Employabilité des physiciens médicaux français à l'étranger

Section Jeunes de la SFPM

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Introduction

Ce document est le fruit d'une enquête proposée en 2018 par la Section Jeunes de la SFPM visant à mieux connaitre l'employabilité à l'étranger des physiciens médicaux diplômés en France. Il est principalement destiné aux professionnels désireux d'initier une expérience clinique à l'étranger. Le but de ce document est de mettre à disposition les informations et les contacts officiels et utiles à ce type de démarche.

Dans cet objectif, la quasi-totalité des sociétés savantes de physique médicale à travers le monde a été interrogée au début de l'année 2018. Tout au long des années 2018 et 2019, un travail méticuleux de relances, d'ajustement des contacts et de demandes de précisions a été mené. La difficulté de l'exercice a principalement résidé dans le fait de cibler précisément le bon interlocuteur, de bien faire comprendre le but de la démarche et d'être parfaitement identifié.

Il est important de préciser que nous nous sommes volontairement limités à l'analyse des réponses officielles (*i.e* venant des sociétés savantes). Malgré plusieurs témoignages, nous n'avons pas souhaité inclure les retours d'expérience directs des physiciens médicaux français vivant ou aillant vécu une telle expérience (Israël, Nouvelle-Zélande, Maroc, Canada…). Il nous a semblé périlleux d'affirmer que l'expérience d'une personne soit le reflet des conditions officielles d'embauche à l'étranger. Néanmoins, il pourra être intéressant, toujours dans l'économie d'une évolution de ce travail, de mettre à disposition les contacts des physiciens français ayant eu des expériences à l'étranger.

Au final, les réponses officielles de 23 pays ont été jugées suffisamment complètes pour être publiées. Malgré tous nos efforts, les réponses officielles de nombreux pays, pourtant réputés pour la qualité de leur culture en physique médicale, manquent. Nous espérons que des travaux futurs permettront de les inclure dans la liste déjà conséquente des pays qui ont accepté de répondre à nos questions.

Enfin, nous attirons l'attention du lecteur sur le fait que les réponses données dans ce document sont les conditions de travail à l'étranger énoncées au moment de l'enquête. La physique médicale reste une discipline jeune et en perpétuel mouvement. Son enseignement, les standards de formation et les reconnaissances de diplôme peuvent donc être amenés à changer dans chaque pays. L'exemple français et les mutations rapides du DQPRM (bientôt DPM = Diplôme de Physicien Médical) en est une parfaite illustration.

La Section Jeunes de la SFPM reste à disposition des lecteurs de ce document pour toute précision d'information et inclusion d'élément nouveau.

Méthodologie

Les trois questions suivantes ont été adressées, en anglais, et par courriel, aux sociétés savantes et/ou leurs représentants :

1. Comment devient-on physicien médical dans votre pays ?
2. Est-il possible d'exercer dans votre pays avec un diplôme français, sachant que le diplôme français autorise d'exercer en France dans tous les domaines de la physique médicale (radiothérapie, radiologie et médecine nucléaire) ?
3. Si non, quels examen/diplôme/entretien supplémentaires sont nécessaires pour être reconnu en tant que physicien médical dans votre pays ?

Une réponse officielle a été obtenue, et a fait l'objet d'une publication dans le présent document, pour les pays suivants :

Europe [17 pays] :

- Allemagne
- Autriche
- Belgique
- Danemark
- Espagne
- Grèce
- Irlande
- Italie
- Lituanie
- Malte
- Moldavie
- Norvège
- Pays-Bas
- Pologne
- République-Tchèque
- Royaume-Uni
- Suisse

Hors Europe [6 pays] :

- Afrique du Sud
- Argentine
- Canada
- Colombie
- Japon
- Trinidad et Tobago

Une liste des pays n'ayant pas fourni de réponse et susceptibles d'intéresser les physiciens médicaux français est proposée :

Europe [3 pays] :

- Finlande
- Portugal
- Suède

Hors Europe [8 pays] :

- Australie
- Chine
- Corée du Sud
- Etats-Unis
- Israël[1]
- Nouvelle-Zélande
- Russie
- Turquie

[1] Réponse hors société savante obtenue et disponible sur demande, mais non publiée pour des raisons méthodologiques.

Résultats

Les réponses des 23 pays sont présentées par ordre alphabétique.

Pour chaque retour présenté :

- La réponse est retranscrite telle qu'elle nous a été transmise, soit en anglais dans le texte. Nous avons en effet voulu éviter toute possible perte d'information liée à une traduction ;
- Un complément permettant de résumer ou de mieux comprendre la réponse est proposé ;
- Le contact de l'interlocuteur lié à la société savante est donné.

