GetReskilled

The Ultimate Guide to Finding a Job in Pharma

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Introduction

Are you thinking of a career change?

Do you want to know more about finding a job in Ireland's highly successful pharmaceutical and medical device manufacturing industries?

We wrote this eBook for those of you considering a mid-career change into this sector. You will be able to find out the types of jobs and salaries that are available and what you'll need to do to successfully switch into these industries, based on your qualifications and experience.

As a matter of fact, if you already have a technical background, you probably have far more relevant knowledge and experience than you realise. The key is identifying that experience, filling your knowledge gaps and having the courage to make the change.

Let's begin with an overview of this sector.

Part 1: Ireland's Pharma Industry - Why You Should Reskill

"I would highly recommend this course to everyone! Before taking this course I didn`t know anything about pharmaceutical industry. I wanted to try something different and never regretted choosing this one. It helped me not only to enhance my knowledge, but also boosted my confidence and faith to find employment again. I found that pace of course was good, lecturers were very good and professional, overall very good experience."

Vesna Dimitrijevic - BioPharmaChem

Chapter 1 - Why Consider Pharma?

Ireland is home to a highly successful pharmaceutical manufacturing industry, attracting businesses from overseas as well as supporting local enterprises.

The industry has performed impressively in spite of the tough economic environment over the last few years, proving its stability despite the cyclical up and downs of the economy.

Here's a quick overview:

- **A total of 300+ MedTech companies and 75+ pharmaceutical companies in Ireland**
- **ALL 10 of the world's largest pharmaceutical companies have a presence in Ireland**
- **28,200 people directly employed in pharma; 29,000 directly employed in MedTech**
- **150,000 further people employed in supporting industries**
- **33% of the world's contact lenses are made in Ireland**
- **30 million people with diabetes use injectable devices made in Ireland**
- **50% of all Ireland's exports are now pharmaceutical related**
- **Pharma accounts for €35 billion per annum of Ireland's exports (top in Europe)**
- **Medical Devices account for €12.6 billion per annum of Ireland's exports (2nd largest in Europe)**

What is Pharmaceutical Manufacturing?

Pharmaceutical companies make medicines and vaccines. That's a huge responsibility.

If you're the people in charge of making things specifically designed to try to make ill people well again, you've got to do your job right. There is simply no room to make a mistake.

Because of this, pharmaceutical manufacturing is a unique and highly regulated environment.

Pharmaceutical manufacturing facilities operate within strict guidelines to make sure that medicines are made safely and correctly, every single time.

We've tracked down a couple of videos to give you an idea of what working in pharmaceutical manufacturing might actually look like.

Check out this video from the 'Naked Scientists' (no actual nudity involved!) that talks through what kind of ingredients actually go into making tablets. Or check out this "How it's Made" episode, it's also focused on manufacturing pills, which shows a bit more of the machinery involved.

If you are looking for a mid-career change, there are five reasons in particular you should consider this sector.

1. The industry is growing

Since the 1960s, Ireland's pharmaceutical and medical device industries have undergone massive change. There's only one thing that hasn't changed - their exponential growth. Here is a quick look at the growth of these industries over the last few decades.

- In 1988, the pharmaceutical industry directly employed 5,200 people; today, over 25,000 people are employed directly and a further 25,000 people are employed in roles supporting and servicing this industry. In recent years, job growth has averaged out at 1,000 per year.
- The biopharmaceutical industry has made a capital investment of more than €8 billion in Ireland, most of which was within the last decade. Between 2011 and 2013 (when many industries were still struggling with recovery from the global financial crisis), over €7 billion was invested, leading to 1500 new jobs.
- There have been over 2000 new jobs created in Ireland's MedTech industry since 2014. In 2014-15 alone, medical technology companies invested €960 million in the country.
- Figures from the Central Statistics Office show that exports of medical and pharmaceutical products totalled €22.2 billion in 2014. In both 2015 and 2016, that figure had increased to €30.2 billion.

2. It supplies well paying jobs

Jobs in the pharmaceutical and medical device sector pay extremely well. For example, the Central Statistics Office reports that people working in the industry earn approximately 30% **more** than Ireland's national average, and the IPHA (the Irish Pharmaceutical Healthcare Association) suggest that salaries are higher when compared against other manufacturing roles.

The average salary for pharmaceutical careers in Ireland is over €47,000. The important thing about the well-paying jobs within this sector is that they are throughout the career ladder – from entry level positions onwards – so it's never too late for you to reskill into this area and take advantage of its numerous benefits.

3. It doesn't suffer from cyclical ups and downs

Before committing to a change of career though, it is important that you consider the security of your new role. Whilst nothing can ever be guaranteed, the medical device and pharmaceutical industries in Ireland have not faced the same historical ups and downs of other industries. It's important to remember that growth has been sustained over many years – this industry has performed well throughout many dips in other sectors.

Many manufacturing sectors showed decline after 2002, the pharmaceutical and medical device sectors did not, they have continued to grow year-on-year. There are two main factors at play here:

- High level of foreign direct investment - new overseas companies are investing as well as more established ones expanding.
- The amount of final product which is exported - Ireland's medical manufacturing industries are not only reliant on 'local' markets.

4. It offers rich opportunities for career growth

One of the main draws of Ireland for medical device and pharmaceutical companies is the talented workforce that exists in the country. However, with the industry growing at its current rate, the talent pool is becoming increasingly sparse.

In 2016, the body who advises the Irish government on current/future skills needs of the country, the Expert Group on Future Skills Needs (EGFSN), specifically singled out a few job roles where skills were identified as an acute need for the country, these were in the groups of:

- Scientists
- Engineers
- Technicians

For the full list, see the report here.

Other groups have also reported recruitment troubles in areas including:

- Lab technicians
- Engineers
- Production specialists
- Quality specialists

All of these employment areas are expected to remain "in demand" for quite some time – this means it's an excellent time to consider reskilling and getting involved.

The other good news is that the Irish recruitment agency Brightwater has reported a "steady expansion at VP, director, and CxO level" within both the pharmaceutical and medical device sectors, so opportunities are increasing all the way up the career ladder – once you're in, there is excellent scope for progression.

Many of the the world's top medical device and pharmaceutical companies are based in Ireland, meaning it is a great place to launch your new career.

5. Host of new innovations

Ireland's past successes have not only come from growth of existing business, but also from embracing new technologies and innovations. Ireland continues to strive to be a centre of excellence for innovation within the sector.

As part of the National Development Plan in 2007, the Irish government gave over €8 billion of funding towards Science, Technology and Innovation. Some of this funding was used to develop research centres and this investment in research has ensured that Ireland is building its own future in innovation.

Examples include the Biomedical Diagnostics Institute which is developing next generation medical devices and the Shannon Applied Biotechnology Centre which is working with natural resources to develop molecules as targets for drug development.

Moving forward, Enterprise Ireland has outlined the following areas as opportunities for growth over the next five years:

- Value added generic pharmaceuticals
- Early stage pharmaceutical research
- Contract services for the pharmaceutical industry
- Gastrointestinal disorders
- Products bringing together technologies from different platforms in collaborations

The IMDA (the Irish Medical Devices Association) estimates that over 80% of Irish medical device companies are "innovative active", meaning they are currently involved with research and development.

This process is increasingly integrating different sectors (e.g. biotech, devices, software, etc.) to produce truly innovative medical products. With so many like-minded companies in the same area, Ireland is the perfect place for companies to be collaborating in this progressive way.

In 2016, Ireland ranked 7th out of 128 countries on the Global Innovation Index.

Having attracted thirteen of the world's top fifteen medical technology companies, Ireland is already a well-respected centre of excellence for manufacturing. It is now striving to be seen as a centre for innovation as well.

Chapter 2 - Over 5,600 New Jobs Announced

At the start of July 2017, there were more than 5,600 new jobs that had been announced as coming to Ireland's pharmaceutical and medical device industries over the next few years. In addition, there is a skills shortage that is making it difficult for employers to find suitable candidates for vacancies.

There have been several big job announcements over the last year which have contributed greatly to the number of open positions. These included:

- **Alexion** announced 200 jobs in Dublin and Athlone, with a second announcement of another 50 jobs in Athlone later in the year.
- **BD** announced 100 new jobs as they expand their Limerick facility, and 20 new roles in Louth as they invest €36m in that production facility.
- **BMS** are recruiting for 400 new positions as they open a new biologic manufacturing plant in Dublin.
- **Chanelle Group** are creating 175 new jobs in an expansion of their Galway plant.
- **Ethicon** announced 270 new roles at a new plant in Limerick.
- **Eurofins'** Waterford site is creating 160 positions.
- **GE** announced 'GE BioPark Cork', expected to bring 500 jobs.
- **IQ Pharmatek** are creating 200 new jobs in Clonmel.
- **MSD** are creating a total of 530 new jobs (200 and 330 in separate announcements) across Carlow, Cork and Tipperary.

- **Ortec** are creating 110 new positions in Limerick as they opened their new European HQ.

- **Randox** announced 470 new jobs at a new manufacturing and research facility.

- **Regeneron** added a further 200 positions in Limerick.

- **Shire** are creating 400 jobs in Co Meath over the next four years. They also announced a shorter term plan to fill 150 new positions in Dublin.

- **VistaMed** created 200 new jobs in Leitrim with a €10m investment in the site.

- **West Pharmaceutical** are creating 150 new positions in Waterford and another 100 in Dublin.

- **Zimmer** announced 250 jobs at their new medical device hub.

For a full list of currently active job announcements, check out this page on our website.

With this level of new opportunities, there has really never been a better time for you to reskill into pharma or medical device manufacturing. If you've got an engineering, science/laboratory, quality, manufacturing, food process, maintenance, project management, construction or automation/instrumentation background, your skills are needed - now!

Chapter 3 - What is the future of the industry in Ireland?

It may seem like a simple conclusion, but the world has always and will always need medicines and medical devices that are made safely, cost effectively and efficiently. That is more true now than in any other era - the world has an increasing life expectancy and a growing elderly population.

The need for effective, safe, and cost-efficient healthcare has never been greater, and Ireland is focused on being the country of choice to provide these.

At the end of 2014, the medical device industry body, the Irish Medical Device Association, announced results of a sentiment survey of its members:

- 77% expect to see a rise in sales
- 44% expect to be hiring new employees
- 35% expect an increase in the spending across research and development

The IDA and Enterprise Ireland also continue in their efforts to attract new talent. This means there is an active and determined effort to increase the numbers of both local and foreign companies setting up or expanding in Ireland.


急停开关
EMERGENCY
热风温度控制仪
INLET TEMPERATURE

Chapter 4 - How Long Will A Successful Career Change Take?

The short answer – at minimum 6-9 months.

The long answer (which you really should take time to read, to make sure you understand what's involved!) is that the time it takes to successfully make a career change to pharmaceutical manufacturing will depend on a number of factors:

- Your previous work experience
- Your previous academic experiences
- How well you keep up with the online study programme
- How good your job hunting skills are
- How many hours you devote to job hunting per week
- What your local industry environment is like
- How well you can present your skills at interview

How Long It Takes – Studying

If you have a background in the following:

- Engineering
- Laboratory science
- Quality
- Maintenance
- Manufacturing
- Food Production

You'll more than likely be starting with our academically accredited Certificate in eBioPharmaChem, it's 30-weeks of academic work that can take people somewhere between 30 and 40 weeks to complete – if you stay on target.

No Industry Experience? No Problem.

If you don't have any industry experience in the above areas, you'll more than likely have to start with our Manufacturing Safe Medicines & Medical Devices (Foundation) programme in order to meet the Dublin Institute of Technology minimum academic requirements. Then you'll have another 8 weeks of study on top of that.

Our minimum requirements article should give you an indication of which course you'd begin with. Alternatively, contact us to speak to a member of the admissions team who can advise you about your particular situation.

Both of these course options are part-time (on average 14 hours per week but this will can vary dramatically depending on your background and work experience) and delivered fully online. You can study while working or maintaining other commitments – you don't have to give up your life for 30 weeks.

How Long It Takes – Finding A Job

As most of you have not been job hunting for years, we can absolutely guarantee you it's going to take you a few months to get up to speed with your job hunting skills so the key to shortening your overall transition time is...

You should start applying for jobs while you're still studying. Every month you spend without a job will cost you €2,500 - €5,000 in lost wages.

You will have enough knowledge to start talking to employers about halfway through the eBioPharmaChem course – after about 15 weeks. Often, just knowing that you are studying a relevant course and will have a relevant qualification in the near future can be enough for employers.

It is not uncommon for our trainees to secure employment while still studying. And again, since the Certificate in eBioPharmaChem is a part-time course delivered online. You can continue to study once you're in relevant employment to make sure you gain that all-important academically accredited certification.

Even if you don't manage to secure a job while you study, you will have access to the online learning materials for at least 6 months after you have finished the course. This will help you refresh and prepare for interviews.

In addition, the Job Hunt Resource Centre on our website is entirely open-access. You can read articles and find resources to help with your job hunt while you study and for as long after as you need.

Our Money Back Job Guarantee

Depending on the programme you enrol in and your location, you may have to option to select a Money Back Job Guarantee. This guarantee will give you access to an additional course that focuses only on job hunting, that you will complete alongside your other course. This will take an additional 5-10 hours per week and will also give you access to a job hunt advisor.

