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Alternative Careers in Oncology (Industry perspective)

Dr Linn: Good evening everyone. I'm Meinolf Linn, I'm looking forward to share with you this next 45 minutes talking about alternative careers in oncology and with my background, bringing you the perspective from the industry and I would like to start with quick introduction of myself. So, I'm a German medical doctor, started in Munich and in South Africa, then worked approximately 8 to 10 years in the clinical environment in Germany, more in internal medicine, oncology, and then, decided early 2000 to join the pharmaceutical industry. Also gave it a test at beginning to see if it's really something that I liked to do and where I can develop. And I held over the last 20 years, after starting in local roles, I held mostly regional and global roles, both in research and development and in medical affairs. So, I was in companies, Novartis, Amgen, most of my time I spent in GSK and before I joined Mundipharma earlier this year. I was in Shire and now since early '21, I'm heading up the medical, global medical team in Mundipharma global means ex US. So, this is Asia, this is Latin America, it's Europe. My personal interests are patient care, still. So, I still have the clinical view and also, access to medicines in developing markets. If you have seen my screensaver before, this is my second residence in the Philippines. So, I know what it means in developing markets for patients to have access to essential medicines and how they struggle. And here, I really like to improve the situation. So, what are we talking about today? I think we have a relatively short time to discuss as much as possible. So, first, I would like to clarify a few myths and reality about clinical work and industry work, then, show a few examples of jobs you could eventually have in the pharmaceutical industry. We go into qualifications needed and expectations, look a little bit beyond money, work/life-balance as well, mobility, career development, risks, at the end, future of pharma. And what we want to do is to have two or three stops in between where you can ask questions, but we will also have a session at the end where you can then at the end also ask questions. So, as I said, at any time you can come up with questions. Here is the guide, how you do it, and I guess you will have attended lots of sessions in ESCO before, so, you are already very familiar with that. So, but we will remind you in between. Myths and reality. So, the clinic, of course, as a medical doctor in the clinic, there is basically no fun. It's stress, no sleep, salaries are pretty low. And if you consider to move into industry, then, I think it's a paradise. You have first-class flights, stop destinations, hotels. And of course, like Donald bird here you are diving in money. That's unfortunately a myth, that's not the fact. And I will show you how it is. I think I have enjoyed my clinical time a lot. I'm enjoying the industry and both has advantages, but all this also sometimes let's say some restrictions and not, not everywhere you will find the paradise. What jobs can the industry offer? I think basically every job is suitable for a medical doctor and industry it's just the route