Afrique du Sud

Réponse de la société savante

1. *"In South Africa you have to have a BSc (Honours) degree in Medical Physics. Usually that will involve a three year BSc degree in Physics and one other major subject, and the BSc (Hons) year will cover the academic training for medical physicists. Once you have that degree, you have to do a two-year medical physics internship at an accredited training institution. The internship ends with an oral exit examination, and after that you may register with the Health Professions Council of South Africa (HPCSA) as a medical physicist, and this allows you to work in any field of medical physics. South Africa does not have the registration category "Radiotherapy physicist" or "Imaging Physicist", you are registered as "Medical Physicist (Independent Practice)", and that allows you to work in any field. In practice most physicists end up working in radiotherapy.*
2. *You are not allowed to work as a medical physicist in South Africa, unless you are registered at the HPCSA.*
3. *I am not 100% certain of this one. If you are registered as a MP in another country, I think the HPCSA would require additional information from you to decide whether you can register or not. Usually this entails handing in a portfolio of evidence of training in the various fields, with the sign-off of a supervisor. If you have only done certain fields of medical physics (e.g. only radiotherapy physics), you would have to do a period of training in the other fields to be able to register. I am not sure what the French training looks like and what academic and clinical training requirements are, but it sounds at least somewhat similar to South Africa."*

Complément de la Section Jeunes

Il semblerait possible à partir d'un dossier solidement monté d'obtenir une certification pour travailler en Afrique du Sud. Le fait que la formation française prépare aux trois spécialités est un atout. Il faut être capable de prouver sa formation et sa pratique dans les trois domaines.

Contact de l'interlocuteur

Christoph TRAUERNICHT
Chair of the South Africa Association of Physicists in Medicine and Biology (SAAPMB)
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Allemagne

Retranscription brute de la réponse

"In order to work as a medical physics expert (MPE) in Germany, you need to obtain the "Fachkunde im Strahlenschutz für MEdizinphysik-Experten" (=requisite qualification in radiation protection for medical physics experts), which comprises:

1. *An academic degree in the field of science/technology (ideally an MSc in Medical Physics),*
2. *2 years of further education(practical training) under the supervision of a medical physics expert (this practical training must be certified by "Sachkundezugnis"),*
3. *Courses in radiation protection according to the National requirements ("Röntgenverordnung" and "Strahlenschutzverordnung").*

Given Germany's federal structure there is no national licensing body for MPEs; rather, local/regional bodies decide if a persons' qualifications are sufficient and which qualifications obtained in another country can be accepted in the framework outlined above.

Please not that a good command of the German language is essential in a clinical setting."

Complément de la Section Jeunes

La décision se ferait à l'échelle de chaque région (*Land*) du fait du caractère fédéral de l'Allemagne. L'accent est mis sur le fait que la maitrise de l'allemand serait déterminante.

Contact de l'interlocuteur

Erik GÜHRS
Chair of the Deutsche Gesellschaft für Medizinische Physik (DGMP)
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Argentine

Retranscription brute de la réponse

"To answer your questions, first we must explain that doesn't exist a direct recognition of the French University degree in Argentina, so, even if you have a PhD, Master or specialization, the first thing a French citizen should do is make a validation of their degree. This validation consists in the revision of the French university curriculum by the authorities of the Argentine university chosen by the person concerned (in Argentina there are several universities in different cities and each one has the property to revalidate the degree at his / her discretion), after this evaluation is likely that the person concerned must attend (or only take the exams) some subjects of degree to be able to obtain the degree valid in Argentina. Then, the French citizen would already be able to apply for the individual license in ARN (Nuclear Regulatory Authority). In Argentina, Radiotherapy, Nuclear Medicine and Radiology have different individual license. These license are granted by ARN and to be able to grant them that they comply with a series of theoretical and practical requirements.

In summary and to answer your specific questions:

1. *-*
2. *No, it is not possible. In Argentina, it is not possible to work with the French diploma because to work with patients, you need a practice license issued by the ARN.*
3. *To obtain the individual license of the ARN, a degree with national validity or recognized by Argentine authority is needed (no more foreign degree is accepted). Then, all the documents of the courses and practices carried out in the desired sector (radiotherapy or nuclear medicine, they are different commissions) must be submitted to ARN. A commission analyzes case by case and if they consider it necessary they can ask again for the realization of a part or all (both of the theoretical part, as of the practical part under the supervision of a physicist with permission and experience.*

In our country, there is a French medical physicist with a PhD and the DQPRM diploma. For personal reasons he moved to Cordoba, Argentina and is currently finishing the practical part that ARN asked him to do again under the tutelage of a licensed medical physicist because in his case he had spent 4 years without working as a medical physicist."

Complément de la Section Jeunes

Pas de reconnaissance automatique du diplôme française mais une commission évalue chaque candidature pour une reconnaissance directe ou avec des évaluations complémentaires. Ensuite, il faut faire une demande de licence auprès d'un organisme dédié afin d'exercer. Le processus semble long et lourd comme l'illustre l'exemple du physicien français dans cette réponse.

Contact de l'interlocuteur

Ricardo RUGERI
Secretary of the Argentine Society of Medical Physics (SAFIM)
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Autriche

Retranscription brute de la réponse

"As Austria is small, we managed to have a uniform list of requirements all over the country. These are listed in our curriculum, but it is in German and not translated yet.