If you follow along all the steps on that programme, we're so confident that you'll have a job within 3 months of graduation, that we'll give you your course fees back if you don't.

You can always Contact us to discuss this option with a member of the admissions team.

Chapter 5 - How to Be Sure About Your Career Change

You're looking for a change of career. Something different. But is pharmaceutical manufacturing the something different that's right for you?

We're assuming that you've already done things like taking our "Is pharma for me?" quiz and been able to identify which course is right for you.

If you're successfully through all that then you know that you could make a career change in pharma, but should you? How do you make an informed decision on changing career? It's in everyone's interests that you are absolutely sure about your decision before you start.

Here's what we'd recommend.

Our Top Tips for Being a Good Online Student

1. **Read about potential jobs you'd be suitable for and their salaries**
Are these jobs that you would enjoy doing? Would you still be happy doing them in 10 years time? Because making a career change is something you do for the long term, you've got to consider it beyond the next year or two.

We're going to cover this in more detail in Part 2 of this eBook so sit tight for more information about that - just keep the above questions in mind.

2. **Have a look at what jobs are available.**
Here is a link to our Irish jobs board. It's Ireland's largest dedicated pharmaceutical jobs board so should be able to give you a great idea about the types of jobs available right now.

Use it to see what opportunities there are in your commutable area. Keep in mind that there might be temporary or fixed term opportunities available – would you be willing to commute a little further for a job like this if it allowed you to get a "foot in the door" of a new industry?

3. **Consider what would be involved in job hunting.**
   Do you know what would be involved in finding a pharmaceutical manufacturing job? Don't worry if not, this ebook has it covered! In Part 4 we'll look at the steps involved.

So there's a lot to think about before you can be sure. Of course, our admissions team are always on hand to chat through any questions you have but at the end of the day, no one can make the decision for you. You need to know that it's been a properly informed one.

The good news is, by the end of this ebook, you should have all the information (or at least know where to go to find it), to actually make that decision.

Part 2:
Jobs & Opportunities

"The reasons I would recommend the course are:
1. The professionalism and passion of the lecturers comes across in the tutorials which gives the student confidence and encouragement to keep on top of the course.
2. The course content material is concise and interesting.
3.The timing of the release of the lessons is perfect; the student moves at a comfortable pace, one step at a time.
John Ryan - BioPharmaChem
(Graduated February 2014)

Chapter 6 - What is Pharmaceutical Manufacturing and Medical Device Manufacturing?

We know that one of the biggest challenges when you're looking to choose a career, is that it's actually really difficult to figure out what people do on a daily basis.

What does working in this industry actually look like? If you're about to commit to retraining into a new industry and you plan to spend the next few years there, you'd better know.

So we've done our best to lay out this information for the pharmaceutical and medical device industries. Of course, details change and there may be slight variations between specific companies, but this should give you a useful insight into a day-in-the-life of different industry employees.

The Different Industries

Let's start with some basic definitions (don't worry if they sound a little complicated - you don't have to understand all the science and research behind products to be a successful manufacturing employee):

- **Pharmaceuticals** – are made using a chemical processes and is generally what comes to mind when people think of "making medicines". The pharmaceutical ingredient (along with a filler) is what you'll find in pills, tablets and capsules. The painkiller "aspirin" is a great example.
- **Biopharmaceuticals** – Where as pharmaceutical products are made using a chemical processes, biopharmaceutical products are made using a biological process or biotechnology. For example, think of how beer is made. The brewer mixes hops, barley, yeast and sugar and the yeast does all the hard work making the beer. So at its simplest, this means capturing things that are produced in biology and using them to make a medicine. The processes here are producing

larger naturally occurring molecules such as proteins, genes and cells, and (again) 'packaging' them in a way that the body can make use of.

- **Nutritional Manufacturing** – this is a segment of the pharmaceutical industry that involves the research, development and manufacturing of nutritional products such as milk powder for babies.

- **Medical Device Manufacturing** – this is a broadly used term for any product, instrument or item which is used to diagnose, prevent, treat or cure health conditions without any chemical or pharmacological action on or within the body. It's probably easier to explain with examples - artificial hips, artificial heart valves, stents (used to widen blocked arteries), machines to measure blood glucose, surgical equipment, hospital monitors and contact lenses are all examples of medical devices (and there are many more!).

Despite their differences, all of these industries work with the aim of saving or improving people's lives. Similarly, they're all highly regulated. This is one of their key distinguishing features, and what makes them different from many other career choices.

Their manufacturing facilities operate within strict (government regulated) guidelines to make sure that medicines and devices are made safely and correctly, every single time. That requires staff that are diligent, committed and able to work within a strict structure.

So What Does Working in Pharma Look Like?

In case you missed in the introduction, we've tracked down a couple of videos to give you an idea of what working in pharmaceutical manufacturing might actually look like.

Check out this video from the 'Naked Scientists' (no actual nudity involved!) that talks through what kind of ingredients go into making tablets.

Or check out this "How it's Made" episode, it's also focused on manufacturing pills, which shows a bit more of the machinery involved.

And finally, no matter which specific industry you're interested in, you might like to check out this video from NC BioNetwork on "Aseptic Gowning for a Cleanroom". This will give you an idea of some of the procedures that might need to be followed, depending on your specific manufacturing environment. Working in a cleanroom is extremely common within these industries.

Different Company Departments - Which One Is Right For You?

Let's now consider the departments within a pharmaceutical company, to get you starting to consider where you might fit in.

Production (Manufacturing)

Deal with all stages of pharmaceutical product manufacture – from producing active ingredients, through to completion of finished products and even packaging. Due to this diversity, work in this area can take many forms and involve the use of specialist machinery. These production processes are all carried out in strict adherence to both internal and external protocols.

Typical % of total company employment: 50%

Breakdown of department activities in (Bio)pharmaceutical manufacturing:

- Upstream & Downstream activities -
  - Upstream activities are stages of biopharmaceutical processing up to the cell-culture or fermentation process that is used to make the target proteins.
  - Downstream activities are the stages of processing that come after cell culture or fermentation. These stages include separation and purification to achieve the required drug product
  - Averages 30% of total company employment (in a new plant the number will start low and increase as activities are scaled up through to full production)
  - Generally engineers, scientists and technicians with Honours Degree and Masters level qualifications
  - In Ireland, this is equivalent to NFQ level 8/9

- Manufacturing, Science & Technology (MSAT)
  - Supports operations with activities such as continuous process improvement, implementing new technologies and troubleshooting.
  - Average 10% of total company employment.
  - Typically engineers, scientists and technicians with Ordinary Degree and Honours Degree level qualifications
  - In Ireland, this is equivalent to NFQ level 7/8

- Fill Finish/Packaging
  - Some of the final stages of the manufacture process where the active agent is prepared into its final form, before being filled and sealed within containers.
  - Average 10% of total company employment once at full production.
  - Usually requiring Ordinary or Honours Degree level qualifications but some Diploma level qualifications with relevant experience may be suitable
  - In Ireland, this is equivalent to NFQ level 7/8+ (or level 6 with experience)

Skills needed include:

- Good manufacturing practice
- Aseptic and sterile manufacturing
- Upstream processing
- Cell culture
- Downstream processing
- Drug substance production
- Media and buffer preparation
- Viral clearance
- Lean Six Sigma manufacturing

Quality (including Validation)

Functional area that monitors and documents activities, processes and products of manufacturing to ensure they meet predefined expectations. Ultimately, this team ensures the safety of the drugs that go out for distribution - their activities are essential within such a regulated industry.

Typical % of total company employment: 30%

Breakdown of department activities includes:

- Quality Assurance - monitors and test processes to ensure results fall within predetermined ranges
- Quality Control - tests products of manufacturing process to ensure meets predefined criteria
- Validation - creates an evidence trail to show a process or system leads to a consistent result that can be reproduced

Skills needed include:

- Good lab practice
- Molecular biology
- Protein characterisation
- Bioanalytics
- Biochemistry
- Protein chemistry
- Glycan analysis
- Microbiology
- Ultra performance liquid technology/ultra high performance liquid technology (UPLC/HPLC)
- Bioassays
- Mass spectrometry
- Documentation management
- Batch release
- Regulatory filings

Operations

Ensures the continuous functioning of the manufacturing plant and its equipment.

Typical % of total company employment: 10%

Breakdown of department activities includes:

- Technical Services
  - Average 6% of total company employment - numbers increase as plant scales up to full production
  - Generally workers will have a minimum of an Ordinary Degree level qualification alongside relevant experience. Employees with a Diploma level craft qualification may be suitable for upskilling
  - In Ireland, this is equivalent to minimum NFQ level 7 qualification and relevant experience, with NFQ level 6 craft qualification holders having potential for upskilling

- IT/Automation -
  - Average 4% of total company employment during full production
  - For roles here, typically an Ordinary Degree level qualification is required
  - In Ireland, this is equivalent to NFQ level 7 qualifications

Skills needed include:

- Facility management
- Equipment maintenance
- Clean utilities
- Calibration
- Automation

Research & Development

Where staff are engaged in making improvements and modifications to existing production processes and identifying possible new production technologies and applications.

Typical % of total company employment: 5%

Department requirements:

- May be located within the facility or at a centralised company location
- Typically requires a minimum of Honours Degree qualification alongside experience
- In Ireland, this is equivalent to NFQ level 8/9/10 qualifications with experience

Skills needed include:

- Varies depending on products and areas targeting for product improvement

Other

Includes areas such as Supply Chain, Logistics, Marketing, HR, Warehouse, Finance, etc.

Typical % of total company employment: 10%

Breakdown of department activities includes:

- May be located within the facility or at a centralised company location
- Typically requires Ordinary or Honours Degree level qualification with domain-specific knowledge. Warehouse roles may be suitable for those with Diploma qualifications and appropriate upskilling
- In Ireland, this is equivalent to NFQ level 7/8+ qualifications with domain-specific knowledge. While level 6 qualification holders may be appropriate for upskilling for warehouse roles

Skills needed include:

- Good distribution practice
- Project management
- Production planning
- Procurement
- Stock management
- Distribution
- Warehousing

One thing to keep in mind is that this is just a guide. The size of these departments depend upon the size of the pharmaceutical company (smaller companies may outsource some of these roles altogether), but they are all ultimately critical parts of the pharmaceutical manufacturing process.

Chapter 7 - Pharma Jobs & Their Salaries?

What specific job could you do within the pharmaceutical manufacturing industry and how much does it pay?

Click on any of the roles below for a more detailed look at what each job involves.

With a Manufacturing Background you could consider…

Packaging Operator

Responsible for taking the finished product of a manufacturing process and ensuring that it is packaged in line with company and industrial standards, making it ready for sale or distribution.

Salary ranges based on years of experience (€) –

- 0-3 years: 28,000 – 32,000
- 3-5 years: 32,000 – 38,000
- 5+ years: 38,000 – 42,000

Process Technician

Operates equipment, monitors processes and documents results in strict adherence to protocols. They are involved in all stages of the manufacturing process and in the pharmaceutical and medical device industries, their role often occurs within a cleanroom environment.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 – 35,000
- 3-5 years: 35,000 – 40,000
- 5+ years: 40,000 – 50,000

Production Supervisor

Directly responsible for overseeing and organising the equipment, staff and processes on a production floor. They will oversee scheduling and routine production activities

as well as acting as first-line troubleshooting should problems arise.

Salary ranges based on years of experience (€) –

- 0-3 years: 35,000 - 45,000
- 3-5 years: 45,000 - 55,000
- 5+ years: 55,000 - 60,000

With a Science Background you could consider…

Laboratory Technician

Assist industry scientists in their research and testing. This can involve a number of different tasks and these tasks can vary greatly between roles. Within the pharmaceutical industry, laboratory technicians can be employed in research and development or in production and manufacturing. As a result, the work can be based in a laboratory or on a production line, depending on the specific responsibilities of the role.

Salary ranges based on years of experience (€) –

- 0-3 years: 25,000 – 28,000
- 3-5 years: 28,000 – 32,000
- 5+ years: 32,000 – 35,000

Microbiologist

Scientific professional who studies microorganisms. They play a key role in pharmaceutical or medical device manufacturing by testing to monitor levels of microbial contamination at all stages of the manufacturing process.

Salary ranges based on years of experience (€) –

- 0-3 years: 28,000 – 33,000
- 3-5 years: 33,000 – 45,000
- 5+ years: 45,000 – 53,000

With a Quality Background you could consider...

Documentation Specialist

The individual responsible for the writing, distribution, collection, storage and maintenance of a company's documentation. In highly regulated industries, these activities are a requirement for regulatory compliance.

