

Careers in the Pharmaceutical Industry

Guidance for school students in the U.K.

What is the pharmaceutical industry?

The pharmaceutical industry provides medicines which save and improve the lives of humans and animals. Every medicine that you get from the pharmacy has been discovered, developed, manufactured and tested by the pharmaceutical industry. In the UK alone, the pharmaceutical industry employs more than 120,000 people at more than 3000 sites which contribute about £18 billion added value to the economy each year.

The pharmaceutical industry is divided into different sectors: prescription medicines (e.g. antibiotics), over-the-counter medicines (e.g. paracetamol, anti-histamines), veterinary medicines (for farm and domestic animals) and devices (e.g. syringes, inhalers, plasters). It offers a range of medicine types: tablets, liquids, inhalers, skin patches, injectables. The medicines themselves are becoming more complex; while basic medicines are made from simple small molecules, medical treatments now include therapeutic proteins, cell therapies and gene therapies.

Common to all products is the need to comply with rigorous standards set by governments through their national regulatory agencies. This requires the industry to deliver a long and continuous cycle of activities throughout the life of the medicine.

What careers are offered by the pharmaceutical industry?

To support this diverse industry, there are hundreds of different careers, which reflect many skills provided by people with both academic and non-academic interests across a wide range of disciplines. So a career in the pharmaceutical industry is not limited to just one type of person.

Career Stepping Stones

The varied careers in the pharmaceutical industry provide opportunities for change, as your interests and employment needs change during your working life. Some of the jobs which will be needed in 10 or 20 years' time do not even exist yet, so you don't know where your career may take you. Many people start their pharmaceutical career in one area and this leads them into a variety of different jobs over their working lifetime.

This means that you can choose a path into the pharmaceutical industry from school, college or university without having to worry that you have made a restrictive career choice for your whole life. Even if you decide to leave the pharmaceutical industry, the high-level skills you have gained there can enhance your CV for other job applications.

However, because of the required technical training, it is easier to move your career away from a science/engineering job into other pharmaceutical areas than the other way around.

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A-Z of Some Pharmaceutical Careers

Accountant (Finance)	Administrator (Global)	Advertiser (Marketing)	Artist (Medical Information)	Auditor (Quality)
Author (Medical Information, Regulatory)	Biochemist (R&D, Manufacturing)	Biologist (R&D, Quality)	Business Developer (New products, Marketing)	Chemical Engineer (R&D, Manufacturing)
Chemist (R&D, Manufacturing)	Clinical Trial Manager (Clinical Trials)	Contract Manager (Procurement)	Coordinator (Programme management)	Copy Writer (Medical Information)
Counsellor (Clinical Trials)	Crystallographer (R&D, Quality)	Designer (Medical Devices, Packaging)	Doctor (Clinical Trials)	Driver (Distribution)
Economist (Regulatory, Marketing, Business strategy)	Electrical Engineer (R&D, Manufacturing, Quality)	Environmentalist (Manufacturing, Global)	Finance manager (Cost control)	Geneticist (R&D, Clinical Trials)
Haematologist (Clinical Trials)	Health & Safety Advisor (Global)	HR Advisor (Global)	Immunologist R&D, Clinical Trials)	Information Technologist (Global)
Journalist (Medical Information, Marketing)	Key Account Manager (Marketing)	Lawyer (Global)	Linguist (Regulatory, Medical Information)	Logistician (Logistics)
Machine Operator (Manufacturing)	Market Researcher (R&D, Sales & Marketing)	Mechanical Engineer (R&D, Manufacturing)	Microbiologist (R&D, Manufacturing, Quality)	Nurse (Clinical Trials)
Oncologist (R&D, Clinical Trials)	Paediatrician (Clinical Trials)	Patent Attorney (R&D, Manufacturing)	Physicist (R&D, Manufacturing, Clinical Trials)	Physiologist (R&D, Clinical Trials)
Process Engineer (Manufacturing)	Programmer (R&D, Manufacturing, Clinical Trials)	Proof Reader (Regulatory, Medical Information, Marketing)	Project Manager (Global)	Quality Controller (Manufacturing)
Quality Assurer (Manufacturing)	Radiologist (R&D, Clinical Trials)	Regulatory Officer (Regulatory)	Sales Representative (Sales & Marketing)	Statistician (R&D, Clinical Trials)
Spectroscopist (R&D. Quality)	Technologist (R&D, Manufacturing, Quality)	Translator (Medical Information, Sales & Marketing)	Transport Manager (Distribution)	User Tester (Regulatory, Clinical Trials)
Validation Engineer (Manufacturing, Quality)	Warehouser (Logistics)	X-ray technician (R&D, Clinical Trials)	Yield Monitor (Manufacturing)	Zoologist (Veterinary Medicines, Animal safety)

