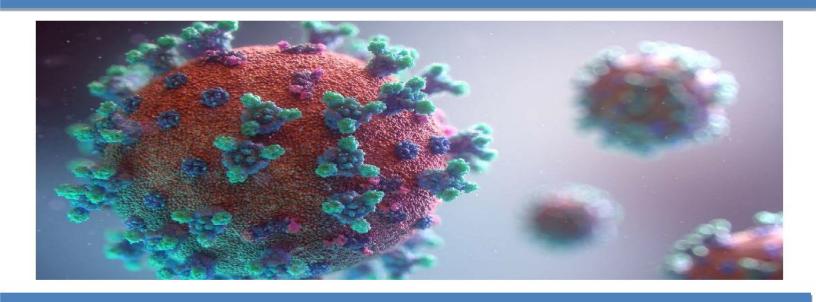


RESEARCH REPORT



COVID-19 Diagnostics

Global C19 Diagnostic Market Forecast by Technology, Product, Channel and Country Assay Volumes and Market Size Outlook to 2026 Updated to include 2021 Actuals



Call: 604 377 8604 Email: service@howesoundresearch.com

Howe Sound Research is a market research and consulting company based in Vancouver, British Columbia, Canada. In our spare time we like to sail in a large body of water nearby called Howe Sound. We publish market research reports that address scientific industries with an emphasis on Biotechnology and Clinical Diagnostic markets. We consider ourselves experts in these areas.

We approach market research differently than other companies. At any one time we have a limited number of reports, and we update them frequently, sometimes several times a year. Our reports are prepared by people who understand the industry and have worked and studied in the area. This contrasts with the many research mills who produce canned reports on the Handbag market one day and the XRay market the next.

Our intellectual property is encryption protected. If you have issues with this or would like to upgrade to a corporate license that is not encrypted, please contact us at the email above.

Please feel free to contact us if you have any questions. We believe in customer service and are more than willing to provide after sales assistance and custom data.

HOWE SOUND RESEARCH

Table of Contents

1	Mc	arket	Guides19	
	1.1	CO	VID-19. Strategic Situation Analysis	20
	1.2	CO,	VID-19. Guidance for Executives	22
	1.3	CO,	VID-19. Guidance for Management Consultants and Investment Advisors	23
2	Intr	odu	ction and Market Definition24	
	2.1	Who	at are Pandemics?	25
	2.2	The	Role of Zoonosis	28
	2.3	Mar	ket Definition	30
	2.3	.1	Assay Volumes.	30
	2.3	.2	PCR	30
	2.3	.3	PCR Multiplex	31
	2.3	.4	\$EQ	31
	2.3	.5	Antigen	31
	2.3	.6	Antibodies	31
	2.3	.7	Instruments	31
	2.3	.8	Reagents and Kits	32
	2.3	.9	Extract	32
	2.3	.10	Collect	32
	2.3	.11	Public	32
	23	12	Hospital	32

2.3.13	Clinic	32
2.3.14	Workplace	33
2.3.15	DTC/OTC	33
2.3.16	Wastewater	33
2.4 Me	ethodology	34
2.4.1	Authors	34
2.4.2	Sources	34
2.5 His	torical Perspective on Pandemics	35
2.5.1	HIV/AIDS PANDEMIC 2005-2012	35
2.5.2	FLU PANDEMIC 1968	36
2.5.3	ASIAN FLU 1956-1958	36
2.5.4	SPANISH FLU 1918	37
2.5.5	SIXTH CHOLERA PANDEMIC 1910-1911	37
2.5.6	FLU PANDEMIC 1889-1890	38
2.5.7	THE BLACK DEATH 1346-1353	38
3 The Po	andemic Overview	40
3.1 Wh	nat is a Virus?	41
3.1.1	Is a Virus Alive?	42
3.1.2	Viral Structure	43
3.1.3	The Viral Genome	44
3.1.4	Viral Mutation	45
3.2 The	e Coronavirus	47
3.2.1	Severe acute respiratory syndrome (SARS)	49
3.2.2	Middle East respiratory syndrome (MERS)	51