Salary ranges based on years of experience (€) –

- 0-3 years: 25,000 - 28,000
- 3-5 years: 28,000 - 33,000
- 5+ years: 33,000 - 38,000

Quality Assurance Associate

Monitors and records results from processes and procedures within manufacturing industries. Results are continually compared to predetermined expected ranges and any deviation from expected results leads to corrective measures.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 – 36,000
- 3-5 years: 36,000 – 45,000
- 5+ years: 45,000 – 50,000

Quality Control Associate

Tests the product of a manufacturing process to ensure that it meets with predefined criteria. The completion of this quality check ensures that the final product is safe to release for sale or distribution.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 – 36,000
- 3-5 years: 36,000 – 45,000
- 5+ years: 45,000 – 50,000

Quality Engineer

Works within the quality team to ensure the overall quality of a manufactured product and are tasked with creating documentation, devising quality tests and defining the criteria a test result should meet. They play a key role in fixing issues when they arise.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 - 40,000
- 3-5 years: 40,000 - 50,000
- 5+ years: 50,000 - 60,000

With an Engineering & Maintenance Background you could consider…

Calibration Technician

Responsible for the routine inspection, testing, maintenance and repair of instruments and manufacturing equipment. The purpose of the calibration technician role is to ensure the accuracy of the measurements taken using this equipment.

Salary ranges based on years of experience (€) –

- 0-3 years: 28,000 - 32,000
- 3-5 years: 32,000 - 38,000
- 5+ years: 38,000 - 42,000

Facilities Engineer

Can have an extremely broad remit covering the infrastructure of the building, depending on the needs of the company. Areas of direct responsibility might include environmental, health and safety issues, electrical engineering or HVAC (heating, ventilation and air conditioning).

Salary ranges based on years of experience (€) –

- 0-3 years: 35,000 - 40,000
- 3-5 years: 40,000 - 50,000
- 5+ years: 50,000 - 55,000+

Maintenance Technician

Tasked with routine maintenance of manufacturing equipment as well as helping to troubleshoot when issues arise. Due to the regulation of the pharmaceutical and medical device industries, they are required to keep detailed and accurate documentation of their work.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 - 35,000
- 3-5 years: 35,000 - 40,000
- 5+ years: 40,000 +

Manufacturing Engineer

Responsible for development, design, implementation and monitoring of equipment, tools and machinery used in the manufacturing process. Their primary goal is to create the stages of a manufacturing system that ultimately produces a product in the most time-efficient and cost-effective way possible, while always maintaining staff safety and product quality.

Salary ranges based on years of experience (€) –

- 0-3 years: 35,000 - 38,000
- 3-5 years: 38,000 - 48,000
- 5+ years: 48,000 - 58,000

Process Engineer

Responsible for designing, implementing, controlling and optimizing industrial processes, especially continuous ones within the chemical, petrochemical, agriculture, mineral processing, advanced material, food, pharmaceutical, and biotechnological industries.

Salary ranges based on years of experience (€) –

- 0-3 years: 35,000 – 38,000
- 3-5 years: 38,000 – 50,000
- 5+ years: 50,000 – 60,000

Project Engineer

Manages technical or engineering projects. They work with stakeholders at all levels, with direct responsibility for budgeting, personnel and project planning.

Salary ranges based on years of experience (€) –

- 0-3 years: 45,000+
- 3-5 years: 50,000+
- 5+ years: 55,000+

If you're looking for more Highly Specialised Roles you could consider…

Automation Engineer

Utilises technology to improve, streamline and automate a manufacturing process. They are responsible for planning, implementation and monitoring of such technology.

Salary ranges based on years of experience (€) –

- 0-3 years: 45,000+
- 3-5 years: 50,000+
- 5+ years: 55,000+

CSV Specialist

Plan, write, implement and review the Computer Systems Validation protocols in place within highly regulated manufacturing industries. Their work is essential to make sure that all computer-based systems are operating as intended (with documents to prove it) to meet regulatory requirements.

Salary ranges based on years of experience (€) –

- 0-3 years: 27,000 - 37,000
- 3-5 years: 37,000 - 48,000
- 5+ years: 48,000 - 60,000

Validation Engineer

Responsible for planning, implementing and monitoring the validation strategy in highly regulated industries such as pharmaceutical or medical device manufacturing. They measure and analyse the process, audit and calibrate equipment and create a document trail that shows the process leads to a consistent result to ensure the highest quality products are produced.

Salary ranges based on years of experience (€) –

- 0-3 years: 35,000 - 40,000
- 3-5 years: 40,000 - 55,000
- 5+ years: 55,000 -65,000+

Validation Technician

Works as part of the Validation team to measure and analyse the manufacturing process, audit and calibrate equipment and create a document trail that shows the process leads to a consistent result. This ensures that the product is consistently of the highest quality.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 - 36,000
- 3-5 years: 36,000 - 45,000
- 5+ years: 45,000 - 50,000

No Experience In These Areas?

For trainees who are reskilling from another industry and don't have experience in any of these backgrounds, check out entry level positions such as:

Packaging Operator

Responsible for taking the finished product of a manufacturing process and ensuring that it is packaged in line with company and industrial standards, making it ready for sale or distribution.

Salary ranges based on years of experience (€) –

- 0-3 years: 28,000 – 32,000
- 3-5 years: 32,000 – 38,000
- 5+ years: 38,000 – 42,000

Process Technician

Operates equipment, monitors processes and documents results in strict adherence to protocols. They are involved in all stages of the manufacturing process and in the pharmaceutical and medical device industries, their role often occurs within a cleanroom environment.

Salary ranges based on years of experience (€) –

- 0-3 years: 30,000 – 35,000
- 3-5 years: 35,000 – 40,000
- 5+ years: 40,000 – 50,000

References

- Sigmar Recruitment Science & Manufacturing Guide 2017 http://www.sigmarrecruitment.com/wp-content/uploads/2017/02/Sigmar-Recruitment-Salary-Guide-2017-Science-Manufacturing.pdf
- Sigmar Recruitment Medical Devices Salary Guide 2017 http://www.sigmarrecruitment.com/wp-content/uploads/2017/02/Sigmar-Recruitment-Salary-Guide-2017-Medical-Devices.pdf
- Morgan McKinley Engineering Salary and Benefits Guide 2017 https://www.morganmckinley.ie/article/2017-engineering-salary-guide
- Morgan McKinley Science Salary and Benefits Guide 2015 https://www.morganmckinley.ie/article/2017-science-salary-guide
- Brightwater Salary Survey 2017 https://www.brightwater.ie/docs/default-source/surveys/salary-survey/2016/brightwater-salary-survey-2017.pdf?sfvrsn=2

Part 3: Reskilling - Preparing you for the job market

"The courses are delivered to a very high professional standard with both the tutors & administration staff being very helpful & encouraging along the journey, the course videos & notes were very easily followed along with weekly webinars in which we could engage with the tutors & tap further into their knowledge & experience. Studying online gives you the time to do the course in your own time yet with assignment deadlines this made you disciplined to meet the deadlines set. I would have no hesitation in recommending these courses to anyone wishing to gain an education in the pharmaceutical sector."

Ronan Balfe - BioPharmaChem
(Graduated November 2012);
eValidation (Graduated June 2014)

Chapter 8 - What Kind of Training Will I Need?

The amount and type of training you require will depend upon:

- Your previous work experience. Do you have work related experience in a manufacturing environment?
- Your academic qualifications. Do you have a technical qualification in a science or engineering discipline?
- Your career goals and aspirations. Are you looking for an entry-level role in manufacturing, science, quality, engineering/manufacturing or a logistics role?
- Are you looking for a validation role or an automation role?
- Are you looking for a more advanced career track in manufacturing, quality or engineering/maintenance?

If you are not sure where to start with picking a course – the easiest way is by checking out our What Courses Should I Take? tool. This will analyse your experience and skills and provide you with a recommendation about which course is most suitable for you at this time.

In general though, without any pharmaceutical industry experience, there are three basic routes to a career change into pharmaceutical manufacturing…

Route 1: Certificate in eBioPharmaChem

If you have industry experience in the following:

- Engineering
- Laboratory Science
- Quality
- Maintenance
- Manufacturing
- Food Production

You start with our academically accredited Certificate in eBioPharmaChem, it's 30-weeks of academic work that can take people somewhere between 30 and 40 weeks to complete – if you stay on target.

Route 2: Manufacturing Safe Medicines (Foundation Courses) & Certificate in eBioPharmaChem

If you don't have any industry experience in the above areas, you start with our **8-Week** Manufacturing Safe Medicines (Foundation Courses) in order to meet the Dublin Institute of Technology's minimum academic requirements.

Then you would take our **30-Week** Certificate in eBioPharmaChem

Our minimum requirements article should give you an indication of which course you'd begin with. Alternatively, contact us to speak to a member of the admissions team who can advise you about your particular situation.

Both of these course options are part-time (on average 14 hours per week but this will can vary dramatically depending on your background and work experience) and delivered fully online. You can study while working or maintaining other commitments – you don't have to give up your life for 30 weeks.

Route 3:

If you have some kind of technical qualification and significant relevant work experience (e.g. Information Technology/Developer/Automation/Engineering) in another industry, you could target these more specialised roles.

Here are some examples but there are many others:

- Automation Engineer
- Validation Technician
- Validation Engineer
- CSV Specialist

The exact courses that individuals within this route take are decided on a case-by-case basis. We will tailor your programme to meet your exact requirements.

If you think you fall into this category, it is best to contact us to discuss your specific circumstances.

How the courses relate to each other

One final thing to note about our accredited programmes, is that they can be combined into a pathway to a BSc degree. Below, we have broken down the different types of academic degrees and certificate programmes we offer, how they can be combined and what types of jobs you might be suitable for afterwards.

Certificate in e(Bio) PharmaChem (DT 698)

Your path to a mid-career change into pharmaceutical or medical device manufacturing begins with our Certificate in eBioPharmaChem.

(That is, unless you have no scientific background. If that's the case we recommend an 8 week introduction course to get you on a level playing field at the start of eBioPharmaChem)

eBioPharmaChem is a Level 7 CPD Certificate that is academically accredited by the Dublin Institute of Technology. It is an online course of 3 modules, taking 14 hours per week over 30 weeks in total.

Your Level 7 Certificate is worth 15 ECTS credits.

At the end of that you will have the knowledge you need for an entry-level position in pharmaceutical or medical device manufacturing. In fact, many of our trainees manage to secure their first job in the industry while still studying this course. They go on to finish the certificate as they work.

You can quite happily leave your education after you get this certification, this is the minimum you need and it'll get your foot in the door.

Check out this post for answers to the most common questions about our eBioPharmaChem programme.

Career Opportunities

You will be able to apply for entry-level roles (contingent on your previous work experience) in the following areas when you get halfway through this course - as you'll have enough technical knowledge to impress employers at an interview.

If you have a manufacturing background:

- Process Technician
- Packaging Operator
- Production Supervisor

If you have a maintenance background:

- Maintenance Technician
- Calibration Technician
- Facilities Engineer

If you have an engineering background:

- Process Engineer
- Project Engineer
- Manufacturing Engineer

If you have a quality background:

- Quality Assurance Associate
- Quality Control Associate
- Quality Engineer
- Documentation Specialist

If you have a science background:

- Laboratory Technician
- Microbiologist

If you have No Experience in these areas:

- Process Technician
- Packaging Operator

Certificate in e-Validation (DT 758A)

If you decide, however, that you'd like to aim for jobs in the very sought after niche of validation, you can continue your education with a second course, eValidation.

Our Certificate in eValidation is a Level 7 CPD Certificate that is academically accredited by the Dublin Institute of Technology. It is an online course of 3 modules, taking 14 hours per week over 30 weeks in total.

Your Level 7 Certificate is worth 15 ECTS credits.

This course equips you with the knowledge you would need to become a validation professional. (If you're not sure what that means, have a look at this blog post to see exactly what validation is all about).

Jobs in validation are more advanced than the entry-level ones available to you after eBioPharmaChem. They generally pay more and, currently, there is a shortage of validation professionals in the industry so it could be a great time to get yourself these skills. Being a part-time course, you can study while you work.

Again, after earning this certificate, you could quite happily leave education behind and enjoy your new job in pharmaceutical or medical device manufacturing. If you've been with us from the start then you've got TWO Level 7 CPD Certificates that are academically accredited and you've given yourself a great start in your new industry.

Check out this post for answers to the most common questions about our eValidation programme.

Career Opportunities

You might now consider more advanced quality and validation roles:

- Validation Technician
- Validation Engineer
- Quality Assurance Associate
- Quality Engineer
- Documentation Specialist

As a brief aside to this discussion on accredited courses, if you combine the eValidation CPD Certificate with the 10-Week Part-Time Course on Computer System Validation, you will get a thorough understanding of how the CSV process fits into your Software Life Cycle and the purpose of each validation deliverable, which means you'll be able to apply for Automation Roles, such as:

- Automation Engineer
- Systems Engineer
- CSV Specialist

See Chapter 7 for more details on job roles and salaries.

BUT, if you've completed eBioPharmaChem and eValidation, you're actually now halfway to a BSc degree...

Degree in Manufacture of Medicinal Products (DT 291)

Our eBioPharmaChem and eValidation courses are standalone programmes. You can study one or both and earn an accredited certificates.

But when the ECTS credits of these two courses are considered in combination – you have earned half of the credits needed to gain our Bachelors of Science degree (BSc).

If you've taken both programmes, you can then go on to study our eManufacturing modules.

The 6 modules of that programme complements the learning of eBioPharmaChem and eValidation to make up the BSc degree programme.

The eManufacturing modules are also delivered via an online part-time course that you can take while you work. Over 2 years, you'll learn even more about the processes involved in manufacturing safe medicines and medical devices.