you want to take in industry. And so, you can be in research and development. And here the entry positions are usually some kind of scientific manager. Every company has different role terminologies to, finally, head of medical, chief medical officer, of a pharmaceutical company. The same applies to medical affairs. And I will come to the difference between research development and medical affairs a bit later to explain a bit. Here from a medical science liaison, which is a more field-based role where you interact with clinics, with physicians in the clinic. But here, also, up to chief medical officer, the sky's the limit, let's say. Then, we have departments like pharmacovigilance or safety, and also the regulatory group where there are roles from safety lead in pharmacovigilance, to head of safety and regulatory, or chief scientific officer, chief medical officer, all options are possible. Not only on the medical side of the broader medical field, but also on the commercial sides there are options; many commercial people in the pharmaceutical industry have a medical background. And this can go from sales rep to a CEO at the end. For instance, Dan Vasella, the previous CEO of Novartis. He was a board certified oncologist. And it's very helpful when you have discussions with these people, because they know how real life looks like in the clinic and can bring in also their clinical experience. Cross-functionally you can also start on one route and then, change on your career paths. So, if you have a couple of years in medical and you are interested in a commercial role, these options are possible. Sometimes it's even desired. And so, it's not that you make a decision, if you make a decision right now, say I go the medical route in research and development that this is now then carved in stone for the rest of your career. So, there's a lot of flexibility and change is let's say ongoing in industry. I think you will be facing a lot of changes if you consider to go to industry on several levels, I will come to this also a bit later. Let's look into a couple of specific roles. So, let me look into research and development. So, we have on the one end, we have the preclinical development where you really have laboratory research, you have animal tests for new molecule entities and with the aim to determine the dose, toxic dose, pharmacological action. You want to really define and identify the best new molecular entity for clinical trials before it goes then into the human testing. And the jobs, project leads, I just had a colleague from Germany who started in preclinical research, she was a board certified oncologist in one of the major universities and was initially not sure if she wanted to join industry, but she was very keen on laboratory research. So, she started with Roche and she's now a therapeutic area lead considering the next step in the career. And she loves the work, is now doing it five years and has an MD, but also PhD and has a really relevant scientific track record. And the MD is for this kind of work, not always required, but in general, we can say the higher the position is for which you are applying or in which you are interested, the higher the level of experience is requested. And so, entry positions have a lower or say a more flexible approach, than if you want to be head of research and development, then you need to have a really substantial academic track record with you. In clinical development we also have to distinguish between early development and the later stage developments, so phase I, phase II. Where we focus on pharmacokinetics, pharmacodynamics, for drug interaction. Here you want to define the target population and endpoints for phase III, with a focus on safety and tolerability. And then, when you go into the later stage, this is really registration focused with large studies, very often, placebo-controlled, or at least controlled. Efficacy, safety and you, also more and more, you build in quality of life and all the other factors, which could play a role later for reimbursement of the drug. And these kinds of discussions and which are helpful. And so, these two big pillars in development are usually divided in the companies. Here, you can be a clinical trial or an indication lead, asset lead. So, for instance, let's take a big drug like Avastin, where you have colorectal cancer, where you have lung cancer and within lung cancer. I was an indication lead for lung cancer. So, this is why I know what I'm talking about. So, you have non-small cell lung cancer and small cell lung cancer. And these have different indication leads, or trial leads, but overall, you have the asset lead for lung cancer. And then, you have the science lead who is then leading the whole bevacizumab. And it was a huge development program. So, many people were working on this. In these roles, you are primarily responsible for developing the investigator brochure, different protocols. You will work with advisory boards. Usually, you share them together with the principal investigator. You are in charge of data safety monitoring boards. You'll eventually co-chair product teams together with commercial or other functions. And you work very cross-functionally with other functions in the pharmaceutical industry,

primarily, with clinical operations. These people are in charge of selection of study sites, making the right choice, and you are advising here. Then, also, monitoring of the clinical study and in charge of drug supply. You work closely with safety. It's very important to identify signals and evaluate the serious adverse events, adverse events. You work with regulatory, because everything, what you do in phase III is registration-focused. So, you are planning with regulatory submissions. You are working with regulatory on scientific advice, you are working with them on presentations with regulatory bodies. You have to present sometimes yourself. You're working with medical affairs, medical affairs is more the bridge between R and D and commercial. So, bring a new product to the market together with commercial. Educate, make sure that this new medicine is really used in the right way, and that the physicians who are using it have the right experience and the right skillset, and are well-informed about also, not only about the features, but also about the limitations of a product. Where can you use it versus where shouldn't you use it? Market access to make sure the patients also have access to the drugs. And then, of course, a bit with commercial as well, but this is in R and D, it's more limited, in medical affairs it's, of course, a partnership, medical affairs and commercial. And eventually in this role, you also have line management or other study managers or scientists. So, you should like to work with people and also to coach people. Bring them forward in their development. Also select the right people for these roles. Qualification is similar to the previous one here; also, MD, PhD, PharmD, or scientists from natural science, that's all possible. Again here, the highest role, the more an MD plus/minus PhD is really asked for. So, again, reminder, ask questions. Simona is very keen to get your questions and to chase me afterwards. Let's switch to medical affairs. So, as I said medical affairs is a link between the science and the commercial activity, and primarily is managing the external relationships. So, we work a lot with key external experts, with scientific societies but also, with patient advocacy groups, not with individual patients, but with patient advocacy groups. And we handle inquiries from both externally and internally, make sure that we train our customer facing people appropriately. And for me, very important is really that we provide balanced and unbiased medical education. Both about the disease and about the products where appropriate so, registered or in development. And, as I said before, we really need to ensure a high level of medical scientific training of internal staff. And this goes across the board from our medical people, but also marketing salespeople, and eventually, other functions. Sometimes, even the board of a company, you need to train. And in a nutshell, these roles are medical face of the company. So, 150% compliant, behavior, good communication skills, good partnership with experts is really something what is a key to be qualified for that role. And a couple of examples, there are many roles we have, but I would divide to in-country roles and above-country roles. And so, the in-country roles, so like responsible here for Switzerland, this is a good entry position, but even for long-term is a medical science liaison. So, providing medical education, you're working with experts on unsolicited study proposals. So, if some of you might have experienced with the investigator initiated trials. So, this is something where the medical science liaison is the partner of this investigator. This is basically a study which is supported by the industry, either with product and/or with financial support, but it's a completely industry hands-off. So, we will not influence the study. Of course, we have to check if all the documents are appropriate, protocols, statistical considerations, et cetera. But it's an investigator sponsored study according to GCP ICH. So, the investigator is responsible for everything. Then, we have a medical advisor role, which is also, usually, in countries, can be above country, but it's more an office-based role. It's most strategic, managing the external relationship, but also providing strategic feedback into internal functions, medical then to above country if there are any specific needs in the country or any places, any specific signals in the country. Then, this needs to be escalated to above country functions. And also, these medical advisors meeting then programs, for instance, for scientific societies and develop meaningful, independent medical education, for instance. The country medical director, this is more a managing position. It's a medical head of a country organization, and very often responsibility first from country to country, also from company to company. Responsible for local medical affairs for research and development in the country, for safety, sometimes, also regulatory and market access. So, it's very often a big group. So, some companies here in Switzerland have 40 to 80 medical people who are managed by the country medical directors. So, as you can imagine, this requires a lot of management skills, budgeting skills, people

