Japan Agency for Medical Research and Development

AMED DataBook 2023

Preface

Japan Agency for Medical Research and Development (AMED) entered its second medium-to long-term plan period, which will take five years, in FY2020. During the second plan period, Research and Development is being promoted in line with the six "integrated projects"* centering on modalities based on the government's second "Healthcare Policy," and Research and Development related to diseases pursued in a format that cuts across the "integrated projects."

This "AMED DataBook 2023" presents the data of the activity achievements in the fourth year (FY2023) of the second plan. The DataBook will help readers appreciate AMED's promotion of medical Research and Development.

December 2024
Japan Agency for Medical Research
and Development (AMED)

* The government's second "Healthcare Policy" states the six "integrated projects": Project for Advanced Drug Discovery and Development, Project for Medical Device and Healthcare, Project for Regenerative Medicine and Cell and Gene Therapies, Project for Genome and Health-Related Data, Project for Basic Medical Research, and Project for Seeds Development and Research Base.

Contents

Statistics of DataBook 2023

AMED collects and stores R&D project information in line with the information at the time of contracting with supporting institutions, and these statistics were produced based on data as of October 2024*1.

The statistical unit is an awarded project. The number of awarded projects and R&D funding are aggregated on an annual basis, and the projects implemented over a period of multiple years are aggregated each implanting year. In these statistics, projects started on or after April 1 of the fiscal year in question are treated as newly awarded projects, and others as ongoing projects.

R&D funding consists of the final contract/payment amount (including indirect costs) at the end of the fiscal year of the commissioned programs, grant programs or special fund programs. Project R&D funding is the total amount of R&D funding for the fiscal year in question including parts of R&D allocated to subsidiary institutions or other subcontracted institutions under the supervision of the PI.

In these statistics where necessary, rounding has been used in the notation of numerical values and therefore the total numerical values in the breakdown do not always equal the total values. The distribution ratio also does not total 100 in some cases.

The R&D tags showing the nature of R&D projects include "Target Disease," "Nature of Research," "R&D Phase," "Product Approval Category," "Disease Area," and "R&D Objective," and these statistics have been produced based on these tags.

For "Target Disease," "Nature of Research," "R&D Phase" "Product Approval Category," and "Disease Area," one awarded project is attached with one of the categorial tags.*2 For "Basic Study" and "Applied Study" in "R&D Phase," they are collectively treated as "Basic/Applied Studies" in these statistics. In the case of "R&D Objective," multiple choices of the categorial tags are possible for a single project.

The classification of R&D tags has changed from FY2023. This DataBook aggregates R&D tags from FY2023 by replacing the R&D tags used until FY2022, in accordance with the data replacement rules established by AMED.

Data accumulated over the past five years are shown as five-year changes and data accumulated from the second plan period include the changes from FY2020.

*1 The statistics in 4.1 were produced based on calls for proposals information published by AMED (as of October 2024), and the statistics in 4.2 and 4.3 were produced based on the Cross-ministerial R&D Management System (e-Rad) data.

*2 For "Disease Area," multiple choices of the categorial tags are possible for a single project in FY2020, and from FY2021 the tags for main "Disease Area" and other "Disease Areas" are attached to a single project. These statistics were produced using the main "Disease Area" data from FY2021 onwards.

1. Promotion of R&D

1.1 No. of Projects, R&D Funding, and R&D Funding per Project

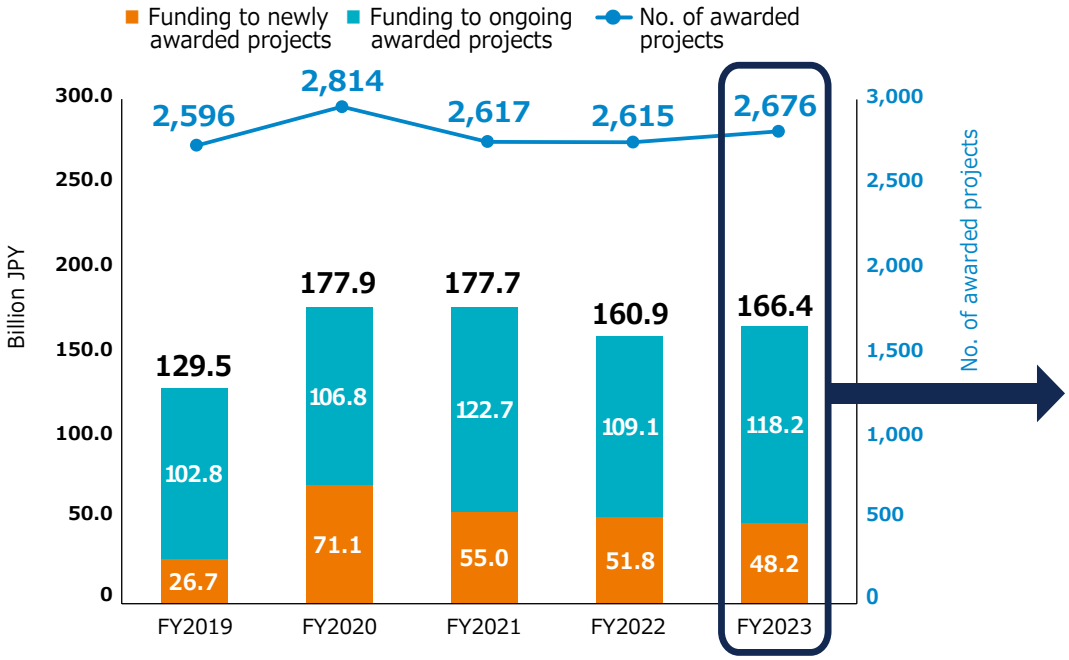

Fig. 1.1.1 Trends in no. of awarded projects and R&D funding

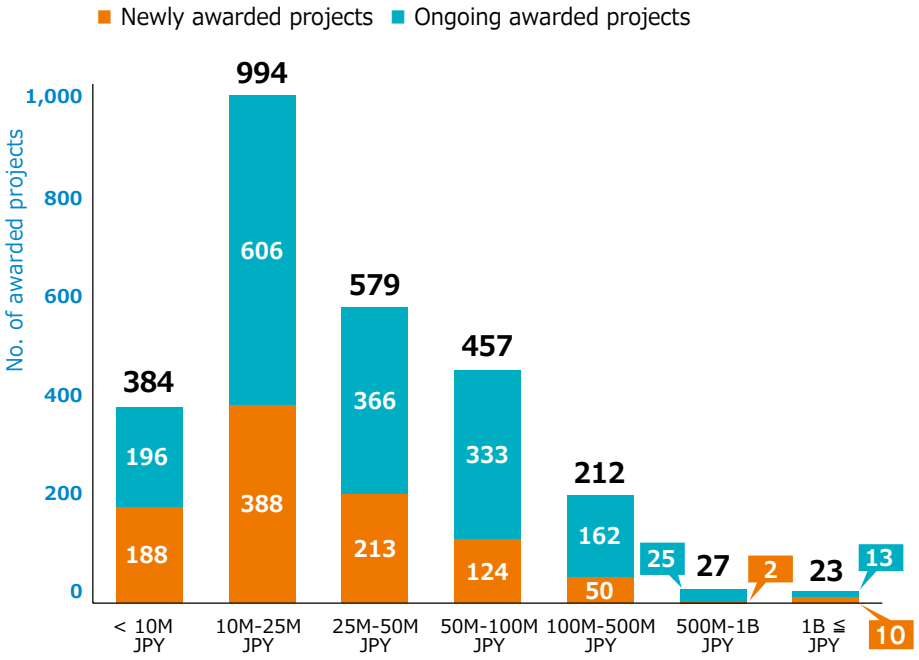

Fig. 1.1.2 Distribution of R&D funding of awarded projects in FY2023

Table 1.1.1 Trends in no. of awarded projects, R&D funding, and R&D funding per project

	FY2019			FY2020			FY2021			FY2022			FY2023		
	Total	Newly	COVID-19*	Total	Newly	COVID-19*	Total	Newly	COVID-19*	Total	Newly	COVID-19*	Total	Newly	COVID-19*
No. of awarded projects	2,596	778	29	2,814	1,094	305	2,617	945	132	2,615	1,001	79	2,676	975	57
R&D funding (Billion JPY)	129.5	26.7	3.3	177.9	71.1	56.6	177.7	55.0	45.8	160.9	51.8	14.3	166.4	48.2	8.2
R&D funding per project (Billion JPY)	0.05	0.03	0.11	0.06	0.07	0.19	0.07	0.06	0.35	0.06	0.05	0.18	0.06	0.05	0.14

* COVID-19-related budget projects

The R&D funding per project is the average figure.

Table 1.1.2 No. of awarded projects by fiscal year and by level of R&D funding

	< 10M JPY		10M - 25M JPY		25M - 50M JPY		50M - 100M JPY		100M - 500M JPY		500M - 1B JPY		1B JPY ≦	
	Total	Newly	Total	Newly	Total	Newly	Total	Newly	Total	Newly	Total	Newly	Total	Newly
FY2019	552	224	897	273	523	158	379	79	224	41	10	2	11	1
FY2020	482	181	991	414	572	230	447	127	276	123	25	9	21	10
FY2021	445	183	990	376	487	165	419	126	236	77	22	13	18	5
FY2022	383	213	981	347	535	225	439	131	230	68	36	12	11	5
FY2023	384	188	994	388	579	213	457	124	212	50	27	2	23	10

Created based on AMED data (as of October 2024).

Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

1. Promotion of R&D

1.2 By Integrated Project: No. of Projects and R&D Funding 1) FY2023

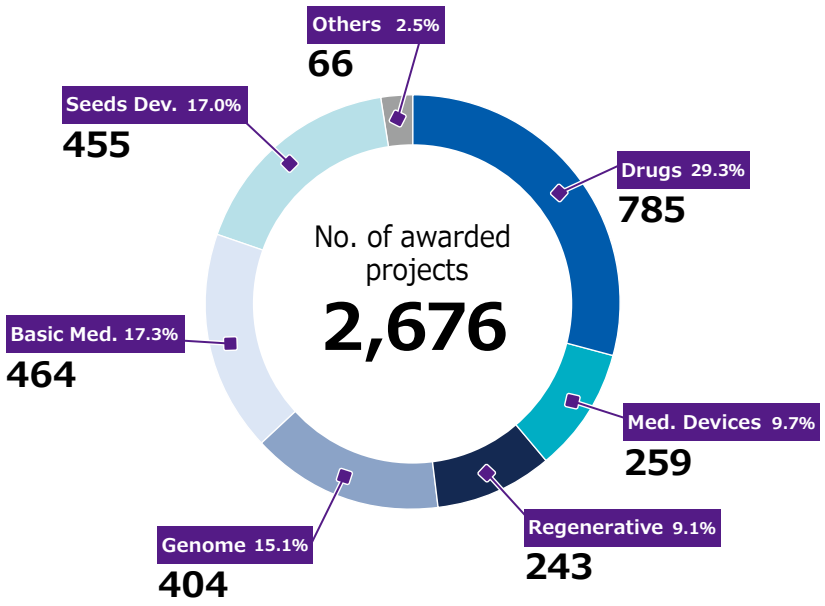

Fig. 1.2.1 No. of awarded projects by Integrated Project in FY2023

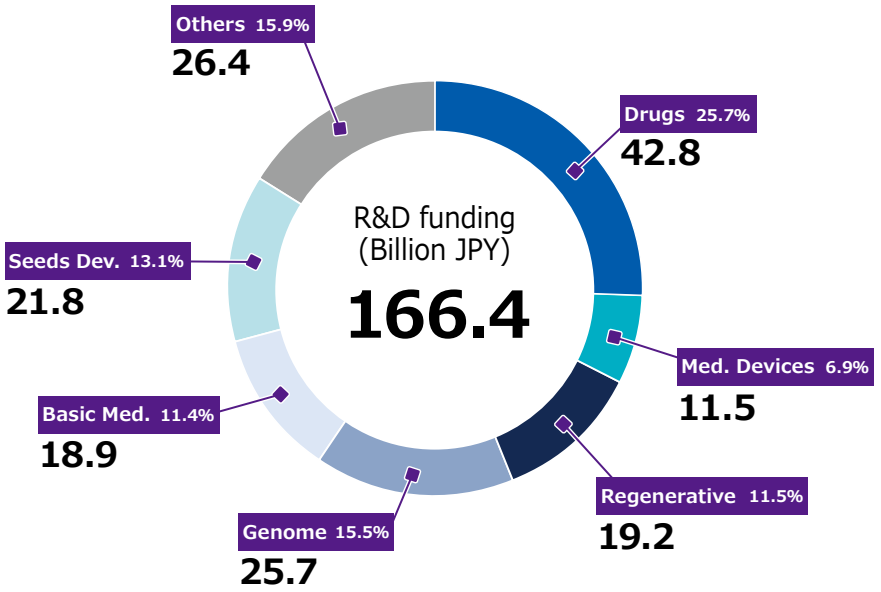

Fig. 1.2.2 R&D funding by Integrated Project in FY2023

Table 1.2.1 No. of awarded projects and R&D funding by Integrated Project in FY2023

Integrated Project	Abbreviation	No. of awarded projects	R&D funding (Billion JPY)
Project for Advanced Drug Discovery and Development	Drugs	785	42.8
Project for Medical Device and Healthcare	Med. Devices	259	11.5
Project for Regenerative Medicine and Cell and Gene Therapies	Regenerative	243	19.2
Project for Genome and Health-Related Data	Genome	404	25.7
Project for Basic Medical Research	Basic Med.	464	18.9
Project for Seeds Development and Research Base	Seeds Dev.	455	21.8
Others (Special Fund Programs, etc.)*	Others	66	26.4
Total		2,676	166.4

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

* Among "Others," AMED provided 22.1 billion JPY in funding for 40 projects through the Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA).