Upon completion of the eManufacturing modules (and assuming prior completion of eBioPharmaChem and eValidation), you will earn a BSc Manufacture of Medicinal Products, academically accredited by the Dublin Institute of Technology.

Career Opportunities

You will be able to apply for a more advanced role in manufacturing, quality or engineering.

With manufacturing experience you might consider:

- Operations Supervisor
- Production Executive

With quality experience you might consider:

- Regulatory Affairs Specialist
- Senior Quality Control Engineer
- Quality Coordinator

With engineering experience you might consider:

- Senior or Supervisory Engineering roles

The Admissions Process

To apply for any of our courses, you should first have read the information on its dedicated page (If you're still not sure which course would be best for you – use our Which Course? tool to find out):

- If you're looking to start your career in pharmaceutical manufacturing, see our eBioPharmaChem course
- If you're looking to specialise in validation, see our eValidation course
- If you're looking to take your pharmaceutical career to the next level, see our degree programme BSc Manufacture of Medicinal Products
- If you're an industry professional looking for specialised industry courses, see all available courses

On each of these pages you'll find information on the course syllabus, who it's suitable for and pricing.

You'll also find an "Apply Now" button – once you've got a good idea about which course is right for you, hit that button. Don't worry if you're not 100% sure, you're not formally enrolling in the course just yet.

Once you hit the "Apply Now" button at the bottom of that form, your request has been sent.

A member of our admissions team will then call you to discuss your application – you cannot be accepted onto a course without a phone call with our admissions team.

This call will cover a number of areas including:

- Your educational history
- Your work experience (we will ask for a copy of your CV)
- Course options
- Pricing and payments

On the basis of this information, you will receive a recommendation of which course is right for you.

After this call, you'll receive an email with the following:

- A registration form
- Details of any other documentation required for registration
- Confirmation of your proposed payment plan
- A note of the closing date for applications

You need to submit your registration form, any other necessary documentation and payment forms to complete your registration.

There will always be someone you can speak to, at every point in the application process if you are unsure about the next step.

"I have really enjoyed the course. The course content was very detailed and way surpassed my expectation. While the course was challenging, the online support and access was exceptional. I am really looking forward to progressing to the follow-on/specialization course"
Darren Deehan - BioPharmaChem
(Graduated February 2014)

Chapter 9 - What is it Like Studying Online?

What does online learning actually look like?

We use one centralized platform where you can log into your classroom. From there you can get assignments, interact with faculty and peers, reply to message boards, and more.

- Each week, you'll complete a series of videos, quizzes, interactive activities and projects through our online platform – available 24/7. This article outlines the technology and skills you need to be able to complete an online course.

- Because it's online, there are no airfares, hotel fees or long commutes. Study at home, after the kids have gone to bed.

- Studying can fit around your pre-existing commitments - and because it's part-time, you can continue to work.

- Online courses can start off great, but staying motivated can be a challenge. So, you'll get weekly feedback reports (and emails or phone calls if you fall behind!) to keep you on track until you finish the course.

Our Top Tips for Being a Good Online Student

- **Be realistic** - online classes take the same amount of work as classes you attend in person; you need to be just as serious about it. There are no shortcuts, so you need to be able to dedicate the time it needs; don't underestimate it. If you're not sure how you feel about returning to education, have a look at this post on our website. Many of our students haven't studied for years so we know what it takes to make a successful return to education.

- **Set goals** - setting realistic goals is an important part of online study, ensuring that you're keeping on top of the workload and keeping yourself motivated as you progress. Just make sure you stick to your goals or reassess them if you're finding it hard to do so.

- **Make a plan** - schedule time for your 'classes', make this a time when you can focus with the least amount of distractions. Be realistic and try to keep to a routine. Make a study plan, divide your work into bite-sized chunks to make it more manageable. Schedule in regular breaks to ensure you're keeping your attention at its highest and giving yourself time to process what you're learning. Just ensure that you keep strict 'back to work' rules and don't get sidetracked by something else whilst on your break.

- **Create a good work environment** - being in charge of your own work environment can be very beneficial to learning; you can do everything necessary to make yourself comfortable and create a space where you feel ready to work. It does also mean that you're in charge of keeping out the distractions - try to be disciplined about leaving your phone to one side, leaving the housework alone and not getting distracted on the internet. Treat your assigned study time like you were in a classroom, and don't do anything you wouldn't do there.

- **Use all the resources available to you** - although you may study by yourself, you are certainly not alone on your course; get involved with the various support and discussion aspects of your program.

- **Self motivation is key** - keep the end goal in mind. If you find yourself struggling with procrastination or lacking in motivation on a given day, always keep your ultimate goals in mind. Remind yourself what improvement you're looking to achieve by taking the course.

- **Every bit helps** - doing 5 minutes of study while waiting in the car to collect the kids from school is better than missing an entire day of study. Like exercise - study works best when it is repeated (even in small amounts) every day. Studying online is a marathon not a sprint, so pace yourself. Applaud yourself for doing small increments daily rather than 6 hours in a day once a week. You are much more likely to remember the materials.

- **Keep in touch** - it's very easy to feel isolated while studying online, but remember you are not alone. You have a course coordinator who would love to hear from you. The most common reason for dropping off online courses is not staying in touch with your course coordinator. Course coordinators can only help if you tell them you are having trouble either with the materials or with finding time to study. So stay in touch. Once you tell them, then plans can be put in place to help remedy the situation. Check out this post for more information about the support you receive when studying our courses.

Online study isn't for everyone and it's important that you consider that before starting - have a look at this article we wrote to outline the main challenges of learning online.

What we also know, though, is that a huge variety of people are extremely successful on our courses so don't be put off just because you've never done it before. We've gathered together stories of our previous students to let you see the diverse backgrounds they've come from, their experiences of studying online and the types of jobs they have secured as a result of reskilling. Check out their stories here.

"The benefits of the series of Employment Coaching webinars were also a pivotal aspect of the courses I successfully completed."

Noel O'Brien - BioPharmaChem (Graduated June 2013); eValidation (Graduated February 2014)

Chapter 10 - What kind of help will you give me to find a job?

Your Job Hunt is the most important part of your transition into the industry, and we are here to help.

“Will I definitely get a job?” is one of the most common questions we get asked.

First up, let us be clear, we won’t find you a job, an internship or a work placement. What we WILL do is give you all the training you need to be job ready. And we are serious about helping you find a job, so we give you a few extras on top of that.

Let’s take a look at all the ways we help our trainees move into employment within the pharmaceutical and medical device manufacturing industries.

Website Job Resource Centre

We have a section of our website dedicated entirely to providing you with resources that will improve your job hunting skills.

We’ve written these articles, templates and checklists specifically for people making a mid-career change into pharmaceutical manufacturing. There is advice and information on CV writing, networking, speculative applications and SO much more.

In addition, there’s also a growing library of local resources to help your job hunt in your area.

Jobs Boards

You’ll find Ireland’s largest pharmaceutical jobs board on the resource centre but you can also sign up for email alerts to let you know when the jobs board has been updated.

Twice every month we search through hundreds of company websites to collect together all the currently available jobs into one handy jobs board. Each and every job listed has a link straight to the company’s own job advert, making it easy for you to apply direct to the company.

Course Assignments

Assignments across all courses will help you consider course content in a way that will be extremely useful in industry environments.

They are specifically designed to help you frame your thoughts and knowledge in a way that you could discuss with employers at interview. They are aimed at helping you build a portfolio which you can bring to interviews to prove you are the best person for the job.

Advanced Coaching Programme

Some of our courses also offer access to our Advanced Coaching Programme. This is a 25 week programme that lays out the steps necessary for a successful job hunt and talks you through them one week at a time.

The first 4 weeks of the course are about laying the groundwork for your job hunt – making sure your CV and job hunting skills are up to date using a range of resources. From week 5 onwards, you'll develop these skills further and be applying for jobs.

During this programme, you will also have direct access to an advisor who can offer you specific feedback and advice about your own job hunt.

Money Back Job Guarantee

Finally, some of our courses actually have a Money Back Job Guarantee option available. You must select this option at the point of enrolment in your course, having discussed it with a member of our admissions team.

Essentially the Job Guarantee follows 3 steps:

- Enrol in a course that has the "Job Guarantee" as an option
- While you study, follow along with our add-on job hunting course
- If you don't get a job offer within 3 months of graduating, we'll refund your course fees.

The Truth About Your Job Hunt

Since we started this section with a moment of blunt truth, let us finish with one.

Your first job hunt in a new industry isn't going to be the easiest thing you've ever done. It will take time, energy and commitment. For the best chance at a successful mid-career change into pharmaceutical manufacturing, we recommend approximately 5 hours dedicated to your job hunt every week. You'll probably have moments where you wonder if you did the right thing.

What we can tell you though, is that 81% of our 2015 graduates found employment within 6 months of graduation. And, of even greater note, is that it is not uncommon for trainees to find work while still completing their courses.

People just like you have, and are currently, making a successful change into pharmaceutical manufacturing using our courses.

Part 4: Job Hunting

"By upskilling I have dramatically increase my confidence as well as my qualifications. At interviews I now feel I have more to offer a potential employer. As well as having the courses as a reference to engage interviewers and showcase my knowledge and qualifications I have also utilized the employment coaching webinars and applied the skills I learned from these webinar into my interviews. I have been very fortunate to have recently secured an operation technician role with a multinational biopharmaceutical company."

Edel Harkins - BioPharmaChem
(Graduated June 2013)

Anyone that has ever spent time job hunting knows that it's not an overnight process - it usually takes longer than you're expecting. If you then add in reskilling and a change of industry, the process really can take time, so it's important to have realistic expectations going in.

Chances are that it will take several rounds of applying and getting feedback before you've really fine-tuned selling yourself for the new role you want.

We recommend starting your job hunt while your course is ongoing. You will actually have enough knowledge to have a meaningful conversation with employers from about halfway through the course. **40% of our previous students secured work before their course was finished**.

As well as starting early, there are things you can do to prepare - to make sure you're not making avoidable mistakes, and to give yourself the best shot. In this next section, we look at how to go about job hunting, applying and interviewing.

Chapter 11 - How do I get started on my job search?

Even with the current strength of the pharma and medical device industries, finding a job can still be a long process. We see lots of very accomplished people struggling to get traction in the job market and wasting precious months making the same mistakes over and over again.

Why is that?

Probably the main reason is that job hunting is a highly involved skill set, it requires tons of practice to get good at it and people consistently underestimate the amount of time, effort and skill required.

But the biggest mistake is that they don't have a consistent well defined process.

Here at GetReskilled, we have spent almost ten years helping people make mid-career changes into the pharmaceutical and medical device industries and we'd like to think we know a thing or two about this.

So with that in mind, we'd like to present to you our Giant Infographic on **'How to Find a Job in Pharma"** with a cogged wheel that breaks down the process into manageable weekly steps, and an accompanying article that explains each step with links to helpful resources.

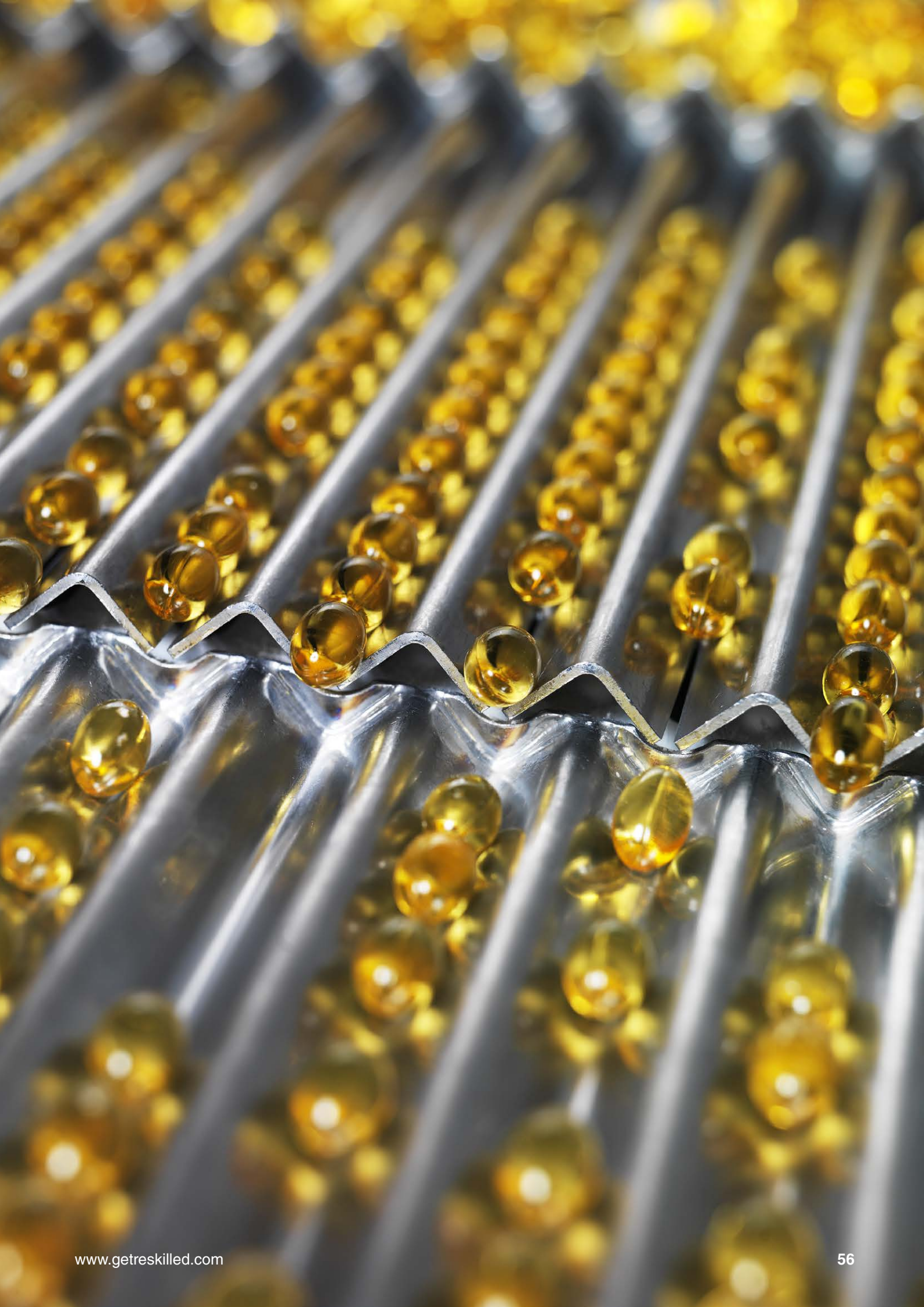
Click here to see the infographic and explainer article.