	3.2	2.3	COVID-19. The SARS CoV 2 Virus	52
		3.2.3.	.1 Signs and symptoms	54
		3.2.3.	2 Transmission	55
		3.2.3.	.3 Diagnosis	56
		3.2.3.	4 Prevention	58
		3.2.3.	.5 Management	59
		3.2.3.	.6 Prognosis	60
		3.2.3.	.7 A Note on Global Statistics Reporting	61
	3.3	Pand	lemic Diagnostics	62
	3.3	3.1 F	Risk Management – Spark and Spread	62
	3.3	3.2 E	Dx Technology – Nucleic Acid Based	64
	3.3	3.3 E	Dx Technology - Immunoassay	65
	3.3	3.4 T	Fime to Market and Preparedness Issues	65
4	Dic	agnos	tic Company Profiles67	
	4.1	Abac	cus Diagnostica	68
	4.2	Abbo	ott Diagnostics	69
	4.3	Acce	elerate Diagnostics	71
	4.4	Acce	es Bio	72
	4.5	Adva	anced Biological Laboratories	73
	4.6	Agen	na Bioscience, Inc	74
	4.7	Agile	nt/Dako	76
	4.8	Alton	na Diagnostics	78
	4.9	Alvec	o Technologies	79
	4 10	An	atolia Geneworks	80

4.11	Applied BioCode	81
4.12	Applied DNA Sciences	83
4.13	Assurance Scientific Laboratories	85
4.14	Aus Diagnostics	86
4.15	Autobio Diagnostics	87
4.16	Beckman Coulter Diagnostics	88
4.17	Becton, Dickinson and Company	89
4.18	BGI Genomics Co. Ltd	91
4.19	BillionToOne	93
4.20	Binx Health	94
4.21	Biocartis	95
4.22	Biodesix Inc.	96
4.23	BioFire Diagnostics (bioMérieux)	97
4.24	Biolidics Ltd	99
4.25	bioMérieux Diagnostics	100
4.26	Bioneer Corporation	102
4.27	Bio-Rad Laboratories, Inc.	104
4.28	Bio-Reference Laboratories	106
4.29	Bosch Healthcare Solutions GmbH	107
4.30	Cepheid (Danaher)	108
4.31	Chembio	110
4.32	Co Diagnostics	111
4.33	Color Genomics	112
4 34	Cue Health	113

4.35	Curetis N.V. / Curetis GmbH	. 114
4.36	Diagenode Diagnostics	. 115
4.37	Diasorin S.p.A	. 116
4.38	Ellume	. 118
4.39	Enzo Life Sciences, Inc.	. 119
4.40	Everywell	. 121
4.41	Fluxergy	. 122
4.42	Fulgent Genetics	. 123
4.43	Fusion Genomics	. 124
4.44	Genedrive	. 126
4.45	Genetic Signatures	. 127
4.46	GenMark Dx (Roche)	. 128
4.47	Gold Standard Diagnostics	. 130
4.48	Hologic	. 131
4.49	Illumina	. 133
4.50	Immunexpress	. 134
4.51	Inflammatix	. 135
4.52	Janssen Diagnostics	. 136
4.53	Karius	. 137
4.54	Laboratory Corporation of America	. 139
4.55	Letsgetchecked	. 141
4.56	Lexagene	. 142
4.57	Luminex Corp	. 143
4 58	LumiraDx	145

4.59	Mammoth Biosciences	146
4.60	Mayo Clinic Laboratories	147
4.61	Mbio Diagnostics	148
4.62	Meridian Bioscience	149
4.63	Mesa Biotech (Thermo Fisher)	151
4.64	Mobidiag (Hologic)	152
4.65	Nanomix	153
4.66	Novacyt	154
4.67	Orasure	155
4.68	Ortho Clinical Diagnostics	157
4.69	Oxford Nanopore Technologies	158
4.70	Perkin Elmer	159
4.71	Primerdesign (Novacyt)	161
4.72	Prominex	162
4.73	Qiagen Gmbh	164
4.74	www.quantumdx.com	166
4.75	Quest Diagnostics	167
4.76	Quidel	168
4.77	Randox Toxicology	170
4.78	Roche Molecular Diagnostics	171
4.79	SD Biosensor	173
4.80	Seegene	174
4.81	Sherlock Biosciences	176
4 82	Siemens Healthineers	177