1. Promotion of R&D

1.2 By Integrated Project: No. of Projects and R&D Funding 2) Trends

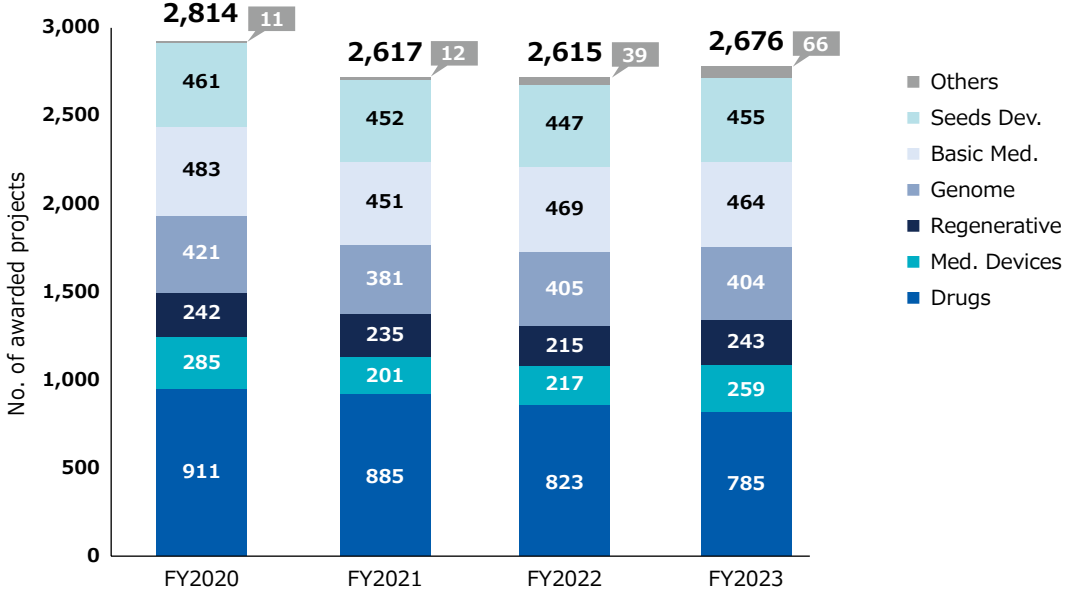

Fig. 1.2.3 Trends in no. of awarded projects by Integrated Project

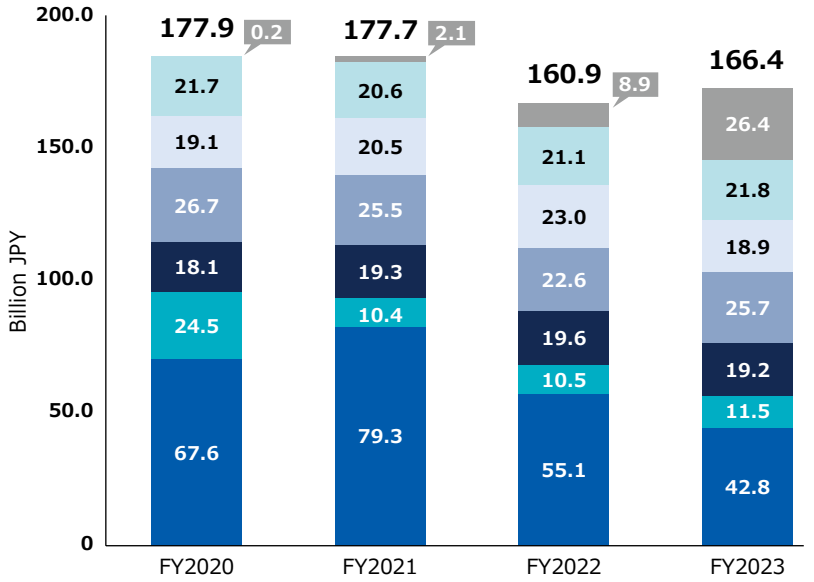

Fig. 1.2.4 Trends in R&D funding by Integrated Project

Table 1.2.2 Trends in no. of awarded projects and R&D funding by Integrated Project

Integrated Project	Abbreviation	No. of awarded projects				R&D funding (Billion JPY)			
		FY2020	FY2021	FY2022	FY2023	FY2020	FY2021	FY2022	FY2023
Project for Advanced Drug Discovery and Development	Drugs	911	885	823	785	67.6	79.3	55.1	42.8
Project for Medical Device and Healthcare	Med. Devices	285	201	217	259	24.5	10.4	10.5	11.5
Project for Regenerative Medicine and Cell and Gene Therapies	Regenerative	242	235	215	243	18.1	19.3	19.6	19.2
Project for Genome and Health-Related Data	Genome	421	381	405	404	26.7	25.5	22.6	25.7
Project for Basic Medical Research	Basic Med.	483	451	469	464	19.1	20.5	23.0	18.9
Project for Seeds Development and Research Base	Seeds Dev.	461	452	447	455	21.7	20.6	21.1	21.8
Others (Special Fund Programs, etc.)*	Others	11	12	39	66	0.2	2.1	8.9	26.4
Total		2,814	2,617	2,615	2,676	177.9	177.7	160.9	166.4

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

* Among "Others," AMED provided 6.4 billion JPY in funding for 22 projects in FY2022, and 22.1 billion JPY for 40 projects in FY2023 through the Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA).

1. Promotion of R&D

1.3 By Type of Research Institution: Allocation of R&D Funding

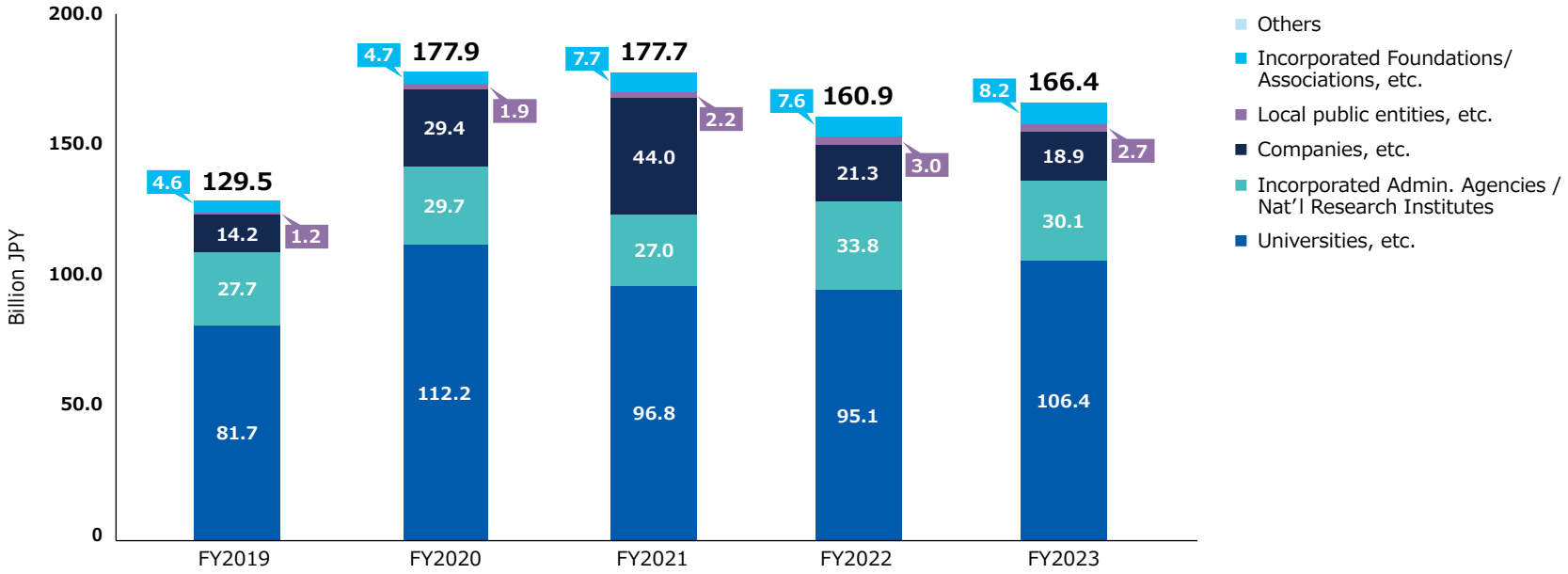

Fig. 1.3.1 Trends in R&D funding by Types of Research Institutions

Table 1.3.1 Trends in R&D funding by Types of Research Institutions

Types of Research Institutions	R&D funding (Billion JPY)				
	FY2019	FY2020	FY2021	FY2022	FY2023
Universities, etc.	81.7	112.2	96.8	95.1	106.4
Incorporated Admin. Agencies / Nat'l Research Institutes	27.7	29.7	27.0	33.8	30.1
Companies, etc.	14.2	29.4	44.0	21.3	18.9
Local public entities, etc.	1.2	1.9	2.2	3.0	2.7
Incorporated Foundations/Associations, etc.	4.6	4.7	7.7	7.6	8.2
Others	0.03	0.03	0.03	0.03	0.02
Total	129.5	177.9	177.7	160.9	166.4

Refer to 5.1 "Types of Research Institutions" with regard to Types of Research Institutions. ▶P25

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

The numerical values for "Others" in the Types of Research Institutions have been omitted in the graph.

1. Promotion of R&D

1.4 By Target Disease 1) No. of Projects

Table 1.4.1 Trends in no. of awarded projects by Target Disease

Target Disease	No. of awarded projects				
	FY2019	FY2020	FY2021	FY2022	FY2023
Certain infectious and parasitic diseases	249	273	288	311	345
COVID-19	28	246	109	88	11
Cancer (neoplasms)	596	592	632	589	601
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	42	35	26	34	123
Endocrine, nutritional and metabolic diseases	86	96	109	103	99
Mental and behavioural disorders	152	164	126	152	140
Diseases of the nervous system	211	192	190	203	316
Diseases of the circulatory system	136	130	149	145	168
Diseases of the respiratory system	50	60	59	51	61
Diseases of the digestive system	81	78	77	82	121
Diseases of the eye and adnexa	43	34	31	33	40
Diseases of the ear and mastoid process	11	15	14	15	16
Diseases of the skin and subcutaneous tissue	28	28	27	30	40
Diseases of the musculoskeletal system and connective tissue	53	71	67	82	70
Diseases of the genitourinary system	42	45	43	42	40
Pregnancy, childbirth and the puerperium	6	7	10	14	14
Certain conditions originating in the perinatal period	9	11	12	11	15
Congenital malformations, deformations and chromosomal abnormalities	54	39	46	46	15
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	42	50	32	35	4
Injury, poisoning and certain other consequences of external causes	66	59	42	41	6
External causes of morbidity and mortality	2	2	–	1	4
Factors influencing health status and contact with health services	9	10	10	4	8
Others	20	29	45	70	65
Diseases unspecified	572	518	468	432	354
Unknown	8	30	5	1	–
Total	2,596	2,814	2,617	2,615	2,676

"Target Diseases" have been aggregated by adding "Others" and "Diseases unspecified" to the large classification (chapter) of WHO's International Statistical Classification of Diseases and Related Health Problems (ICD-10, 2013).
AMED confers one of the ICD-10 classification of diseases as a main "Target Diseases" for each project. "Others" means awarded projects targeting diseases that are not possible to classify in ICD-10.
The category of "Diseases unspecified" includes research projects supporting the cross-disease research infrastructure, as well as basic research projects that have not yet specified "Target Diseases" but may target a wide variety of diseases in the future. ICD-10 uses "Codes for special purposes" for a provisional assignment of new diseases of uncertain etiology or emergency use, and COVID-19 has been given a code for special purposes. In this table, it is displayed as COVID-19.
Among the AMED R&D projects, the projects to which codes for special purposes apply consisted almost entirely of COVID-19 except two projects in FY2021 and one project in FY2022.
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from this figure because necessary information was not available.
The data bars in this table assume, for each fiscal year, the value of 100 for the "Target Diseases" of the largest number of projects in the year, and illustrate the size of the respective "Target Diseases" by relative ratio. However, the "Unknown" category is excluded.

1. Promotion of R&D

1.4 By Target Disease 2) R&D Funding

Table 1.4.2 Trends in R&D funding by Target Disease

Target Disease	R&D funding (Billion JPY)				
	FY2019	FY2020	FY2021	FY2022	FY2023
Certain infectious and parasitic diseases	10.4	9.6	23.1	13.8	31.8
COVID-19	3.0	39.8	30.3	16.5	3.8
Cancer (neoplasms)	26.5	23.4	32.2	31.3	30.2
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1.7	1.3	1.0	1.2	4.9
Endocrine, nutritional and metabolic diseases	3.8	3.2	5.4	4.5	5.6
Mental and behavioural disorders	5.3	7.8	6.5	9.0	6.2
Diseases of the nervous system	9.5	9.1	10.6	14.8	20.4
Diseases of the circulatory system	8.9	5.8	6.9	6.5	6.2
Diseases of the respiratory system	1.4	3.8	3.2	2.4	4.9
Diseases of the digestive system	3.7	3.1	3.0	3.0	5.5
Diseases of the eye and adnexa	2.4	1.7	1.6	1.5	2.9
Diseases of the ear and mastoid process	0.3	0.4	0.3	0.4	0.5
Diseases of the skin and subcutaneous tissue	1.5	1.0	1.3	1.7	1.8
Diseases of the musculoskeletal system and connective tissue	2.0	2.6	2.7	3.4	3.5
Diseases of the genitourinary system	1.4	1.8	1.3	1.4	1.5
Pregnancy, childbirth and the puerperium	0.2	0.2	0.2	0.6	0.3
Certain conditions originating in the perinatal period	0.2	0.4	0.5	0.5	0.5
Congenital malformations, deformations and chromosomal abnormalities	2.2	1.8	2.1	2.1	0.5
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	2.4	3.0	1.2	1.8	0.2
Injury, poisoning and certain other consequences of external causes	2.2	2.5	2.6	2.1	0.1
External causes of morbidity and mortality	0.02	0.02	–	0.01	0.2
Factors influencing health status and contact with health services	0.3	0.5	0.3	0.2	0.2
Others	2.6	1.3	1.5	4.7	4.9
Diseases unspecified	37.0	53.1	39.8	37.7	29.9
Unknown	0.5	0.8	0.1	0.01	–
Total	129.5	177.9	177.7	160.9	166.4

"Target Diseases" have been aggregated by adding "Others" and "Diseases unspecified" to the large classification (chapter) of WHO's International Statistical Classification of Diseases and Related Health Problems (ICD-10, 2013).
AMED confers one of the ICD-10 classification of diseases as a main "Target Diseases" for each project. "Others" means awarded projects targeting diseases that are not possible to classify in ICD-10.
The category of "Diseases unspecified" includes research projects supporting the cross-disease research infrastructure, as well as basic research projects that have not yet specified "Target Diseases" but may target a wide variety of diseases in the future. ICD-10 uses "Codes for special purposes" for a provisional assignment of new diseases of uncertain etiology or emergency use, and COVID-19 has been given a code for special purposes. In this table, it is displayed as COVID-19.
Among the AMED R&D projects, the projects to which codes for special purposes apply consisted almost entirely of COVID-19 except two projects in FY2021 and one project in FY2022.
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from this figure because necessary information was not available.
The data bars in this table assume, for each fiscal year, the value of 100 for the "Target Diseases" of the largest number of projects in the year, and illustrate the size of the respective "Target Diseases" by relative ratio. However, the "Unknown" category is excluded.

