



# Life Sciences Manufacturing Report

Puerto Rico

Q4 2020 Update



**INVEST**  
PUERTO RICO

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# Update Since Original Publication

This past year, global supply chains, particularly of critical materials, have been severely disrupted, leading to a national push to re-shore essential manufacturing. As a recognized international BioScience powerhouse, Puerto Rico offers the ideal solution to the United States and to foreign companies that are hoping to maintain strong links to US and Latin American markets, while taking advantage of top-notch talent and cost-effective business solutions. Puerto Rico's new designation as a global air transshipment hub means that companies have an expanded opportunity to also connect with suppliers and customers in Europe and the Middle East.

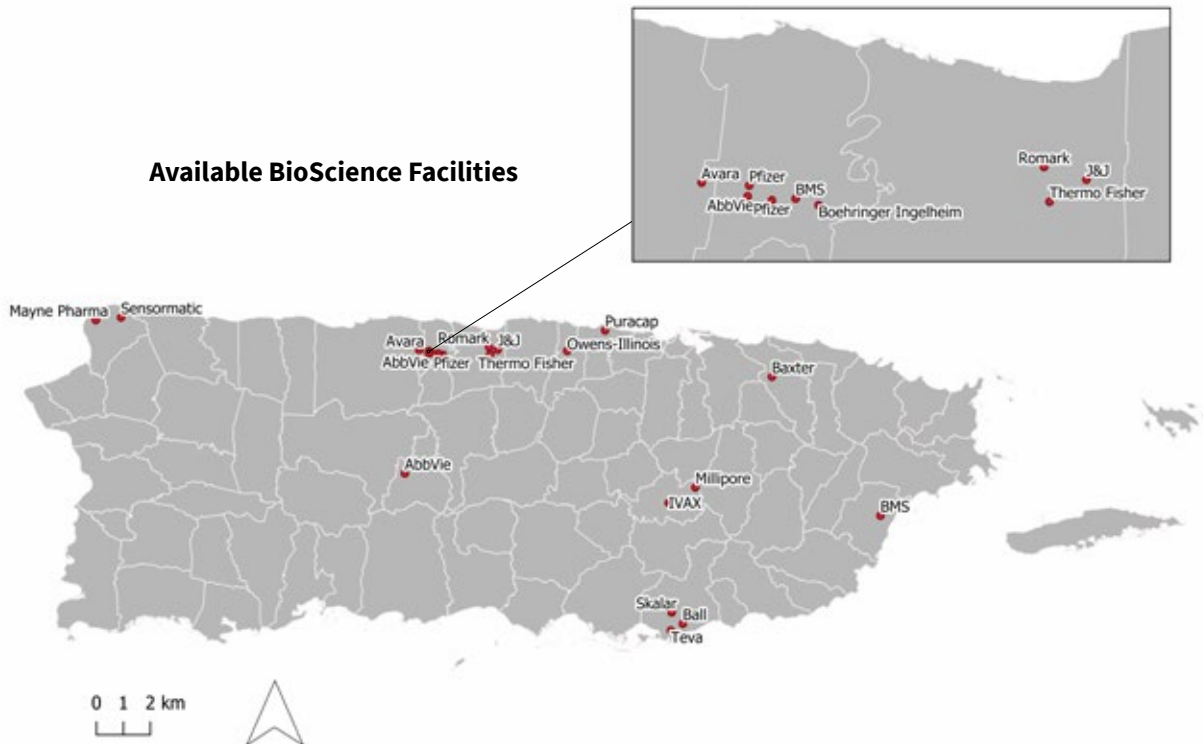
Due to the local BioScience expertise, Puerto Rico garnered the attention of the federal government as the ideal destination for additional private and public investment to bolster the local economy and the nation's security in terms of pharmaceuticals and essential medical supplies. As the President's Director of Trade and Manufacturing Policy and the coordinator for the Defense Production Act Dr. Peter Navarro tweeted, "China Fired. Puerto Rico, Hired."

In August, Invest Puerto Rico hosted federal officials to tour several former and current pharmaceutical and medical device manufacturing facilities across the Island. Throughout, Puerto Rico proved itself to be a land of BioScience excellence and opportunity. While the Island is home to sophisticated, state-of-the-art, automated small molecule manufacturing operations, there are also several facilities that are either ready to be occupied or redeveloped for use. This combination means that Puerto Rico offers an accelerated timeline to the re-shoring process that enables companies to get started right away serving the American public and global BioScience market.

On this tour of the industry's capabilities, federal officials saw 10 facilities and were provided detailed information on the strengths and opportunities that over a dozen other plants offer, including a timeline of availability.

As a result of the tour, the [Department of Defense awarded a \\$10 million contract](#) to Copan Industries to establish

## Available BioScience Facilities



domestic production of cotton swabs now critical for COVID-19 tests. Additional deals are expected to be announced in the coming months.

Puerto Rico's BioScience industry, as with the wider economy, will greatly benefit from recent investments in expanded energy and logistics capacity. Less than a month after federal delegates visited Puerto Rico, the White House announced \$9.6 billion in FEMA grants for the renewal and resiliency of the Island's energy grid. This will spur even greater business continuity and reduce operating costs, making large manufacturing plants more efficient.

Additionally, Puerto Rico now serves as a global air transshipment hub, giving the Island's three international airports expanded capacity to transfer passengers and cargo. The pharmaceutical industry already relies on Puerto Rico's sophisticated cold chain network and air logistics to connect with customers and suppliers. Now, as many industries are finding ways to cut costs and adapt, expanded global reach and planned infrastructure investments at Puerto Rico's airports will further establish Puerto Rico as the ideal destination for BioScience companies looking to relocate.

On top of the [\\$43 million awarded to Puerto Rico's airports](#) through the CARES Act, the Puerto Rico [Ports Authority received \\$24.2 million](#) to develop the runway reconstruction project at the Rafael Hernandez International Airport in Aguadilla and [\\$2.5 million from FEMA](#) to design and install a combined heat and power generation system at the Luis Muñoz Marín International Airport near San Juan. These investments will expand the capacity of these facilities to handle time- and temperature-sensitive materials, improving greatly the Island's value proposition for pharmaceutical and medical device companies.

Puerto Rico has already seen positive movement from the private sector, as well, based on these advancements and improvements. Right after the federal tour of Puerto Rico, the [FDA announced that they have approved Romark's](#) newest 35,000 sq. ft. manufacturing facility in Manatí. This facility will produce NT-300, an investigational drug currently in Phase 3 trials for the prevention and treatment of COVID-19 and other viral respiratory diseases. The new facility should expand their workforce presence from 100 employees to 400 over the next three years.

A few weeks later, transfusion and cell technology company [Fresenius Kabi announced it was investing \\$30 million](#) to expand its complex in San Germán. On the announcement, Vice President of the local operation Eric Santiago-Justiniano said, "The operational excellence, commitment to quality, and dedication to the highest manufacturing standards of Puerto Rican workers are exemplified through this expansion... Our Puerto Rico operations are an example of the focus on efficiency and productivity."

Puerto Rico is proving to have a robust R&D sector, as well. In September, [GK Pharmaceuticals](#), a contract manufacturing organization (CMO) in Manatí, received FDA authorization to produce a critical element of molecular COVID-19 tests. With the approval, GK Pharmaceuticals will produce 350,000 kits a year, each good for up to 1,000 tests. The results are available within 3 hours. The test kit was developed by researchers at [Laboratorio Clínico Martin](#) near the production facility.

The companies that operate in Puerto Rico have made it clear that the talent, cost-effectiveness, and organizational support of the local BioSciences industry are ample reasons to stay. Companies looking to expand to Puerto Rico, and the federal government, recognize that available facilities, specialized expertise, enhanced logistics capacity, and access to the US market make Puerto Rico the most competitive BioSciences hub in the world.





# Summary

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This research examines the history, capabilities, present status, and immediate potential of the pharmaceutical and medical device manufacturing industries in Puerto Rico. The purpose of this research is to provide a detailed overview of the industry on the island and the opportunities with regards to talent, tax incentives, and real estate.

JLL Puerto Rico has been on the island since 1998, and currently has a Puerto Rico-based team of over 300 employees who provide our clients multiple services including: Facilities Management, Project Development Construction Services, Property Management, Transaction Advisory, Research, GIS Mapping, Data Collection, Market Planning, Engineering Services, Hospitality Sales and Consulting, Supply Chain, Sourcing and Logistics, Sustainable Energy Programs, and Capital Markets Advisory Services. JLL is the only full-service and wholly integrated international commercial real estate firm with a corporate office and business line leaders based in Puerto Rico.

To complete this research JLL partnered with Invest Puerto Rico. Invest Puerto Rico is a non-profit and politically independent investment promotion organization created by law via Act 13 – 2017. Its mission is to promote Puerto Rico as a competitive investment jurisdiction to attract new business and capital investment to the island, and to be a transformational and results-oriented accelerator of economic development. Invest Puerto Rico has been a tremendous resource throughout the research process, and a vital partner to completing and distributing this report.

The JLL commercial real estate research team compiled information on every existing pharmaceutical and medical device manufacturing site on the island and used these data to determine criteria ranges for potential manufacturing sites. The criteria determination methods are discussed in greater detail in the final section of this document. After determining the site criteria, the team was able to filter through over 1.5 million sites on the island to arrive at 38 sites that would be ideal for rapid deployment for pharmaceutical and medical device manufacturing.

Please contact [Henry.Keenan@am.jll.com](mailto:Henry.Keenan@am.jll.com) to request our brochure containing specific information and locations of the 38 potential manufacturing sites in Puerto Rico.

# Introduction

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For the past 60 years Puerto Rico has been a bastion of pharmaceutical and medical device manufacturing, serving the United States and the world's medical manufacturing companies by providing them with cost-efficient, high-quality drugs and equipment. The industry on the island is largely driven by a well-educated labor force, relative low costs, business-friendly tax policies, strong logistical capabilities, and United States rule of law.

Puerto Rico is the world's fifth largest pharmaceutical manufacturing hub by volume, comprising more than 80 manufacturing facilities operated by the likes of Amgen, Johnson & Johnson, Pfizer, Becton Dickinson and GlaxoSmithKline, amongst other large-scale manufacturers. Tylenol, Advil, Humira, saline solutions for blood transfusions, K Tabs, and Cialis are just a few of the many products currently being made in Puerto Rico.