Once you've realised just how awesome a job hunting outline that is (!), grab yourself a copy of our tracking template to help you keep note of all the progress you're making (link below).

The template takes each of these weekly tasks and lays them out on a spreadsheet, making it extremely obvious which tasks need done next and where you can find the resources you need (they're all linked from the spreadsheet). There's also space for you to make notes and track your progress. If you use it properly, all your job hunting information will end up in one easily accessible place.

Click here for more information about the tracking template, how to use it and how to get yourself a copy.

Using a combination of these tools to guide your job hunt will make sure you're doing everything you need to - and doing it at the right time!



Chapter 12 - Creating a killer CV

Everyone knows that a good CV is important when you're trying to find a job. What people are much less clear on, is what makes a "good CV".

If you're reskilling into pharma or medical device manufacturing from another industry, there is one key rule for starters… NEVER try to update a CV you already have written, START FROM SCRATCH.

Before you Start

Before you even think about writing that new CV, you should get to grips with your own skillset. As someone moving industries, you need to learn to outline your experience in terms of transferable skills. This will help to show employers that even seemingly unrelated work experience has given you skills that would be useful to them.

This can be an extremely tricky thing to do so we've outlined the skills assessment process in this article. Before you do anything else, grab yourself a coffee and give it a read. You'll also find a link on that page to a template that will help walk you through the skills assessment process.

Once you've completed that exercise, you're ready to start putting your CV together.

Writing Your CV

If you're not sure about what layout to use, have a look at our CV templates page, where you'll find different downloadable CV templates. Simply pick the one you like best and follow through the document, filling in your details in place of the instruction text. Remember to save it with an appropriate file name such as "[yourname] CV".

Once you've had a go at completing one of the templates, make sure that your CV ticks ALL the boxes on our downloadable CV Checklist as a check that you haven't missed out anything important.

Now that might seem like a lot of steps but once you have this baseline CV that truly meets the expectations of recruiters, it's SO much easier to successfully apply for jobs.

Unfortunately, we know that people don't always follow the above steps all that well. That's why we created this list of 30 common mistakes people make on their CV. As a final check, I'd recommend reading through that article and making sure that your newly crafted CV hasn't fallen into any of these common problems.

How to Make Your CV Shine

The steps above will give you a great baseine CV but your CV work is far from over. For each and every application, you should tailor your CV to match the requirements of that specific job advert.

Take the time to read through the job advert, pick out the skills they are looking for and the key activities of the job you're applying for. Then make sure that you're using those **exact words and phrases** when you're describing your relevant experience.

To be clear, you're not claiming to have experience that you don't. You are just reframing any relevant experience you do have, and **talking about it in the same way that they do**.

Also consider reordering bullet point lists to bring most relevant facts to the top and pulling out different examples of achievements to best match the requirements.

While the basic facts remain the same, a large portion of your CV should change for every application. Even when applying for two similar jobs with different companies, unless they're using exactly the same job advert (highly unlikely!), your CV should be changing.

To be honest, this is where a lot of people get kind of lazy in their job hunt. They feel like they've got a great baseline CV so they're happy enough to send that out to every job they apply for. This leaves you with a big opportunity.

If an employer receives 25 good but rather generic CVs that they have to work to read and find the relevant skills and experience, and your highly tailored CV that makes it super-easy for them to see you already have the skills they need… guess who's CV shines?!

It's a no brainer. Don't put all that work in creating a good baseline CV, only to mess up your actual applications because you couldn't be bothered taking the time to customise it for each job.

Chapter 13 - Networking Skills

Networking in Person

When most of us think about job hunting, we think about ourselves - the job hunter. So here's a quick experiment, let's try to think about it as the employer…

- I have a vacancy
- I want to find someone with suitable skills who'd fit in well with the team I already have
- The longer the vacancy sits empty, the less productive my team is being
- I need to find someone quickly

What's the best way for our employer to find someone quickly who has great skills and who'd fit in with the team? Ask people around them that they know and trust.

The easiest place to find suitable candidates is by asking people they know – people in the industry and their own employees. Plus, if they find people this way, it's likely to cost them a lot less than hiring a recruitment company or multiple postings on a job board.

Why should this matter to you as a job hunter?

The easiest way to get yourself noticed by employers is to get yourself into the space where they're looking.

And of course, the most efficient way you can do that?… By networking in person.

This is something that a lot of people can find awkward, but there's really no reason. We've written a whole article on how to go about successfully networking in person (that starts exactly the same way as this chapter). I'd highly recommend checking it out and reading on if you're at all unsure about the idea.

Online Social Networks

What's probably a little more familiar to you is the idea of networking online through social networks. But even if you use LinkedIn, Twitter or Facebook already, do you know how useful they can be to your job hunt? Do you know how to optimise your activities on each site to give you the best chance of hearing about relevant jobs?

There are 3 resources I'd recommend you having a look at if you're interested in making the most of online opportunities:

- Using Social Media to Find a Job - where we consider each social network in turn and discuss how you can use each one to help your job hunt progress

- Top 10 Tips for Building Your LinkedIn Profile - where we focus on LinkedIn even more closely and consider what your profile needs, to be effective

- 10 Tips to Manage Your Online Reputation - even if you don't use social media, it's vital that you know and control what's said about you online. In this article we look at what to check, how to check and what you might want to change about your profiles

"When I got interviews after that the companies were very interested in my course, I felt like I had gained an advantage again, and fortunately I am now employed by one of the biggest BioPharmaceutical companies in the World that is why I'd say continuing education can only be good for your career."
Denis Mehigan - BioPharmaChem

Chapter 14 - Interviewing

How to Prepare for an Interview

Interview preparation should fall into 3 categories:

Yourself

You have to know yourself inside out. This sounds like common sense, but it's often harder than it first seems. You have to be able to line yourself up against the job specification and critically analyse where your strengths and weaknesses are. Take time to think and practice clear and concise answers to address each.

You also have to make sure you can comfortably talk through your work history. When you're changing industry, it's important that you not only tell the interviewer what your roles have been before, but how they relate to the position you're applying for. You may think it's obvious, but there's the chance your interviewer knows very little about your previous role, so spell out the similarities. Don't leave them guessing.

Additionally, you should be able to give a confident overview of yourself in 5 minutes, many interviewers use this as a way of beginning an interview and letting you settle down - be aware of what your key points are.

The Company

Before you set off for an interview, you need to gather as much information as possible. You have to be able to show that even though you've not done this specific role in this industry before, you have a good idea of what it is and what it involves.

Have a look at the company's website, social media (Facebook, LinkedIn, etc.) and talk to anyone who knows something about the company. What you're after is a well-rounded view of the company, what they do and how they function. Not only does this help you look prepared and confident to the employer, it also helps you decide that this is a company you would enjoy working for.

Asking what you know about the company is often one of the opening questions in an interview - take the opportunity to do more than just relay a list of facts. Tell them why

knowing this makes you want to work for them, what makes you a good fit or what can you add to the pursuit of their company goals. You can easily use this question to get an excellent start to your interview.

The Interview Process

Don't be afraid to ask about the process - you've got to know what you're preparing for.

- Are you only meeting one interviewer?
- What is their position within the company?
- Is there a set structure to the interview?
- Will there be any assessments or psychometric tests within this interview?
- How long is the interview scheduled to last?

Preparing effectively will give you confidence going into that all important interview. Even if you've asked all the above questions, expect the unexpected! Remember that no two interviews are ever the same and you can't guarantee any part of it. So be sure make the most of every opportunity given to you throughout the process and be clear on the key things you want someone to know about you.

Also ask about the rest of the process

- Are they making a selection based on these interviews alone?
- Is there a second stage of interviewing?
- Are there tests/assessments to do on a separate occasion?

These are all things you are perfectly entitled to ask and should be – having a clear idea of the process lets you confidently focus best on each task in turn with no surprises.

To help you prepare, we've created this downloadable template that walks you through some of the specific things you might like to consider for each interview.

Mistakes to Avoid at Interview

So all your hard work has finally paid off and you have a number of job interviews lined up over the next few weeks. However, for some of you it may have been a long time since you last did a formal job interview. So what shouldn't you do? Let us take you through the most common job interview mistakes and our tips for avoiding them.

1. Being Unprepared for Interview Questions

There are many different ways that companies conduct interviews – there are lots of ways they can ask you about your past work experiences and your reasons for wanting their job.

Some questions can be a little tricky if you're unprepared – asking difficult questions is a great way for an interviewer to see how you cope under pressure, and often more likely to force you into an honest answer.

By preempting these difficult questions you can prepare for how you might answer them. This way, your answers will sound more confident.

GetReskilled Top Tips:

There is a huge amount of material out there on how to best prepare for a job interview, here is one particular link we like but there are many others.

How to answer the 64 toughest interview questions

If at any point you are unsure about a question, don't be afraid to ask for some clarification. It's MUCH better to do that before you begin an answer.

2. Dressing Inappropriately

When you interview for a job, it's imperative to look professional and polished. Although your everyday working attire may vary based on the position you're applying for, it's important to look well-dressed and put together for an interview, no matter what the company.

GetReskilled Top Tips:

In the pharmaceutical and medical device industries, always go with professional attire.

3. Arriving Late

Everyone knows that first impressions are very important – make sure you don't make a bad first impression before you even arrive. Running late not only suggests poor time management skills, but it shows a lack of respect for the company, the position and even your interviewer.

It also does away with some very important time to gather your thoughts.

GetReskilled Top Tips:

Go the extra length to make sure that you aren't late – in fact, aim to be early. Plan your time so you make it to the interview location about 15 minutes before the scheduled start time. That way, if something unforeseen comes up on your way, you have some time in hand.

It's always good to give yourself a little time waiting at the location to calm any nerves and focus your thoughts towards all that preparation you've been doing.

4. Being Distracted

Once you're in that interview room, the only thing you should be thinking about are the questions being asked and your answers. Distractions come in many forms – there are some you can control and some you can't.

It is your responsibility to ensure you've dealt with all the ones you can control, both before you enter the room and throughout your time with the interviewer.

GetReskilled Top Tips:

Before you go in, deal with any outside distractions – switch off your mobile phone (or at the very least ensure it's silenced). Once in the room, keep your focus on the interviewer. It can be really easy to anticipate what you think they're going to ask or what you want them to ask and answer that.

Really listen to the question. Take a second to consider your answer and give it, making sure you address all parts of the question.

If you're finding it difficult to stop your mind from racing and distracting you, try sitting forward in your chair and employ some good 'active listening' techniques.

If you find that your interviewer is the one who seems distracted or disorganised then it's even more important that you focus on making your 'key facts' heard and remembered.

5. Lack of self-awareness

One of the biggest mistakes you can make is not knowing what your own strengths/ weaknesses are compared against the job role requirements. It's such an easy one to avoid – there's really no excuse.

GetReskilled Top Tips:

Before the interview, take your time to work through the job advert again and identify the areas you think you're strongest so you can emphasise them to an interviewer.

But equally important is to identify the areas where you're weaker, so you can prepare a succinct and effective way to address these concerns. Even if an employer doesn't explicitly mention your weaknesses, they will have noticed them and may ask questions around them.

Being acutely aware of what your weaknesses are, gives you the opportunity to spot when you're inadvertently being asked about them and to confidently address them.

That's just 5 common interview mistakes to watch out for. For 15 more (along with advice and relevant articles) have a look at our article 20 Interview Mistakes to Avoid*.*

Chapter 15 - Ireland's Largest Pharmaceutical Jobs Board

When you're actually looking for a pharmaceutical or medical device manufacturing job there is one key piece of advice. One thing you HAVE to do.

Check out Ireland's Largest Pharmaceutical Jobs Board!