1. Promotion of R&D

1.5 By Nature of Research 1) No. of Projects and R&D Funding in FY2023

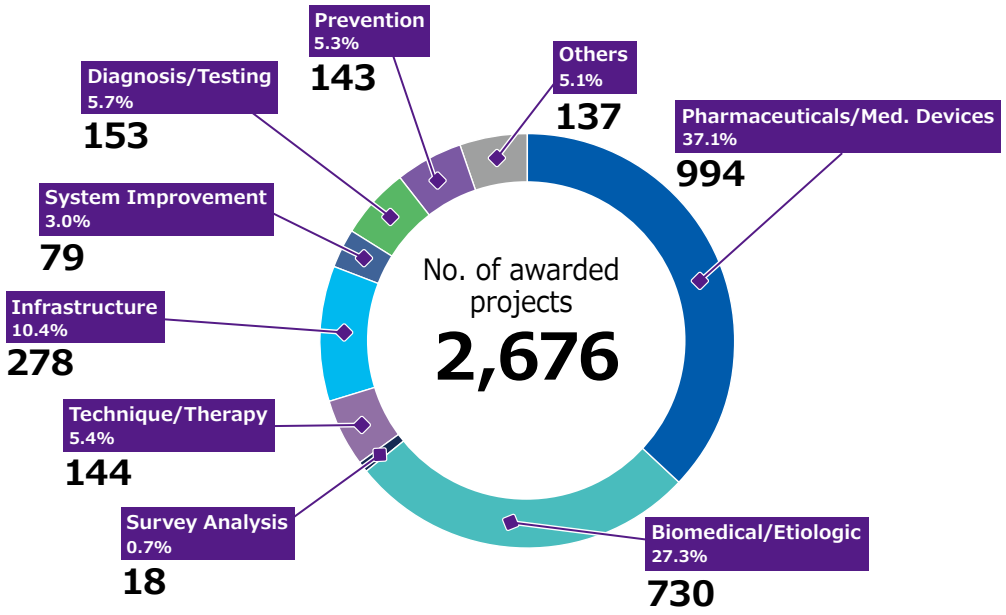

Fig. 1.5.1 No. of awarded projects by Nature of Research in FY2023

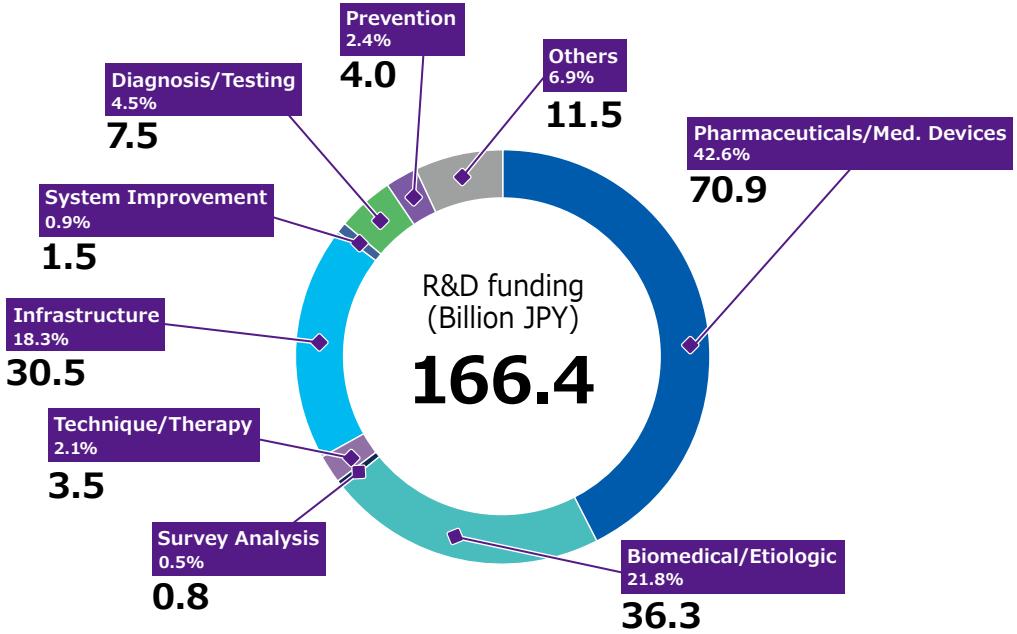

Fig. 1.5.2 R&D funding by Nature of Research in FY2023

Table 1.5.1 No. of awarded projects and R&D funding by Nature of Research in FY2023

Nature of Research	Abbreviation	No. of awarded projects	R&D funding (Billion JPY)
Pharmaceutical/Medical Device Development	Pharmaceuticals/Med. Devices	994	70.9
Basic Biomedical/Etiologic Studies	Biomedical/Etiologic	730	36.3
Fact-finding Survey Analysis	Survey Analysis	18	0.8
Medical Technique/Standard Therapy Dev.	Technique/Therapy	144	3.5
Research/Drug Discovery Infrastructure Development	Infrastructure	278	30.5
Regulatory/Nursing System Improvement and Technical Support	System Improvement	79	1.5
Development, Establishment, and Validation of New Diagnostic/Testing Methods and Systems	Diagnosis/Testing	153	7.5
Evidence Building for Prevention	Prevention	143	4.0
Others	Others	137	11.5
Total		2,676	166.4

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

1. Promotion of R&D

1.5 By Nature of Research 2) No. of Projects

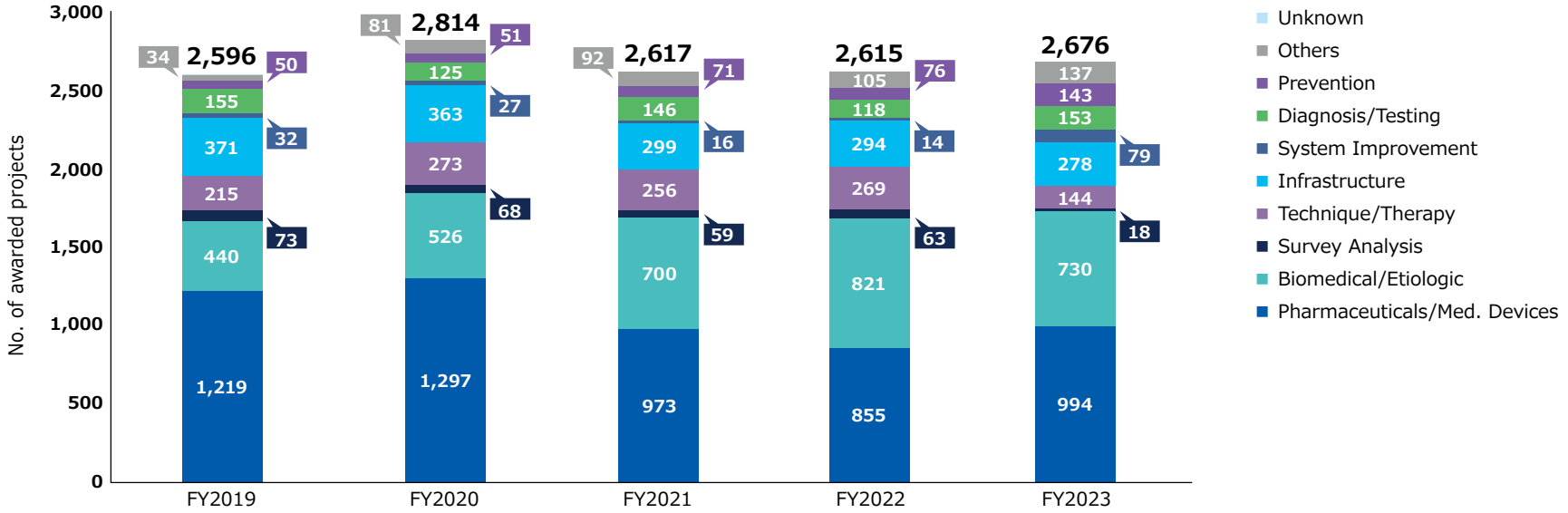

Fig. 1.5.3 Trends in no. of awarded projects by Nature of Research

Table 1.5.2 Trends in no. of awarded projects by Nature of Research

Nature of Research	Abbreviation	No. of awarded projects				
		FY2019	FY2020	FY2021	FY2022	FY2023
Pharmaceutical/Medical Device Development	Pharmaceuticals/Med. Devices	1,219	1,297	973	855	994
Basic Biomedical/Etiologic Studies	Biomedical/Etiologic	440	526	700	821	730
Fact-finding Survey Analysis	Survey Analysis	73	68	59	63	18
Medical Technique/Standard Therapy Dev.	Technique/Therapy	215	273	256	269	144
Research/Drug Discovery Infrastructure Development	Infrastructure	371	363	299	294	278
Regulatory/Nursing System Improvement and Technical Support	System Improvement	32	27	16	14	79
Development, Establishment, and Validation of New Diagnostic/Testing Methods and Systems	Diagnosis/Testing	155	125	146	118	153
Evidence Building for Prevention	Prevention	50	51	71	76	143
Others	Others	34	81	92	105	137
Unknown	Unknown	7	3	5	–	–
Total		2,596	2,814	2,617	2,615	2,676

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the Natures of Research have been omitted in the graph.

1. Promotion of R&D

1.5 By Nature of Research 3) R&D Funding

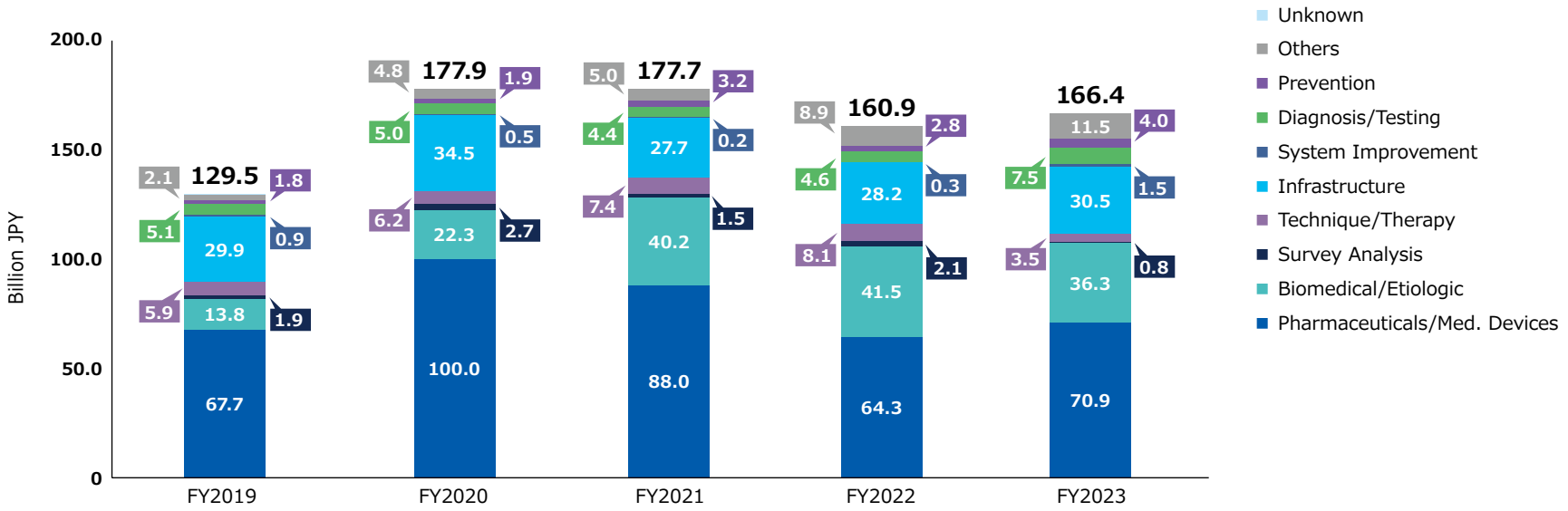

Fig. 1.5.4 Trends in R&D funding by Nature of Research

Table 1.5.3 Trends in R&D funding by Nature of Research

Nature of Research	Abbreviation	R&D funding(Billion JPY)				
		FY2019	FY2020	FY2021	FY2022	FY2023
Pharmaceutical/Medical Device Development	Pharmaceuticals/Med. Devices	67.7	100.0	88.0	64.3	70.9
Basic Biomedical/Etiologic Studies	Biomedical/Etiologic	13.8	22.3	40.2	41.5	36.3
Fact-finding Survey Analysis	Survey Analysis	1.9	2.7	1.5	2.1	0.8
Medical Technique/Standard Therapy Dev.	Technique/Therapy	5.9	6.2	7.4	8.1	3.5
Research/Drug Discovery Infrastructure Development	Infrastructure	29.9	34.5	27.7	28.2	30.5
Regulatory/Nursing System Improvement and Technical Support	System Improvement	0.9	0.5	0.2	0.3	1.5
Development, Establishment, and Validation of New Diagnostic/Testing Methods and Systems	Diagnosis/Testing	5.1	5.0	4.4	4.6	7.5
Evidence Building for Prevention	Prevention	1.8	1.9	3.2	2.8	4.0
Others	Others	2.1	4.8	5.0	8.9	11.5
Unknown	Unknown	0.5	0.03	0.1	–	–
Total		129.5	177.9	177.7	160.9	166.4

Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the Natures of Research have been omitted in the graph.

1. Promotion of R&D

1.6 By Disease Area : No. of Projects and R&D Funding

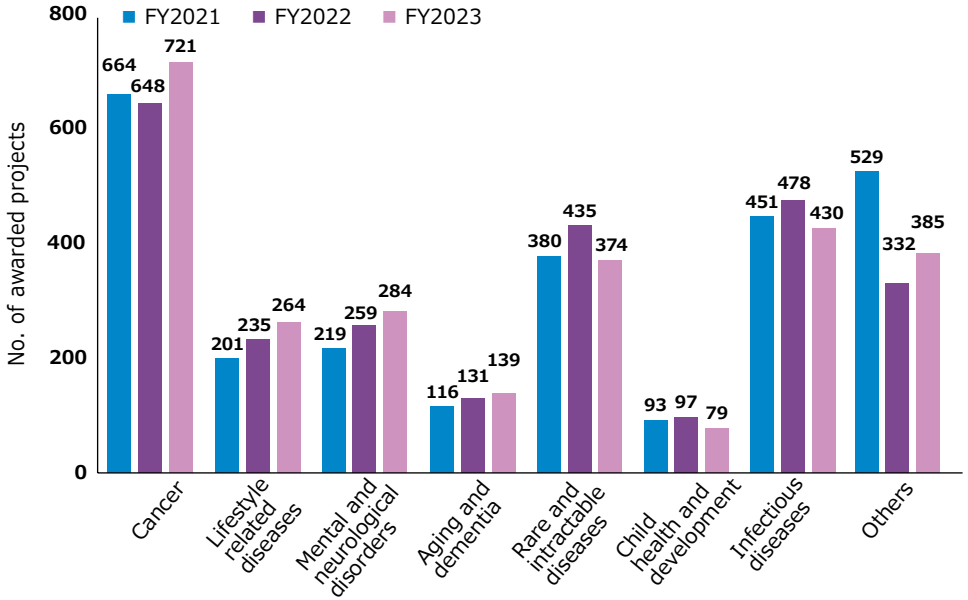

Fig. 1.6.1 No. of awarded projects by Disease Area

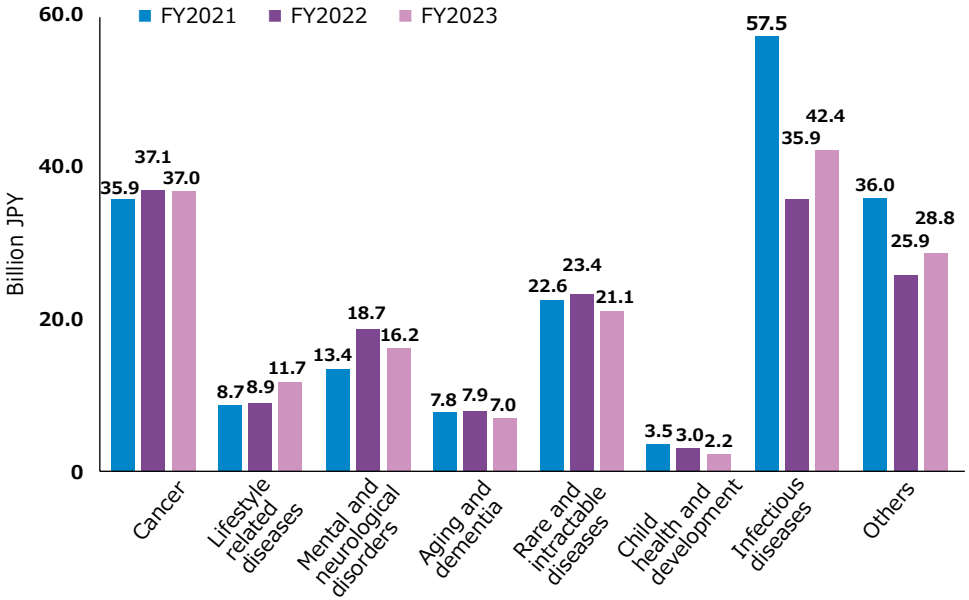

Fig. 1.6.2 R&D funding by Disease Area

Table 1.6.1 No. of awarded projects and R&D funding by Disease Area

Disease Area	No. of awarded projects				R&D funding(Billion JPY)			
	FY2020*	FY2021	FY2022	FY2023	FY2020*	FY2021	FY2022	FY2023
Cancer	617	664	648	721	26.0	35.9	37.1	37.0
Lifestyle related diseases	246	201	235	264	8.0	8.7	8.9	11.7
Mental and neurological disorders	275	219	259	284	10.5	13.4	18.7	16.2
Aging and dementia	179	116	131	139	10.8	7.8	7.9	7.0
Rare and intractable diseases	433	380	435	374	22.5	22.6	23.4	21.1
Child health and development	64	93	97	79	1.6	3.5	3.0	2.2
Infectious diseases	631	451	478	430	56.6	57.5	35.9	42.4
Others	735	529	332	385	58.8	36.0	25.9	28.8

In FY2021 there were multiple choices for disease areas among 22 projects, and all choices were aggregated. “Others” includes basic R&D projects on non-specifiable diseases and R&D projects on research/drug discovery infrastructure development. Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

* Since multiple choices for a single awarded project were possible in FY2020, the reference values are presented in Tab 1.6.1. They are not shown on the graphs.