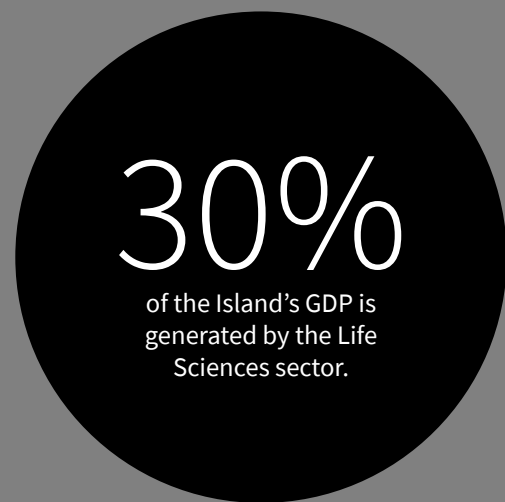
The Puerto Rican government's cooperation and relationship with the pharmaceutical industry can serve as a benchmark for companies considering relocating to the island. The pharmaceutical industry in Puerto Rico traces its roots to the late 1960s and early 1970s, when manufacturers were initially drawn to the island through the Operation Bootstrap, which began a series of tax breaks for U.S. corporations. The tax-incentive, known as Section 936, enabled U.S.-based pharmaceutical manufacturers to send all products from Puerto Rican plants to mainland parent plants without having to pay federal taxes on those earnings.

In the past few decades, international competition, patent expirations, and increased production costs have posed a challenge to U.S. pharmaceutical manufacturers. In addition to these factors, the expiration of the Section 936 incentive at the end of 2005 contributed largely to the decline of the industry in Puerto Rico, and the loss of revenue for the island was the primary cause of the island's fifteen-year recession from 2005-2019. The Life Sciences sector in Puerto Rico encompasses more than half of all manufacturing in Puerto Rico and sustains more than 100,000 jobs on the island. The industry pays approximately USD 3 billion in taxes annually, generating 25 percent of the island's GDP over the past four decades.

In addition to manmade challenges, Hurricane Maria caused millions of dollars of physical damage to plants across the island while also damaging the island's power grid, which took months to repair. Despite the natural disaster, the pharmaceutical industry showed signs of strength and resilience by being able to operate just hours or days after the disaster. Victor Batista, the general manager of Pfizer Guayama stated in an interview "The reality is that what we built on the island cannot be undone overnight."

The industry that has been built up over decades in Puerto Rico has the potential to turn the island into a jewel in the Caribbean rather than a federal fiscal liability in the United States. Despite past challenges, Puerto Rico still produces 5 of the world's top 10 selling drugs, and while companies now must pay taxes on their products, manufacturing in Puerto Rico still comes at a massive discount in comparison with the mainland.

This comes at a time while manufacturing drugs and medical devices offshore has become a national security liability. The island's existing infrastructure, talent base, rule of law, and reliability in the face of extreme challenges make it a prime candidate for new and additional manufacturing, and JLL is ready to help manufacturers achieve their ambitions in Puerto Rico.



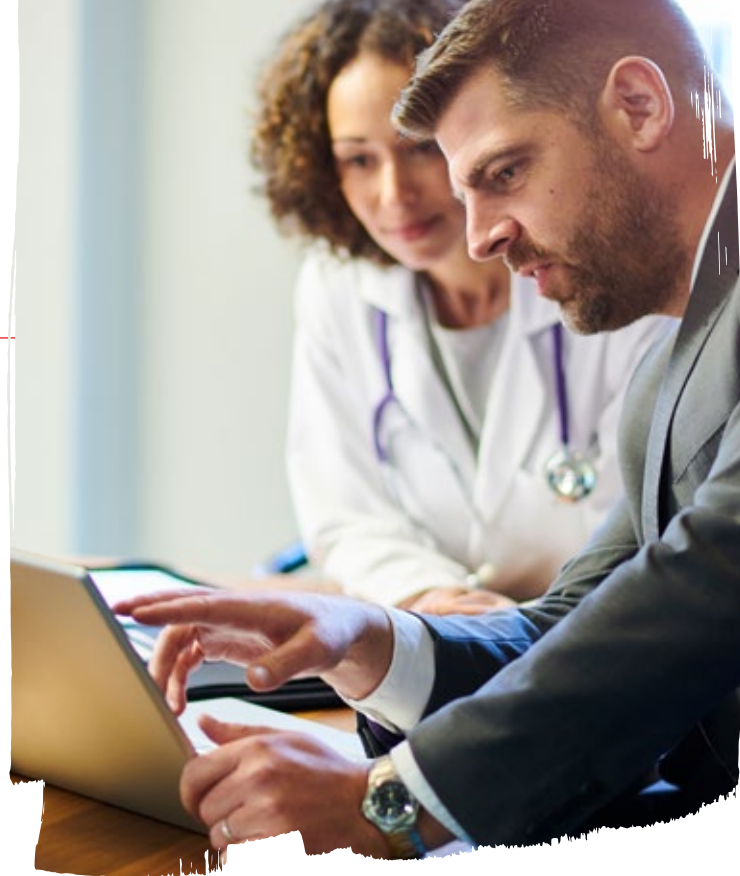
# Background

With 32 medical devices and 35 pharmaceutical sites around the island, Puerto Rico is one of the most important healthcare manufacturing centers in the world. With 50 years of experience in pharmaceutical manufacturing, the island has attracted 12 of the world's top 20 pharmaceutical companies including: AstraZeneca, Abbott-Abbvie, Amgen, Bristol-Myers Squibb, Merck, Pfizer, Eli Lilly and various others. In addition, the island hosts various research institutes that focus on applied sciences, ranking Puerto Rico as the third in highest value manufacturing hub per capita in the world.

Many companies operate more than one site on the island. In fact, Puerto Rico is the third-largest biotechnology manufacturer in the world with more than two million square feet of biotech manufacturing space. According to Industry University Research Center, Inc. (INDUNIV), the pharmaceutical industry is accountable for at least 78,000 direct and indirect jobs in Puerto Rico, making it home to the 6th highest concentration of scientists and engineers in the world. Furthermore, Puerto Rico leads the nation in its concentration of subsector experts with 8.6 times more than the national average for pharmaceutical talent, one of the key drivers in sustaining the industry on the island.

Puerto Rico exports to more than 80 countries around the world, making it the U.S.'s top pharmaceutical exporting region, and a main source for various top-selling drugs and medical devices. Two-dozen different kinds of drugs are manufactured in Puerto Rico: antihypertensive drugs, tranquilizers, laxatives, anti-diabetic drugs, vasodilators, antibiotics and contraceptives, among many others. Today, manufacturing accounts for over half of the island's GDP, of which the pharmaceutical industry occupies the largest portion.

As a sweetener, Puerto Rico is home to some of the most attractive tax incentives in the United States. In 2020, many of the previous incentives such as Act 20 and Act 22 were compiled into a single incentives code (Act 60) that established a 4 percent corporate income tax, 0 percent rate on dividends distribution, 75 percent property tax exemption, 75 percent construction tax exemption, 50 percent municipal tax exemption, and 50 percent exemption on other municipal



taxes. Eligible activities include manufacturing, R&D, and exports of goods and services, among others.

The pharmaceutical industry in Puerto Rico traces its roots to the late 1960s and early 1970s, when manufacturers were initially drawn to the island by the now-expired federal Section 936. The code enabled U.S.-based pharmaceutical manufacturers to send all profits from Puerto Rican plants to mainland parent plants without having to pay federal taxes on those earnings. For a period, Section 936 worked as standards of living rose. Between 1950 and 1980, GDP per capita and disposable income both rose sharply, according to the Center for a New Economy. However, during the 1990s critics of the tax break emerged and in 1996 a law was passed that would phase out Section 936 over 10 years, ending in 2006.

International competition, patent expiration, and increased production costs have posed a challenge to U.S. pharmaceutical manufacturers, and the island's recession from 2006 to 2019 was largely caused by these factors and the expiration of the Section 936 incentive at the end of 2005, with Puerto Rico losing nearly 40 percent of its manufacturing job base, due primarily to plant closures. Even though Section 936 expired back in 2006, the new incentives code still represents a great advantage for many companies in the industry compared to other jurisdictions.

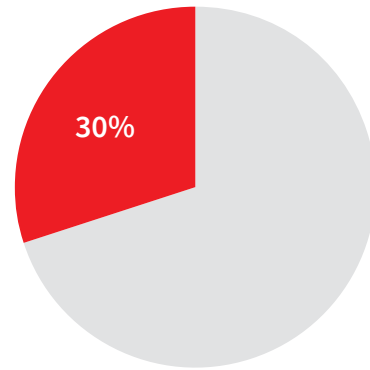


# Economic Impact

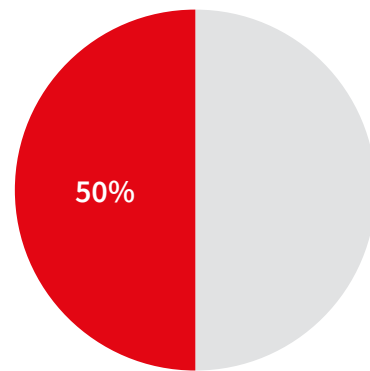
The pharmaceutical industry plays a key role in Puerto Rico's economy, and was primarily responsible for shifting the island's economy from an agricultural to an industrial base in the latter half of the Twentieth Century. In 2016, the industry comprised approximately 30 percent of the island's GDP, and its products were among the island's largest exports. The industry also supports a highly skilled workforce that collectively earned approximately USD 800M in wages that year.

In addition to the industry being essential to the island's economy, the United States relies heavily on Puerto Rico for its pharmaceutical manufacturing, with around 8 percent of pharmaceutical expenditures by Americans being for products manufactured in Puerto Rico. Furthermore, Puerto Rico now produces more pharmaceutical products for the United States than any foreign country, and it is the number one exporter within the United States.

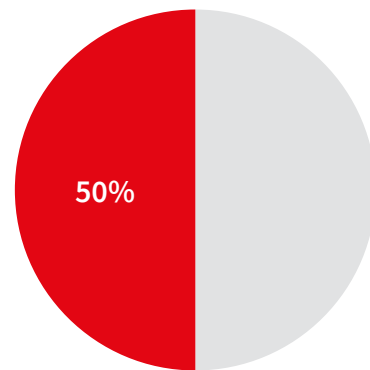
According to the National Drug Code directory, there are more than 1,000 individual drug products manufactured in Puerto Rico; of which several hundred are deemed medically important by the FDA. Moreover, Puerto Rico manufactures 30 drug products that are of critical importance as Puerto Rico is a primary manufacturer and these drugs do not have clear therapeutic alternatives, and 14 of the 30 are only sourced in Puerto Rico. Included in this list are five of the world's top ten best selling drugs in 2018: AbbVie's Humira (the world's best-selling pharmaceutical product), Bristol-Myers Squibb and Pfizer's Elquis (#2), Bristol-Myers Squibb's Opdivo (#4), Amgen and Pfizer's Enbrel (#6), and Bayer and Johnson & Johnson's Xarelto (#10).