This board is updated twice a month by checking over 180 resources, to bring you all the relevant jobs into one easy-to-use jobs board.

You can filter by location, by job type or by company so it's easy to find the jobs you're looking for.

We check every single job each time we update the board so even if a job is a few weeks old - if it's still on the board, it's still a live posting.

AND - as a bonus tip - we also put out a monthly update of all the pharmaceutical industry news, articles, job announcements, events and job hunting information.

You can see that on this page of our website.

You can also sign up for email updates on that page. We'll send you out the Info List monthly as well as the jobs board updates and newly published blog articles - it's a great way to keep up with the industry.

Part 5: Resources

Major Pharmaceutical and Medical Device Companies in Ireland

Abbott Ireland Ltd

Area/Products: Diagnostics, medical devices, generic pharmaceuticals and nutritionals.

Brief history: Abbott worldwide was founded in 1888. Globally, Abbott employs almost 70,000 people, with a customer base across almost 130 countries. 2014 global sales were $22 billion. Abbott work in research, development, manufacture and marketing of a range of products. Their portfolio spans the breadth of healthcare including medical devices, diagnostics, branded generic pharmaceuticals and nutritionals.

Presence in Ireland: Abbott has had a presence in Ireland since 1946. Today they have six manufacturing sites across Ireland, and in total, they employ almost 3000 people across 11 Irish sites. They have manufacturing sites in Clonmel, Cootehill, Donegal, Longford and Sligo, with commercial support operations in Dublin and Westport.

Website: www.abbott.ie

Abbvie

Area/Products: Biopharmaceuticals

Brief history: Originally a part of Abbott Ireland, AbbVie was established as a distinct company in early 2013. They describe themselves as having “the expertise and structure of a proven pharmaceutical leader, and the focus and passion of an entrepreneur and innovator”. Their work focusses on developing and manufacturing pharmaceuticals in fully integrated therapeutic areas including oncology, antiviral and renal/cardiovascular. Approximately 26000 people work for AbbVie worldwide and their products reach over 170 countries.

Presence in Ireland: AbbVie has a pharmaceutical manufacturing plant in Sligo. Initially opened in 2002, it manufactures the company's active pharmaceutical ingredients.

Website: www.abbvie.ie

Actavis Ireland Ltd

Area/Products: Generic and branded pharmaceuticals

Brief history: Actavis worldwide, with global headquarters in Dublin, works in the fields of both branded and generic pharmaceuticals, over the counter medications and biologics. Actavis worldwide is the largest generic pharmaceutical supplier globally; Actavis Ireland has a focus on the generic pharmaceutical product range. In July 2014, Actavis bought Forest Laboratories and most recently, in 2015, Actavis bought Allergan, the manufacturer of Botox.

Presence in Ireland: The Irish presence began after the 2013 acquisition of the Ireland's Warner Chilcott plc; it was at this point that Actavis global headquarters were moved to Ireland. As well as these global headquarters, Actavis now has a manufacturing and R&D presence in Ireland.

Website: www.actavis.ie

Alcon Labs

Area/Products: Pharmaceutical, surgical and vision care products

Brief history: Alcon began as a Texas ophthalmic shop in 1945 and started creating speciality pharmaceutical products in 1947. The accompanying surgical division was formed in 1969, and today they offer a range of vision care products treating vision conditions and eye diseases. In 2011, Alcon merged with Novartis and became their third largest division. Their eye care products currently reach over 180 countries. 1800 research and development associates and approximately 14000 people are involved in manufacturing worldwide. They manufacture pharmaceutical products, contact lenses and lense care products as well as surgical equipment and devices.

Presence in Ireland: Alcon Ireland Ltd is responsible for the company's Intraocular Lens (IOL) - this lens replaces the natural lens of the eye when it is removed during cataract surgery. Production of this is set to increase considerably over the next few years so there are opportunities available to those with the right skill set.

Website: www.alcon.com

Alexion

Area/Products: Biopharmaceutical - focussed on rare diseases.

Brief history: Alexion's European operations serve patients in more than 30 countries. The company focuses on efficiently bringing to market pharmaceutical treatments for orphan diseases. These diseases are all severe or life-threatening and rare. Alexion began as a bio-tech start-up in 1992 - in 2012, 2013 and 2014, it ranked number two on the Forbes "The world's most innovative companies" list.

Presence in Ireland: Ireland is home to Alexion's global supply chain and quality operations - supply chain, quality assurance, quality control, and logistics. In 2014, plans were announced for a new site in Roscommon which will be an aseptic vial fill-finish facility. Also in plans is a new plant in Dublin, which will serve as a new Global supply chain and operations facility. More recently, in May 2015, Alexion announced plans to open its first ever biologics manufacturing facility outside of the US, in Dublin. Once complete, these projects will bring Alexion's Irish workforce to almost 500.

Website: www.alexionpharma.eu

Alkermes Plc

Area/Products: Biopharmaceuticals

Brief history: Alkermes is a fully integrated biopharmaceutical company. Annual turnover is $500 million from a developed range of over 20 commercial products. Alkermes Inc and Elan Corporation plc merged in 2011 to become Alkermes plc.

Presence in Ireland: Alkermes have their corporate headquarters in Dublin and a development and a solid oral product manufacturing facility in Athlone, Westmeath. The company have had a presence in Ireland for over 40 years (first as part of Elan). In 2014, Alkermes promised investment of over $20 million over three years into its Athlone site in readiness for future growth and competitiveness.

Website: www.alkermes.com

Allergan Pharmaceuticals Ireland

Area/Products: Pharmaceutical and medical device multi-speciality health care company

Brief history: Allergan began in 1950 after its founder successfully developed anti-allergy nose and eye drops. The focus was novel treatments for speciality markets in response to feedback and information from health care professionals and patients. They currently have over 2700 employees, including over 800 at their Westport manufacturing site. Allergen is a multi-speciality provider in areas including eye care, neurosciences and dermatology. In March 2015, Allergan was bought by Actavis.

Presence in Ireland: The current Co. Mayo site is the largest in the company and was established in 1977. It is now home to both a Sterile Pharmaceutical Ophthalmic Plant and a Biologics Plant. There are 850 staff currently employed by Allergan across Ireland. The Mayo-based site production accounts for more than 50% of the company's total revenue.

Website: www.allergan.ie

Almac Group

Area/Products: Contract development and manufacturing organisation

Brief history: Almac was founded in 1968 as Galen. They offer a range of services including research and development through to product commercialisation. The group is comprised of five divisions - Almac Diagnostics, Sciences, Clinical Services, Clinical Technologies and Pharma Services. Over 600 companies worldwide - including many top pharmaceutical companies - use their services. The group remains privately owned and employs over 3000 staff globally.

Presence in Ireland: Almac's global headquarters are in Northern Ireland. The Armagh site also conducts pharmaceutical, chemical and biomarker discovery and development. In August 2014, Almac group announced a $54 million investment to expand the site with the creation of a further 348 jobs over the subsequent five years.

Website: www.almacgroup.com

Amgen

Area/Products: Biotechnology

Brief history: Established in 1980, Amgen was one of the first companies to bring biotechnology based products to patients. They led the way in developing innovative products based on advances in recombinant DNA and molecular biology, and they were responsible for biotechnology's first blockbuster medicines. Their portfolio today includes treatments in the therapy areas of oncology, rheumatoid arthritis and other autoimmune diseases.

Presence in Ireland: Amgen have a septic operations facility in Dublin which specialises in secondary manufacturing activities – formulation, fill and packaging. Acquired in 2011, the site includes bioprocessing suite, labs and warehouse/packaging capabilities. Amgen have announced future plans to move production of all parenteral products to this site.

Website: www.amgen.co.uk

Astellas

Area/Products: Pharmaceuticals

Brief history: Established in its current form in 2005 from the merger of two Japanese pharmaceutical companies, Astellas provides treatments in the areas of transplantation immunology, urology, cardiology, dermatology and infectious disease. The company employs approximately 17,000 people globally.

Presence in Ireland: Astellas has two manufacturing sites in Ireland - one in Dublin where they manufacture active pharmaceutical ingredients, and one in Co. Kerry where they manufacture and package a range of pharmaceutical treatments. These sites combined employ almost 400 people.

Website: www.astellas.ie

Athlone Laboratories

Area/Products: Pharmaceuticals

Brief history: Athlone Laboratories was established in Ireland in 1974. The company is a dedicated manufacturer and supplies of beta-lactam antibiotics. In 2013, Athlone Laboratories became part of DCC Vital.

Presence in Ireland: Based in Ireland, Athlone Laboratories employs around 140 people at their Roscommon manufacturing site.

Website: www.athlone-laboratories.com

Baxter

Area/Products: Medical devices, pharmaceuticals and biotechnology

Brief history: Baxter began in the 1930s by launching the first commercially prepared intravenous (IV) solutions; today Baxter operates as a global diversified healthcare company. Its products serve disease areas such as haemophilia, infectious diseases, kidney disease, immune disorders and trauma treatment. In 2014, Baxter International Inc. reported sales of $16.7 billion and employed approximately 65,500 people worldwide.

Presence in Ireland: Baxter moved into Ireland in the mid-1960s and built its first manufacturing site there in 1972. They currently have two manufacturing sites in Co. Mayo: one in Castlebar, where they produce renal dialysis solutions, pre-mixed IV solutions and several drug products; the other in Swinford, which produces devices for administration of these products. Between them they employ over 1000 people.

Website: www.baxterhealthcare.ie

BD (Becton, Dickinson and Company)

Area/Products: Medical Technology

Brief history: Started in 1897, BD now employs almost 30,000 people in over 50 countries. Their focus is on medical technology to improve drug delivery, diagnostic abilities and advancing drug discovery. They have a range of products including medical devices, laboratory instruments, reagents, medical supplies and diagnostic products. The company operates over three distinct segments - BD Medical, BD Diagnostics and BD Biosciences.

Presence in Ireland: BD Medical have had a presence in Ireland since 1969 and currently have two manufacturing sites. They operate one in Dun Laoghaire, which manufactures 11 different lines of pen needles for insulin injection, and a second in Louth, which manufactures a range of medical devices including a high-value pre-filled syringe.

Website: www.bd.com

Boston Scientific

Area/Products: Medical devices

Brief history: Boston Scientific produces a large range of medical devices used to diagnose and treat patients with issues in the areas of cardiology, urology, endoscopy and many more. It was founded in 1979 with the aim of creating less invasive medical devices and procedures; they continue to innovate across expanding areas of medicine. They estimate that around 21 million people were treated with one of their products in 2014. Boston Scientific currently employs approximately 23,000 people across 40 countries.

Presence in Ireland: Boston Scientific have had a manufacturing presence in Ireland since 1994. There are currently three manufacturing sites - Galway, Cork and Clonmel. Established in 1994, the Galway site is the largest in the country providing research and development, manufacturing, regulatory affairs and new product development. The Cork site was opened in 1998 and manufactures a range of devices across several areas of the business. In Clonmel, they have a focus on development, manufacture and distribution of defibrillators and pacemakers - the Cardiac Rhythm Management area is an area of high potential and growth for the company. These sites export approximately 10 million devices every year. They currently have around 4500 employees across Ireland.

Website: www.bostonscientific.com

Bristol-Myers Squibb (BMS)

Area/Products: Biopharmaceuticals

Brief history: BMS was founded in the US in 1858 and since then they've grown via pipeline development and acquisition. In 2014, they reported sales of $15.9 billion and employed around 28,000 people globally. BMS currently operate under a BioPharma strategy - combining the scope of a global pharmaceutical company with the 'entrepreneurial spirit and agility' of a biotech company. Over the last seven years, they have brought 12 new medicines to market with a current product range in disease areas including hepatitis, cardiovascular disease, cancer and HIV/AIDS.

Presence in Ireland: BMS began manufacturing in Ireland in 1964 with a bulk pharmaceutical plant in County Dublin. In 2004, they opened a second Dublin-based manufacturing site which is a highly automated bulk pharmaceutical production plant. They employ approximately 550 people across Ireland. In 2014, they announced plans for a new facility in Dublin that is expected to provide another 400 jobs.

Website: www.bmsireland.ie

Cook Ireland

Area/Products: Medical Devices

Brief history: Cook Ireland is part of the Cook Group of companies, which began manufacturing medical devices in 1963. The company's products diversified and now, the Cook Group is a range of companies, all with the focus of improvement of medical care through medical device innovation. The group employs over 11,000 people.

Presence in Ireland: Devices produced in Cook Ireland's Limerick facility are distributed throughout Europe, Africa and the Middle East, treating conditions in the areas of gastroenterology, urology, obstetrics and gynecology.

Website: www.creganna.com

Creganna Medical

Area/Products: Medical Device Product and Service Provider

Brief history: Creganna is an Irish company that provides manufacturing and design services to over 400 medical device companies across 30 countries - they employ over 850 staff globally. With specific expertise in access and delivery devices that are minimally invasive (such as catheters), today Creganna ranks in the top three minimally invasive medical devices outsourcing companies in the world.

Presence in Ireland: Started in Ireland in 1980 to provide outsourced engineering solutions, they moved into medical devices in 1999. By 2003, their medical device offering was their sole focus. Creganna operates all their Irish activities from a campus in Galway - this site employs over 550 people.