development skills. So, this person is primarily line manager and it's usually always member of the country leadership team. So, where the country head, the commercial head, the medical head and couple of other functions are then really driving the country organization, which can be pretty big. So, even more than 1000 people in countries. Above-country roles in medical affairs at a regional level, as I said before, it's medical advisor, but just then for a couple of countries. So, for instance, in my team, we have a regional medical director who is covering approximately 12 countries. We have one for central Eastern Europe. We have one here for mid Europe. Here you are either a TA in therapeutic areas specific lead. So, in my career I was medical director for central Eastern Europe for oncology. But you can also, depending on the size of the company, you can also have a full range and covering the full portfolio of a company. And then, you also usually the country, the line manager of the country, medical directors in the region, and you are the medical spokesperson of the company in this region for your specific area. So, you are the face of the company, you are at conferences, you are meeting with experts, you are meeting with regulatory bodies. It's a very colorful position. I loved my role in central Eastern Europe for oncology. This was one of my best times in career. At a global level, it's very often you can a global broad medical director, which is the... who is the strategic medical lead for usually a marketed product or a product, which is in phase III and when you prepare the launch of the products pending registration. And here, you are the global medical spokesperson for these products, you are working pretty similar to what I showed before in the countries. You are working with a lot of other functions, the commercial director, market access, R and D. Often you have to manage a team and a team which is not sitting with you, but a team which is remote. So, this can span from Australia to Argentina. And so, you also need to be flexible when you want to have your calls. It can happen that you sometimes need to do also your work at midnight or one or two o'clock in the night because of the geographical spread of your team. But we come to that in a minute. We have then, other functions in the industry, and I was pointing that out before. Pharmacovigilance, safety, I will touch this only a little bit top-line. Pharmacovigilance is in charge of detection, assessment, understanding, prevention of adverse events throughout the lifecycle. And here we can have drug safety physicians where you are responsible to monitor and report drug effectiveness and importantly, adverse events or a safety lead with oversight on clinical trials. Really monitoring during the progress of the study for any safety signals, which are really important to be addressed during the course of the study, either with amendments or even with discontinuation of the study. So, I think you are the safety guard for the patient in this role. In regulatory affairs, when you see there's a little bit on the right side, how interlinked this role is. It's an interface between the company and the regulatory authorities, not only for registration, but also for regular updates on the products. Sometimes, there are specific requirements associated with the registration and here you'll need to interact with the regulatory authorities. You need to like also to be up to date with the legislation and you are the advisor for the company, what are the potential registration rules for a product in development. This is also a very interesting role. Then, commercial, very top-line in commercial. Everything is possible. So, you can start as a sales rep, many medical people start a sales rep and I have one of my former team members in mind who started as a sales rep, then, came to me as a medical science liaison. So, in this very basic, not basic, it is a startup position, in medical and he is now in engine... I think the head, the commercial head of Latin America. So, I think this is a career you can also make, and he made it in 15 years, approximately. So, there are many opportunities you can become a marketing manager or a business unit head. So, where you are leading a business-like oncology with several products, you can become the head of a country organization and go from there being promoted in a global role and then like, Dan Vasella, for instance, as I was pointing out earlier, can become the CEO of the company. Everything is possible in this. I think I would pause here. I think the slides are a bit... no, I think the slides are the slides because I had that before, but I think I would pause here and ask Simona if she received any questions?