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I don't know what I want for my tea next Tuesday. How can I decide on a lifetime career?

It is not unusual to be unsure about what to do after you finish school. If you are attracted by a particular type of job (the A – Z table above gives some examples) you can then find out what qualifications are needed for it.

Another approach is to think about you own interests and needs, then find out what careers can meet those needs. For example, you could ask yourself:

What do I enjoy?	What do I want to do after school?	What do I want from a job?
Design	Employment	Money
Science	Apprenticeship	People
Reading	Further academic study	Interesting work
Creating	Vocational Training	Excitement
Team activities	Get away from home	Travel
Solo activities	Nothing	Respect of other people
People	Don't know	Self-respect
Don't know		Don't know

There are no “wrong” answers and there can be many other things on your own list. You may go on asking these questions at different times throughout your life, and your answers may change as time passes. This is just one way to think about the unknown world after school.

Hint: Schools can only teach a few “platform” subjects compared to the variety of jobs in the pharmaceutical industry. If a career or job interests you, don't worry that you won't be able to do it just because it doesn't match your school curriculum. Whatever route you take into the workplace, a good employer will always provide on-going support to make sure you are properly trained to do the job.

How do I get into the Pharmaceutical Industry?

There is no single route to a career in the pharmaceutical industry, because the jobs and job requirements are so varied. The Table below shows some entry routes into various pharmaceutical jobs. The website links listed later will help you get more information.

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Some examples of entry routes to the Pharmaceutical Industry

Career base	16+	18+	21+	Typical First Job	Starting salary
Science	A-levels / (Advanced) Highers / BTEC: Chemistry, Biology, Physics, Mathematics	→		Laboratory (R&D, Quality Control)	£
		University Science Degree Courses (B.Sc.)	→	Laboratory (R&D, Quality Control); Manufacturing; Clinical Trials; Sales & Marketing; Medical Information; Project Management.	££
			University post-graduate study (M.Sc., Ph.D.)	Laboratory/Management (R&D, Quality Control); Clinical Trials; Manufacturing Management; Project Management; Quality Assurance; Medical Information	£££
	GCSEs / Nationals -> Apprenticeships	→		Laboratory Technician; Animal Technician; + training to access further qualifications	£
Medical	A-levels / (Advanced) Highers /: Chemistry, Biology, Physics, Mathematics	University Medical degree (M.B., B.Ch.)	Qualified doctor	Pharmaceutical consultant physician; Clinical Trials Investigator;	££££
	A-levels / (Advanced) Highers: Chemistry, Biology, Physics, Mathematics	University Nursing Degree	→	Occupational Health; Clinical Trials; Sales & Marketing; Medical Information	££
	GCSEs / Nationals / CACHE / Vocational	Nursing	→	Occupational Health; Clinical Trials; Sales & Marketing; Medical Information	££
Engineering	A-levels / (Advanced) Highers / BTEC: Chemistry, Biology, Physics, Mathematics, Design	→		Manufacturing	£
		University Engineering Degree Courses (B.Eng./B.Sc.)	→	Manufacturing; Design; Project Management	££
			→	R&D; Manufacturing; Design; Project Management	££
	A-levels / (Advanced) Highers -> Apprenticeships	University Biomedical Engineering Degree Courses (B.Eng./B.Sc.)	University post-graduate study (M.Eng./M.Sc./Ph.D.)	R&D; Manufacturing; Design; Team Management; Project Management	£££
		→		R&D; Manufacturing; Design; Management training schemes; + training to access further qualifications	£/££