Website: www.creganna.com

EirGen Pharma

Area/Products: Pharmaceuticals

Brief history: Irish company EirGen specialises in development, manufacture and distribution of high-potency and moisture sensitive pharmaceuticals and is a world leading supplier in this field. Founded in Ireland in 2005, to manufacture generic chemotherapy products, they now export a range of products to over 40 countries worldwide. EirGen offer services in clinical trial management, drug formulation management, generic formulation development and contract manufacturing.

Presence in Ireland: Their site in Waterford is home to state-of-the-art high containment facilities needed for high-potency and moisture sensitive pharmaceuticals and employs 100 people.

Website: www.eirgen.com

Genzyme Ireland Ltd

Area/Products: Biopharmaceuticals

Brief history: Genzyme Ireland was founded in 2001 as a highly automated state-of-the-art biopharmaceutical finishing facility. Genzyme was acquired by Sanofi in 2011 and operations continue to grow with more products being added to their portfolio - the operation is currently expanding to bring a Sanofi insulin product to the site.

Presence in Ireland: Genzyme activities are focussed on their Waterford site which currently employs over 550 people. Their manufacturing efforts are in sterile fill finishing and oral dose manufacturing. Products from this plant are distributed to over 70 countries.

Website: www.genzyme.ie

Gilead Sciences

Area/Products: Biopharmaceuticals

Brief history: Established in 1987, Gilead Sciences currently have over 7000 employees globally. They are a research-based company focussed on current unmet clinical needs. They currently market 19 products in the US and their annual revenues of 2014 were $24.9 billion.

Presence in Ireland: Gilead's facility in Cork is responsible for manufacture, quality and distribution of their product range across the European Union as well as some other international destinations.

Website: www.gilead.com

GlaxoSmithKline (GSK)

Area/Products: Pharmaceuticals

Brief history: GlaxoSmithKline is one of the world's biggest pharmaceutical companies, describing itself as a 'science-led global healthcare company'. GSK took its current form in 2000 after a merger between SmithKline Beecham and Glaxo Wellcome, and in 2014 it ranked as the sixth-biggest pharmaceutical company worldwide. Their products fall into three main areas - vaccines, pharmaceuticals and consumer healthcare. It is estimated that one GSK vaccine is administered every minute across Ireland.

Presence in Ireland: GSK employs approximately 1500 people across Ireland. They have manufacturing in Cork, Dungarvan and Sligo. The Cork facility was opened in 1975 and focuses on research and development and active ingredient manufacturing for nine of GSK's pharmaceutical products. Dungarvan has been a manufacturing site for GSK since 1981; it is concerned with consumer healthcare manufacturing with two distinct plants - one for 'over the counter' products and one for oral health care. The Dungarvan plants have an annual production of the equivalent of 8 billion tablets and almost 100 million tubes - these products are distributed to over 70 countries globally. Stiefel, a GSK company, has a manufacturing site in Sligo which produces about 40 skincare formulations.

Website: www.ie.gsk.com

Jazz Pharmaceutical

Area/Products: Biopharmaceuticals

Brief history: Jazz Pharmaceuticals is an international speciality biopharmaceutical company founded in 2003 with products in disease areas such as narcolepsy, pain, psychiatry and oncology. The focus on current efforts is to identify, develop and bring to market products that meet previously unmet clinical needs in focussed therapeutic areas.

Presence in Ireland: The company has their global headquarters in Dublin. In 2014, Jazz Pharmaceuticals announced the building of their first ever manufacturing and development site was to begin in Co. Roscommon.

Website: www.jazzpharma.com

Johnson & Johnson

Area/Products: Healthcare Products

Brief history: Founded in 1886 with the initial idea that wounds should be treated and dressed using sterile equipment - today's Johnson and Johnson is one of the world's

biggest healthcare companies. Johnson and Johnson operate three distinct divisions - medical devices, pharmaceuticals and consumer health. Both their medical device and pharmaceutical divisions have manufacturing sites in Ireland. Johnson and Johnson products are marketed in 57 countries via almost 250 operating companies - global personnel is approximately 120,000.

Presence in Ireland: Johnson and Johnson have had a presence in Ireland for over 70 years. Today, that presence is in the form of DePuy, Janssen (Biologics, Pharmaceuticals, R&D, Alzheimer Immunotherapy), Johnson & Johnson Ireland and Vistakon. Between them, they have several separate manufacturing operations in both Limerick and Cork.

Website: www.jnj.com

Lake Region Medical

Area/Products: Medical device industry supplier

Brief history: An OEM business established in the US in 1947, Lake Region Medical has grown steadily to become today's biggest manufacturer and supplier of diagnostic guide wires to the medical device industry. They work primarily in the Cardio & Vascular as well as Advanced Surgical specialities. Lake Region Medical provide research and development as well as manufacturing and finishing capabilities to major medical device companies.

Presence in Ireland: Lake Region Medical has a manufacturing site in Wexford that opened in 1994. It employs over 750 staff in the production of the company's product line, and products from this site are distributed to over 30 countries. In 2012, this facility became the first medical device manufacturing plant to be awarded the Shingo Accreditation Bronze Medallion - an award which recognises excellence in manufacturing. Lake Region Medical also operate a separate research and development facility in Galway.

Website: www.lakeregionmedical.com

Lilly

Area/Products: Pharmaceuticals

Brief history: Lilly was founded in 1876 in the USA. Lilly currently markets products in multiple disease areas including cancer, diabetes, schizophrenia, depression and many more. Their products are available in 143 countries around the world, and they employ 41,000 people globally. Their NET sales in 2014 were over $19.6 billion.

Presence in Ireland: Lilly established manufacturing in Ireland with a site in Cork in 1978. This site still produces active pharmaceutical ingredients for products across the Lilly portfolio in three main areas: small molecule API manufacture and supply; small molecule commercialisation; biopharmaceutical commercialisation and supply. Lilly employs over 700 people in Ireland across several divisions, 400 of these are employed at the manufacturing site in Co. Cork.

Website: www.lilly.ie

Medtronic (Covidien)

Area/Products: Medical devices

Brief history: Medtronic began as a medical supply repair shop in the US in 1949, and their first commercial product was a battery powered, wearable pacemaker. From then on, they have focussed on technology as a means of improving treatment. Today, there is a focus on using that technology to improve treatment and management of chronic conditions specifically - Medtronic claim that “every three seconds, another life is improved by a Medtronic product or therapy”. In 2014, Medtronic bought Irish company Covidien to further expand their scope. Globally, Medtronic employ over 85,000 people in over 160 countries.

Presence in Ireland: Medtronic moved into Ireland in 1999 and now operate two facilities - an office site in Dublin and a development and manufacture site in Galway which manufactures products in their cardiovascular range. This Galway site employs over 2500 people. The three Covidien manufacturing sites continue to operate in Galway, Westmeath and Offaly - employing over 1200 people in total.

Website: www.medtronic.ie

Merck Millipore

Area/Products: Life Sciences

Brief history: Merck Millipore began in 1954 as a filtration company. After becoming successful, the company was bought to become the life science division of Merck KGaA - the world's oldest pharmaceutical and chemical company employing approximately 40,000 people across 64 countries. Merck Millipore has approximately 10,000 personnel with a portfolio of over 60,000 products. They offer research, development and manufacture solutions for biotechnology and pharmaceutical companies, often specialising in high growth and margin markets such as bio-production and bio-research.

Presence in Ireland: Merck Millipore has a research and development as well as filter membrane manufacturing site in Co. Cork.

Website: www.merckmillipore.com

MSD

Area/Products: Healthcare company

Brief history: Following their merger with Schering-Plough in 2009, MSD is the world's second largest pharmaceutical company with operations in over 140 countries. They produce a wide range of products including vaccines and prescription medications for disease areas including diabetes, HIV, hepatitis C, oncology and osteoporosis.

Presence in Ireland: MSD began production in Ireland in 1976. Today, they employ over 2,000 across five sites in Ireland. The original facility in Co. Tipperary now employs in excess of 400 people in the production of active pharmaceutical ingredients. In Dublin, a range of pharmaceuticals are manufactured and packaged, as well as sites in animal health and the global financial services division. They also have an active pharmaceutical ingredient manufacturing plant in Co. Wicklow and a newer site in Carlow which specialises in human vaccine production. Finally, they support a BioPharma centre of excellence in Co. Cork. In April 2015, they announced plans for a further investment of €11.5 million in its Carlow site.

Website: www.msd-ireland.com

Mylan (McDermott Lab)

Area/Products: Pharmaceuticals

Brief history: Beginning in 1961 as a pharmaceutical distributor in the US, it was 1966 before Mylan manufactured their first product - penicillin. From there, Mylan has grown to be one of the biggest generic and speciality pharmaceutical companies in the world. They have a staff of over 30,000 worldwide, and their products are distributed to over 140 countries.

Presence in Ireland: Mylan have a history of more than 25 years in Ireland. They are the largest generics manufacturer in Ireland - manufacturing as Gerard Laboratories in Dublin and as Bioniche in Galway, employing approximately 700 people. In 2012, they announced a major investment and expansion of these sites that would lead to a further 500 jobs by 2016.

Website: www.mylan.com

Nestle Nutrition

Area/Products: Nutritionals

Brief history: Globally, Nestle employs about 339,000 people in areas including food and nutrition. Nestle Nutrition is part of the Nestle Health Science brand. Announced in 2010, Nestle Health Science looks to develop science-based nutritional solutions to healthcare problems, particularly focussed on improving chronic disease management.

Presence in Ireland: Nestle made its return to manufacturing in Ireland in 2012 after the purchase of Pfizer's Nutrition business. They currently have a site in Dublin and also the Wyeth Nutrition infant formula site in Limerick. Over 75% of the 40,000 tonnes of product from the Limerick site is exported to outside of the EU.

Website: www.nestlehealthscience.co.uk

Norbrook Laboratories

Area/Products: Pharmaceuticals

Brief history: Norbrook Laboratories was established in Northern Ireland in 1969 to produce veterinary pharmaceuticals; they subsequently included human pharmaceuticals into their portfolio. To date, they have developed and registered over 800 products in 120 countries. Norbrook are the only non-US company licensed by the FDA to produce veterinary sterile injections outside of the US and import them into the US market.

Presence in Ireland: Norbrook Laboratories currently employ over 1500 people at their site in Co. Down and another 1500 people globally.

Website: www.norbrook.com

Novartis Ireland Ltd

Area/Products: Pharmaceuticals

Brief history: Parent company, Novartis AG, is a global healthcare company based in Switzerland, established in its current form in 1996 from the merger of Ciba-Geigy and Sandoz. They are seen as having one of the strongest pharmaceutical pipelines, currently reporting 140 treatments in clinical development. Their pharmaceuticals treat disease areas such as neurology, oncology, ophthalmology and metabolism along with many more. Novartis Ireland Limited is the Irish affiliate of this company; Novartis Ireland's group sales in 2013 were reported as $327 million.

Presence in Ireland: Novartis was one of the first pharmaceutical companies to come to Ireland in the 1950s. Today, Novartis employ over 1300 people over four sites. The Novartis Pharmaceuticals manufacturing and development site is based in Co. Cork and has a focus on production of active pharmaceutical ingredients.

Website: www.novartis.ie

Pinewood Healthcare

Area/Products: Pharmaceuticals

Brief history: Pinewood Healthcare began in 1976 and has become the leading and fastest growing branded generic company in Ireland. Their product ranges include liquids, ointments, creams and powders.

Presence in Ireland: From their Tipperary site, Pinewood Healthcare manufacture their own ranges as well as provide contract manufacturing solutions. They currently employ almost 400 members of staff, manufacturing products that are marketed in over 30 countries.

Website: www.pinewood.ie

Pfizer

Area/Products: Pharmaceuticals

Brief history: Pfizer was first established in 1849 as a fine-chemicals business in New York and has grown to become the world's biggest bio-pharmaceutical company through both pipeline development and acquisition. Pfizer has treatments in many prominent disease areas and therapies in most high-growth markets. In 2014, Pfizer's revenue was reported as $49.6 billion.

Presence in Ireland: Pfizer was one of the first pharmaceutical companies to move into Ireland, in 1969. Pfizer currently employ over 4000 people across sites in Cork, Dublin and Kildare. Their manufacturing operations are active pharmaceutical ingredients, solid dose pharmaceuticals, biopharmaceuticals, vaccines and nutritionals.

Website: www.pfizer.ie

Regeneron

Area/Products: Biologics

Brief history: Regeneron is a biologics company based in the USA that was established in 1988. Their product portfolio includes products to treat high LDL cholesterol, a rare inflammatory condition and eye disease.

Presence in Ireland: Regeneron opened their European business office in Dublin, in 2013. In 2015, they announced that Ireland would become the site for their first biologics manufacturing site outside of the US. The Limerick site is expected to provide 500 highly skilled jobs.

Website: www.regeneron.com

Roche Ireland Ltd

Area/Products: Pharmaceutical and Diagnostics

Brief history: Roche began in Basel, Switzerland in 1896 with the intention of industrial manufacture of medicines. Roche employ over 80,000 people worldwide and their products are used in over 150 countries. They have products in disease areas including oncology, virology, transplantation and immunology. Roche is currently considered to be the world's biggest biotechnology company with 14 marketed biopharmaceuticals and a strong biopharma pipeline.