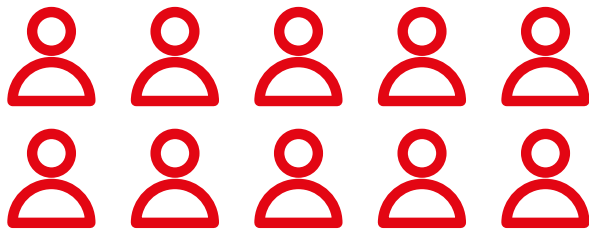
of Puerto Rico's GDP



of manufacturing activity



of manufacturing jobs



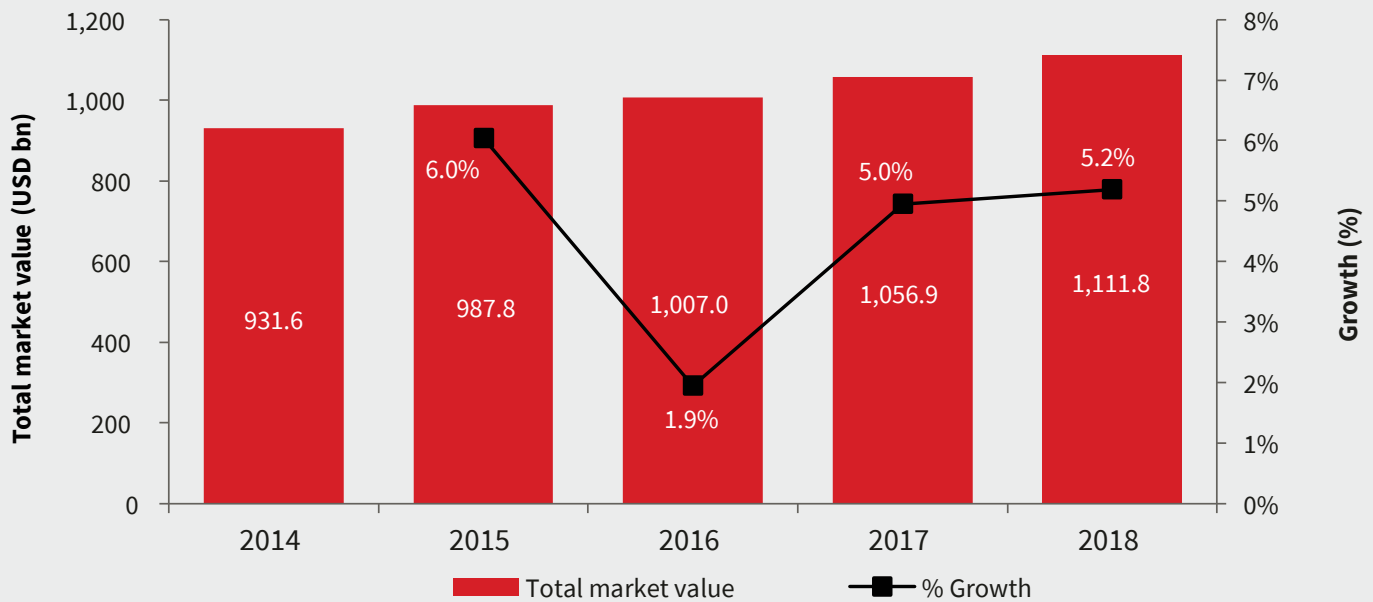
Jobs for **90,000** people

# U.S. and World Market

## Market Size and Growth

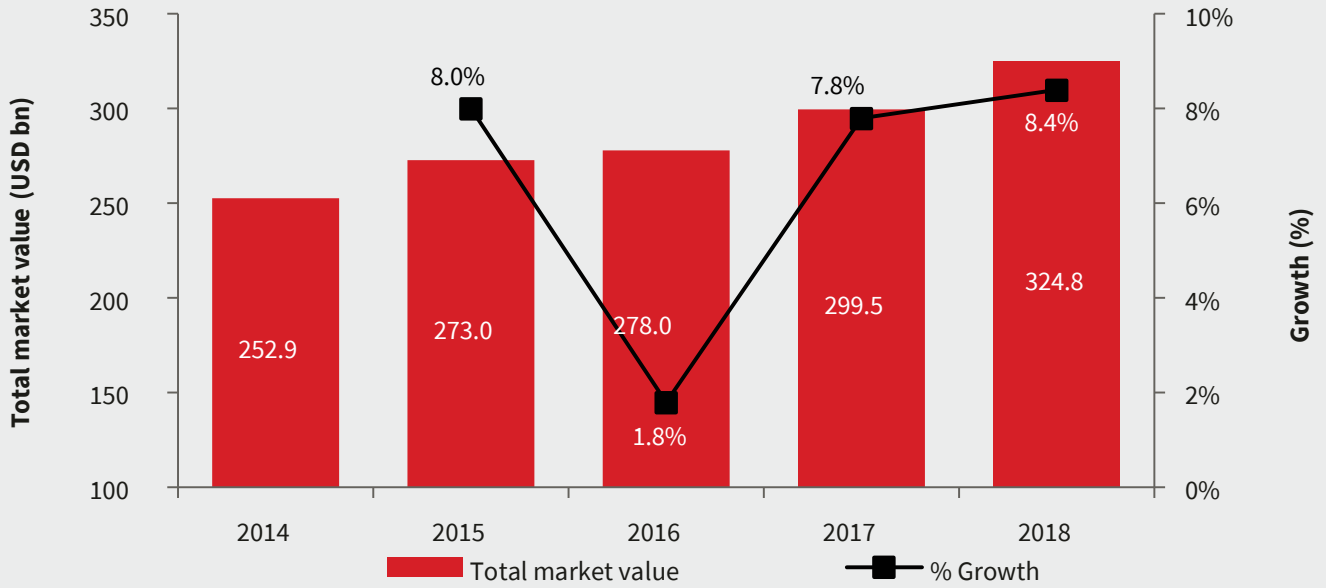
Geographically, the U.S. represents the largest share at 35.3 percent of the global pharmaceutical market, followed by Asia-Pacific markets (APAC) at 29.2 percent. From 2014 to 2018 the global pharmaceutical industry grew at a CAGR of 4.5 percent to reach USD 1.1 trillion. The growth has been driven by a rise in pharmaceutical spending in emerging markets in APAC, in addition to growth in the U.S.. APAC led global pharmaceutical growth, largely sustained by countries such as India (15.4 percent CAGR) and China (8.2 percent CAGR) and has been complemented by initiatives undertaken by governments in the region. Growth in the U.S. (4.5 percent CAGR) is bolstered by its continued free market approach to healthcare, although there is a slow backlash from the U.S. government against the high prices of drugs, nominally a recent Executive Order which regulates drug prices, a standard practice in much of the world.

**Global pharma industry size, 2014-18 (USD bn)**

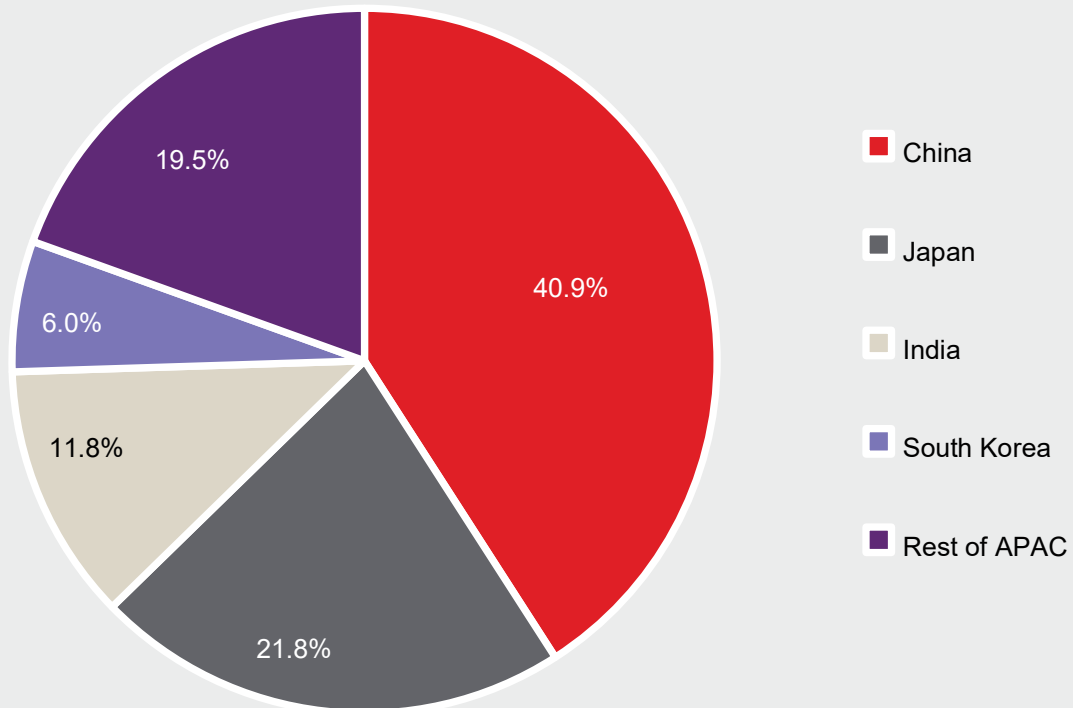


The following factors drive APAC's pharmaceutical industry: increasing disposable incomes, rising prevalence of lifestyle diseases, burgeoning middle class that spends more on health, greater awareness of chronic diseases, and significant developments in the field of contract manufacturing, particularly in active pharmaceutical ingredients (APIs). Further, the growth is supported by the consistent initiatives undertaken by governments in the region to promote the pharmaceutical industry.