1. *By going through a 3 year postgraduate course (part time study), or by proving an equivalent education which is assessed by Austrian Society of Medical Physics and/or the Ministry of Health.*
2. *That is unspecific. The role of the MP is defined in national law, and we have always sought EFOMP certification for our courses. In short, if you can work in the EU, you can most likely also work in Austria.*
3. *Basically, you need a dedicated education in the field. This is equivalent to 60 ECTS."*

Complément de la Section Jeunes

L'Autriche suit les standards proposés par l'EFOMP pour la reconnaissance d'un diplôme.

Contact de l'interlocuteur

Wolfgang BIRKFELLNER
Director of the academic program for education of medical physicists
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Belgique

Retranscription brute de la réponse

1. *"The law stipulated a list of courses and requires 12 months of practical training in one of the 3 fields. You get accredited for one field at the time.*
2. *Our Federal Agency for Nuclear Control (FANC) certifies medical radiation physicists. To do so, every candidate has to provide a series of documents, such as the diplomas, the confirmation of practical training, the proof of permanent education, etc. Also French people could apply. It helps if they can show that they are accredited in France.*
3. *The candidate has to send the files to the FANC and they then tell what has to be done. This includes normally that a course has to be followed on the Belgian legislation. Depending on the sent-in files, they can add extra tasks. As an example: if there is no evidence that the candidate has ever tested a system for interventional cardiology, he/she may be requested to learn that."*

Complément de la Section Jeunes

Un organisme étudie la pertinence de la candidature sur la base de leurs diplômes et expériences. Le diplôme français ne semble pas directement reconnu mais il semble aider à lancer la procédure. Il peut être demandé d'acquérir des compétences supplémentaires selon les dossiers.

Contact de l'interlocuteur

Hilde BOSMANS
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Canada

Retranscription brute de la réponse

"I would refer you to our professional organization:

http://www.comp-ocpm.ca/english/about-comp/what-is-medical-physics/what-is-medical-physics.html

and our certification body:

http://www.ccpm.ca/

1. *For your first question, the answers are here: http://www.comp-ocpm.ca/english/about-comp/what-is-medical-physics/definition-of-a-qualified-medical-physicist.html*

2. -
3. *For you third question, refer to this page: https://www.ccpm.ca/ccpm-english/main/certification/eligibility.html*
   "

Complément de la Section Jeunes

Le processus de reconnaissance des diplômés étrangers est complexe mais largement documenté et tracé dans les liens proposés. La reconnaissance du diplôme est conditionnée par le respect des standards de formation définis par le CAMPEP (Commission on Accredidation of Medical Physics Education Programs). Il faut donc savoir dans quelles mesures le diplôme français satisfait ces recommandations. Il existe des passerelles pour les diplômes non directement reconnus notamment en justifiant d'au moins 4 années d'expérience clinique. L'ensemble des informations utiles sont accessibles à partir des liens internet proposés dans la réponse.

Contact de l'interlocuteur

Chris THOMAS
Canadian Organization of Medical Physics (COMP)
Chris.Thomas@nshealth.ca

Colombie

Retranscription brute de la réponse

1. *"A minimum of a master's degree in medical physics is required.*
2. *If it is from a master's program equivalent to Colombian programs, the degree must be homologated and that is enough.*
3. *-"*

Complément de la Section Jeunes

Le master de physique médical semble être suffisant afin d'exercer en Colombie. A fortiori, le diplôme français de physicien médical l'est également.

Contact de l'interlocuteur

José Agustin DAZA MORENO
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Danemark

Retranscription brute de la réponse

"I believe your questions are answered here on our website: https://dsmf.org/dsmf/english*:*

In Denmark, medical physics as a profession is not protected by an authorization license under the National Health Authorities. This means that it is the local chief physicist who decides whether the qualifications of the job applicant meets the local requirements.

If you have a medical physics degree and/or practical experience working as a medical physicist in a clinical environment, you will probably qualify for a medical physics position but, again, it is up to an individual evaluation made by the chief physicist.

Both clinical job openings and research positions are often advertised on the website for the Danish Society for Medical Physics, even though the text will be in Danish.

The Danish Ministry of Foreign Affairs has a page about residence and work permits."

Complément de la Section Jeunes

Pas de cadre officiel pour le recrutement d'un physicien médical. Il semble possible pour un physicien étranger et a fortiori français d'exercer au Danemark sous réserve de la validation du chef de service qui évaluera les compétences du candidat.

Contact de l'interlocuteur

Klaus SEIERSEN
President of Danish Society for Medical Physics
klauseie@rm.dk

Espagne

Retranscription brute de la réponse

"1. To become a Physician in Spain, you have to pass a national exam. There are approximately 30 places (depends on the year).

If you are one of the 30 approved you access to a training period for 3 year in a Hospital. If this training period is overcame, the medical physicist diploma is obtained.

This diploma allow you to work in the fields of radiotherapy, radiology and nuclear medicine.

2. You have to validate the Diploma.
In Spain, the processing and resolution of applications for the recognition of professional qualifications, such as the title of specialist of medical physics, is the responsibility of the Ministry of Health, Social Services and Equality (MSCBS).