Presence in Ireland: As well as their pharmaceutical headquarters in Dublin, Roche has operated a pharmaceutical manufacturing plant in Co. Clare since 1994. The site was formerly part of Syntex Ireland and has been operational since 1974 - in 1994, Syntex Ireland became part of the Roche group. This site produces active pharmaceutical ingredients for use by the whole of the Roche group. Roche employs approximately 240 people across Ireland.

Website: www.roche.ie

Servier

Area/Products: Pharmaceuticals

Brief history: Established in 1954, Servier is a leading independent French research organisation. They employ over 21,000 people around the globe and market their products in over 140 countries. They have a strong research and development offering, employing almost 3,000 people in this area - in 2014, 28% of Servier's €4 billion turnover was invested into research and development pursuits.

Presence in Ireland: Servier Laboratories and Servier Industries both have a presence in Ireland. The research site has been in Ireland since 1974 and focusses on key therapy areas. The industrial site has been open since 1989 and employs over 400 people. This site produces more than 120 million boxes of pharmaceuticals, which are then exported for use in 105 countries.

Website: www.servier.ie

Sigma-Aldrich

Area/Products: Life Science and Technology

Brief history: Sigma-Aldrich produce bio and organic chemical kits and products for use in a range of areas including research, disease diagnosis and pharmaceutical development and manufacturing. They also offer a range of contract services spanning research and development to manufacture. They have a presence in 35 countries and employ 8,000 staff globally.

Presence in Ireland: The Sigma-Aldrich site in Co. Wicklow is home to four production plants. The primary function of the site here is commercial scale production of generic and custom active pharmaceutical ingredients.

Website: www.sigmaaldrich.com/ireland

Stryker

Area/Products: Medical devices

Brief history: Founded by an orthopaedic surgeon in the U.S in 1941, Dr Stryker was aiming to make products that met his patients' healthcare needs. Stryker continues in the field of medical technology with a focus on surgical devices and is now one of the biggest such companies in the world. They currently employ over 25,000 people worldwide.

Presence in Ireland: Stryker has three plants across Ireland - two in Cork and one in Limerick. The Cork Instruments plant develops surgical instruments and associated technology. The Stryker Orthopaedics sites in Cork and Limerick research and develop biomaterials as well as manufacturing knee and hip joints. Across these three sites, Stryker employs over 1,200 people.

Website: www.stryker.com

Takeda

Area/Products: Pharmaceuticals

Brief history: Takeda is a Japanese pharmaceutical company. It began in 1781 selling traditional Japanese and Chinese medicines. Almost a century later, the company began importing western medicines into Japan, and in 1895, they began medicinal manufacture. Takeda employs almost 16,000 people worldwide.

Presence in Ireland: Takeda has had a presence in Ireland since 1997 and currently employs over 400 people in the country. Their drug product site in Co. Wicklow is the main production site for solid oral dose finished pharmaceuticals, serving European and U.S markets. The active pharmaceutical ingredient site in Dublin was the first such site built by the company outside of Japan.

Website: www.takeda.ie

Teva Pharmaceuticals

Area/Products: Generic Pharmaceuticals

Brief history: Teva began in 1901 in Jerusalem as a small wholesale drug distributor. Today, Teva is the world's leading generic pharmaceutical company, working in development, manufacture and marketing of generic pharmaceuticals. They do also work in the areas of branded pharmaceutical and active pharmaceutical ingredients. Teva is ranked in the top 20 pharmaceutical companies across the world and employ more than 44,000 people.

Presence in Ireland: Teva Pharmaceutical Ireland has its commercial base in Louth and the manufacturing site is Waterford. This manufacturing site employs hundreds of staff across research, development and manufacturing activities of the company's respiratory products.

Website: www.teva.ie

Zimmer Biomet

Area/Products: Medical devices

Brief history: Zimmer Biomet was established after the merger of Zimmer and Biomet in 2015 - they are now a leading manufacturer of orthopaedic surgical products. The company employ over 9,000 people and have a presence in over 100 countries worldwide.

Presence in Ireland: In 2007, Zimmer opened a manufacturing site in Co. Clare, employing 330 people in the production of their "NexGen" femoral knee system. In 2015, they announced a new site to be opened in Galway which is expected to create a further 250 jobs.

Website: www.zimmer.com

Jobs Near You - Manufacturing Sites by County

Here are list of manufacturing plants of top pharma and medtech companies, organised by county.

For the most comprehensive list, I'd recommend having a look at our interactive factory locator (for a map-based view of companies) and the job hunt company directory on our website.

County	Company	Number of Employees	Activities
Armagh	Almac Group	2100+	Pharmaceutical, biomarker and chemical discovery and development.
Carlow	MSD	450	Vaccine and biologics manufacture.
Cavan	Abbott Ireland Nutritional Division		Manufacture of infant nutritional products for export.
Clare	Roche	400	Manufacture of active pharmaceutical ingredients.
	Zimmer Biomet	330	Meical device manufacture.
Cork	AbbVie		Pharmaceutical manufacturing and development.
	Alcon Laboratories Ireland Ltd	100+	Development and manufacture of vision care products.
	Alcon Laboratories Ireland Ltd	400	Development and manufacture of vision care products.
	Boston Scientific	860	Medical device manufacture.
	DePuy	600	Manufacture of orthopaedic devices.
	GlaxoSmithKline	400	R&D and pharmaceutical manufacturing.
	Janssen Biologics	200	Biomedicine production.
	Janssen Pharmaceutical	200	Manufacturing of bulk active pharmaceutical ingredients.
	Lilly	400	Active pharmaceutical ingredient manufacture.

County	Company	Number of Employees	Activities
	Merck Millipore		Filter membrane manufacturing.
	MSD	550	Biopharma development, filling and testing.
	Novartis	680	Manufacture of active pharmaceutical ingredients.
	Pfizer (3 sites)		Little Island / Ringaskiddy / Loughbeg: Manufacture and export of active pharmaceutical ingredients.
	Stryker	700	Surgical device manufacture.
Donegal	Abbott Ireland Diabetes Care		Manufacture of test strips for use in blood glucose meters.
Dublin	Alexion	200	Pharmaceutical global supply chain and quality operations.
	Abbott Ireland Nutritional Division		Manufacture of infant nutritional products for export. (Planned biologics manufacturing facility).
	Amgen	380	Secondary manufacturing aseptic operations.
	Astellas	70+	Manufacture of bulk active pharmaceutical ingredients.
	BD Medical		Manufacturing pen needles for insulin injection.
	Bristol-Myers Squibb	550	Two sites manufacturing bulk pharmaceuticals.
	MSD		Pharmaceutical manufacture and packaging.
	Mylan - Gerard Laboratories	300+	Manufacture of inhaled and oral dose product lines.
	Nestle Nutrition		Product manufacture.
	Pfizer	1250	Biotechnology facility.
	Takeda	60	Active pharmaceutical ingredient development and manufacture.

County	Company	Number of Employees	Activities
Galway	Boston Scientific	2,600	Product manufacture.
	Covidien	300	Respiratory medical device manufacture.
	Creganna	550+	Minimally invasive medical device design and manufacture outsourcing.
	Medtronic	2,000	Medical device manufacture and development.
	Mylan - Bioniche Pharma		Pharmaceutical manufacturing and packaging.
	Zimmer Biomet	250 (expected)	Medical device manufacture.
Kerry	Astellas	300+	Pharmaceutical manufacture and packaging.
Kildare	Pfizer	550	Solid dose pharmaceutical manufacture.
Limerick	Cook Ireland	800	Medical device manufacture.
	Johnson & Johnson Vision Care	640+	Contact lense manufacture.
	Regeneron	500 (expected)	Biologics.
	Wyeth Nutritional	600	Infant formula production.
	Stryker	500	Surgical device research, development and manufacture.
Longford	Abbott Ireland Diagnostic Division	300+	Manufacture of diagnostic reagent products.
Louth	BD Medical		Medical device manufacture.
Mayo	Allergan Pharmaceuticals Ireland	900	Manufacturing plants - Sterile Pharmaceutical Ophthalmics plant and Biologics plant.
Offaly	Covidien	400	Medical device manufacture.
Roscommon	Athlone Laboratories	140	Pharmaceutical manufacture.
	Alexion		Planned vialling facility.
	Jazz Pharmaceuticals	50 (expected)	Pharmaceutical manufacture and development facility.

County	Company	Number of Employees	Activities
Sligo	Abbott Ireland Diagnostics Division		Manufacture bulk reagents for use in Abbott diagnostic instruments.
	Abbott Ireland Nutritional Division		Manufacture of feeding devices.
	AbbVie	300	Manufacture of active pharmaceutical ingredients.
	Stiefel (a GSK company)	120	Manufacturing.
	Teva Pharmaceuticals	500	Research, development and manufacture of pharmaceutical products.
Tipperary	Abbott Ireland Vascular Division		Manufacture of broad range of vascular devices.
	Boston Scientific	700+	Development, manufacture and distribution of defibrillators and pacemakers.
	Pinewood Healthcare	350-400	Pharmaceutical manufacture.
Waterford	EirGen	100	Manufacture of high-potency pharmaceuticals.
	Genzyme Ireland Ltd	550	Biopharmaceutical finishing facility.
	GlaxoSmithKline	750	Consumer healthcare manufacturing.
Westmeath	Alkermes PLC		Pharmaceutical manufacture.
	Covidien	500	Respiratory medical device manufacture.
Wexford	Lake Region Medical	750+	OEM development and manufacture to medical device companies.
Wicklow	MSD	270	Manufacture of active pharmaceutical ingredients.
	Servier	400	Manufacture of finished pharmaceutical product.
	Sigma-Aldrich		Manufacture of generic and custom active pharmaceutical ingredients.
	Takeda	400	Drug product manufacture.

Organisations You **Need** to Know

National Organisations

The Irish Pharmaceutical Healthcare Association **(IPHA)** is the industry body of the research-based pharmaceutical industry of Ireland. Members are manufacturers of both prescription products and non-prescription and consumer healthcare medicines.

The Irish Medical Devices Association represents the medical device and diagnostics industries in Ireland. With key involvement of industry leaders, they are working towards an environment which supports and enables these sectors to develop and grow.

The Health Products Regulatory Authority **(HPRA)** is a state agency tasked with regulation of medicines, medical devices and other health products. Until 2014, this agency was known as the Irish Medicines Board. They are responsible for granting company licences, monitoring of health products (including taking action when concerns are raised) and inspecting manufacturing sites across the country.

International Organisations

The Food and Drug Administration **(FDA or USFDA)** is an agency of the United States Department of Health and Human Services and is responsible for protecting and promoting public health through the regulation and supervision of food safety, tobacco products, dietary supplements, prescription and over-the-counter pharmaceutical drugs (medications), vaccines, biopharmaceuticals, blood transfusions, medical devices, electromagnetic radiation,cosmetics, emitting devices (ERED), and veterinary products.

The International Society for Pharmaceutical Engineering **(ISPE)** is a not-for-profit industry trade group for pharmaceutical science and manufacturing professionals. It has 25,000 members in more than 90 countries. The ISPE provides pharmaceutical industry professionals with opportunities to develop technical knowledge, exchange practical experience, and collaborate with global regulatory agencies and industry leaders.

The Parenteral Drug Association **(PDA)** is an international non-profit industry trade group for pharmaceutical and biopharmaceutical manufacturers. Founded in 1946 as the Parenteral Drug Association by a small group of pharmaceutical manufacturers who recognised the need for an organisation to disseminate technical information within the industry, it now has more than 11,000 members worldwide. Today, coordinated through its headquarters and its Training & Research Institute in Bethesda, Maryland, PDA volunteers worldwide promote the exchange of rapidly evolving information on the latest technology and regulations concerning high-quality pharmaceutical production.

The World Health Organization **(WHO)** is a specialized global agency that is concerned with direction and coordination of international public health. It was established on 7 April 1948, with its headquarters in Geneva, Switzerland and an aim of providing leadership in public health globally. Today, more than 7,000 people from 150 countries work for WHO worldwide covering 194 member states. WHO affects public health by monitoring health trends, setting health standards, shaping the research agenda and providing leadership.

The European Medicines Agency **(EMA)** is an agency of the European Union that is based in the United Kingdom. They are responsible for scientifically evaluating pharmaceutical products that are manufactured for use in the European Union. The agency does this by through evaluation of new products applying for marketing licences in the EU as well as providing a centralised pharmacovigilance monitoring system. Part of their remit can involve coordinating the inspection of pharmaceutical manufacturing sites.

Part 6: What now?

"I would rate the course 10 out 10 and would highly recommend to others, very interesting, informative and very well presented. Relevant totally to my needs and expectations. The most practical course I have ever attended."
Andy Wnuk, MSc (Eng) MIEI

So there you have it. If you're thinking about a change of career, those are the steps you need to take to give yourself the best chance at a successful change.

If you've worked in a technical role previously, then you'll probably be surprised at how close you are to being an ideal candidate for the pharma and medical device industries. Reskilling wouldn't be starting something from scratch, it would be starting something a few strides away from the finish line.

Contact us here at GetReskilled to talk through your options in more detail with an expert.

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