1. Promotion of R&D

1.7 By R&D Objective : No. of Projects and R&D Funding

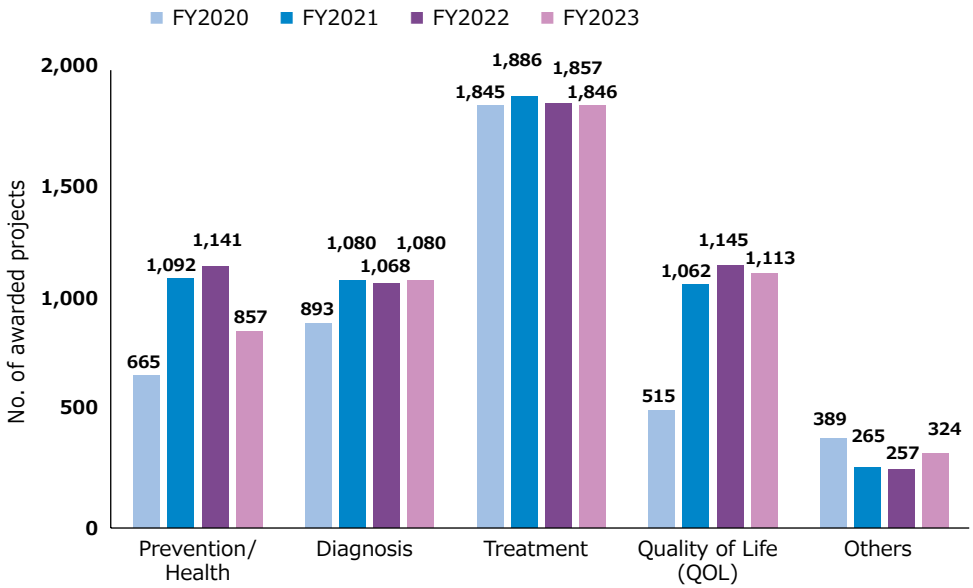

Fig. 1.7.1 No. of awarded projects by R&D Objective

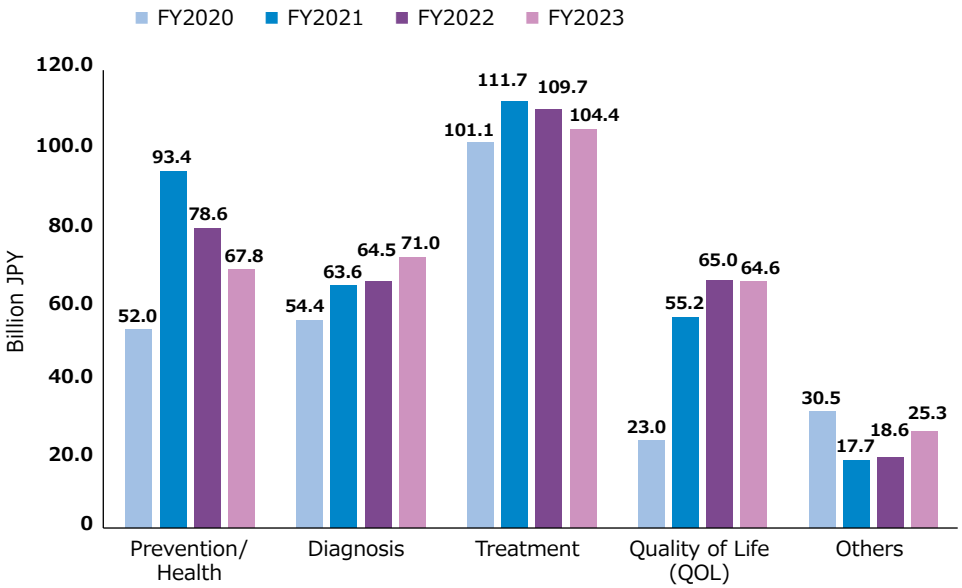

Fig. 1.7.2 R&D funding by R&D Objective

Table 1.7.1 No. of awarded projects and R&D funding by R&D Objective

R&D Objective	No. of awarded projects				R&D funding (Billion JPY)			
	FY2020	FY2021	FY2022	FY2023	FY2020	FY2021	FY2022	FY2023
Prevention/Health	665	1,092	1,141	857	52.0	93.4	78.6	67.8
Diagnosis	893	1,080	1,068	1,080	54.4	63.6	64.5	71.0
Treatment	1,845	1,886	1,857	1,846	101.1	111.7	109.7	104.4
Quality of Life (QOL)	515	1,062	1,145	1,113	23.0	55.2	65.0	64.6
Others	389	265	257	324	30.5	17.7	18.6	25.3

For a single awarded project, there were possible in multiple choices for develop objectives.
"Others" includes both of R&D projects on "Research/Drug Discovery Infrastructure Development" and "Basic Biomedical/Etiologic Studies."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.1 By R&D Phase 1) No. of Projects and R&D Funding in FY2023

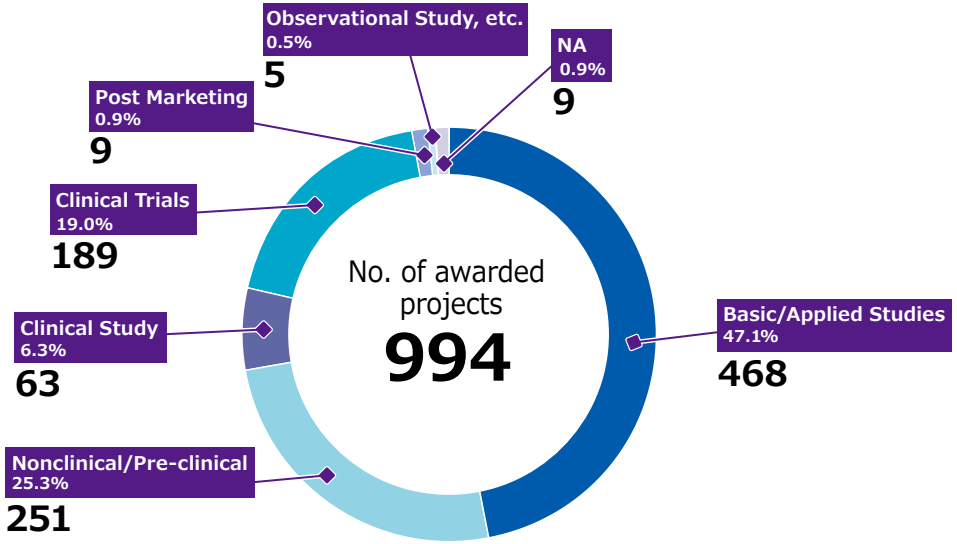

Fig. 2.1.1 No. of awarded projects by R&D Phase of research for "Pharmaceutical/Medical Device Development" in FY2023

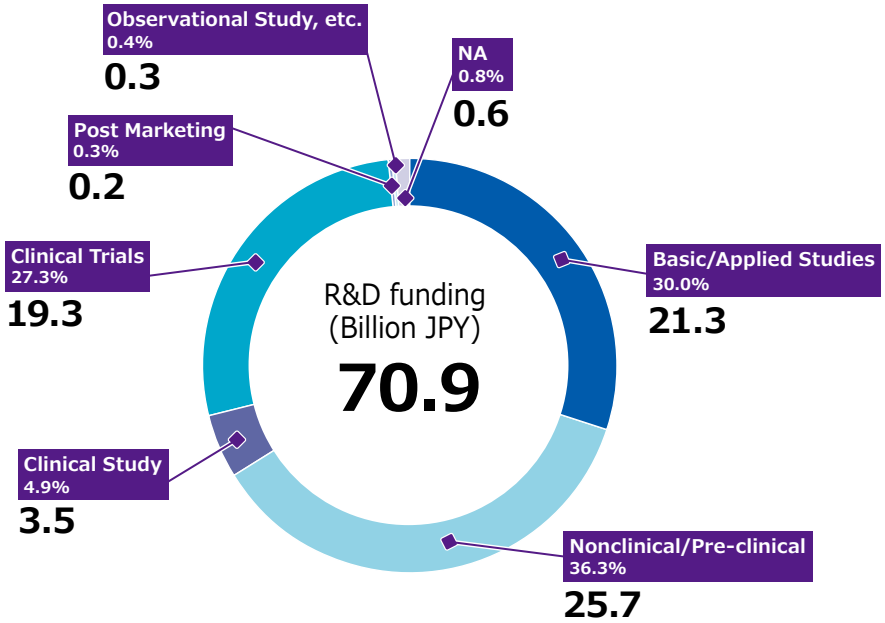

Fig. 2.1.2 R&D funding by R&D Phase of research for "Pharmaceutical/Medical Device Development" in FY2023

Table 2.1.1 No. of awarded projects and R&D funding by R&D Phase of research for "Pharmaceutical/Medical Device Development" in FY2023

R&D Phase	No. of awarded projects	R&D funding (Billion JPY)
Basic/Applied Studies	468	21.3
Nonclinical/Pre-clinical	251	25.7
Clinical Study	63	3.5
Clinical Trials	189	19.3
Post Marketing	9	0.2
Observational Study, etc.	5	0.3
NA	9	0.6
Total	994	70.9

These data show the " R&D Phase" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.1 By R&D Phase 2) No. of Projects

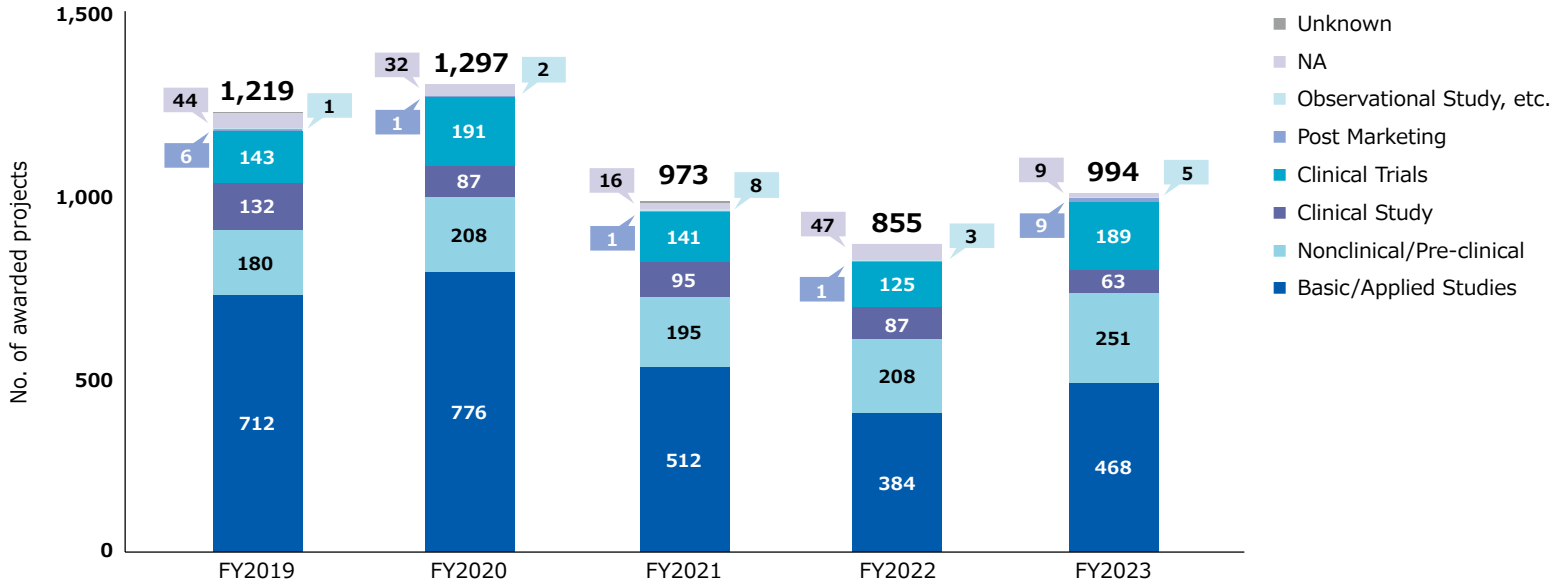

Fig. 2.1.3 Trends in no. of awarded projects by R&D Phase of research for "Pharmaceutical/Medical Device Development"

Table 2.1.2 Trends in no. of awarded projects by R&D Phase of research for "Pharmaceutical/Medical Device Development"

R&D Phase	No. of awarded projects				
	FY2019	FY2020	FY2021	FY2022	FY2023
Basic/Applied Studies	712	776	512	384	468
Nonclinical/Pre-clinical	180	208	195	208	251
Clinical Study	132	87	95	87	63
Clinical Trials	143	191	141	125	189
Post Marketing	6	1	1	1	9
Observational Study, etc.	1	2	8	3	5
NA	44	32	16	47	9
Unknown	1	–	5	–	–
Total	1,219	1,297	973	855	994

These data show the " R&D Phase" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the "R&D Phase" categories have been omitted in the graph.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.1 By R&D Phase 3) R&D Funding