3. The MSCBS staff will be responsible for collecting and reviewing the documentation. Once all the documentation is complete it will be delivered to the National Commission of the Specialty (CNE). The CNE according to the applicant's curriculum will assess the validation of the medical physicist's degree or the need to complete the training with a stay in a center to cover all the areas covered in the specialty teaching program.

In the following link you can find all the necessary documentation and how to apply for the validation of the professional title in Spain:

https://www.mscbs.gob.es/profesionales/formacion/recoTitulosEuro/profesionales.htm

Any questions you may have regarding the validation of the community title can be done at the following email: reconocue@mscbs.es

Sadly, I believed that the webpages are only in Spanish language."

Complément de la Section Jeunes

Un processus de reconnaissance des diplômes étrangers existe et est correctement documenté.

Contact de l'interlocuteur

Juan CASTRO
Sociedad Espanola de Fisica Medica (SEFM)
jcastro@sefm.es ou secretaria@sefm.es

Grèce

Retranscription brute de la réponse

"Relevant information are available here:

https://www.efie.gr/index.php/en/medical-physicist/education

A. *In order for candidate Hospital Physicists – Medical Physicists who have attended the Greek training program to get a professional certificate as a **Hospital Physicist – Medical Physicist working with ionizing radiation**, until the training program's modification around June 2018, they must have:*
    1. *Physics Degree (four-year)*
    2. *Master's degree in Medical Physics from Greece or recognised foreign postgraduate programs of studies (two-year or twelve-month full time)*
    3. *A twelve-month clinical training in hospital that is divided into a four-month phase at Radiation Therapy field of physics, a four-month phase at Medical Imaging field of physics and a four-month phase at Nuclear Medicine field of physics.*
    4. *Passed the Radiation Therapy, Medical Imaging, Nuclear Medicine and Radiation Protection examinations.*

*Take into account that the professional certificate is provided by **Ministry of Health** and the holder of the certificate is allowed to work in **any field of medical physics**.*

*Additionally, a **Hospital Physicist, working with non-ionizing radiation**, certification is obtained, with no clinical practice required, by taking exams in the physics' fields of MRI, Laser and Ultrasound.*

B. *According to the new Greek training program, the duration of clinical practice will change to three-year and include all fields of non-ionizing radiation. Therefore, a single professional certificate as a **Hospital Physicist – Medical Physicist** is expected and will permit the occupation with **all fields of Medical Physics**.*
C. *If a foreign candidate comes in Greece having met some of the requirements (1) to (3), then she/he can enroll into the training program and take part in the examination, as long as she/he requires everything, in accordance with Greek program, in her/his curriculum vitae (CV). Nonetheless, vacancies for clinical practice are limited.*
D. *Hospital Physicists – Medical Physicists who have attended the training course abroad and have gotten the professional certification, could optionally have it recognized by the **Council for the Recognition of Professional Qualifications (SAEP)** that belongs to **Ministry of Health**. The candidate has to submit a thorough CV along with the translated documents and evidence of, at least, qualifications (1) to (4), which are, also, the minimum expected internationally. The application is being processed by rapporteur – secretary of SAEP and is reviewed by the committee in which a member representative of Hellenic Association of Medical Physicists (EFIE) participates.*

    The recognition regards the exact professional qualifications the candidate had been accredited of by the state where she/he initially got the professional certification from, meaning that if she/he had a certification as Hospital Physicist – Medical Physicist specializing in Radiotherapy, for instance, then she/he could not practice physics of Nuclear Medicine, in Greece.

    The SAEP's recognition procedure requires time. The recognition gets easier in case that the candidate has attended a complete training program inside the European Union. »

Complément de la Section Jeunes

La formation grecque a récemment évolué avec un allongement du stage clinique à trois années en accord avec les recommandations internationales. Une commission dédiée évalue les dossiers des candidats diplômés souhaitant faire reconnaitre leur diplôme. La procédure semble relativement conséquente, mais elle parait allégée pour les ressortissants de l'union européenne.

Contact de l'interlocuteur

Efi KOUTSOUVELI
Hellenic Association of Medical Physicists (HAMP)
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Irlande

Retranscription brute de la réponse

"In relation to your questions, I represent the Irish Association of Physicists in Medicine and a lot of your questions could also be directed to the Irish College of Physicists in Medicine (https://www.icpm.ie/).

- *How to become a medical physicist in your country?*

Please see the Job criteria advertised on the job section on our website. You must hold a recognized science/engineering degree and usually a post graduate degree where Medical Physics has been taken as module. There are also some trainee programs (usually a post doc is required for these also), but there are none available at the moment. ICPM would have more information on this.

- *Is it possible to work in your country with a French diploma, considering that the French diploma allows us to work in any field of Medical Physics in France (that is radiotherapy, radiology and nuclear medicine)?*

If you are registered in another jurisdiction having a Medical Physics Expert registration scheme recognized by EFOMP makes you automatically eligible for membership of the ICPM. You will still need to complete the application form with details of your registration in the other jurisdiction.