**APAC pharma industry size, 2014-18 (USD bn)**



**APAC pharma geography segmentation, 2018**



# Pricing

## JLL Pro Pricing

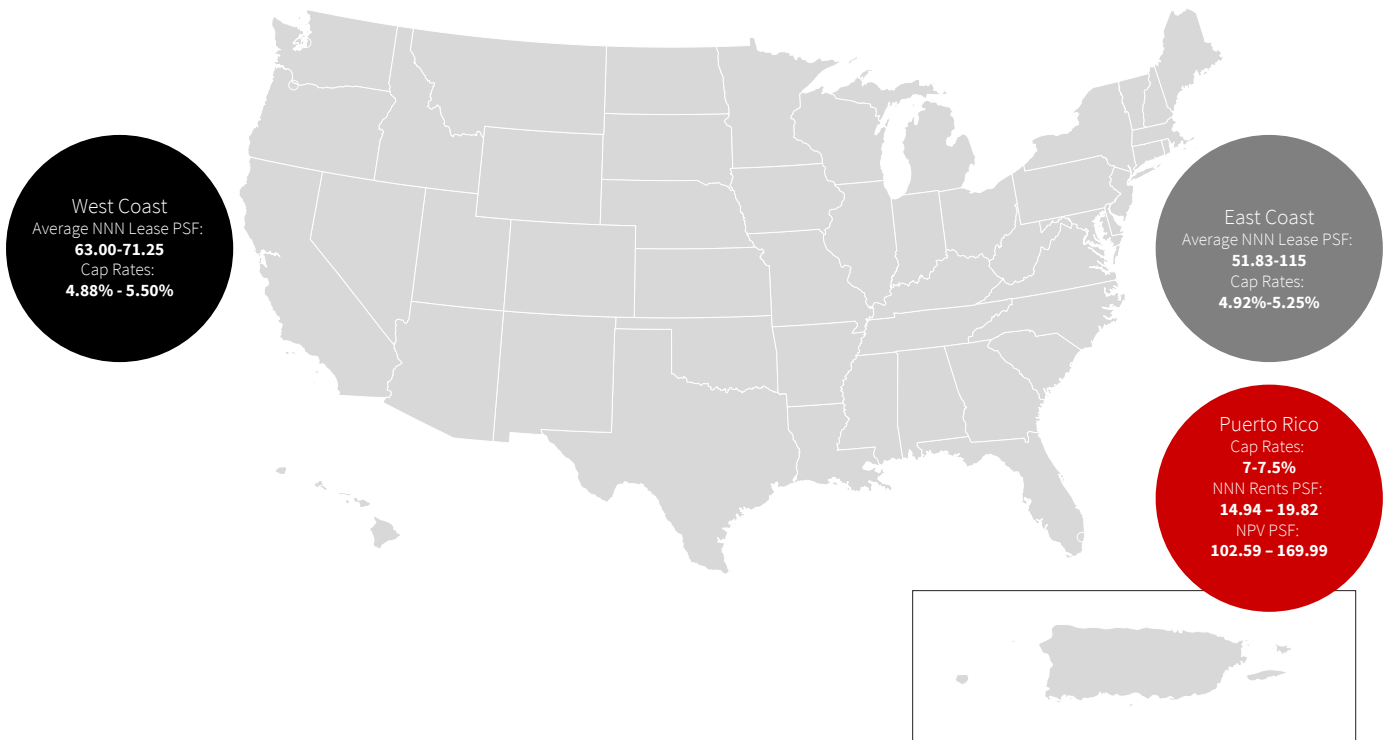
JLL Pro is a data aggregation and automatic valuation model (AVM) that factors location, class, status, and size of properties to generate price estimates.

Municipality	Class A NPV	Class A GAR
San Juan	\$127.05	\$9.21
Carolina	\$137.60	\$9.98
Guayama	\$125.45	\$9.09
Guaynabo	\$135.45	\$9.82
Bayamón	\$138.80	\$10.06



## Pricing Metrics

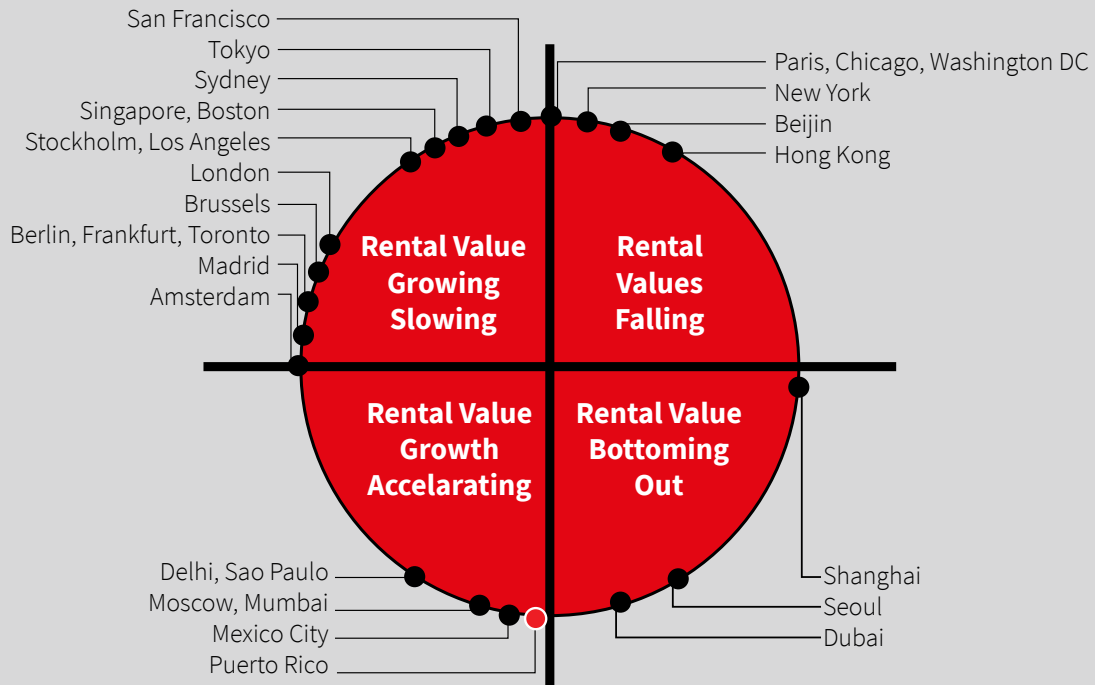
### Life Science Pricing Metrics



**Gross Annual Rent Per Square Foot of Top 10 Industrial and Manufacturing Municipalities in Puerto Rico**

Municipality	Class A NPV	Class B NPV	Class A GAR	Class B GAR
San Juan	\$127.05	\$57.75	\$9.21	\$4.76
Carolina	\$137.60	\$58.65	\$9.98	\$4.84
Guayama	\$125.45	\$56.35	\$9.09	\$4.65
Guaynabo	\$135.45	\$61.60	\$9.82	\$5.08
Bayamón	\$138.80	\$58.65	\$10.06	\$4.84
Isabela	\$155.05	\$122.90	\$11.24	\$10.14
Manatí	\$159.05	\$72.35	\$11.53	\$5.97
Cataño	\$155.05	\$122.90	\$11.24	\$10.14
Caguas	\$144.80	\$62.40	\$10.50	\$5.15
Toa Baja	\$155.05	\$122.90	\$11.24	\$10.14

**Global Industrial Rental Clock (Q4 2019)**



# Global Pharmaceutical Trends

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## **Growing pricing pressure on the pharmaceutical industry**

Government pressure to make drugs affordable has resulted in increasing pressure on pharmaceutical companies to drive down drug prices. This in turn is leading to tougher market conditions for pharmaceutical companies and is driving down their profit margins. In addition, patent losses and increasing promotion of generics and biosimilars drugs are further driving the pricing pressure on the pharmaceutical companies worldwide.

## **Increasing market of biosimilars**

The growing volume of biosimilar medical products in the market is expected to increase competition in the biologics medical product segment and reduce healthcare costs globally. According to PwC, 41 percent of top-selling drugs (worth more than USD 600 billion in expected sales from 2018 to 2023) are expected to be biologics. With a rising number of biosimilars getting approval, the sale of biologics is expected to decline, globally.

## **Rising M&A in the pharmaceutical industry**

The M&A activity in the pharmaceutical industry is rising due to the need for increasing product lines, expanding

geographic coverage, facilitating innovation, strengthening market positions, and achieving operation synergy.

## **Adoption of advanced technologies to increase manufacturing productivity and operational efficiency**

Pharmaceutical companies are adopting technologies, such as big data and analytics, cloud computing, blockchain, and automation, to increase productivity, reduce costs, improve the efficiency of drug discovery process, increase visibility into pharmaceutical supply chain, and automate manufacturing processes. (Puerto Rico is home to two of the five continuous pharmaceutical manufacturing operations in the world that are the direct result of significant advances in automation in the industry.)

## **Rising adoption of AI in pharmaceutical industry**

The pharmaceutical industry is witnessing a rise in the adoption of Artificial Intelligence (AI), as AI algorithms can analyze large data sets from clinical trials, genetic profiles, health records, and preclinical studies at an exponentially faster rate. This field is known in the industry as “Bioinformatics.”

# Reshoring and Plus One

The United States at present is heavily reliant on Chinese production of critical materials: 40-45 percent of heparin, 70 percent of acetaminophen, and 80 percent of active pharmaceutical ingredients (APIs). According to the Coalition for a Prosperous America, reshoring even half of U.S. bioscience imports could generate 804 thousand jobs in pharmaceuticals and 302 thousand jobs in medical devices; that is USD 200 billion in pharmaceutical production and USD 54 billion in medical device production per year.

With global tensions rising, supply chain disruptions, and irregularities in foreign regulations, the United States is preparing to bring critical bioscience manufacturing back to the Americas. Puerto Rico is the best destination for bioscience reshoring and supports the U.S. in 5 key areas:

1. **Timely** – Puerto Rico has move-in ready facilities that can start producing critical materials now.
2. **Qualified** – Puerto Rico has the workforce and experience to supply fresh demand.
3. **Supportive** – Decades of experience in specialized manufacturing and industry support are engrained in the culture, helping get companies of all sizes and activities up and running cost-effectively and with an eye towards quality.
4. **Prepared** – Because of changes to federal tax policy in the early 2000s, some Life Sciences companies left Puerto Rico for global destinations. Puerto Rico is ready to welcome them back with a new set of incentives.
5. **Specialized** – The island possesses a broad set of pharmaceutical and medical device core competencies, with specializations in many subsectors.

Support for foreign manufacturers:

1. **Talent** – Globally, Puerto Rico has the sixth highest concentration of scientists and engineers in the world and is first in the U.S. in concentration of pharmaceutical and medical device experts. Additionally, average Puerto Rican wages are around 40 percent below the United States national average.
2. **Low-Cost Logistics** – Expansive Foreign Trade Zones (FTZs) support cost-effective global business practices. Combined with three international transshipment hubs

on the island, global companies benefit from proximity to lower cost supply chains.

3. **Available Facilities** – The island possesses immediately available CMOs, turnkey facilities, and greenfield sites. Excellent industry support can also help companies customize their facilities to accommodate all types of operations.
4. **Location** – Geography and culture give companies access to both American continents and a bilingual local workforce.
5. **High-Value Networks** – The integration of academia, research facilities, manufacturing facilities, and transshipment hubs means that companies in Puerto Rico benefit from consolidated supply chains.



# Pharmaceutical Manufacturing and Research

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## Exciting on-going research in drugs and pharmaceuticals:

- The Pharmacy School at the UPR Medical Sciences Campus houses the Drug Discovery Labs, the Biotech and Cell Therapies Labs, and the Operations Technologies Research Labs, all of which advance pharmaceutical discovery, development, and manufacturing.
- The UPR at Mayagüez was granted USD 1.25M in 2019 by the EDA to process analytical technology (PAT) and continuous manufacturing training.
- The UPR at Mayagüez was granted USD 300k in 2018 by the NSF to formulate renewable sources of acids used in pharmaceutical products.
- The UPR Río Piedras was granted USD 363k in 2019 to run a 9-week program for undergraduates to engage in exploratory efforts in new biomolecular applications, including drug design and delivery methods.
- The UPR at Mayagüez was granted USD 165k in 2020 to use machine learning to discover and identify new catalysts in chemical and pharmaceutical applications.