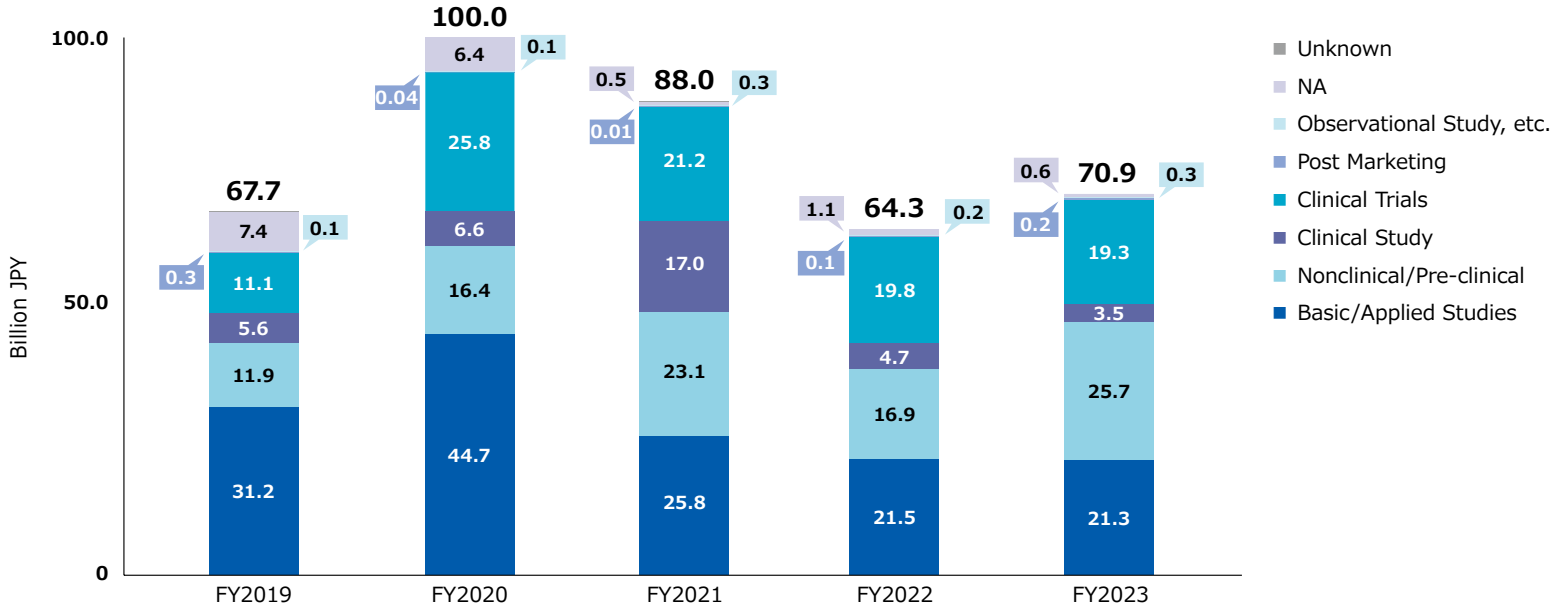

Fig. 2.1.4 Trends in R&D funding by R&D Phase of research for "Pharmaceutical/Medical Device Development"

Table 2.1.3 Trends in R&D funding by R&D Phase of research for "Pharmaceutical/Medical Device Development"

R&D Phase	R&D funding (Billion JPY)				
	FY2019	FY2020	FY2021	FY2022	FY2023
Basic/Applied Studies	31.2	44.7	25.8	21.5	21.3
Nonclinical/Pre-clinical	11.9	16.4	23.1	16.9	25.7
Clinical Study	5.6	6.6	17.0	4.7	3.5
Clinical Trials	11.1	25.8	21.2	19.8	19.3
Post Marketing	0.3	0.04	0.01	0.1	0.2
Observational Study, etc.	0.1	0.1	0.3	0.2	0.3
NA	7.4	6.4	0.5	1.1	0.6
Unknown	0.1	–	0.2	–	–
Total	67.7	100.0	88.0	64.3	70.9

These data show the " R&D Phase" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the "R&D Phase" categories have been omitted in the graph.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.2 By Product Approval Category 1) No. of Projects and R&D Funding in FY2023

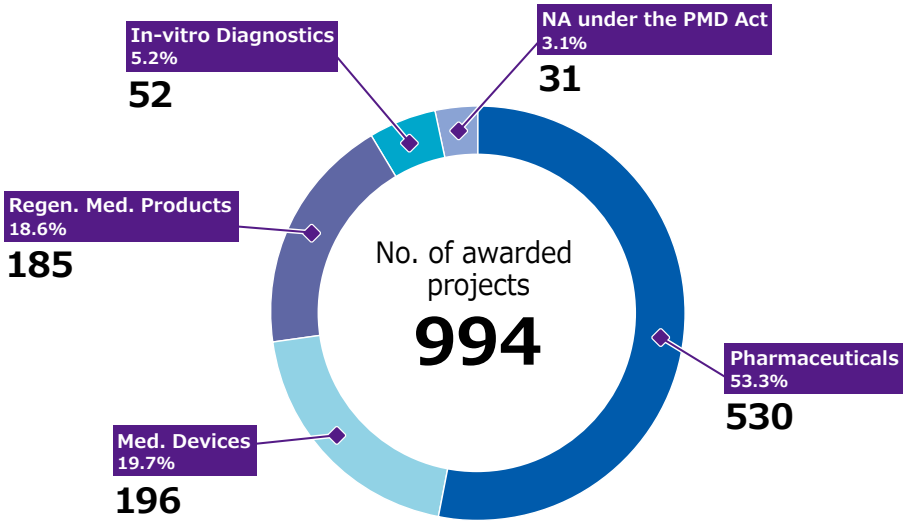

Fig. 2.2.1 No. of awarded projects by Product Approval Category of research for "Pharmaceutical/Medical Device Development" in FY2023

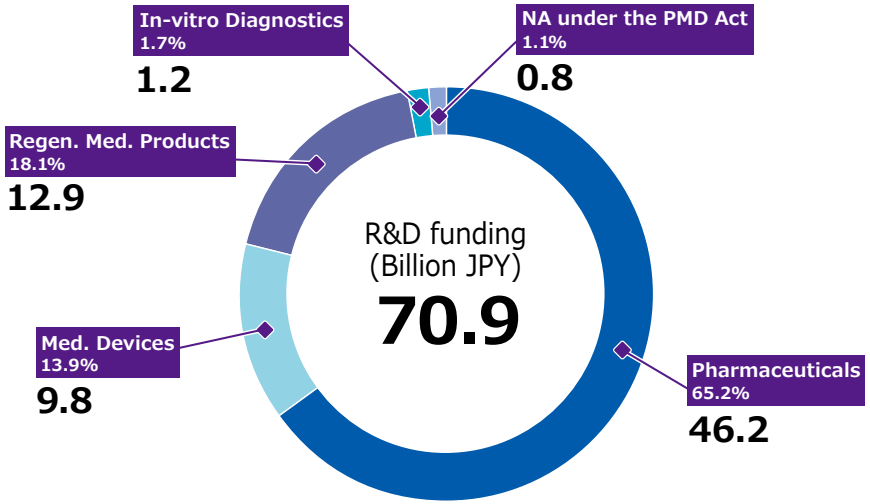

Fig. 2.2.2 R&D funding by Product Approval Category of research for "Pharmaceutical/Medical Device Development" in FY2023

Table 2.2.1 No. of awarded projects and R&D funding by Product Approval Category of research for "Pharmaceutical/Medical Device Development" in FY2023

Product Approval Category	No. of awarded projects	R&D funding (Billion JPY)
Pharmaceuticals	530	46.2
Medical Devices	196	9.8
Regenerative Medicine Products	185	12.9
In-vitro Diagnostics	52	1.2
NA under the PMD Act	31	0.8
Total	994	70.9

These data show the " Product Approval Categories" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.2 By Product Approval Category 2) No. of Projects

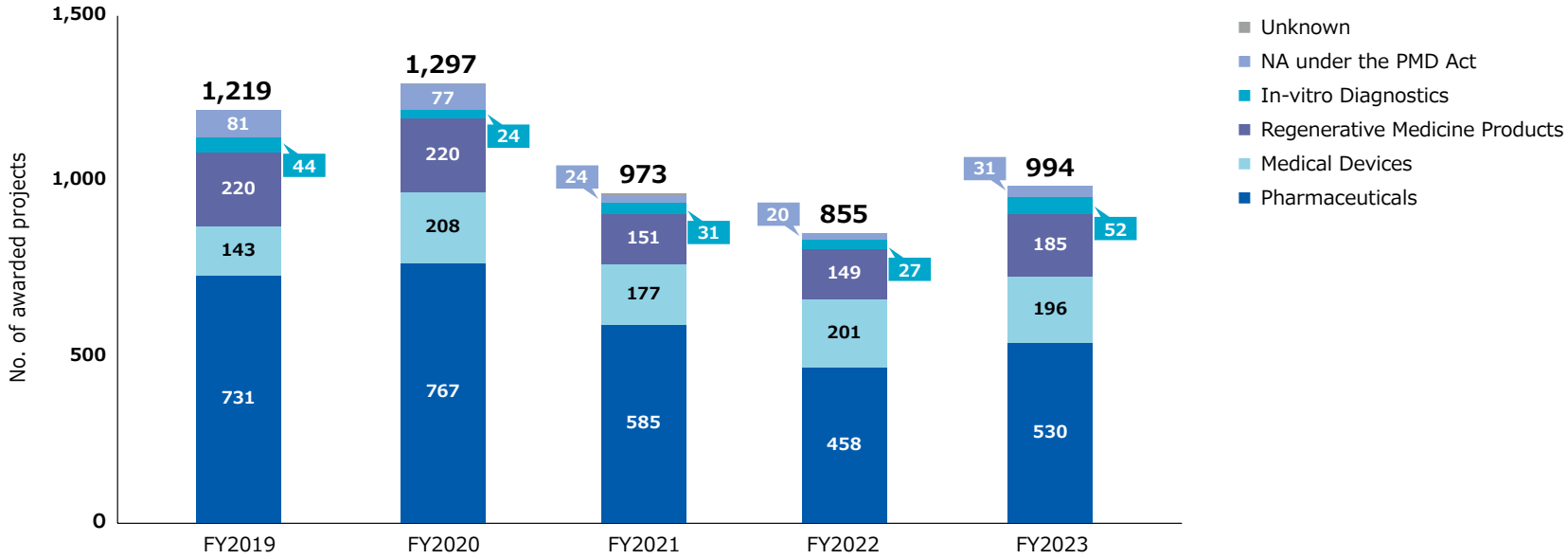

Fig. 2.2.3 Trends in no. of awarded projects by Product Approval Category of research for "Pharmaceutical/Medical Device Development"

Table 2.2.2 Trends in no. of awarded projects by Product Approval Category of research for "Pharmaceutical/Medical Device Development"

Product Approval Category	No. of awarded projects				
	FY2019	FY2020	FY2021	FY2022	FY2023
Pharmaceuticals	731	767	585	458	530
Medical Devices	143	208	177	201	196
Regenerative Medicine Products	220	220	151	149	185
In-vitro Diagnostics	44	24	31	27	52
NA under the PMD Act	81	77	24	20	31
Unknown	–	1	5	–	–
Total	1,219	1,297	973	855	994

These data show the " Product Approval Categories" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the "Product Approval Category" have been omitted in the graph.

2. R&D Projects for Pharmaceutical/Medical Device Development

2.2 By Product Approval Category 3) R&D Funding

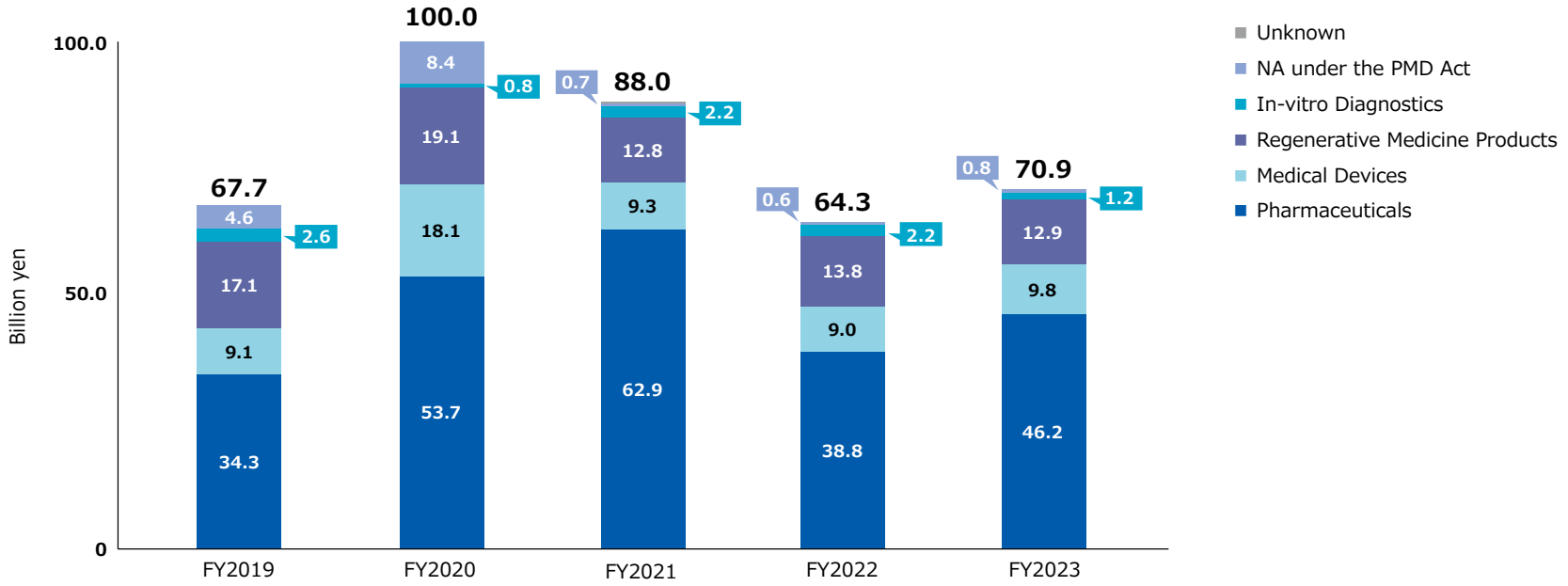

Fig. 2.2.4 Trends in R&D funding by Product Approval Category of research for "Pharmaceutical/Medical Device Development"

Table 2.2.3 Trends in R&D funding by Product Approval Category of research for "Pharmaceutical/Medical Device Development"

Product Approval Category	R&D funding (Billion JPY)				
	FY2019	FY2020	FY2021	FY2022	FY2023
Pharmaceuticals	34.3	53.7	62.9	38.8	46.2
Medical Devices	9.1	18.1	9.3	9.0	9.8
Regenerative Medicine Products	17.1	19.1	12.8	13.8	12.9
In-vitro Diagnostics	2.6	0.8	2.2	2.2	1.2
NA under the PMD Act	4.6	8.4	0.7	0.6	0.8
Unknown	–	0.01	0.2	–	–
Total	67.7	100.0	88.0	64.3	70.9

These data show the " Product Approval Categories" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
Created based on AMED data (as of October 2024). Cyclic Innovation for Clinical Empowerment (CiCLE) is excluded from these figures because necessary information was not available.
The numerical values for "Unknown" in the "Product Approval Category" have been omitted in the graph.