- *If not, what are the additional requirements in terms of diplomas/interviews to become a medical physicist in your country?*

For our trainee programs a science degree, an interview and usually a post graduate training are required. The field is quite competitive in Ireland and it is quite unusual to get a job based on a B.SC or B.Eng. alone."

Complément de la Section Jeunes

Sur la base des standards européens de l'EFOMP, les diplômes étrangers peuvent être reconnus. Il faut passer par l'ICPM (Irish College of Physicists in Medicine) pour être reconnu et pouvoir exercer.

Contact de l'interlocuteur

Aibhilinn MCHUGH
Secretary of Irish Association of Physicists in Medicine (IAPM)
aibhmcq@yahoo.co.uk

Italie

Réponse de la société savante

1. *"It is necessary to have the title of specialist in Medical Physics. This title is obtained after Master's Degree in Physics (5 years) + 3 years of Specialization School in Medical Physics*
2. *No, absolutely not.*
3. *A French Physicist must apply for the recognition of his degree, so he must enroll in an Italian specialization school in medical physics"*

Complément de la Section Jeunes

Le passage par une école de spécialisation en physique médicale italienne semble déterminant. Il n'y a pas de reconnaissance automatique du diplôme français.

Contact de l'interlocuteur

Franco FUSI
President of the Italian Conference of the Directors of Specialization School in Medical Physics
franco.fusi@unifi.it

Japon

Réponse de la société savante

1. *"It is required to pass the credentialing examination performed by JBMP (Japanese Board of Medical Physicist Qualification). The examination is done once per year and in Japanese.*
   ***Eligibility for admission to credentialing examination** (A or B or C or D)*
   - *A. Completion or more than one year's enrollment of the medical physics education course accredited by JBMP*
   - *B. Master's or higher degree of science or engineering (including future graduates) having the above performance evaluation point of 5 units prescribed in the bylaws.*
   - *C. Master's or higher degree of radiation technology or health science (including future graduates), having the above performance evaluation point of 5 units prescribed in the bylaws.*
   - *D. Master's or higher degree of courses related to the medical physics installed at the Graduate School of Medicine (including future graduates), having the above performance evaluation point of 5 units prescribed in the bylaws.*

   Eligibility for application for certification
   Within five years after pass of credentialing exam and being a full member of JSMP (Japan Society of Medical Physics) or JRS (Japan Radiological Society), having a performance evaluation point prescribed in the bylaws (and)
   - *A. Completion or enrollment of the medical physics education course accredited by JBMP (and) Master's degree and experience more than two years involved in medical physics*
     (or) Master's degree and experience more than two year's enrollment of doctoral course
     (or) Doctoral degree
     (or) Completion of residency course
   - *B. Master's or higher degree of science, engineering, radiation technology or courses related to the medical physics installed at the Graduate School of Medicine*
     (and) Experience more than three years involved in medical physics
     (or) Doctoral degree and experience more than one years involved in medical physics
2. *No.*
3. *Now, there is no regulation for certification of medical physicists who have foreign medical physicist license."*

Complément de la Section Jeunes

La première barrière serait celle de la langue. Le passage par un examen de certification semble obligatoire, et en langue japonaise.

Contact de l'interlocuteur

Shigekazu FUKUDA
Chair of International Affairs Committee of JBMP
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Lituanie

Retranscription brute de la réponse

"How to become a medical physicist in your country?

To become Medical Physicist in Lithuania you will need to study in MSc study program Medical Physics which is given in English at Kaunas University of Technology/Lithuania (www.ktu.lt). This program is prepared according to international recommendations (IOMP, EFOMP and EC) and is unique in Lithuania. You also may find information about the program on the www.iomp.com website.

- *Is it possible to work in your country with a French diploma, considering that the French diploma allows us to work in any field of Medical Physics in France (that is radiotherapy, radiology and nuclear medicine)?*

Yes, University diploma from any EU country is accepted in Lithuania, without any additional requirements. However if you would be willing to work in Clinics, you will need legal confirmation, that you have already worked in Clinical environment for at least 2 years. Just after graduation of MSc studies, you can be employed as young Medical physicist who can work under supervision of the experienced MP only."

Complément de la Section Jeunes

La reconnaissance du diplôme français est directe après avoir exercé deux ans en milieu clinique.

Contact de l'interlocuteur

Diana ADLIENE
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Malte

Réponse de la société savante

"In Malta we follow exactly the RP174 European Guidelines on MPE recommendations.

Following a first degree in physics or engineering (4 years) students take a Masters in Medical Physics which includes a specialization in Radiation Oncology OR Nuclear Medicine OR Diagnostic & Interventional Radiology. This would be followed by 2 years supervised training in the ONE particular specialty. This makes one a legally certified Medical Physicist in the specialty area. It is simply not possible to be qualified in the three areas any more.

To become an MPE in the ONE specialty area two further years of experience and CPD (Continuing Professional Development) are required in that area.

From 2019, we plan to start a Bachelors also in Medical Physics to replace the general physics / engineering degree which in addition to physics and medical physics will include a lot of anatomy and physiology plus pathology, management…"

Complément de la Section Jeunes

La formation semble correspondre aux standards européens. Nous n'avons cependant pas obtenu de réponse claire sur la possibilité, pour un physicien français, de travailler à Malte.