Dr Volovat: Not yet. Not yet.

Dr Linn: Okay, don't be shy. I think we are a small family as seven participants. So, feel free, we can have an open discussion. So, I'm looking forward to hear something from you.

Dr Volovat: Maybe, they will. **Dr Linn:** If no questions, I take a bit of, I take a drink.

Dr Volovat: Yes. And just the kind reminder that we have around 15 minutes for the...

Dr Linn: Thank you, Simona, I will speed up. I was... but I think it should work.

Dr Volovat: Yeah..

Dr Linn: Okay. Everything is possible, as I said before, but expectations need to be realistic. So, the industry as, I think, as a clinic is not the paradise, right? So, but you can have a very fulfilling work here. And sometimes, you have frustration and disappointment as you have in the clinical setting. But you have great moments, specifically, when you can bring new medicines to patients. I was launching Gleevec 20 years ago. This was my first job in industry. And in Gleevec in CML, this was really a breakthrough for patients. And I had so much patients' interaction in that time. So, this was for me, one of my most impressive career moments in life, the launch of Gleevec. Important is be yourself, be authentic, be curious, be ambitious, a 100%, I would even say 150% compliant. And the patient is always number one in your list. I think this does not change for medical people. And, but even also for commercial people, in the industry, you hear sometimes reports, which sound differently. Of course, you are not working for a charity organization at the end, the company needs to earn money, but the company wants to earn the money, with bringing the right medicines to the right patients. And you are here a key-person in doing this. And it's just patient care in a different way. And for me, after 20 years, I would say it's as important as bedside work. And you have a great chance to be part of breakthrough therapies and of the future in oncology and this in this context here. Cultural sensitivity is important both internally and externally because you are working with many different cultures. It's very different if you are meeting the head of an oncology department in China, or if you're going to Rio and visiting a clinic. And the same applies to your teams; the Asian teams work differently, there's a more hierarchical, more formal way of working that in America, it's more relaxed, and Europe is in between. So, you need to have this cultural sensitivity and I think it's always good before you go to a country to check the do's and don'ts when you work with teams and it helps. Qualifications as said earlier, medical doctor, board certification is a plus, but it's not a must. I'm also not board certified, I have to admit but I think I'm board eligible, I think. This was one of the reasons why I went to industry because 20 years, the situation for qualification was different than today. Good therapeutic area knowledge is important. MBA, depending on what you want to do is sometimes helpful. You can also do it during your career, sometimes the industries is helping you with it. Definitely, a good proficiency of English, other languages like Spanish or French or German, are helpful. Publication record is definitely a plus, membership in societies, ESMO of course, but, but also others is also very good and also having your network there. And depending on the role, I think it helps if you know how to budget or at least a little bit of financial background or understanding, otherwise, you learn it on the way. And digital knowledge is increasingly important. And this does not mean only that you know how to do WhatsApp, but also really use the digital tools in the right way and develop your programs in a digital format, like we are doing it here. I give you a very quick snapshot, this is my career, my career path. And so, I worked two years, or let's say, four years in a local role first as a medical advisor and then, as a medical director, country medical director, was building up the medical department when Amgen opened operations here in Switzerland. Then, I was global indication lead, as I said earlier in Lung. I was then two years global head of immunology for a plasma manufacturer and then, stayed eight years in oncology until this business got sold to Novartis in different roles and then moved to Baxalta, which moved to Shire which moved to Servier. But this is a role always was the same before we exited there. And as I said, now, I'm a little bit more than half a year in Mundipharma and covering the whole portfolio. Money and beyond. I think this is definitely an important factor. The packages have a wide range. So, I cannot tell you, you will be, you will get this and that package. So, it varies between companies, countries, industries, biotech, classical pharma, family owned business, very, very different. But salaries are usually above the clinical salaries. Very often you have a bonus which varies depending on role between 10 and 30, 35% of your basic salary. You'll get healthcare, you'll have pension plans, this is country dependent. Sometimes you have a car or a car