3. Special Fund Programs

3.1 No. of Projects and R&D Funding (COVID-19, Research Institution)

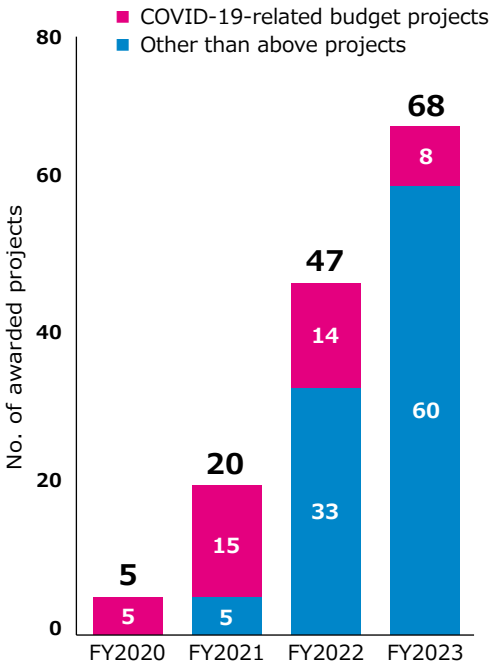

Fig. 3.1.1 No. of awarded projects

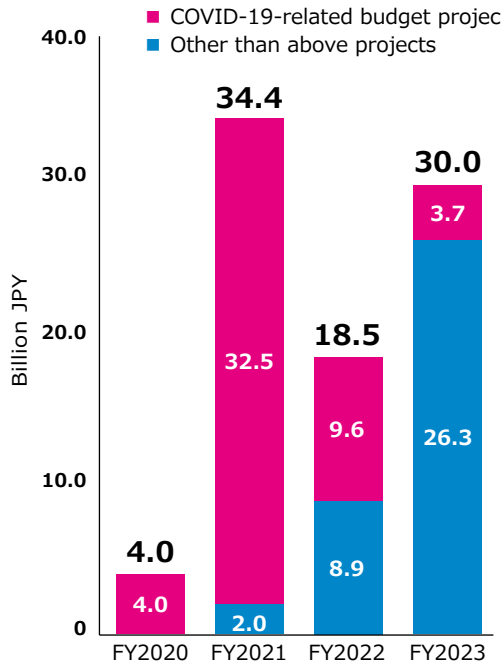

Fig. 3.1.2 R&D funding

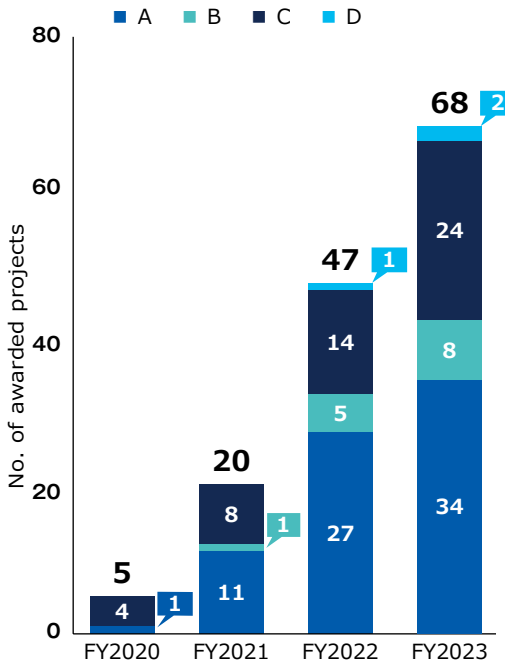

Fig. 3.1.3 No. of awarded projects by Types of Research Institutions

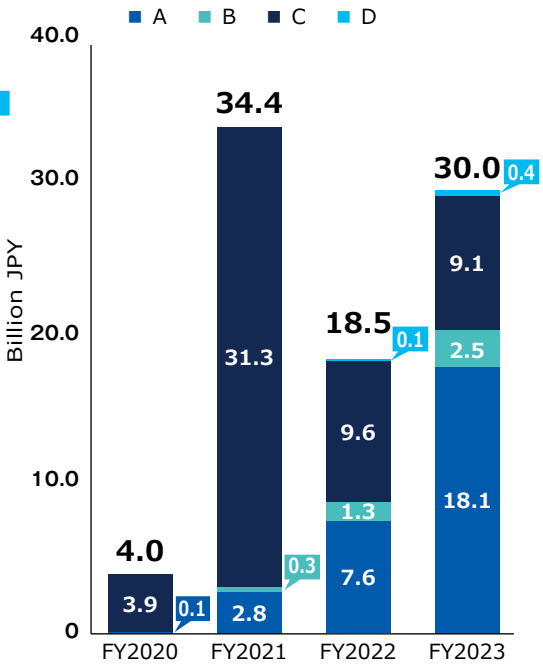

Fig. 3.1.4 R&D funding by Types of Research Institutions

Table 3.1.1 No. of awarded projects and R&D funding

	FY2020			FY2021			FY2022			FY2023		
	AMED total	Special fund programs	COVID-19 *2	AMED total	Special fund programs	COVID-19 *2	AMED total	Special fund programs *1	COVID-19 *2	AMED total	Special fund programs *1	COVID-19 *2
No. of awarded projects	2,814	5	5	2,617	20	15	2,615	47	14	2,676	68	8
R&D funding (Billion JPY)	177.9	4.0	4.0	177.7	34.4	32.5	160.9	18.5	9.6	166.4	30.0	3.7

*1 Among the "Special fund programs," AMED provided 6.4 billion JPY in funding for 22 projects in FY2022, and 22.1 billion JPY for 40 projects in FY2023 through the Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA).

*2 COVID-19-related budget projects

Created based on AMED data (as of October 2024).

Table 3.1.2 No. of awarded projects and R&D funding by Types of Research Institutions

Type of Research Institution	FY2020		FY2021		FY2022		FY2023	
	No. of awarded projects	R&D funding (Billion JPY)	No. of awarded projects	R&D funding (Billion JPY)	No. of awarded projects	R&D funding (Billion JPY)	No. of awarded projects	R&D funding (Billion JPY)
Universities, etc. (A)	1	0.1	11	2.8	27	7.6	34	18.1
Incorporated Admin. Agencies/ Nat'l Research Institutes (B)	–	–	1	0.3	5	1.3	8	2.5
Companies, etc. (C)	4	3.9	8	31.3	14	9.6	24	9.1
Incorporated Foundations/ Associations, etc. (D)	–	–	–	–	1	0.1	2	0.4
Total	5	4.0	20	34.4	47	18.5	68	30.0

3. Special Fund Programs

3.2 By R&D Categorial Tag : No. of Projects and R&D Funding in FY2023

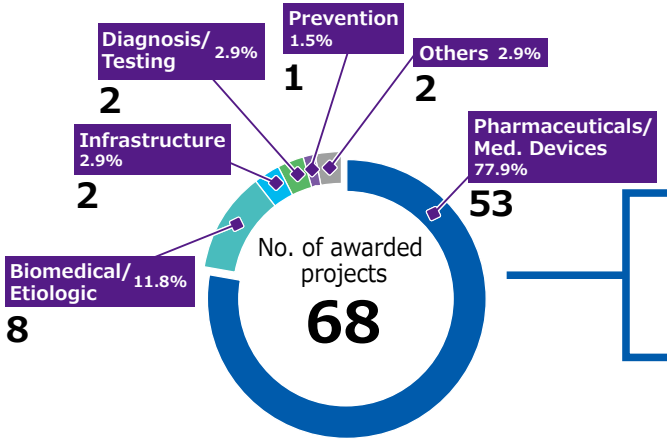

Fig. 3.2.1 No. of awarded projects by Nature of Research

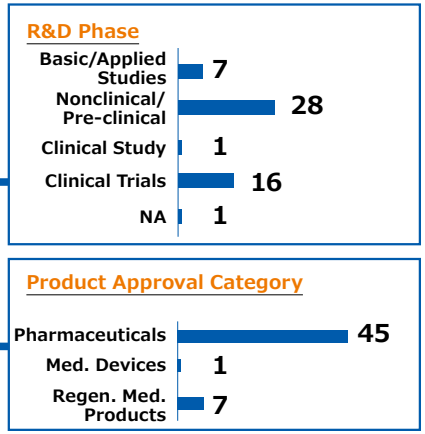

Fig. 3.2.2
No. of awarded projects by R&D Phase and Product Approval Category of research for "Pharmaceutical/Medical Device Development"

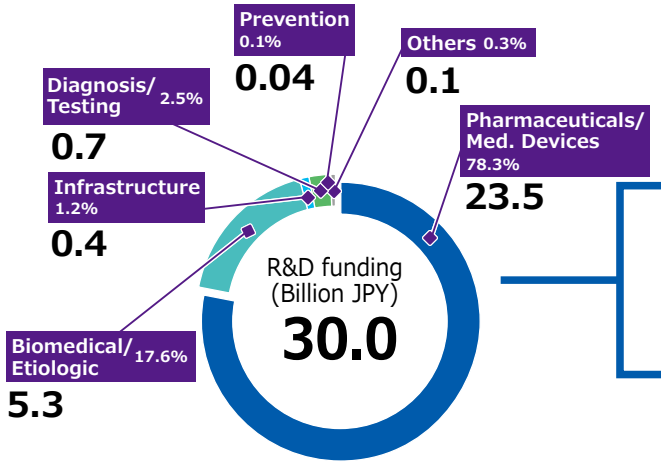

Fig. 3.2.3 R&D funding by Nature of Research

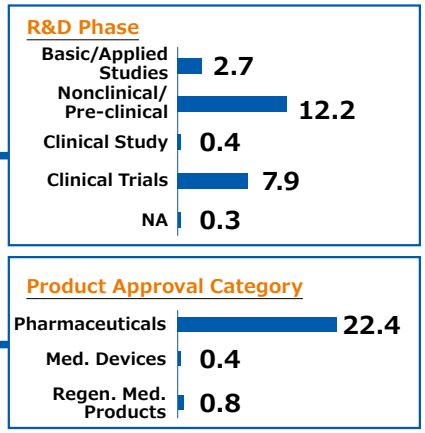

Fig. 3.2.4
R&D funding by R&D Phase and Product Approval Category of research for "Pharmaceutical/Medical Device Development"

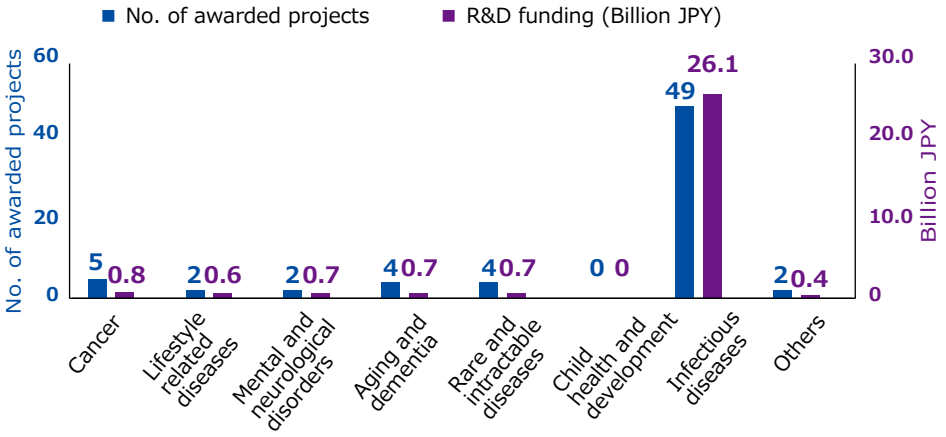

Fig. 3.2.5 No. of awarded projects and R&D funding by Disease Area

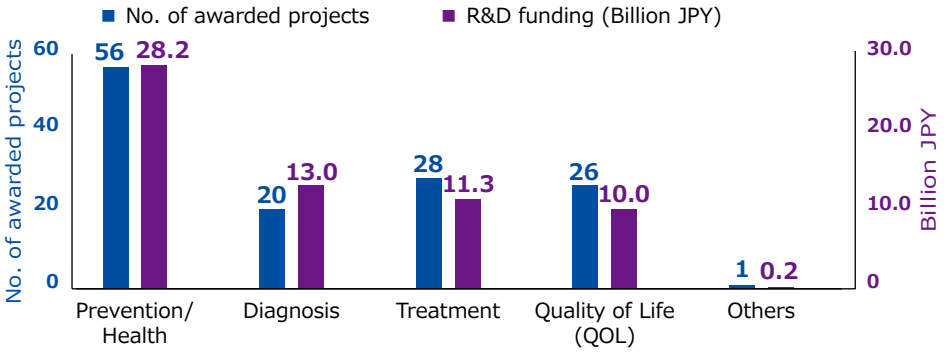

Fig. 3.2.6 No. of awarded projects and R&D funding by R&D Objectives

Created based on AMED data (as of October 2024).
Refer to "1.5 By Nature of Research" regarding the abbreviations for "Nature of Research."
The bar graphs show the "R&D Phases" and "Product Approval Categories" that are required to be attached to awarded projects for "Pharmaceutical/Medical Device Development."
In regard to "R&D Objective ," multiple objectives are possible for individual projects.

4. Awarding of Projects by AMED and New Principal Investigators (PIs)

4.1 No. of Applications and Newly Awarded Projects, and Success Rates

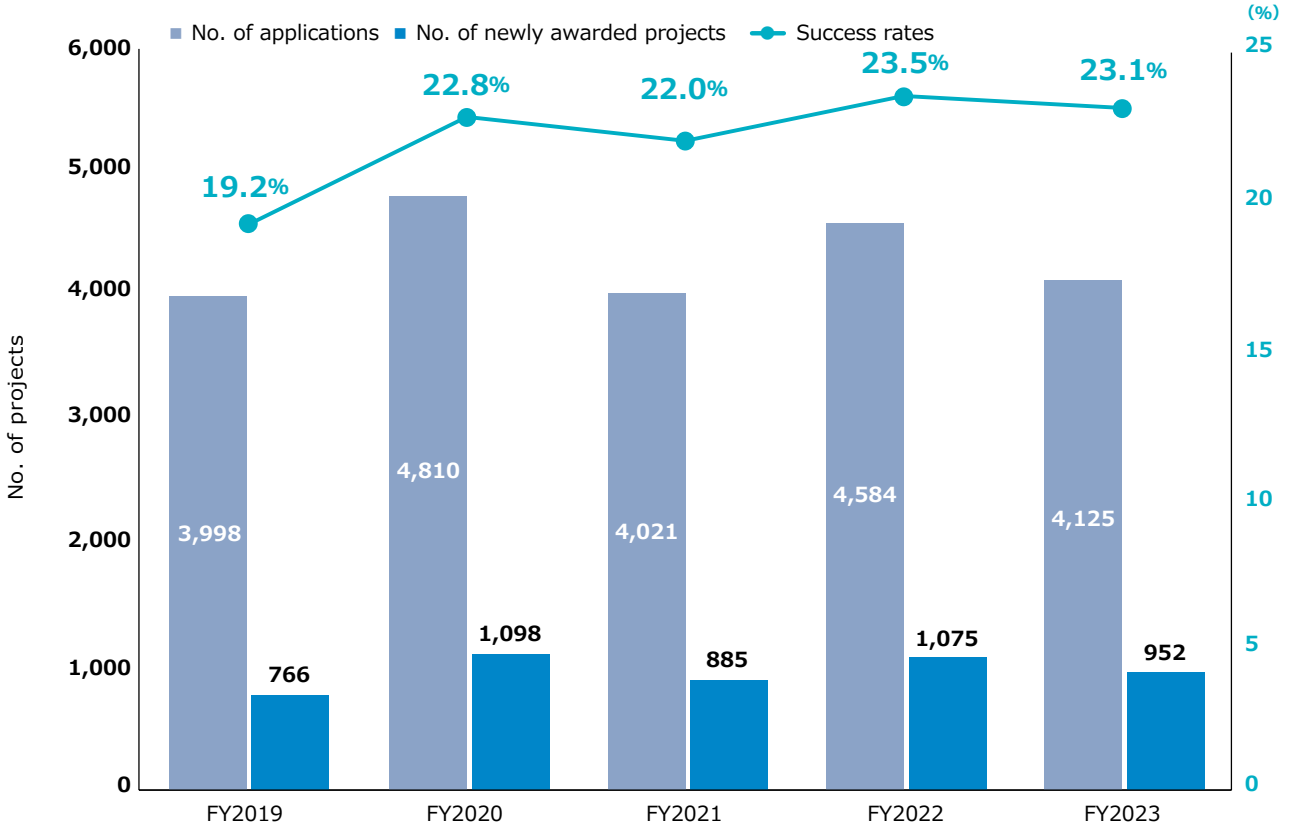

Fig. 4.1.1 Trends in no. of applications and newly awarded projects, and success rates

Table 4.1.1 Trends in no. of applications and newly awarded projects, and success rates

	FY2019	FY2020	FY2021	FY2022	FY2023
No. of applications	3,998	4,810	4,021	4,584	4,125
No. of newly awarded projects	766	1,098	885	1,075	952
Success rates	19.2%	22.8%	22.0%	23.5%	23.1%

Success rates are the percentage of all newly awarded projects to the number of applications.
They were calculated based on calls for proposals information by AMED (as of October 2024).