Contact de l'interlocuteur

Eric PACE
ericpace@gmail.com

Moldavie

Retranscription brute de la réponse

"Please find below the non-formal answer to your questions:

1. There are no university in the Republic of Moldova, which graduate medical physicists. Last case, 2 young specialist were graduated in medical physics in the neighbor country- Iasi, Romania.

2. Working in the Republic of Moldova. There are 2 ways for in-sourcing: in state medical institution or in private sector. In state institution - you should respect some conditions, like to know the state language, to win a competition of the nominations, etc. In private sector - usually it is a contract between the parts. I do not know, if the medical physicist with French diploma needs the recognition of the documents. If you prefer to found your own company (for out-sourcing services), you need to obtain the Authorization from our Regulatory Authority (National Agency for Regulation of the Nuclear and Radiological Activities - www.anranr.gov.md).

For more information please try the following sites:

- http://www.anofm.md/en - National Agency of workforce occupancy, and

- http://www.angajat.md/

Just for example, I tried to find vacancy for medical physicist, and the search returned "0 results"!!!"

Complément de la Section Jeunes

De l'aveu même de l'interlocuteur, il n'existe à priori pas de manière officielle, pour un physicien étranger, de travailler en tant que professionnel en Moldavie. La section Jeunes souhaitait malgré tout laisser au lecteur la possibilité d'accéder aux différentes sources d'informations présentées dans cette réponse.

Contact de l'interlocuteur

Alexandru HUSTUC
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Norvège

Retranscription brute de la réponse

"On the web page for the Norwegian Association of Medical Physics you can find information about work in Norway for Medical Physicists with education/experience from other countries :

http://www.medfys.no/work-in-norway-as-a-medical-physicist/ :

Foreign medical physicists who want to apply for work in Norway, don't need a Norwegian certification (in fact, Norwegians don't need it either, at least not yet). It is up to the employer to judge the applicant's experience and skills. Nevertheless, a certification from another country would probably be appreciated.

We have a transitional agreement for certification as a medical physicist and Medical physicist specialist. It is, however, not a formal certification, although we are working to have the Government's approval. Our aim is to have a process similar to the European guidelines (given by EFOMP)."

Complément de la Section Jeunes

Il n'y a pas de cadre strict en Norvège pour employer un physicien médical (local ou étranger). C'est à l'employeur de juger des compétences du candidat. La mise en place d'une certification fondée sur les standards de l'EFOMP est en cours. Par conséquent, les conditions d'embauche devraient évoluer.

Contact de l'interlocuteur

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Pays-Bas

Retranscription brute de la réponse

"In the Netherland, registration as medical physicist (Dutch: klinisch fysicus) is obtained after successfully completing a 4 years post-graduate training programme at a recognized teaching hospital. This programme should cover a 2 year general curriculum, followed by a 2 year specialty curriculum for one of the following fields of expertise: radiotherapy, radiology and nuclear medicine, audiology or general medical physics, as defined by the Dutch Medical Physics Training Foundation (Dutch: Stichting OKF). A MSc degree in physics, or an equivalent master degree, is a prerequisite for entering the post-graduate programme.

A professional who is registered as medical physicist in a foreign country and wants to obtain a Dutch registration as medical physicist, can apply for recognition of his or her professional qualification. Applications should be submitted to the CIBG at the Ministry of Healthcare, Welfare and Sport (see: https://english.bigregister.nl/foreign-diploma/procedures/recognition-professional-qualifications).
Applicants should possess a MSc degree in physics, or an equivalent master degree, and should have successfully completed a post-graduate programme in Medical Physics. Applicants are eligible if their field of expertise and level of competence meet the requirements of the Dutch post-graduate training programme. If substantial differences exist between the completed programme and the requirements of the Dutch post-graduate training programme, it is evaluated to what extent professional experience compensates for these differences. Based on the advice of a committee of professionals, a decision is made on each individual application, which may include recommendations to correct for possible shortcomings. *"*

Complément de la Section Jeunes

Un processus de reconnaissance et d'équivalence de diplôme existe. Il est vérifié que les compétences et les enseignements reçus sont en adéquation avec la formation hollandaise.

Contact de l'interlocuteur

Chris PETERS
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Pologne

Retranscription brute de la réponse

"There are two positions of medical physicists. The first one just the physicist graduated from physics (the best medical physics). The second one is the specialist in medical physics. How to become a specialist is described in Physica Medica (32 (2016) 914—917). For foreigners, considered an expert (specialist) in medical physics there is a special path for being a specialist in Poland. This is described in the Act (enclosed)."

Complément de la Section Jeunes

La formation polonaise est décrite de façon complète dans l'article de *Physica Medica* proposé à la lecture par l'interlocuteur. Elle semble coller aux recommandations de l'EFOMP. La reconnaissance des diplômes étrangers semble s'appuyer sur ces standards. L'interlocuteur propose la lecture d'un document, en polonais, décrivant le processus de reconnaissance des diplômes étrangers de professionnels de santé (texte généraliste, non spécifique à la physique médicale). La Section Jeunes peut le transmettre aux personnes intéressées.