allowance. Sometimes you have shares or options or both. And then a lot of other benefits, which are sometimes given for instance important for those who have a family. And you want to be flexible. Companies sometimes provide support for international schooling so that you can really also transfer from one country to another easier and the family is considered in everything what you are doing. And then the traditional work equipment. Work-life balance is possible. It's like in the clinic, but I think it's squeezed, sometimes, depending on the time of the year, if there's a budget cycle, but it's possible. And you can have a mix of office-based, home-based increasingly now, in these days, it's usually a hundred percent, a home-office base, which is not always an advantage because you can sometimes not really switch off. Usually, I'd say usually, no night or weekend shifts, but in some roles like pharmacovigilance, it can be that you need to be on-call for certain roles, but this is not routine and not standard. Often you have high pressure, as I said, and long work hours. And coming back to my first slide or one of my first slides, travel is exciting at the beginning, but sometimes, at some stage, it's getting exhausting depending on the frequency of travel. And I had in my international roles, very often 50-60% of travel time, which is then really exhausting. And you do not really enjoy it always. Nevertheless, you are the master of your life and you need to be clear, what do you want in your life. And then, you adjust and design the role and try to go your way in industry and this is possible in the industry. You'll set, you set your own priorities. And I was lucky, I always had good bosses who were always supportive. Mobility as I said, it's you need to be flexible. It's very helpful and desired for career. If you are not, it's also not a carrier block, right? It's just, the options are then a bit more limited. I think I will not go through everything here, you can read that and the slides will be available. You can gain experience, ex-patriate packages, which means that you have the package from one country and you'd move around the world with the same package. This is less and less an option for companies anymore for tax reasons, for other reasons. And it was very popular in the past, but it was also extremely expensive for companies. There are some risks. There are certainly lots of planning and stability in a clinic you can expect the clinic will be around there tomorrow as well. In industry, I think there's a lot with merger acquisitions. You do not know if the company where you are now working in is still existing next year, or has been acquired by another company and what this company will do with you. So, I experienced this two times in my life. And so, I think it can be nice, but it's not always fun. But jobs, specifically jobs for oncologists, in oncology are always around. So, if you started your career, if you are well-connected, you will always receive opportunities for new jobs. So, to become jobless is pretty unlikely. So, where to apply, and this is just, every company has a career site for unsolicited, but also for on-job applications, just look around of course, Mundipharma is here, as well. And, but of course all the others and also the new ones. And then, there are specialized recruitment firms or search engines like pharmiweb, this is an umbrella for jobs where you can scroll down and say, I want to have a job in Switzerland or in Europe or in Latin America in oncology or in HIV or wherever, in commercial and in R and D. This is a...I think if you look around, you will always find lots of opportunities where you can apply. Again, questions? We're still a little family here, so, feel free.

Dr Volovat: No questions yet.

Dr Linn: Good. Then I come to very, very briefly at the end, what are the future trends in pharma? Nothing will stay as it is. And specifically COVID now has given a boost to new technologies and not only a boost to research, but also a boost to the funding of companies working with the mRNA technology. So, Moderna is I think the second biggest player, meanwhile, in pharma with their market capitalization. So, they have a size from a market capitalization perspective, like AstraZeneca, like GSK. And COVID offered for them a huge opportunity. And even companies like Curevac where we didn't get a vaccine out of the research, they are advanced so much in their research, in their platforms. And it's not about Corona virus and similar viruses, they have programs in oncology, in HIV, in Alzheimer, in many other areas. So, this will drive the future and the players of today will not be the players of tomorrow. This is my personal opinion. So, in 10 years, the big players will, will be Biontech, Moderna, Curvac and maybe a couple of others. But it might be that the time of the current big players is coming to an end. Digitalization, as said earlier, it's not just sending, getting papers and sending emails, it's really providing meaningful edit services for customers. Here building a skillset

is definitely, definitely helpful. So, this is just as an overview, many opportunities in industry. Everything is possible. This is my strong belief, career opportunities, work-life yes, yes. Financial it's okay, I'm not starving. Challenge, you have a lot. You also have a lot of academic visibility because you are really working with the top experts in the world. And it's fun, it's really fun, I can tell you this. And you can also have or continue a parallel academic career, but with limitations. And with this, I think I'm at my end. So, am I good, members, regard to timing? Not with regard to quality, but with regard to timing?