## Pharmaceutical and Medical Device Manufacturers in Puerto Rico

Branded Oral Solid Dosage	Over the Counter	Generic Oral Solid Dosage	Contract Manufacturing	Biotech Products	Hospital Supply	API
<ul style="list-style-type: none"> <li>• Eli Lilly</li> <li>• Janssen</li> <li>• Bristol-Myers Squibb</li> <li>• Romark</li> <li>• AbbVie</li> </ul>	<ul style="list-style-type: none"> <li>• GSK</li> <li>• McNeil</li> </ul>	<ul style="list-style-type: none"> <li>• Mylan</li> <li>• Puracap</li> <li>• Neolpharma</li> <li>• Upjohn by Pfizer</li> </ul>	<ul style="list-style-type: none"> <li>• Avara</li> <li>• Abbott</li> <li>• TEVA</li> <li>• GK Pharma</li> <li>• Puracap</li> <li>• Neolpharma</li> <li>• Bristol-Myers Squibb</li> </ul>	<ul style="list-style-type: none"> <li>• Amgen</li> <li>• Eli Lilly</li> <li>• Janssen-Ortho</li> </ul>	<ul style="list-style-type: none"> <li>• Baxter</li> <li>• Fresenius Kabi</li> </ul>	<ul style="list-style-type: none"> <li>• Upjohn by Pfizer</li> <li>• Amgen</li> <li>• Eli Lilly</li> <li>• AbbVie</li> </ul>

## Pharmaceutical and Medical Device Products in Puerto Rico

Oral Solid Dosage	Over the Counter	Biologics	Hospital Supply	API
<ul style="list-style-type: none"> <li>• Niaspan®</li> <li>• Depakote®</li> <li>• Kaletra®</li> <li>• Biacin®</li> <li>• K Tab®</li> <li>• Venclexta®</li> <li>• Orilissa®</li> <li>• Synthorid®</li> <li>• Norvasc®</li> <li>• Feldene®</li> <li>• Diflucan®</li> <li>• Zithromax®</li> <li>• Lomotil®</li> <li>• Aldactazide®</li> <li>• Cialis®</li> <li>• Zyprexa®</li> <li>• Cymbalta®</li> <li>• Alinia®</li> </ul>	<ul style="list-style-type: none"> <li>• Tylenol®</li> <li>• Advil®</li> <li>• Caltrate®</li> <li>• Motrin®</li> <li>• Zyrtec®</li> <li>• Centrum®</li> <li>• Tylenol Cold®</li> <li>• Panadol®</li> </ul>	<ul style="list-style-type: none"> <li>• Aranesp® (darbepoetin alfa)</li> <li>• Enbrel® (etanercept)</li> <li>• EPOGEN® (erythropoetin)</li> <li>• Neulasta® (pegfilgrastim)</li> <li>• NEUPOGEN® (filgrastim)</li> <li>• Vectibix® (panitumumab)</li> <li>• Repatha® (evolucumab)</li> <li>• Prolia® (60 mg denosumab for osteoporosis)</li> <li>• XGEVA® (120 mg denosumab for fracture prevention with bone metastases)</li> <li>• Sensipar®/Mimpara® (cinacalcet)</li> <li>• Nplate® (romiplostim)</li> <li>• Corlanor® (ivabradine)</li> <li>• Humira®</li> <li>• Humalog®</li> </ul>	<ul style="list-style-type: none"> <li>• Saline Solution Large &amp; MiniBags</li> <li>• Saline Solutions for Blood Transfusions</li> </ul>	<ul style="list-style-type: none"> <li>• Celecoxib</li> <li>• Azithromycin</li> <li>• Amlodipine</li> <li>• Certaline</li> <li>• Doxazosin</li> <li>• Tolterodine</li> <li>• Latanoprost</li> </ul>

# Antibody and Vaccine Development

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Puerto Rico's BioScience strengths lie in highly specialized fields. Significant expertise exists in the research, development, technology transfer and manufacturing of monoclonal antibodies in Puerto Rico. Blockbuster products such as etanercept (Enbrel), adalimumab (Humira), inflectra (Remicade) to treat rheumatoid arthritis and other related ailments are produced at Puerto Rican plants established over the past several decades. Puerto Rico has experience in antibody and vaccine development, and we continue to see these as exciting areas for opportunity and growth.

Across the island, targeted novel therapies are being advanced simultaneously by private industry and the School of Pharmacy at the University of Puerto Rico Medical Sciences Campus.

CDI Labs is just one company that uses cutting-edge technologies to identify monoclonal antibodies and protein arrays that help diagnose patients with viruses and diseases. They combined proprietary proteomic libraries with a deep expertise in synthetic biology to create Monomabs, the first proteome-validated monospecific monoclonal antibodies, and Antygen, the multi-dimensional immunoprofiling service. Their newest product helps scientists uncover new immune responses to COVID that can help advance clinical trials of treatments and vaccines. Similar work is being done by Amgen, most of whose profile in Puerto Rico is based in identifying antibody reagents and developing gene therapies. Thermo Fisher Scientific is another such company; it has developed influenza antibodies for the swine flu that swept the world in 2009.

At the UPR's School of Pharmacy, researchers in the upcoming Drug Discovery Labs, the Biotech and Cell Therapies Labs, and the Operations Technologies Research Labs will advance pharmaceutical discovery, development, and manufacturing, including viral vector transformation and CAR T Cell therapies.

Additionally, researchers at UPR's Molecular Sciences and Research Center in San Juan are collaborating with NIH to improve the drug development pipeline to optimize the production of HIV glycoproteins as vaccine candidates. They are accelerating the development of a protein-based HIV vaccine toward clinical trials; the UPR contribution will have a tremendous impact in the global fight to control the spread of HIV/AIDS.

With six decades of experience in clinical research, product development, technology transfer, manufacturing of small and large molecules, and exporting to countries around the world, Puerto Rico is perfectly positioned to continue being a global player in the discovery, development, and distribution of antibody therapies and vaccines.

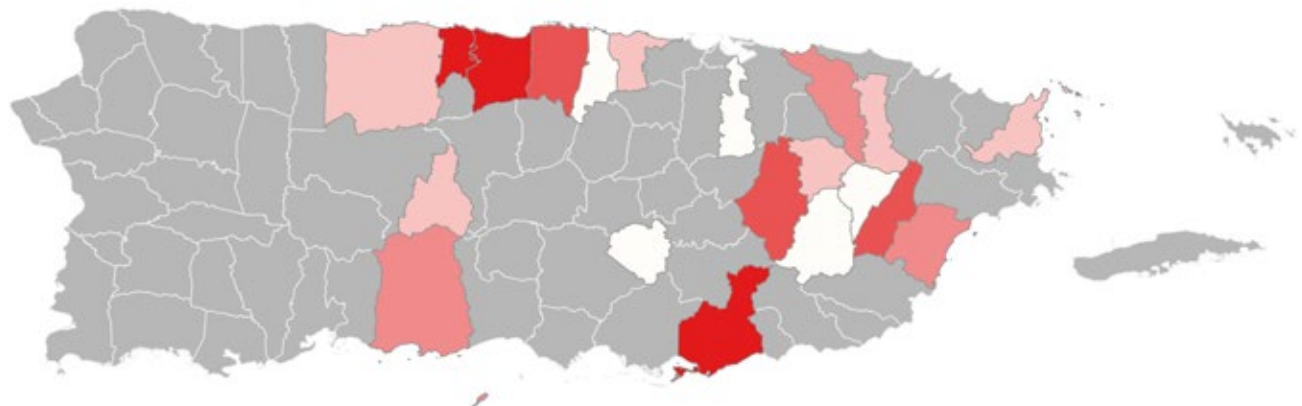


# Currently Operational Pharmaceutical Sites



0 10 20 km

• Pharma Sites



0 10 20 km

### Square Footage

- 12,177 - 79,110
- 79,110 - 253,022
- 253,022 - 339,157
- 339,157 - 480,577
- 480,577 - 974,474

# Medical Device Manufacturing

Puerto Rico is also of critical importance to the medical device sector, producing over 2,500 different kinds of products, many of which are life critical. Puerto Rico has the highest concentration of medical device expertise in the country, with 5.5 times more employees than the national average. Across around 40 plants, the medical device subsector retains around 20,000 direct jobs. Furthermore, 7 of the world's top 10 medical device companies and 15 of the top 20 Class 3 manufacturers operate locally. 90 percent of the world's pacemakers are made in Puerto Rico, as well as hundreds of millions of soft-contact lenses.

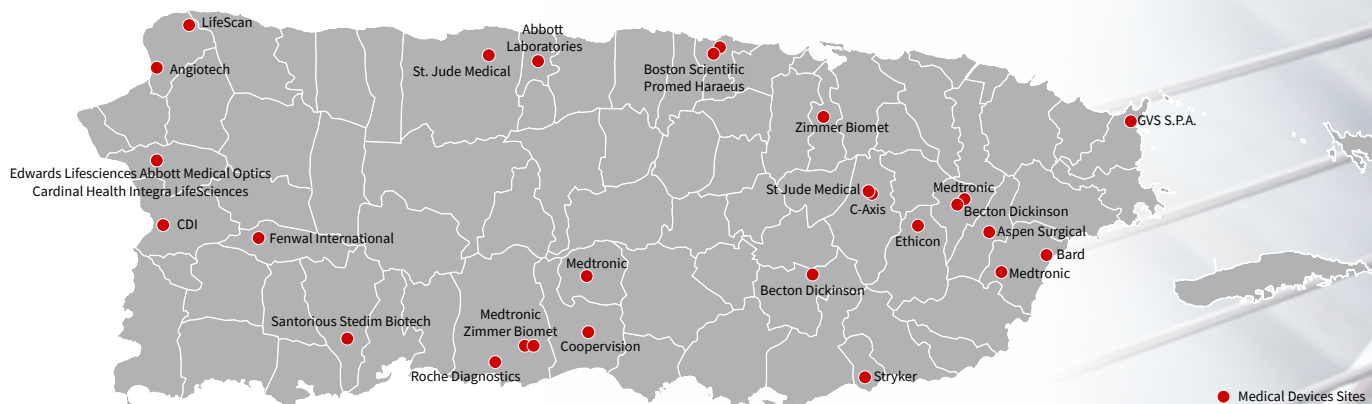
Much of the support in the industry comes from INDUNIV, an industry research consortium, the Medical Device Cluster, and different research performed throughout local universities and research centers. The subsector is also supported by the 26,500 STEM graduates from local universities, many of whom specialize in industrial and biomedical engineering. Local research at these institutions, as well as support from PRIMEX and the Puerto Rico Consortium for Clinical Investigation, guarantees that the companies on the island are provided with talent, tools, and processes. With all its research capabilities, the island enjoys 2 of the 5 fully continuous manufacturing processes in the world.

The following are among the medical devices produced on the island:

- Pacemakers
- Defibrillators and pulmonary artery catheters
- Bandages
- Insulin pumps
- Hernia patches implants
- Contact lenses
- Stents
- Glucose monitors
- Blood collection systems
- IV saline bags
- Diagnostics
- Hemodynamic monitoring catheters

## Promising on-going research in medical devices:

- The Center for the Advancement of Wearable Technology received a USD 3.7 million grant from the NSF to research devices that sense and monitor health conditions.
- The UPR-Penn Partnership for Research and Education in Materials (PREM) was awarded over USD 3.2 million to advance knowledge in materials science to develop more efficient devices for health applications, among others.
- The UPR at Mayagüez received over USD 225k from the NSF to research fluid dynamics essential to many biomedical device applications.