	4.83		Sona Nanotech	179
	4.84		SpeeDx	180
	4.85		Thermo Fisher Scientific Inc	181
	4.86		Veredus Laboratories	184
	4.87		Vircell	185
	4.88		Visby Medical	186
	4.89		YD Diagnostics	188
	4.90		Zhejiang Orient Gene Biotech	190
5	Со	ovic	d-19 Diagnostics Recent Developments192	
	5.1	Re	ecent Developments – Importance and How to Use This Section	193
	5.1	1.1	Importance of These Developments	193
	5.1	1.2	How to Use This Section	193
	5.2	Cl	RISPR Tests for SARS-CoV-2 Using Saliva Samples	193
	5.3	C,	VS Limits Purchases of Rapid Covid-19 Tests	197
	5.4	IIIu	ımina, COVID-19 Surveillance Continue to Boost Business	197
	5.5	Le	tsGetChecked Closes \$150M Funding Round	201
	5.6	No	ovacyt Gets CE Mark for Multigene SARS-CoV-2 Test, Launches RUO Variant Asso	ay 201
	5.7	Αk	obott Sees Sharp Decline in COVID-19 Test Revenue	202
	5.8	Ph	nosphorus Diagnostics Gets EUA for DTC C19 Test, Sample Collection Kit	203
	5.9	N١	Times Explores Multiplex Testing	204
	5.10		Hologic Banking on MDx Acquisitions	205
	5.11		Demand for Cepheid SARS-CoV-2 Point-of-Care Tests to Continue Through 2022	2 210
	5.12		DiaSorin Acquires Luminex to Broaden MDx Portfolio, Expand US Presence	212
	5.13		LumiraDx to Go Public Through SPAC	217

	5.14	Eurofins Test Helps to ID Mutations	. 218
	5.15	Roche Sees Growing Opportunities for Diagnostics	. 224
	5.16	Roche to Acquire GenMark Diagnostics for \$1.8B	. 228
	5.17	Fulgent Genetics s to Use COVID-19 Testing Gains to Grow Clinical Sequencing	. 230
	5.18	LexaGene Syndromic Panel Platform Lets Labs Customize Targets	. 233
	5.19	FDA Grants EUAs for DTC Sample Collection Kit, Two Molecular Tests	. 238
	5.20	At-Home Infectious Disease Test Developer Lucira Health Goes Public	. 239
6	The (Global Market for COVID-19 Diagnostics241	
	6.1 G	lobal Market Overview by Country	. 242
	6.1.1	Table – Global Market by Country	. 242
	6.1.2	Chart - Global Market by Country	. 243
	6.1.3	Table – Global Market by Country – Assay Volumes	. 244
	6.2 G	lobal Market by Technology - Overview	. 245
	6.2.1	Table – Global Market by Technology	. 245
	6.2.2	Chart – Global Market by Technology – Base/Final Year Comparison	. 246
	6.2.3	Chart – Global Market by Technology – Base Year	. 247
	6.2.4	Chart – Global Market by Technology – End Year	. 248
	6.2.5	Chart – Global Market by Technology – Share by Year	. 249
	6.2.6	Chart – Global Market by Technology – Segments Growth	. 250
	6.3 G	lobal Market by Product - Overview	. 251
	6.3.1	Table – Global Market by Product	. 251
	6.3.2	Chart – Global Market by Product – Base/Final Year Comparison	. 252
	6.3.3	Chart – Global Market by Product – Base Year	. 253
	631	Chart Clohal Market by Product End Year	254

	6.3.5	Chart – Global Market by Product – Share by Year	255
	6.3.6	Chart – Global Market by Product – Segments Growth	256
	6.4 Glc	bal Market by Channel - Overview	257
	6.4.1	Table – Global Market by Channel	257
	6.4.2	Chart – Global Market by Channel – Base/Final Year Comparison	258
	6.4.3	Chart – Global Market by Channel – Base Year	259
	6.4.4	Chart – Global Market by Channel – End Year	260
	6.4.5	Chart – Global Market by Channel – Share by Year	261
	6.4.6	Chart – Global Market by Channel – Segments Growth	262
7	Globa	l COVID-19 Diagnostic Markets – By Technology2	63
	7.1 PC	₹	264
	7.1.1	Table PCR – by Country	264
	7.1.2	Chart - PCR Growth	265
	7.2 PC	R Multiplex	266
	7.2.1	Table PCR Multiplex – by Country	266
	7.2.2	Chart - PCR Multiplex Growth	267
	7.3 Sec	quencing	268
	7.3.1	Table Sequencing – by Country	268
	7.3.2	Chart - Sequencing Growth	269
	7.4 Ant	ribody	270
	7.4.1	Table Antibody – by Country	270
	7.4.2	Chart - Antibody Growth	271
	7.5 Ant	igen	272
	751	Table Antigen – by Country	272