Contact de l'interlocuteur

Pawel KUKOLOWICZ
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République tchèque

Retranscription brute de la réponse

"You are interested in qualified medical physicist recognition only, but in Czech Republic the same principles are applied for a fresh MP and qualified MP. These requirements are listed in Czech legislation.

The process of recognition is pretty straightforward. You need to fill an application form stating the degree of your education, the duration of your practice as qMP and other things like clear criminal record, etc. For the process of recognition it is very important to give a list of lessons taken during your studies at the university and also courses lectures, etc. taken during your education for qMP or MPE. The whole process of recognition in Czech Republic is reduced to comparison between the system of education (and absolved lectures, courses, etc.) of the applicant from EU country and the "same" person in Czech Republic. This process is fully handled by Czech Ministry of Health, but sometimes Czech Association of Medical Physicists is asked for additional opinion.

In case of any (major) discrepancies between learning plans of the applicant and Czech student, there are two possibilities. The application is rejected or the applicant must absolve additional examination (theoretical and/or practical) and the decision is made according to the result of this testing.

As you can see, if someone fulfils the "standard EU requirements for MP" he/she should not have a problem in recognition in Czech Republic. Last but not least:

A knowledge of Czech language is required at least on the level needed for usual communication with the rest of working team in the hospital. Fortunately, in Czech Republic, MPs do not need to communicate directly with patients, so the knowledge of the Czech language can be really a basic one. It's not expected that everyone speaks Czech, so it's for sure that the applicant will fail the first Czech language exam. The Ministry of Health will still give him/her a recognition, but for a limited period of time (2 years usually). After this period he/she must repeat the Czech language exam, needless to say that successfully. During this period one can speak English with the rest of team, in case is not an uncomfortable for them and there is no risk of harming the patient.

It is a common practice to let the foreign MP or qMP work for a few months under supervision of a Czech qMP. This very much depends on the head of the department or the chief MP."

Complément de la Section Jeunes

Un processus d'équivalence du diplôme peut être mené. La similitude avec les enseignements tchèques sont particulièrement investigués. Des évaluations supplémentaires peuvent être demandées. La pratique de la langue tchèque est également un facteur déterminant et évalué pour s'établir durablement dans le pays.

Contact de l'interlocuteur

Jaroslav PTACEK
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Head of the Department of medical physics and radiation protection
President of Czech Association of Medical Physicists
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Royaume-Uni

Retranscription brute de la réponse

"In the first instance, you can see IPEM's (Institute of Physics and Engineering in Medicine) FAQ section on international careers here:

https://www.ipem.ac.uk/CareersJobs/FAQCareers/FAQ-International.aspx

I am working as a medical physicist but want to move to the UK, what should I do?
If you are fully trained and qualified and are working (or have previously worked) overseas you should apply directly to the HCPC to obtain Clinical Scientist Registration under their International Route.
To find out whether you are sufficiently qualified and experienced to apply please ensure that you read and understand the Standards of Proficiency for Clinical Science. It is extremely important that you do this, as your application will be assessed against these Standards.
Please note that even if you do obtain Clinical Scientists Registration via the HCPC this does not guarantee that you can work in the UK if you are from outside the EU as you need to obtain a Tier 2 Visa (which requires you to have a sponsoring employer, i.e. you need to secure work in the UK)"

Complément de la Section Jeunes

Un organisme étudie les candidatures et évalue le niveau de formation et les compétences. Les compétences et éléments requis sont listés.

Contact de l'interlocuteur

Jo PEARSON
IPEM's Training and Membership Manager
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Suisse

Retranscription brute de la réponse

"You can find the answer to your questions on the homepage of the "Swiss Society of Radiobiology and Medical Physics': http://ssrpm.ch/certification-for-medical-physicists/basic-informations-fr/

Strictly speaking, one has to distinguish between "could work as a medical physicist in Switzerland" and "could be certified in Switzerland". I suppose that you inquire about the latter, but I'll write about both.

The Swiss certification is not a prerequisite to work as a medical physicist in Switzerland in the sense that "you're not allowed to work if you don't have the certification". However, each employer is bound by law to employ a certain minimum number of certified medical physicists as in the eyes of the law it is them who are responsible. A small department will want to hire only certified (or certifiable) medical physicists, but larger departments have had medical physicists working there for years without ever obtaining their certification. From that standpoint, it's an employer's choice who they want to hire and which qualifications they require. A department wishing to "outsource" the QA tasks and free the resources of the certified medical physicists might still accept someone who is not eligible for the Swiss certification.