# Supporting Ecosystem

Historic industry expertise in pharmaceutical, medical device, and agbio has also inspired a world-class industry support network in linked sectors. Excellence in Puerto Rico's BioScience industry support includes:

- Compliance certification
- Facility design, construction, and management
- Equipment calibration
- Water testing and purification
- Material testing
- Legal support
- Quality assurance

As a U.S. jurisdiction, Puerto Rican Life Science companies are well-versed in these compliance requirements, ensuring that big and small operations alike can guarantee their customers products of the highest quality. Support companies are in turn strengthened by industry associations, like the Mechanical Contractors Association (MCAPR). The MCAPR represents companies with specialized expertise in constructing highly specific Life Science facilities, including clean rooms and laboratories.

Puerto Rico has move-in ready facilities but having comprehensive industry support enables companies to design and build their own world-class Life Science plants to their customized specifications. There are architects, designers, developers and plant managers with nearly 60 years of experience in catering to the needs of globally relevant Life Science researchers and manufacturers. There are also contract manufacturing operations that can serve as a temporary fix for a company that wants to be operational immediately while construction for a new plant is underway. In addition to industry excellence, these companies offer their services at a cost-effective rate that makes Puerto Rico the most competitive location to open a new facility in the United States.

Companies are not the only actors supporting the Life Sciences. Many public research facilities help to create a broad and deep ecosystem that helps Puerto Rican Life Sciences thrive. The Materials Characterization Center, for example, offers industry partners a variety of specialized services that strengthen industrial activity, such as nuclear

magnetic resonance, confocal microscopy, spectroscopy, and mass spectrometry. Their efforts are supported by the Puerto Rico Science, Technology, & Research Trust, INDUNIV, and Pharmaceutical Industry Association of PR (PIA), all of which offer networks of local expertise in everything from clean room architecture to pharma-specific legal support.

Puerto Rico has decades of experience in researching, developing, and manufacturing Life Science products for 100 countries around the world. In fact, Puerto Rico's excellence in industry support services spread around the world, helping to set up other Life Science hubs and supporting growth in the global Life Sciences industry. Throughout the past 60 years, local support industries have grown up around the Life Sciences, making Puerto Rico uniquely capable of welcoming companies at any stage of development and ensuring that the process of opening a local operation is as seamless and cost-effective as possible.

*Puerto Rico is home to 11 of the world's most prestigious professional organizations and networks.*



# Supporting Organizations

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Companies established in Puerto Rico benefit from a large network of organizational and industry support. Puerto Rico is home to some of the world's most prestigious professional organizations and networks, which focus on defending the industry's interests and maintaining best practices. Thanks to its network, in 2018 Puerto Rico placed third in the world for highest value-added manufacturing per capita, according to World Development Indicators.



## PRiMEX

The Puerto Rico Manufacturing Extension supports the needs of small and mid-sized companies by helping improve everyday business practices. PRiMEX is part of the Manufacturing Extension Partnership (MEP) national network and was ranked best in the nation in delivery of process improvement support.

Website: <https://www.primexpr.org>



## PRMA

The Puerto Rico Manufacturers Association advances the mutual interests of all Puerto Rico's manufacturers and service industries to improve the competitiveness of Puerto Rico's economy.

Website: <http://industrialespr.org>



## MCAPR

The Mechanical Contractors Association represents technical construction and installation companies in Puerto Rico. It connects the public and private sectors with education and networking assets to ensure that the contracting industry is of highest quality.

Website: <https://mcapuertorico.org>



## PRSA

The Puerto Rico Shipping Association focuses on promoting port productivity, reducing operating costs, and maintaining San Juan as the premier port in the Caribbean. The group provides a forum for legislation and industry advancement.

Website: <http://navierospr.com>



## PIA

The Pharmaceutical Industry Association represents the biopharmaceutical industry and works in the public and private sectors to enhance the sector's global competitiveness and improve healthcare outcomes through networks, social capital, and job growth.

Website: <https://piapr.org>





### Medical Device Cluster

The Medical Device Cluster helps local medtech companies grow and excel through focusing on regulatory compliance, supply chain development, product and process improvement, and industry benchmarking.

Website: <https://www.prteconline.com/index.php/initiatives/clusters/medical-devices-cluster/>



### PRABIA

The Puerto Rico AgBio Industry Association brings local agbio companies together to advocate for a stronger local business ecosystem, enhanced educational opportunities in agricultural biotechnology, and more jobs in science and agronomy.

Website: <https://www.prabia.org>



### INDUNIV

The Industry University Research Center represents industry, government, and academia engaged in science and technology. INDUNIV is also the local affiliate of Biotechnology Innovation Organization (BIO), connecting local companies with a national network of Life Science promoters.

Website: <http://www.induniv.org>



### PRSTRT

The Puerto Rico Science, Technology, & Research Trust is dedicated to investing, facilitating, and building capacity to advance innovation-based business growth throughout Puerto Rico. They fund a wide range of activities from testing labs to STEM education.

Website: <https://prsciencetrust.org>



### PRCCI

The Puerto Rico Consortium for Clinical Investigation enhances private and academic development by the PRSTRT to further advance the knowledge economy.

Website: <https://www.prcci.org>



### APHIS and FDA

Puerto Rico has local APHIS and FDA offices that help agbio and biotech companies meet regulatory standards, bring products to market, and manage imports and exports of sensitive materials.

Website: <https://www.aphis.usda.gov/aphis/ourfocus/planthealth/ppq-program-overview/sphd/puerto-rico>

# Logistics

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Puerto Rico is a global logistics leader, serving as the highest volume port system in the Caribbean. Puerto Rico is the only location in the U.S. with a Department of Transportation waiver that enables the transfer of international cargo and passengers. This status will help companies navigate the post-COVID landscape more effectively. The island now has the opportunity to: leverage its logistics expertise, establish new travel and commercial routes, help companies cut expenses, reduce shipping times, and ensure top quality handling of goods.

Through three international air hubs and 12 harbors and ports, companies established in Puerto Rico can easily service all their international logistical needs in Puerto Rico. The island's history in research and manufacturing has led to refined capabilities to handle, store, and ship sensitive materials in the pharmaceutical and medical devices subsectors.

Direct flights to major U.S. cities, Colombia, Spain, and Germany enable local and global companies to connect with customers and supply chain partners. Furthermore, Puerto Rico is located between the Americas and Europe, and with new air transfer regulations the island can serve as a midpoint for trade between these locations. 90 percent of all air cargo leaving Puerto Rico is comprised of Life Science products and around 1,730 companies (57 percent of the island's GDP) depend on air cargo. With over 60 years of experience in the Life Sciences industry, Puerto Rico has developed and maintained world-class global logistics capabilities.



# International Airports

## San Juan (SJU)

- 8.4 million passengers
- Inbound: 301.5 million lbs. (1.2 billion lbs. in total landed weight, ranking 24th nationally)
- Outbound: 170.9 million lbs.
- Load factor of 87.14, higher than the national average of 86.42 (passenger-miles as proportion of available seat-miles in percent)

## Aguadilla (BQN)

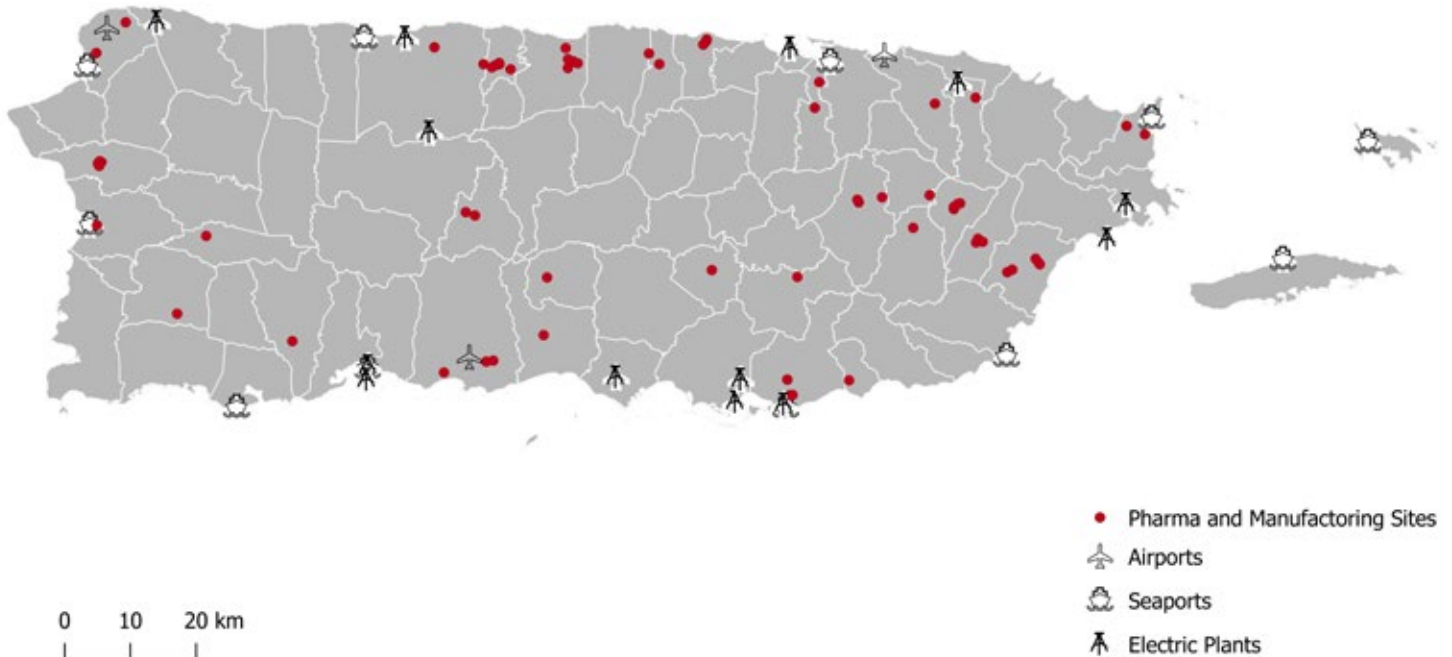
- 472,000+ passengers
- Inbound: 69.4 million lbs.
- Outbound: 58.3 million lbs.
- Advanced MRO facility in operation
- Infrastructure built on former Strategic Air Command base
- Longest runway in the Caribbean
- Substantial area for greenfield development

## Ponce (PSE)

- 168,000+ passengers Inbound: 342,700 lbs. Outbound: 2,720 lbs.