	7.5.2	Chart – Antigen Growth	273
8	Globa	Il COVID-19 Diagnostic Markets – By Product	274
	8.1 Inst	ruments	275
	8.1.1	Table Instruments – by Country	275
	8.1.2	Chart - Instruments Growth	276
	8.2 Red	agents & Kits	277
	8.2.1	Table Reagents & Kits – by Country	277
	8.2.2	Chart – Reagents & Kits Growth	278
	8.3 Extr	action	279
	8.3.1	Table Extraction – by Country	279
	8.3.2	Chart - Extraction Growth	280
	8.4 Col	llection	281
	8.4.1	Table Collection – by Country	281
	8.4.2	Chart - Collection Growth	282
9	Globa	ll COVID-19 Diagnostic Markets – By Channel	283
	9.1 Puk	olic	284
	9.1.1	Table Public – by Country	284
	9.1.2	Chart - Public Growth	285
	9.2 Hos	spital	286
	9.2.1	Table Hospital – by Country	286
	9.2.2	Chart - Hospital Growth	287
	9.3 Clir	nic	288
	9.3.1	Table Clinic – by Country	288
	9.3.2	Chart - Clinic Growth	289

9.4 Wo	orkplace	290
9.4.1	Table Workplace – by Country	290
9.4.2	Chart - Workplace Growth	291
9.5 DT	C/OTC	292
9.5.1	Table DTC/OTC – by Country	292
9.5.2	Chart – DTC/OTC Growth	293
9.6 Wo	astewater	294
9.6.1	Table Wastewater – by Country	294
9.6.2	Chart – Wastewater Growth	295
10 Ap	pendix	296
10.1 l	J.S., Europe, Asia Approved COVID-19 Assays	297

Table of Tables

Table 1 Who List of Potential Pandemic Pathogens	42
Table 2 Characteristics of Coronavirus Pandemic Infections	53
Table 3 COVID-19 Symptoms	55
Table 4 Global Market by Region	242
Table 5 Global Market Assay Volumes by Region	244
Table 6 Global Market by Technology	245
Table 7 Global Market by Product	251
Table 8 Global Market by Channel	257
Table 9 PCR by Country	264
Table 10 PCR Multiplex by Country	266
Table 11 Sequencing by Country	268
Table 12 Antibody by Country	270
Table 13 Antigen by Country	272
Table 14 Instruments by Country	275
Table 15 Reagents & Kits by Country	277
Table 16 Extraction by Country	279
Table 17 Collection by Country	281
Table 18 Public by Country	284
Table 19 Hospital by Country	286
Table 20 Clinic by Country	288
Table 21 Workplace by Country	290
Table 22 DTC/OTC by Country	292

Table 23 Wastewater by Country	. 294
Table 24 Approved Covid-19 Assays	. 297

Table of Figures

Figure 1 Testing Volumes To Date for Select Countries	20
Figure 2 Global Distribution Pandemic Preparedness	26
Figure 3 Global Pandemic Pathogen Status	27
Figure 4 Estimated Economic Impact of Viral Pandemic by Region	29
Figure 5 Historical Pandemics Infographic	39
Figure 6 Antigenic Drift Creates a new Strain of Virus	46
Figure 7 Structure of Coronaviruses	49
Figure 8 Global Market Share Chart	243
Figure 9 Base/Final Year Comparison Chart	246
Figure 10 Global Markets by Technology Base Year	247
Figure 11 Global Markets by Technology End Year	248
Figure 12 Global Markets by Technology Share by Year	249
Figure 13 Global Markets by Technology Segment Growth	250
Figure 14 Global Market by Product Base vs. Final	252
Figure 15 Global Market by Product Base Year	253
Figure 16 Global Market by Product End Year	254
Figure 17 Global Market by Product Share by Year	255
Figure 18 Global Market by Product Segments Growth	256
Figure 19 global Market by Channel – Base vs. Final	258
Figure 20 global Market by Channel – Base Year	259
Figure 21 global Market by Channel – End Year	260

Figure 22 global Market by Channel – Share by Year	261
Figure 23 global Market by Channel – Segments Growth	262
Figure 24 PCR Growth	265
Figure 25 PCR Multiplex Growth	267
Figure 26 Sequencing Growth	269
Figure 27 Antibody Growth	271
Figure 28 Antigen Growth	273
Figure 29 Instruments Growth	276
Figure 30 Reagents & Kits Growth	278
Figure 31 Extraction Growth	280
Figure 32 Collection Growth	282
Figure 33 Public Growth	285
Figure 34 Hospital Growth	287
Figure 35 Clinic Growth	289
Figure 36 Workplace Growth	291
Figure 37 DTC/OTC Growth	293
Figure 38 Wastewater Growth	295