



MSP Sector Analysis
Manufacturing
Focus on Medical Tech

Significant Growth, Innovation in Medical Device Sector

The medical device and pharmaceutical manufacturing industry in Minneapolis-Saint Paul has unique talent needs that span manufacturing, production, chemistry, and medical specialties. Over 87% of the state's medical and pharmaceutical manufacturing occurs in the 7-county metro area, with some of the largest employers in the state represented. The industry is part of what makes the metro unique, with 2.5 times the share of people employed in medical manufacturing in the metro than the nation overall. Employment in medical manufacturing occupations rose an average of 3.2% each year since 2014, compared to 0.9% nationally.

Top Medical Device & Pharmaceutical Manufacturing Occupations in Demand in the 7-County Metro

Occupations	Current						3-Year Forecast (Baseline)					3-Year High Growth Scenario	
	% Employment in Med Tech	Med Tech Employment 2017Q4	Med Tech Jobs Advertised 2017Q4	Average All-Industry Wage	Med Tech Median Advertised Wage	Hiring Difficulty	Exits (incl. retirements)	Transfers (occupation changes)	Est. Training Need 2020	Est. Employment Change 2020	Est. Avg. Annual Growth	Est. Training Need 2020	Est. Avg. Annual Growth
Team Assemblers	12%	1,513	46	\$32,100	\$23,750	Low	183	307	422	-68	-1.5%	479	-0.2%
Dental Laboratory Technicians	94%	816	12	\$40,400	\$48,550	Low	111	173	317	32	1.3%	350	2.7%
Industrial Engineers	13%	712	1,059	\$93,200	\$90,050	High	53	94	182	35	1.7%	211	3.0%
Inspectors, Testers, Sorters, Samplers, & Weighers	10%	622	41	\$41,600	\$35,250	Low	74	137	188	-23	-1.2%	212	0.1%
First-Line Supervisors of Production & Operating Workers	7%	443	399	\$64,100	\$57,000	Moderate	44	87	137	6	0.5%	154	1.8%
Packaging & Filling Machine Operators & Tenders	9%	426	33	\$32,300	\$25,250	Low	60	85	147	2	0.1%	164	1.5%
Medical Appliance Technicians	72%	398	8	\$35,900	\$33,300	Average	55	86	160	20	1.6%	177	3.0%
Machinists	6%	393	159	\$50,200	\$47,550	Moderate	42	79	128	7	0.6%	144	1.9%
Ophthalmic Laboratory Technicians	57%	378	11	\$34,100	\$34,000	Average	51	80	144	13	1.1%	159	2.5%
Biomedical Engineers	48%	375	44	\$101,000	\$96,900	Average	25	49	81	6	0.5%	96	1.9%
Helpers--Production Workers	5%	302	31	\$26,000	\$25,500	Low	50	88	143	5	0.6%	155	1.9%
Industrial Production Managers	9%	267	15	\$117,200	\$112,750	Low	19	38	60	3	0.4%	71	1.7%
Industrial Engineering Technicians	16%	252	150	\$55,700	\$44,500	High	25	41	69	3	0.4%	79	1.8%
Electromechanical Equipment Assemblers	16%	244	8	\$34,900	\$37,450	Average	35	45	69	-11	-1.5%	78	-0.2%
Chemists	20%	237	34	\$82,600	\$75,650	Moderate	18	46	71	6	0.9%	80	2.2%
Computer-Controlled Machine Tool Operators, Metal/Plastic	8%	209	34	\$46,300	\$38,000	Average	18	45	67	4	0.6%	75	1.9%
Laborers & Freight, Stock, and Material Movers, Hand	1%	190	49	\$32,600	\$25,000	Low	29	50	82	3	0.5%	89	1.8%
Sales Representatives, Wholesale & Manufacturing, Except	1%	187	99	\$79,700	\$71,250	Low	19	38	60	3	0.5%	68	1.9%
Technical & Scientific Products													
Mult. Machine Tool Setters, Operators, & Tenders, Metal/Plastic	14%	187	3	\$40,600	\$40,000	Average	21	39	62	2	0.3%	69	1.6%
Electrical & Electronic Equipment Assemblers	3%	180	97	\$34,300	\$30,000	Average	26	33	51	-8	-1.5%	58	-0.2%
Molding, Coremaking, & Casting Machine Setters, Operators, & Tenders, Metal/Plastic	9%	177	15	\$38,700	\$39,000	Average	19	39	55	-4	-0.7%	62	0.6%
Mechanical Engineers	4%	170	140	\$85,400	\$90,650	Moderate	10	22	35	3	0.5%	42	1.9%
Total	10%	17,595	2,900	\$46,900	\$68,350	Moderate	1,927	3,317	5,438	109	0.2%	6,112	1.5%