Dr Volovat: Yes, yes. We still have a few minutes and we have a question.

Dr Linn: Okay.

Dr Volovat: So, for doctors from middle east, are there opportunities, or you should have local qualifications to gain a job offer based in Europe?

Dr Linn: Yeah. This is, this is less of a question for the industry, this is more a question for the immigration office. Yes. I would say yes. I think we do a lot of transfer and just discussing, also, with a colleague to transfer to the UK. I think, this, usually the company takes care of this, right? If you're applying for a position and you need a sponsorship for visa and for applications, usually the HR department of a company is taking care for this. For instance, when I joined Switzerland 20 years ago, there was no Schengen and my wife had a Romanian passport. So, it was a big challenge for Novartis to get my wife into Switzerland, because I said, I will not come without my wife. So, it took them a couple of weeks to negotiate with the foreign policy, but finally it works. So, and this is in, this is company job to do, yes. So, middle east, Europe. Yes.

Dr Volovat: Okay. So, I hope that answers the question. And I also have just a short discussion. I would like us for discussion on. Because you emphasized so well a lot of good parts and the opportunities and various types of things that he can access while working in pharma. But what are the main struggles when you work in pharma especially for people who want to move from the clinical work to pharma?

Dr Linn: The major... I think I would not even call it struggle. And I think you are sitting all there on your chair if you have an office-based function, right? So, I think in industry and in the clinic, I was finally in charge of three different boards and I made approximately 10 kilometers walk a day. So, you gain weight. This is the one struggle. And in home office-based you gain even more weight, like I'm doing now. And the other thing is, depending, I think you sometimes have discussions with commercial, where commercial would like, or the marketing and sales group, would like to go a little bit further than you as a medical person would like to allow, right? And this is discussions where you talk, okay, these are the limitations where commercial, what commercial is allowed to do and what, and here is the limit. And you need to have a clear position, and sometimes, you come under pressure, but you learn it with time also to manage that. And I think when you start in the industry, you always will have a good mentor and a good coach and a good boss. I think most of the bosses are good. I can say and this is not applying to my experience only, but to others as well. So, nothing is expected when you start in the industry tomorrow, expect of your backgrounds, but you will get the training on the job. And my training in the first two years in Novartis was exceptionally good.

Dr Volovat: Yeah. That would have been my another question about the skills that are needed. If there are the special skills that you need to have before considering a job in pharma, maybe different from the one that you have in clinics? So...

Dr Linn: Yeah, no, that's it. I think if you have clinical trial experience in the clinic, it helps you a lot, right. That you know, how protocol looks like and the investigator brochure and what you have to do, submissions to ethical committees and so on. So, this helps you a lot, but this is a good basis then together with your medical knowledge to gain, to go into industry. And that's fine.

Dr Volovat: And, and in my last, just very short question, short answer, because you, you mentioned about the COVID pandemic that is changing everything around us and the directions. So, what do you think is the main direction that it's going to be changed in pharma after the situation?

Dr Linn: I think digitalization definitely, right. So, I think nevertheless, the personal context remains important, but the services pharma will provide also the medical education activities will move more and more into the digital world, rather than face-to-face.

Dr Volovat: Thank you very much. I think that we can...

Dr Linn: Thank you. And just one comment, at the end. So, for those, for the participants, if you have any specific questions which we cannot answer here, you can contact me via LinkedIn, and we can have a chat. If you want to have any personal advice or what you want to do, feel free to contact me.

Dr Volovat: Thank you, everyone for participation. And thank you for the presentation.

Dr Linn: Thank you it was a pleasure.

Dr Volovat: It's a pleasure.