*The island is home to the best equipped, and most vibrant airport in the Caribbean, Luis Muñoz Marín International Airport.*







# Workforce and Talent Development

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Puerto Rico is proud to produce top engineers and workers that are educated by top schools in the Caribbean and the United States in bioscience and engineering fields. Puerto Rico is known for being the highest producer of bio-related engineering talent in the United States and is a world leader in exporting bio process excellence and skills. The island has 8.6 times more pharmaceutical jobs than the United States national average and 5.5 times more medical device jobs. Puerto Rico is ranked 6<sup>th</sup> globally in availability of scientists and engineers, and first in Latin America and the Caribbean in rates of higher education and training. Wages are 40 percent lower than the national average in the United States, and manufacturers in Puerto Rico are taking advantage of a skilled workforce at an affordable price.

Moreover, the island is home to nearly 80 institutes of higher education in Science and Engineering. Some of the top institutions include the University of Puerto Rico Río Piedras and Mayagüez campuses, Polytechnic University in San Juan, and the Pontifical Catholic University in Ponce. In 2019, Puerto Rico expanded its potential workforce with 60 percent of graduates in the STEM field, whereas the highest-ranking states in the United States on average have roughly 10 percent of graduates in STEM fields. Every year, local universities provide additional talent for the Life Sciences and other knowledge and health-based sectors of the economy, maintaining Puerto Rico's status at the top of Life Science and Engineering industries.

# Tax and Other Incentives

## Incentives for Business by Industry

The main tax benefits and incentives contemplated under the Incentives Code are the following:

### Export Activities

The Incentives Code promotes the export of services and goods by offering attractive tax incentives to companies with minimal requirements that establish and expand the export services industry on the island. The Incentives Code includes a fixed 4 percent income tax rate, a 100 percent exemption from dividend distributions, a 75 percent exemption on property taxes, and a 50 percent exemption from municipal license taxes. The tax grants for export services under the Incentives Code have a term of 15 years. One key change to Act 20 passed in 2019 in the Incentives Code is that businesses with more than USD 3 million of actual or projected total revenue must now directly employ at least one full-time employee, which may be the business owner; and in the case of manufacturing businesses, three fulltime employees. Creative industries, network and cloud computing are considered export services. The Incentives Code also establishes as new export service activities the sale of tickets outside of Puerto Rico or the sale of tickets that are purchased by tourists in Puerto Rico, as well as income related to the transmission or sale of rights to the recording of shows, musical productions and events of Sports and Fantasy Leagues held in Puerto Rico for audiences outside of Puerto Rico.

### Manufacturing and Related Activities

This incentive was established to provide an efficient business environment, and to provide opportunities for the development of local and foreign industries. The Incentives Code offers an attractive contributory proposal to attract foreign direct investment and to promote the economic and social development of Puerto Rico. The incentives for manufacturing and key supplier services for manufacturers are subject to a 4 percent fixed income tax rate, a 50 percent exemption on municipal taxes and 75 percent exemption on property taxes.

### Infrastructure

The tax benefits under this category varies. In general, specific housing projects and other infrastructure businesses are generally subject to a 4 percent income tax rate.

### Business in Vieques and Culebra

The Incentives Code recognizes a new tax benefit for businesses establishing operations in Vieques and Culebra. The tax benefits for businesses in Vieques and Culebra includes a 2 percent special income tax rate and a 100 percent exemption from property and municipal taxes during the first five (5) years of operations. After the initial five (5) years, these businesses will enjoy a 4 percent income tax rate and a 75 percent and 50 percent exemption for property and municipal taxes, respectively.

### Difficult Recruitment Professionals

These are defined as professionals who are residents of Puerto Rico who have a specialized knowledge in the operation of an exempted business under the Incentives Code or under a superseded tax incentives act. These individuals will enjoy a 100 percent income tax exemption on salaries in excess of USD 100,000 per year.

### Incentive for Medical Professionals

The Incentives Code incentivizes the retention and return of medical professionals by offering them tax incentives. The Incentives Code provides qualified medical professionals with a fixed 4 percent income tax rate, and a 100 percent tax exemption on dividend distributions. In addition, eligible dividends of qualified physicians are exempt from withholding tax on income at the source and payment of income taxes up to a maximum of USD 250,000. The tax grants for qualified medical professionals under the Incentives Code have a term of 15 years, which may be extended to an additional 15 years, for a total of 30 years.

### Researchers & Scientists

Certain researchers are not subject to income tax up to USD 250,000.



# Opportunity Zones

On December 22, 2017, the Opportunity Zones Program was enacted and added to the tax code by the Tax Cuts and Jobs Act in order to spur investment, encourage economic development and job creation in distressed communities. The Opportunity Zones Program is designed to drive long-term capital to rural and low-income urban communities throughout the U.S. and its territories and uses tax incentives to encourage private investment in impact funds.

Qualified Opportunity Zones are specific geographical areas in the United States and Puerto Rico that were designated by the Federal Government. The zones are designed to spur economic development by offering tax benefits to individuals and institutions that invest eligible capital into the zones.

How they work:

1. Sell asset for capital gain
2. Invest some or all of gains in a qualified opportunity fund within 180 days from the day in which the capital gain would be recognized for federal income tax purposes
3. All incentives are linked to the duration of the qualified investment

Opportunity Zones are designed to spur long-term investments in low-income urban and rural communities through investment via Qualified Opportunity Funds (Form 8996). There are 3 types of qualified opportunity zone properties, including businesses, which must be in Qualified Opportunity Zones:

1. Qualified Opportunity Zone Stock
2. Qualified Opportunity Zone Partnership Interest
3. Qualified Opportunity Zone Business Property
  - a. 50 percent of total gross income must be from active conduct of business in QOZ
  - b. Intangible property must be used in the active conduct of the business
  - c. Less than 5 percent of the business can be attributable to non-qualified financed property
  - d. Principal business cannot be gambling/alcohol sales

With the Opportunity Zone (OZ) designation, an investor interested in investing in a business in Puerto Rico can expect a tax deferral of all capital gains invested in a Qualified Zone Fund (“QZF”). Additionally, investing in an OZ in Puerto Rico could potentially eliminate up to 15 percent of the deferred capital gains (10 percent if the investment is held for at least 5 years and 15 percent if held for at least 7 years in a QZF). Moreover, an interested investor may eliminate all taxes on all capital gains earned on the amount invested in a QOF if he or she holds such investment for at least 10 years. The Incentives Code provides for a 18.5 percent fixed income tax rate, a 100 percent tax exemption on dividends and distributions to its shareholders, 25 percent tax exemption on municipal license tax and property tax and up to 25 percent tax credits for OZ projects in Puerto Rico.

95 percent of the Island qualifies as an opportunity zone. See the green area of the maps on the next page.







# Potential Manufacturing and Research Sites

## Site Criteria

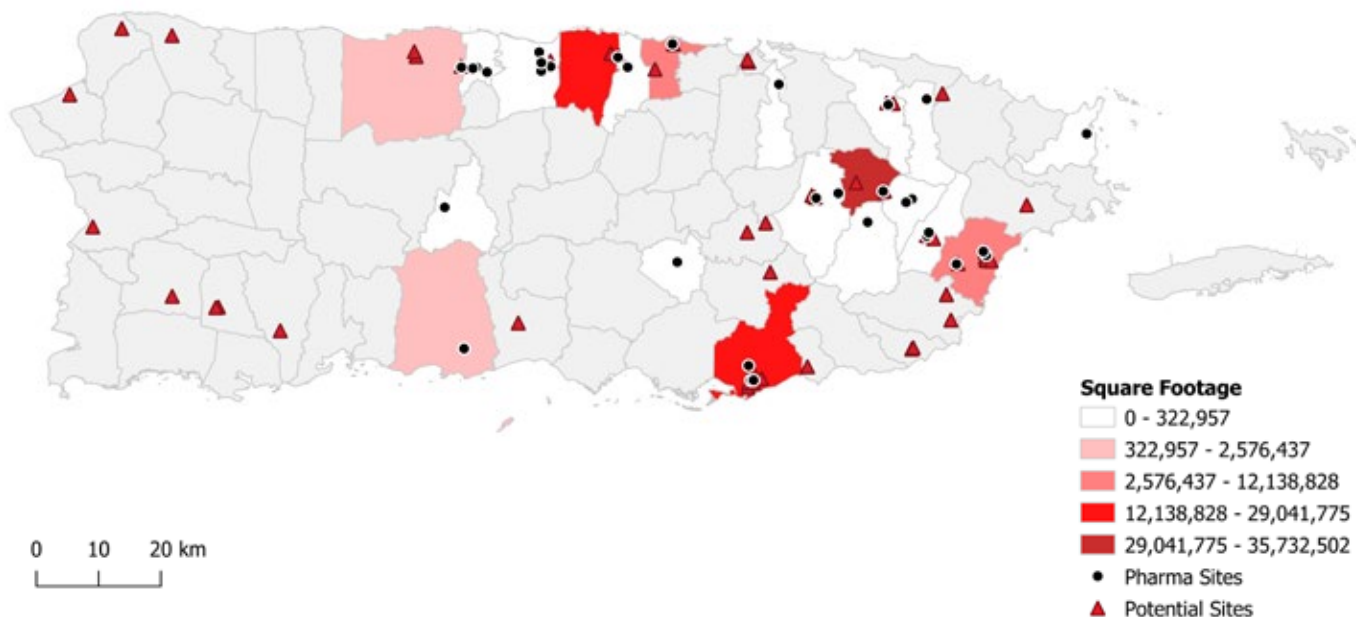
After compiling the data, we created limit criteria for the sites based on the following characteristics in descending order: parcel size, building footprint, electricity line KV, internet speed, zoning, airport proximity, port proximity, total population of the municipality, unemployment rates, education rates, and purchasing power per capita. Lower limits were determined with a cutoff of the bottom 25th percentile of some of the criteria, such as land size, while upper limits were established with a cutoff of the upper 25th percentile of criteria, such as distance to ports and airports.

The limits stipulated that ideal site sizes should have a minimum of 809 thousand square feet (18.6 acres), have 240 KV power line accessibility at a minimum, a minimum of cable internet at 100 mbps speeds, light industrial zoning, and should be no more than 120 kilometers from a transportation hub. The limits also stipulated that municipalities should have at least a population of 60,000, with at least 10 percent holding bachelor's degrees; however, these limits were not

central to our site selection, but rather served as a tiebreaker for sites that were close.

## Results

From our research efforts, we were able to identify 38 sites across the island that fit the criteria of an ideal site for companies involved in the Life Sciences. Many of the sites are currently pieces of land that can be developed and turned into prominent pharmaceutical or medical device sites. All the land sites have an area of over one million square feet and share the zoning of heavy industrial or light industrial. As for sites with existing structures and facilities, they range from the lower range of 100,000 square feet of building space to one million square feet. Most of the sites are located in the following municipalities: Aguadilla, Arecibo, Bayamón, Canóvanas, Carolina, Cataño, Dorado, Fajardo, Guayama, Gurabo, Humacao, Isabela, Juana Díaz, Juncos, Manatí, Maunabo, Mayagüez, Moca, Naguabo, Peñuelas, Ponce, Vega Alta, Vega Baja, and Yabucoa.