4. Awarding of Projects by AMED and New Principal Investigators (PIs)

4.2 New Principal Investigators (PIs) : No. by Gender and Average Age

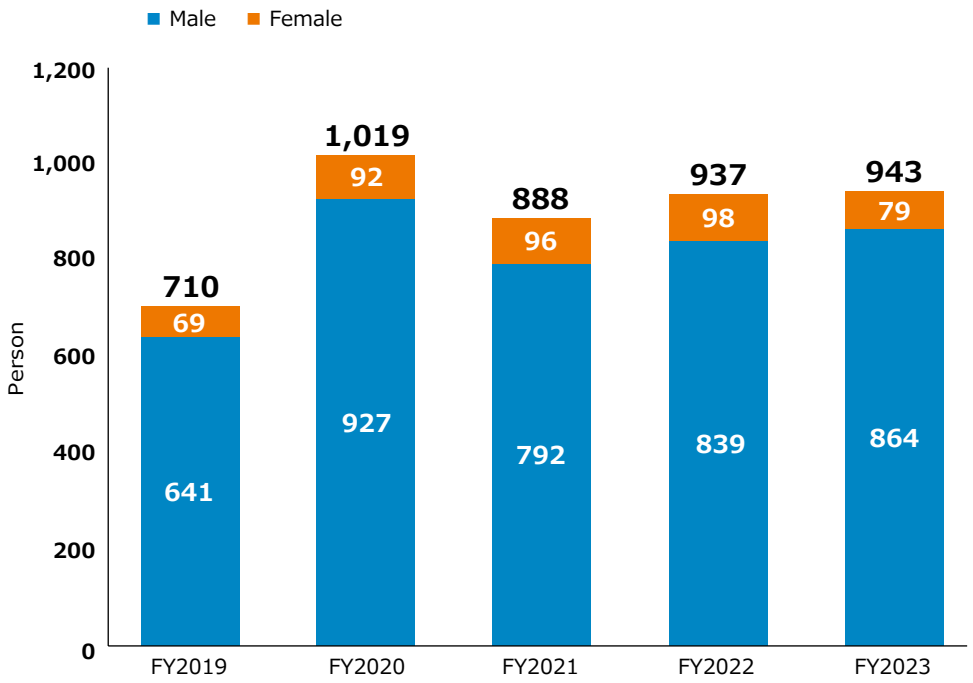

Fig. 4.2.1 Trends in no. of PIs by gender

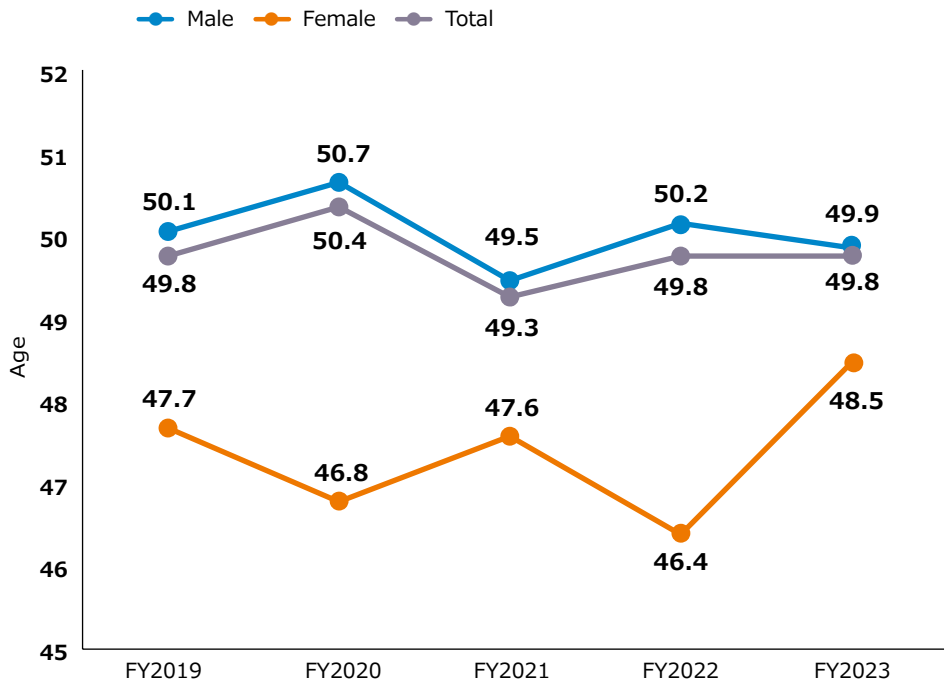

Fig. 4.2.2. Trends in average age of all PIs and by gender

Table 4.2.1 Trends in percentage of female PIs

	FY2019	FY2020	FY2021	FY2022	FY2023
Percentage of female PIs	9.7%	9.0%	10.8%	10.5%	8.4%

Table 4.2.2 Trends in average age of PIs

	FY2019	FY2020	FY2021	FY2022	FY2023
Male	50.1	50.7	49.5	50.2	49.9
Female	47.7	46.8	47.6	46.4	48.5
Total	49.8	50.4	49.3	49.8	49.8

The newly awarded projects for a certain fiscal year are the projects launched in that fiscal year.
The number of PIs is the aggregate number for the newly awarded projects in each fiscal year, and their ages are as of the start of each fiscal year of research launch based on their birth dates.
The figures and tables were produced using data for awarded projects from the Cross-ministerial R&D Management System (e-Rad) (all as of October 2024).
Note that data for which gender and birth date are unknown have been omitted.

4. Awarding of Projects by AMED and New Principal Investigators (PIs)

4.3 New Principal Investigators (PIs) : No. by Age Group 1) Total

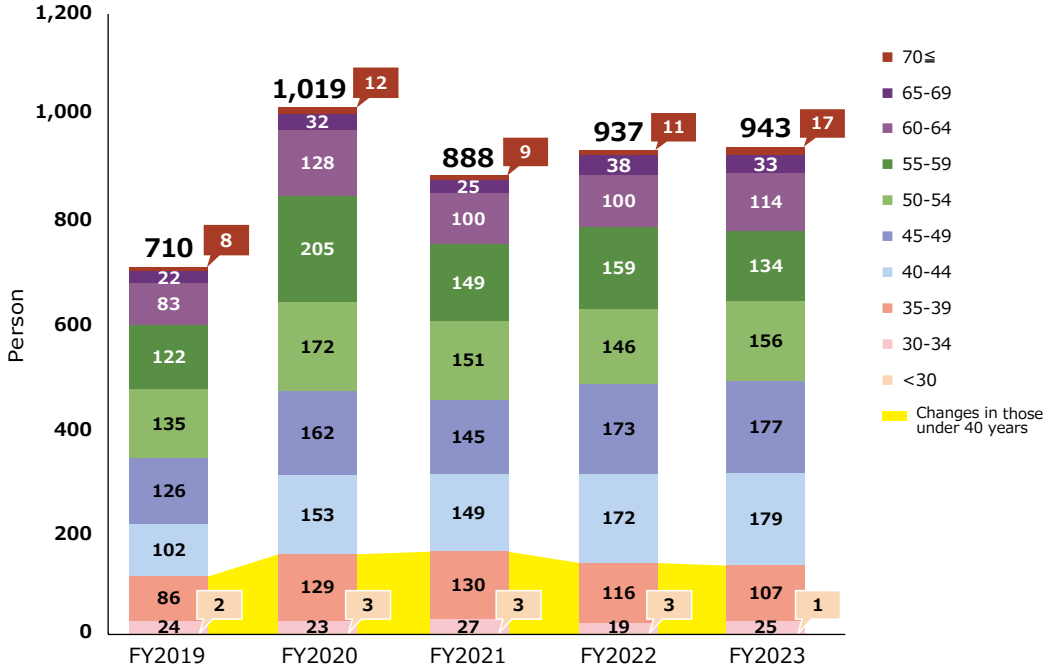

Fig. 4.3.1 Trends in no. of PIs by age group

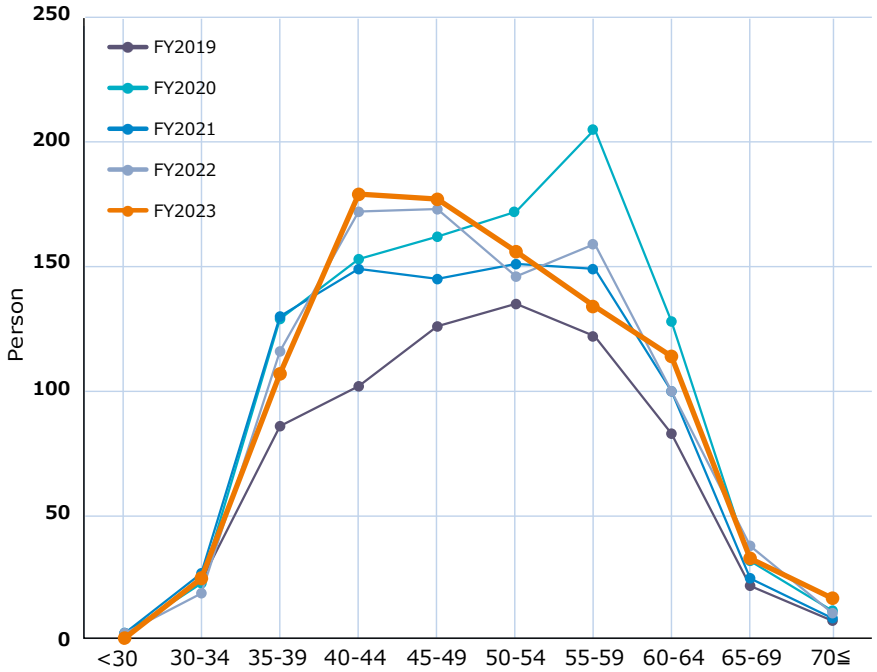

Fig. 4.3.2 Trends by fiscal year in average age of PIs by age group

Table 4.3.1 Trends in no. of PIs by age group

Age group	FY2019	FY2020	FY2021	FY2022	FY2023
<30	2	3	3	3	1
30-34	24	23	27	19	25
35-39	86	129	130	116	107
40-44	102	153	149	172	179
45-49	126	162	145	173	177
50-54	135	172	151	146	156
55-59	122	205	149	159	134
60-64	83	128	100	100	114
65-69	22	32	25	38	33
70≦	8	12	9	11	17
Total	710	1,019	888	937	943

The newly awarded projects for a certain fiscal year are the projects launched in that fiscal year.
They were calculated by age group based on the number of PIs is the aggregate number for the newly awarded projects in each fiscal year, and their ages are as of the start of each fiscal year of research launch based on their birth dates.
The figures and tables were produced using data from the Cross-ministerial R&D Management System (e-Rad) awarded projects (all status, as of October 2024).
Note that data for which gender and birth date are unknown have been omitted.

4. Awarding of Projects by AMED and New Principal Investigators (PIs)

4.3 New Principal Investigators (PIs) : No. by Age Group 2) Male PIs

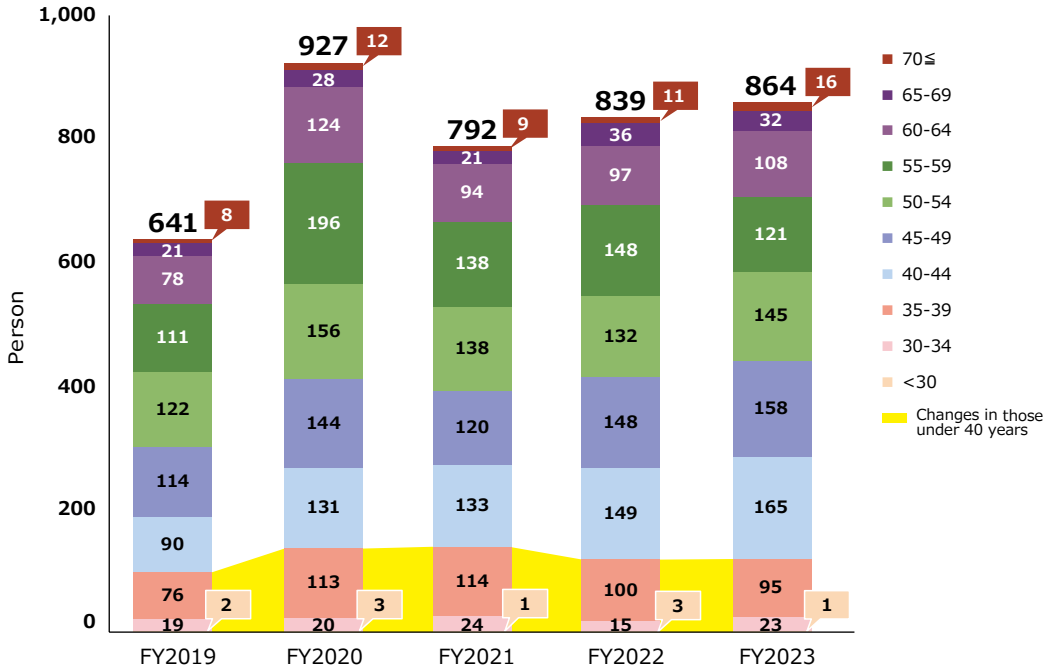

Fig. 4.3.3 Trends in no. of male PIs by age group

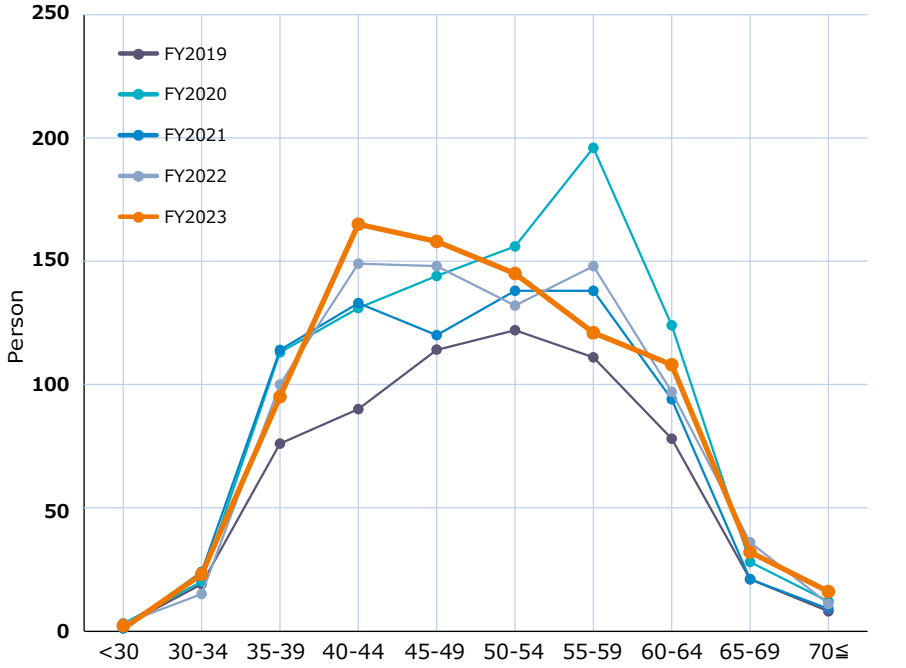

Fig. 4.3.4 Trends by fiscal year in average age of male PIs by age group

Table 4.3.2 Trends in no. of male PIs by age group

Age group	FY2019	FY2020	FY2021	FY2022	FY2023
<30	2	3	1	3	1
30-34	19	20	24	15	23
35-39	76	113	114	100	95
40-44	90	131	133	149	165
45-49	114	144	120	148	158
50-54	122	156	138	132	145
55-59	111	196	138	148	121
60-64	78	124	94	97	108
65-69	21	28	21	36	32
70≦	8	12	9	11	16
Total	641	927	792	839	864

The newly awarded projects for a certain fiscal year are the projects launched in that fiscal year.
They were calculated by age group based on the number of PIs is the aggregate number for the newly awarded projects in each fiscal year, and their ages are as of the start of each fiscal year of research launch based on their birth dates.
The figures and tables were produced using data from the Cross-ministerial R&D Management System (e-Rad) awarded projects (all status, as of October 2024).
Note that data for which gender and birth date are unknown have been omitted.