If a medical physicist with a foreign certification fulfills the entry criteria for the Swiss certification, then he/she may choose to be certified in Switzerland and is immediately admitted to the oral exam. The written part is waived. But an exam still does need to be taken. The procedure would be to send a full application (minus mentor agreement and training plan) to the chair of the SSRMP committee of educational affairs, see section 6.1 of "les directives".

https://ssrpm.ch/wp-content/uploads/2015/12/Directives_Specialisation_AGM_2015-10-21.pdf

The crucial part is "fulfills the entry criteria", which are a bachelor's degree in physics and a master's degree in a science, both at university level. Unfortunately, many schools call themselves "university" these days (e.g. "university of applied science"), but in Switzerland there are clear rules what is considered a university and what not (haute école spécialisée).

https://www.swissuniversities.ch/fr/themes/etudes/hautes-ecoles-suisses-reconnues-ou-accreditees

It is not always easy for us to judge foreign degrees, but based on the information available online, for example an "Institut universitaire de technologie" does not seem to be the same as a "Université". Likewise, we do not accept a degree of a German "Fachhochschule" as being equivalent to a physics degree obtained at a university."

Complément de la Section Jeunes

Pour être reconnu comme physicien médical certifié suisse, un physicien médical français devrait passer un examen oral. Néanmoins, il est possible d'être embauché sans cette certification dans la limite d'un certain nombre par équipe.

Contact de l'interlocuteur

Regina SEILER
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Trinidad et Tobago

Retranscription brute de la réponse

"Regarding your first question, Trinidad and Tobago currently does not have any Legislature or Board related to the field of Medical Physics. The ten qualified Physicists in the country all have: 1) An undergraduate degree in Physics or Physical Science with emphasis in Physics and 2) A postgraduate degree (MSc.) in Medical Physics from an internationally accredited university. 3) At least two years working experience under a qualified Medical Physicist.

At present, Trinidad and Tobago welcomes persons with French diplomas and the necessary work experience into our system, however, the final decision will be subject to the specific institution's needs at the time of vacancy."

Complément de la Section Jeunes

Trinidad et Tobago ne délivre pas de diplôme de physicien médical. Le diplôme français semble être reconnu.

Contact de l'interlocuteur

Sherisse DE FOUR
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Synthèse et conclusion

Il est difficile de synthétiser des réponses aussi diverses. Cependant, nous avons essayé de résumer les grandes tendances dans les réponses données afin, malgré tout, d'offrir une vision globale de l'état de l'employabilité à l'étranger d'un physicien médical diplômé en France.

Premièrement, il est intéressant de noter qu'un certain nombre de pays européens font ouvertement référence aux standards proposés par l'EFOMP (*European Federation of Organisations for Medical Physics*) pour reconnaitre les diplômes (Autriche, Irlande, Malte, République Tchèque…). Ces recommandations sont décrites dans l'article Physica Medica 30 598-603 de 2014 et disponible ici : http://www.efomp.org/uploads/policy_statement_nr_12.1.pdf. À titre d'exemple, l'EFOMP recommande deux années de spécialisation après le master dans une discipline (radiothérapie, médecine nucléaire ou radiologie). Sur ce point, la formation française n'est pas en accord avec ces recommandations. Pour ces pays, il faut donc vérifier au cas par cas si, malgré tout, le diplôme français satisfait suffisamment ces recommandations pour être reconnu.

Ailleurs, la question de la reconnaissance du diplôme a été approfondie et un cadre clair a été officiellement réfléchi et défini. Cela passe généralement par l'intermédiaire d'une commission nationale et des procédures spécifiques, parfois complexes mais bien documentées (Afrique du Sud, Argentine, Pays-Bas, Belgique, Royaume-Uni, Grèce, Canada, Espagne…). La reconnaissance des compétences est plus ou moins automatique selon ces pays et requiert parfois le passage par des examens complémentaires.

Pour d'autres pays, la responsabilité de la reconnaissance du diplôme et des compétences pour une embauche est donnée directement à l'employeur. C'est donc une appréciation au cas par cas selon l'expérience qui primera dans ces pays (Allemagne, Danemark, Norvège, Suisse...).

De façon plus rare, il est possible de travailler directement dans certains pays avec le diplôme français (Colombie, Lituanie, Trinidad et Tobago…). Ce processus semble majoritairement possible dans les pays où le métier et sa formation sont relativement moins avancés.

Enfin, de façon plus rare, il existe des pays pour lesquels le diplôme français n'est pas reconnu et dans lesquels il faut reprendre plusieurs années de formation. C'est notamment le cas de l'Italie.

De façon plus générale et en dehors du cadre du diplôme, la maitrise de la langue est un facteur important dans de nombreux pays (Japon, Allemagne, République Tchèque…). Cet élément doit évidemment être pris en compte pour ce type de projet en allant bien au-delà de la langue anglaise. L'exemple d'une certification en langue japonaise pour le Japon est le plus parlant.

Pour conclure, cette enquête a permis de présenter un sujet rarement abordé jusque-là. Ce document met à disposition des éléments de réponses ainsi que des contacts aux physiciens souhaitant se lancer dans de type de projet.

Plusieurs limites de cette enquête ont été mises en évidence (manque de réponse, évolution des conditions de reconnaissance…). Néanmoins, ce document constitue une base qui pourra faire l'objet d'une mise-à-jour régulière, ou encore être complétée ou précisée.