium, and France.

This is where Euratom comes in. The need for a highly efficient supply system became clear in 2008-2010 when the Dutch reactor experienced several shutdowns because of safety concerns.6 In response, Euratom, the European Commission, European Association of Nuclear Medicine, and industry stakeholders established the European Observatory on the Supply of Medical Radioisotopes to ensure supplies of these substances.7 As with organs for transplant and seasonal influenza vaccines, the observatory recognises the need for international agreements to ensure equitable supplies of products where supply is limited by physical or biological factors. Euratom also has a key role in the use of isotopes for research.

The Royal College of Radiologists and the British Nuclear Medicine Society, following careful assessments, have expressed grave concerns about the supply of medical isotopes if we leave Euratom and the clear risk to patients should supplies be interrupted,8 concerns that have been endorsed by the European Commission. Although it may be possible for the UK to remain within existing arrangements, it will be exceptionally complicated and the UK’s position will inevitably be weakened.

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Crucially, the government has offered no real clarity on how any agreement might be achieved. The position paper on Euratom published by the government in July 2017 contained little detail even on nuclear power and did not mention medical isotopes.10

Ministers have no excuse for failing to anticipate this controversy. The problems were highlighted clearly in an article in the Financial Times in February 201711 and in briefings by nuclear industry experts. Yet, as with all aspects of the Brexit negotiations, there is no evidence of any serious planning. Although peers made extremely detailed arguments as to why they see major problems ahead in a House of Lords debate on Euratom on 20 July 2017, the government simply responded that it did not envisage problems.12

Notwithstanding the enormous scale of the problem, there are two things that could be done now. Firstly, the Department of Health must be brought into the Brexit negotiating team, as recommended by the Commons Health Committee.13 The government was unable to confirm even that the department had been consulted on leaving Euratom. Secondly, the Department for Exiting the EU must urgently appoint a chief scientific adviser, as recommended by the Commons Science and Technology Committee.2

The prime minister’s failure to realise that health was a key concern in the Brexit negotiations was one reason why Jean-Claude Juncker concluded that she was “on a different galaxy.”14 Recent events suggest that little has changed.

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1 Science and Technology Committee. EU membership and UK science. House of Lords, 2016.

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