# Sample Site

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## LSM #16 Guayama

This site in Guayama which is in the South part of the island has a land area of 2,073,154 sq. ft, or 48 acres of land, and it is zoned for light industrial manufacturing. This site is the old TEVA plant. The site is 88 kilometers from the San Juan seaport and 89 kilometers from the Carolina airport. Regarding utilities, the site is powered by the AES 454 MW, located approximately 0 kilometers away. In the immediate vicinity of the site there are amenities and services like San Vicente Mall, Shell Gas Station, J & L Hardware Corp and manufacturing sites like Baxter Healthcare and GSK.

The Guayama municipality has a population of 39,465 residents. The last reported unemployment rate was 12.1 percent, and the median income is 16,374 dollars per year. As for education, 16.9 percent of the population has a bachelor's degree.

Type	Land
Lat, Long	17.948435, -66.154164
Catastro Number	441-000-008-11
Land Area	2,073,154
Zoning	Light Industrial
Owner	Tapi Puerto Rico Inc
Contact Info	787-864-4545
Plant distance	Adjacent
Classification	SU (Suelo Urbano)
Distance to airport	89 km
Distance to seaport	88 km
Total Population	36,465
Unemployment	12.1 percent
Education	High school Graduates 25yrs+: 76.1 percent College Graduates 25yrs+: 16.9 percent
Sale Price	USD 15,100,000
Annual Rent	USD 1,200,000

Please contact [Henry.Keenan@am.jll.com](mailto:Henry.Keenan@am.jll.com) to request our brochure containing specific information and locations of the 38 potential manufacturing sites in Puerto Rico.



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# Appendix

Identification							Building Footprint	Utilities				
Catastro Number	Company	Type	Location	Latitude	Longitude	Land Area (Sq. ft)	Sq. Footage	Main Plant Location	Main Plant (MW)	Transmission Center Location	Lines (KV)	Internet
	AbbVie Biotechnology	Biotechnology	Barceloneta	18.4279384	-66.5764014							
	CDI	Biotechnology	Mayagüez	18.2017875	-67.1419221							
	Sartorius Stedim Biotech	Biotechnology	Yauco	18.0360363	-66.8619863							
	Angiotech	Medical Devices	Aguadilla	18.4485387	-67.1428479							
	LifeScan	Medical Devices	Aguadilla	18.4923577	-67.1006979							
	Abbott Medical Optics	Medical Devices	Añasco	18.2924384	-67.1354278							
	Cardinal Health	Medical Devices	Añasco	18.2899318	-67.1402179							
	Edwards Lifesciences	Medical Devices	Añasco	18.2935022	-67.1380413							
	Integra Neuro Sciences	Medical Devices	Añasco	18.2914401	-67.1398611							
	Techno Plastics Industries	Medical Devices	Añasco	18.2868761	-67.138706							
	St. Jude Medical	Medical Devices	Arecibo	18.4566475	-66.6585602							
	Stryker	Medical Devices	Arroyo	17.979952	-66.0647374							
	Abbott Laboratories	Medical Devices	Barceloneta	18.4342476	-66.5657888							
	C-Axis	Medical Devices	Caguas	18.2380943	-66.0525084							
	St. Jude Medical	Medical Devices	Caguas	18.2384979	-66.0527132							
	Becton Dickinson	Medical Devices	Cayey	18.1280209	-66.1386713							
	Boston Scientific	Medical Devices	Dorado	18.4659223	-66.2688768							
	Haraeus	Medical Devices	Dorado	18.4625567	-66.2717685							
	Promed	Medical Devices	Dorado	18.460354	-66.273521							
	GVS S.P.A	Medical Devices	Fajardo	18.3440281	-65.6671135							
	Zimmer Biomet	Medical Devices	Guaynabo	18.3700155	-66.1137524							
	Bard	Medical Devices	Humacao	18.1461067	-65.7915294							
	Medtronic	Medical Devices	Humacao	18.1384172	-65.8309377							
	Coopervision	Medical Devices	Juana Díaz	18.0446687	-66.5020476							
227-064-164-04-001	Becton Dickinson	Medical Devices	Juncos	18.2282014	-65.9145362	592,379	47,348	Daguau CT	523	Juncos	115	Cable
	Medtronic	Medical Devices	Juncos	18.2323681	-65.9092038							
	Aspen Surgical	Medical Devices	Las Piedras	18.1782158	-65.8732768							
389-077-500-08-902	Medtronic	Medical Devices	Ponce	18.0068519	-66.5843388	924,380	327,069	Eco Electrica	507	Ponce	115	Cable
	Zimmer Biomet	Medical Devices	Ponce	18.008259	-66.5742325							
	Roche Diagnostics	Medical Devices	Ponce	17.9912133	-66.6448581							
	Fenwal International	Medical Devices	Maricao	18.1866398	-66.9854098							
	Ethicon	Medical Devices	San Lorenzo	18.1982928	-65.9727824	328,284	52,152	Cayey CT	223	Caguas	115	Cable
	Medtronic	Medical Devices	Villalba	18.1272887	-66.4971831							
297-049-103-07-864	Baxter	Pharmaceutic	Aibonito	18.137845	-66.261262	408,345	48,149	Cayey CT	223	Barranquitas	115	Cable
032-000-008-03-001	Avara Pharmaceutical	Pharmaceutic	Arecibo	18.4325788	-66.5882755	2,576,437	253,022	Cambalache	240	Barceloneta	115	Cable
032-000-010-48-902	AbbVie	Pharmaceutic	Barceloneta	18.4323521	-66.5654862	4,577,971	373,705	Cambalache	240	Barceloneta	115	Cable
055-000-002-20-901	Merial	Pharmaceutic	Barceloneta	18.4251997	-66.5494439	7,309,864	288,168	Cambalache	240	Barceloneta	115	Cable
054-000-005-92-000	Pfizer	Pharmaceutic	Barceloneta	18.4310486	-66.5709203	4,544,039	190,144	Cambalache	240	Barceloneta	115	Cable
225-000-001-63-000	Mylan	Pharmaceutic	Caguas	18.2346942	-66.0507435	1,595,545	161,521	Cayey CT	223	Caguas	115	Cable
	Neolpharma	Pharmaceutic	Caguas	18.2419838	-66.0173023	2,116,131	273,621	Cayey CT	223	Caguas	115	Cable
089-069-298-03-000	AstraZeneca	Pharmaceutic	Canóvanas	18.3844537	-65.8833143	1,173,956	218,959	San Juan CC	440	Canóvanas	230	DSL
088-000-010-19-901	Eli Lilly	Pharmaceutic	Carolina	18.3759919	-65.9416158	4,429,781	315,125	San Juan CC	440	Berwind	115	Cable
150-038-229-02-901	Teva	Pharmaceutic	Fajardo	18.33204	-66.6409073	322,957	205,426	Daguau CT	454	Fajardo	115	Cable
441-000-003-03-000	Baxter	Pharmaceutic	Guayama	17.9589115	-66.1499062	1,627,495	74,127	AES	454		115	Cable
	Biogen sasa	Pharmaceutic	Guayama	17.981	-66.153							
	GSK	Pharmaceutic	Guayama	17.9591385	-66.1455917	4,879,800	580,325	AES	240		230	Cable
419-000-008-06-901	Skalar Pharma	Pharmaceutic	Guayama	17.9810947	-66.1531693	6,553,059	203,680	AES	454		230	
062-093-535-08-000	Bristol-Myers Squibb	Pharmaceutic	Guaynabo	18.4067976	-66.1072103	38,583	12,177	San Juan CC	440	Viaducto Underground lines	115	Cable
226-008-135-85-000	Janssen Ortho	Pharmaceutic	Gurabo	18.2450521	-65.9492685	5,325,612	234,817	Daguau CT	523	Juncos	115	Cable
305-000-002-08-902	Bristol-Myers Squibb	Pharmaceutic	Humacao	18.1481355	-65.7929993	2,307,615	104,616	Yabucoa CC	302	Shell	115	Cable
305-000-002-43-000	Galephar	Pharmaceutic	Humacao	18.1539807	-65.7974737	970,226	88,606	Yabucoa CC	302	Shell	115	Cable
304-000-008-71-000	GSK	Pharmaceutic	Humacao	18.13481	-65.838072	644,696	145,935	Yabucoa CC	302	Shell	115	Cable
	AbbVie	Pharmaceutic	Jayuya	18.2206469	-66.6136302	370,009	157,646	Eco Electrica	507	Ponce	115	Cable
	Baxter	Pharmaceutic	Jayuya	18.2158995	-66.6004783							
227-000-003-20-000	Amgen	Pharmaceutic	Juncos	18.2332561	-65.9055575	7,063,888	31,762	Daguau	523	Juncos	115	Cable
	Galephar	Pharmaceutic	Juncos	18.224972	-65.914507							
279-000-005-99-926	McNeil	Pharmaceutic	Las Piedras	18.1771492	-65.8827564	3,228,736	257,114	Yabucoa CC	302	Humacao	115	DSL
279-010-437-29-000	Merck	Pharmaceutic	Las Piedras	18.1825846	-65.880096	1,772,874	223,464	Yabucoa CC	302	Humacao	115	DSL
034-000-003-65-000	Bristol-Myers Squibb	Pharmaceutic	Manatí	18.4554717	-66.4705251	1,591,531	319,633	Cambalache	240	Barceloneta	115	DSL
056-000-004-31-000	GK Pharmaceuticals	Pharmaceutic	Manatí	18.4363827	-66.4592224	2,825,225	143,239	Cambalache	240	Barceloneta	115	Cable
	Jassen Ortho	Pharmaceutic	Manatí	18.433785	-66.4533152	972,952	227,710	Cambalache	240	Barceloneta	115	Cable
056-000-003-72-901	Patheon	Pharmaceutic	Manatí	18.426977	-66.467455	4,057,602	279,044	Cambalache	240	Barceloneta	115	Cable
034-085-138-02-000	Romark	Pharmaceutic	Manatí	18.4396266	-66.4671886	1,786,389	4,848	Cambalache	240	Barceloneta	115	DSL
058-000-004-12-901	Steris	Pharmaceutic	Vega Alta	18.4326495	-66.3364966	216,275	23,660	Camcalache	523	Vega Baja	115	DSL
036-000-007-05-000	Pfizer	Pharmaceutic	Vega Baja	18.4477421	-66.3511556	2,302,466	464,801	Cambalache	240	Vega Baja	115	Cable
037-000-004-22-000	Pura Cap	Pharmaceutic Lab	Dorado	18.4677852	-66.268562	809,234	185,319	Dorado Solar Panels	240	Dorado	115	Cable
	Pace Analytical	Pharmaceutic Lab	San Germán	18.0753033	-67.0269576							







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