4. Awarding of Projects by AMED and New Principal Investigators (PIs)

4.3 New Principal Investigators (PIs) : No. by Age Group 3) Female PIs

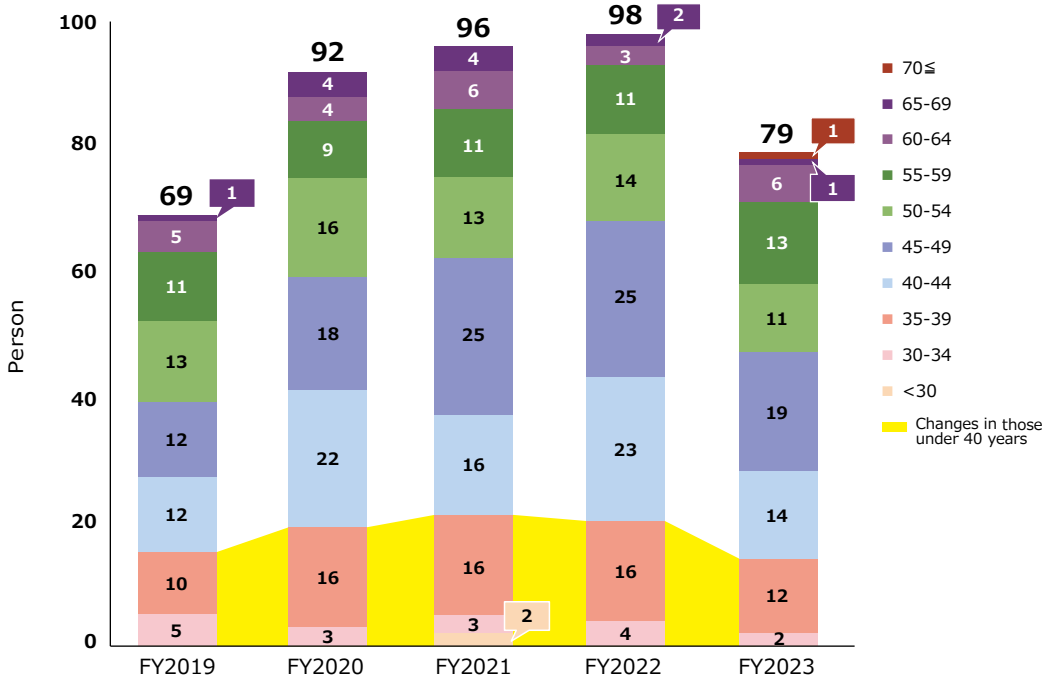

Fig. 4.3.5 Trends in no. of female PIs by age group

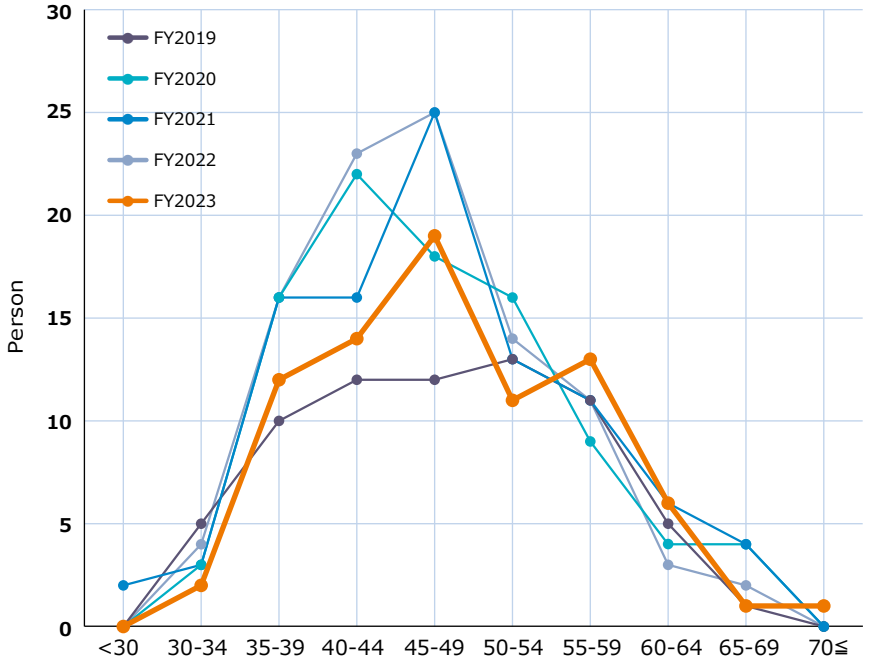

Fig. 4.3.6 Trends by fiscal year in average age of female PIs by age group

Table 4.3.5 Trends in no. of female PIs by age group

Age group	FY2019	FY2020	FY2021	FY2022	FY2023
<30	0	0	2	0	0
30-34	5	3	3	4	2
35-39	10	16	16	16	12
40-44	12	22	16	23	14
45-49	12	18	25	25	19
50-54	13	16	13	14	11
55-59	11	9	11	11	13
60-64	5	4	6	3	6
65-69	1	4	4	2	1
70≦	0	0	0	0	1
Total	69	92	96	98	79

The newly awarded projects for a certain fiscal year are the projects launched in that fiscal year.
They were calculated by age group based on the number of PIs is the aggregate number for the newly awarded projects in each fiscal year, and their ages are as of the start of each fiscal year of research launch based on their birth dates.
The figures and tables were produced using data from the Cross-ministerial R&D Management System (e-Rad) awarded projects (all status, as of October 2024).
Note that data for which gender and birth date are unknown have been omitted.

5. Supplementary Notes

5.1 Types of Research Institutions

Table 5.1 Types of Research Institutions

Category in the DataBook	Type of entity
Universities, etc.	National universities Public universities Private universities Inter-University Research Institute Corporations, etc.
Incorporated Admin. Agencies/ Nat'l Research Institutes	Incorporated Administrative Agencies National Research Institutes
Companies, etc.	Companies Medical Corporations, Social Welfare Corporations, etc.
Local public entities, etc.	Local public entities Local Incorporated Administrative Agencies
Incorporated Foundations/Associations, etc.	Incorporated Foundations Incorporated Associations Public Interest Corporations Special Corporations and Specially-authorized Corporations
Others	Religious Corporations Overseas institutions Others

From FY2022 junior colleges and colleges of technology have been moved from the "Others" to "Universities."

5. Supplementary Notes

5.2 Glossary

Term	Description
Awarded project	A general term for R&D projects and their equivalents that are funded by AMED including projects conducted at subsidiary institutions or other subcontracted institutions under projects selected by AMED.
COVID-19-related budget projects	Refers to the COVID-19-related R&D projects that AMED supported with supplementary budgets for COVID-19 countermeasures. The COVID-19-related budget projects in the DataBook are based on "AMED R&D Regarding COVID-19 Countermeasures" **https://www.amed.go.jp/content/000112086.pdf** (Japanese language only.)
Cyclic Innovation for Clinical Empowerment (CiCLE)	Through the provision of large-scale and long-term loans (in principle up to 10 years with a ceiling of 10 billion JPY) to bear the burden of technology risks by AMED, AMED is promoting the creation of an infrastructure for innovation to accelerate the R&D and practical application of pharmaceuticals, medical devices and other medical products.

Term	Description
Disease Area	The seven disease areas stipulated in the second Healthcare Policy as being social issues in contemporary and future Japanese society with a view to demographic movement in the year 2040. In the DataBook, in the event that an awarded project does not fit into any of the seven categories or if it is not research regarding a specific disease area, it is treated as "Others." · Cancer · Lifestyle related diseases (including circulatory system and diabetes) · Mental and neurological disorders · Aging and dementia · Rare and intractable diseases · Child health and development · Infectious diseases (including AMR)
ICD-10 Disease Classification	ICD is an abbreviation of "International Statistical Classification of Diseases and Related Health Problems" created and endorsed by the World Health Organization (WHO), and ICD-10 is its 10th revised version. The Ministry of Health, Labour and Welfare of Japan currently compiles the "detailed list of statistical classification of diseases, injuries and causes of death (FY2013 version)," derived from ICD-10 (2023 version), to register the statistical data and medical records in Japan. AMED uses the ICD-10 large categories (chapters) as "Target Disease" categorial tags for the AMED R&D projects. In the DataBook, the ICD-10 category (chapter) of "Neoplasms" is shown as "Cancer (Neoplasms)." Note that in ICD-10 codes for special purposes are used for the provisional assignment of new diseases of uncertain etiology or emergency use, and these include COVID-19. In the DataBook, they are shown as "COVID-19."

5. Supplementary Notes

5.2 Glossary

Term	Description
Integrated Projects (second term)	The six integrated projects centering on modalities, stipulated in the second Healthcare Policy. 1) Project for Advanced Drug Discovery and Development 2) Project for Medical Device and Healthcare 3) Project for Regenerative Medicine and Cell and Gene Therapies 4) Project for Genome and Health-Related Data 5) Project for Basic Medical Research 6) Project for Seeds Development and Research Base
Medium- to long-term plan	AMED, as a Japanese National Research and Development Agency, is set to launch a medium- to long-term plan to achieve its objectives, and this is stated in Article 35-5 of the Act on General Rules for Incorporated Administrative Agencies (Act No. 103 of 1999). The period of AMED's first medium- to long-term plan was from FY2015 to FY2019, and the period of the second medium- to long-term plan was from FY2020 to FY2024. First and Second medium- to long-term plan: **https://www.amed.go.jp/koukai/kouhyou.html#anc-3** (Japanese language only.)

Term	Description
Nature of Research	A categorial tag to classify the "Nature of Research" of individual awarded projects, uniquely defined by AMED. Eight categories are listed as below. ・Pharmaceutical/Medical Device Development (including development of systems linking to medical device development) ・Basic Biomedical/Etiologic Studies ・Fact-finding Survey Analysis (including fieldwork, surveillances, and monitoring) ・Medical Technique/Standard Therapy Development (including evidence building to improve the quality of medical care by compilation of guidelines and other methods) ・Research/Drug Discovery Infrastructure Development (including drug discovery technologies, ICT infrastructure and platforms) ・Regulatory/Nursing System Improvement and Technical Support (including advancement of technology supports for the international health system) ・Development, Establishment, and Validation of New Diagnostic/Testing Methods and Systems (excluding development of diagnostic drugs and equipment) ・Evidence Building for Prevention (including epidemiology studies)
Principal Institution/ Principal Investigator (PI)	Principal institution/Principal Investigator (PI) of R&D projects awarded by AMED

5. Supplementary Notes

5.2 Glossary

Term	Description
Product Approval Category	One of the categorial tags for AMED R&D projects. It is attached to one of the four items eligible for AMED R&D support (Pharmaceuticals, Medical devices, Regenerative medicine products, and In-vitro diagnostics) from among the items defined in Article 2 of the Act on Securing Quality, Efficacy and Safety of Products Including Pharmaceuticals and Medical Devices (Pharmaceuticals and Medical Devices Act: PMD Act). The attachment of categorial tags is necessary when the "Nature of Research" is "Pharmaceutical/Medical Device Development," but the attachment of categorial tags is optional for projects of different "Nature of Research."
R&D Objective	One of the categorial tags for AMED R&D projects. The "R&D objectives" for the main research themes are categorized into the following four. · Prevention/Health · Diagnosis · Treatment · Quality of Life (QOL) If R&D projects do not fit into any of the above four or do not have any specific "R&D objective", they are treated as "Others."
R&D Phase	One of the categorial tags for AMED R&D projects. The "R&D phase" of R&D support is categorized into Basic Study, Applied Study, Nonclinical Study/Pre-clinical Study, Clinical Study, Clinical Trials, Post Marketing, and Observational Study, etc. The attachment of categorial tags is necessary when the "Nature of Research" is "Pharmaceutical/Medical Device Development," but the attachment of categorial tags is optional for projects of different "Nature of Research."

Term	Description
Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response(SCARDA)	Based on the national Strategy for Strengthening the Vaccine Development and Production System, the Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA) was established at AMED in March 2022, with the mission to strengthen strategic research funding and to promote the formation of world-class R&D centers. In anticipation of future infectious disease emergencies, support is provided for R&D through integrated allocation of budgets, accelerating vaccine development with rapid and agile funding both in peacetime and in the event of an infectious disease emergency.
Second Healthcare Policy	Pursuant to Article 17 of the Health and Medical Strategy Advancement Act (Act No. 48 of 2014), the Healthcare Policy was stipulated by the government to promote in a comprehensive and systematic manner the measures the government should take related to medical R&D and the creation of new industries to contribute to a society in which people enjoy long and healthy lives, in order for the establishment of a society in which the public can live healthy lives and enjoy greater longevity (a society in which people enjoy long and healthy lives). The Second Policy sets the five years from FY2020 to FY2024 as the period covered, and was approved by the Cabinet on March 27, 2020 (and partially revised on April 9, 2021).

5. Supplementary Notes

5.2 Glossary

Term	Description
Special Fund Programs	Programs that are established pursuant to the Act on Improving the Capacity, and the Efficient Promotion of Research and Development through Promotion of Research and Development System Reform. The programs secure in advance the financial resources for several years, thus enabling flexible support for their stable and efficient implementation.
The Cross-ministerial R&D Management System(e-Rad)	The Cross-ministerial R&D Management System. This is a cross-ministerial system to put online the series of processes regarding R&D management (receipt of application => review => selection => awarded project management=> accomplishment report) centering on the competitive research funding system, which went into operation from January 2009. **https://www.e-rad.go.jp/en/**

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Published by February, 2025