Industry Detail	Current			3-Year History		3-Year Forecast (Baseline)					3-Year High Growth Scenario*	
	Employment Q4 2017	Avg. Annual Wages	Location Quotient	Total Employment Change	7-County Metro	Exits (incl. retirements)	Transfers (occupation changes)	Est. Training Need 2020	Est. Employment Change 2020	Est. Avg. Annual Growth	Est. Employment Change 2020	Est. Avg. Annual Growth
Food & Product Manufacturing	60,465	\$64,744	0.96	2,081	1.2%	7,509	12,201	18,149	-1,519	-0.8%	696	0.4%
Fabrication Manufacturing	42,017	\$70,432	1.40	329	0.3%	4,452	8,267	12,101	-607	-0.5%	950	0.7%
Assembly Manufacturing	41,454	\$100,929	1.12	68	0.1%	3,996	7,109	9,812	-1,289	-1.0%	238	0.2%
Medical Device Manufacturing / Med Tech	17,595	\$89,699	2.45	1,196	2.4%	1,976	3,351	5,438	111	0.2%	785	1.5%
Furniture, Clothing, Jewelry, & Other	11,142	\$55,255	0.81	442	1.4%	1,401	2,078	3,272	-200	-0.6%	194	0.6%
All Manufacturing Industry	172,674	\$76,815	1.14	4,115	0.8%	19,334	33,006	48,772	-3,481	-0.7%	2,888	0.6%
Total - All Industries	1,833,479	\$62,255	1.00	90,515	1.7%	259,737	346,286	645,117	39,093	0.7%	101,092	1.8%

*If Economic and Employment Growth Could Continue, without Labor Force Shortage (estimate of true employer demand)

Top Employers Recruiting

2017Q4 Med Tech jobs advertised

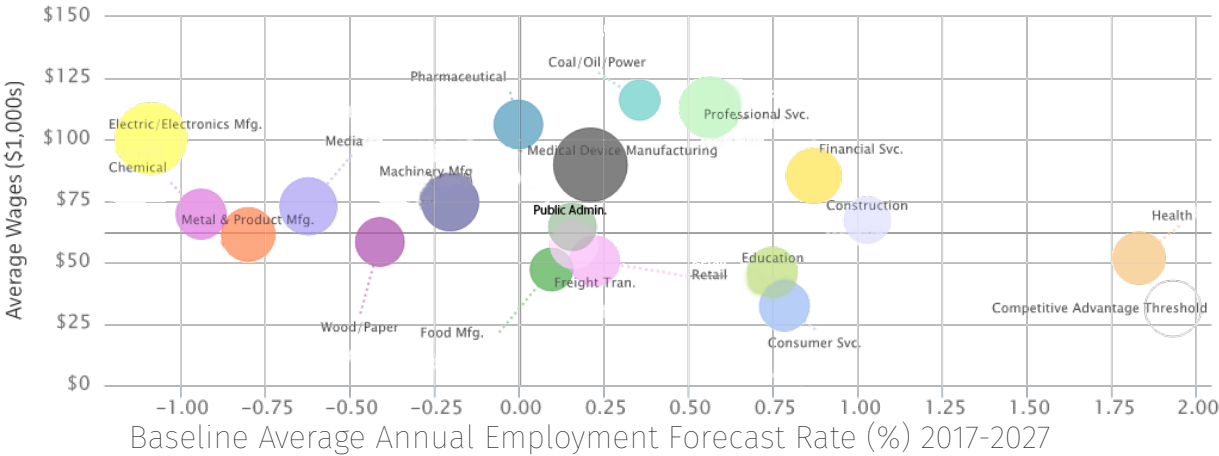
- Medtronic (660)
- Boston Scientific (194)
- RMS Machining (146)
- 3M Company (118)
- TE Connectivity (85)
- Integer (82)
- Cummins Inc. (60)
- Abbott Laboratories (55)

Top Skills/Experience

- Medical Device Production
- Quality Systems
- Good Manufacturing Practice
- Microscopes
- ISO 13485
- Six Sigma
- Blueprints (reading/writing)



Baseline Forecasted Demand by Industry Cluster



Example Paths into Medical Manufacturing*

Entry-Level

- Helpers-Production Workers
- Laborers & Freight, Stock, & Material Movers
- Packers & Packers, Hand
- Packaging & Filling Machine Operators
Median Wage: \$14.85/hr
Ann. Growth: 0.7%-1.8%
SURPLUS
HS/EQUIVALENT
SHORT-TERM OJT

Team Assemblers
Total Employed: 13,125
Unemployment: 3.6%
Median Wage: \$15.57/hr
Ann. Growth: -1.5% - -0.2%
SURPLUS
HS/EQUIVALENT
MODERATE OJT

Electromechanical Equipment Assemblers
Total Employed: 1,536
Unemployment: 2.4%
Median Wage: \$16.62/hr
Ann. Growth: -2.4% - -1.2%
MAINTAINING SUPPLY
HS/EQUIVALENT