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Career base	16+	18+	21+	Typical First Job	Starting salary
Business/ Management	A-levels / (Advanced) Highers / BTEC: Sciences, Mathematics, Social Sciences, Humanities	→		Business data controller; Sales & Marketing	£
		University Business studies/Economics degree courses	→	Business analytics; Manufacturing; Business Development; Health Economics; Sales & marketing; Client relations; Supply Chain management	££
		University degree courses	→	HR/Personnel Business partner;	££
			University post-graduate study (M.A./B.A./MBA)	Manufacturing Management; Sales & Marketing; Business Development; Strategic Planning	£££
	A-levels / (Advanced) Highers -> Apprenticeships/ Vocational	→		HR; Business analytics; Manufacturing; Health Economics; Sales & marketing; Supply Chain; + training access to further qualifications	£/££
Finance	A-levels / (Advanced) Highers / BTEC: Sciences, Mathematics, Social Sciences	→		Accountancy data management; Finance controller	£
		University/College accountancy courses	→	Business analytics; finance control management; business partner	££
			Professional accountancy qualifications	Business analytics; finance management; business development; audit management	£££/££££
	Apprenticeships	→		Accountancy data management; Finance controller; + training access to further qualifications	£
Law	A-levels / (Advanced) Highers / BTEC: Humanities, Sciences, Mathematics, Social Sciences	University law courses	→	Corporate legal	££
			University law post-graduate study	Corporate counsel	£££
			Post-graduate patent & IP law	Patent & IP associate	£££
Languages	A-levels / (Advanced) Highers: Modern languages	University degree course in modern language(s)	[University post-graduate study]	Clinical Trials; Medical Information; Sales & Marketing; Technology Transfer; Business Development.	£££

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Some useful links

The following links offer a starting point for further information. Often, the opening page leads to case studies, examples and other relevant items.

The Association of the British Pharmaceutical Industry (ABPI) has a very good website offering advice about careers in the Pharmaceutical Industry:

<https://www.abpi.org.uk/careers>

The Prospects and the Royal Society of Chemistry also have information and individual stories, starting from here:

[Medicinal chemist job profile | Prospects.ac.uk](#)

[Medicinal chemist | Job profile | RSC Education](#)

Choices at 16+

[16+](#)

Science Experience: British Science Association Crest Awards for 16+ projects:

<https://www.crestawards.org/crest-gold>

Science Experience: Nuffield Research Placements for 16+:

<http://www.nuffieldfoundation.org/nuffield-research-placements>

In2science Year 12 In2STEM programme (website also offers other science experience events):

<https://in2scienceuk.org/students/schools>

Pharmaceutical Work Experience for 16+/18+ (filter select “work experience placements (school students)” for links to specific providers):

[Work experience \(abpi.org.uk\)](#)

UCAS Website

<https://www.ucas.com>

Apprenticeships: Information and Examples

<https://www.abpi.org.uk/facts-figures-and-industry-data/industry-and-academia-links-survey-2019/apprenticeships>

<https://skillstraininguk.com/apprenticeships-for-pharmaceuticals>

Case Studies of Different Careers in the Pharmaceutical Industry:

<https://www.abpi.org.uk/careers/job-roles-and-case-studies>

Broad range information & guidance on academic, apprenticeships and vocational opportunities

<https://www.careerpilot.org.uk>

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