Machine Feeders & Offbearers
Total Employed: 1,068
Unemployment: 5.6%
Median Wage: \$17.82/hr
Ann. Growth: 0% - 1.3%
MAINTAINING SUPPLY
HS/EQUIVALENT

Mid-Level

Dental Lab Techs ☀️
Median Wage: \$18.72/hr
Ann. Growth: 1.3%-2.6%
SHORTAGE
HS/EQUIVALENT
MODERATE OJT

Ophthalmic Lab Techs ☀️
Median Wage: \$15.46/hr
Ann. Growth: 0.9%-2.1%
SHORTAGE
HS/EQUIVALENT
SHORT-TERM OJT

Supervisors of Prod./ Operating Workers 🌿
Median Wage: \$29.82/hr
Ann. Growth: -0.1%-1.1%
MAINTAINING SUPPLY
HS/EQUIVALENT
SHORT-TERM OJT

Welders, Cutters, Solderers, & Brazers ☀️
Median Wage: \$20.94/hr
Ann. Growth: 0.4%-1.5%
SHORTAGE
HS/EQUIVALENT
MODERATE OJT

Medical Appliance Techs ☀️
Median Wage: \$16.70/hr
Ann. Growth: 1.2%-2.4%
SHORTAGE
HS/EQUIVALENT
MODERATE OJT

Mechanical Engineering Technicians ☀️
Median Wage: \$29.51/hr
Ann. Growth: 0.2%-1.6%
SHORTAGE
AA/AS
NO OJT

Industrial Engineering Technicians ☀️
Median Wage: \$26.29/hr
Ann. Growth: -0.1%-1.2%
SHORTAGE
AA/AS
NO OJT

Advanced

Biomedical Engineers ☀️
Median Wage: \$48.76/hr
Ann. Growth: 0.4%-1.6%
SHORTAGE
BA
NO OJT

Training Program Graduates

Entry-Level Manufacturing Credential Programs**	Est. Annual Graduates
Pathways to Prosperity Program	43
Dislocated Worker Program	30

Less than 16% of graduates from either program secured employment in manufacturing

National Institute for Metalworking Skills

Credentials Attained	2015	2016	2017	All-Time Total
CNC Drive Press Press Brake Skills II	-	1	1	20
CNC Lathe Operator	65	31	18	322
CNC Milling Operator	94	54	29	400
CNC Milling Skills II	1	-	-	3
CNC Milling Programming Setup & Ops.	28	21	1	82
CNC Turning Skills II	1	-	-	7
CNC Turning Programming Setup & Ops.	9	26	8	99
Drill Press Skills	12	1	2	64
EDM - Conventional/Plunge I	1	-	-	N/A
Grinding II	2	-	-	8
Grinding Skills	5	9	2	44
ITM: Basic, Hydraulic, or Mechanical Ops.	-	3	-	8
Job Planning, Benchwork & Layout	40	59	95	437
Machine Maintenance II	-	5	4	17
Measurement, Material & Safety	163	215	157	1,300
Metalforming I	9	8	8	282
Milling I	17	16	3	129
Milling II	2	-	-	7
Stamping II Operate w/Single Hit Tooling	1	1	2	64
Stamping II Operate w/Compound Dies	2	-	1	61
Stamping II Operate w/Progressive Dies	2	-	1	41
Stamping III Parts Inspection & QC	2	-	-	37
Turning II	4	-	-	9
Turning Ops: Turning Between Centers	14	9	1	101
Turning Ops: Turning Chucking Skills	7	13	1	N/A
Totals	481	477	334	3,625

☀️ Indicates DEED Bright Outlook occupation.
🌿 Indicates Onet Green Occupation.

For more information:

- Industry Contact: **Mike Slezak, DEED** (michael.slezak@state.mn.us)
- MSPWin Career Map: <http://mspwin.org/wp-content/uploads/2016/06/Career-Pathway-Maps.pdf>
- RealTime Talent Reports: realtimetalent.org/research/reports or contact **Erin Olson** (erin@realtimetalentmn.org)

*Employment and salary data represent those employed in all industries, not only medical manufacturing. Wage data represents covered manufacturing employment from DEED OES data for the 16-county metro. OJT stands for on-the-job training. **Estimated annual graduates from credential programs represent the average graduates from programs at metro workforce centers and community organizations in 2015 and 2016. Developed by Erin Olson (erin@realtimetalentmn.org). Published 4/13/2018 by RealTime Talent. Sources: TalentNeuron Recruit aggregate online job postings. www.wantedanalytics.com accessed January 15, 2018. Counts of job postings in Q4 2017 by employer were available October 1 - December 31, 2017 in the 7-county Minneapolis-Saint Paul Metro. Includes staffing agencies. Percent change in job postings are the change from the same quarter in the prior year. Employment, wage, and education data modeled from IPEDS, OES, and BLS data by JobsEQ. Living wage was defined for the purposes of these reports as any occupation where the median wage is \$30,000 annually, or about \$14.50 per hour.