

2012

Summary of 2012 Annual Performance Reports from NIDRR Grantees

September 30, 2013

National Institute on Disability and Rehabilitation Research
Office of Special Education and Rehabilitative Services
U.S. Department of Education



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The purpose of this report is to present selected key data from the National Institute on Disability and Rehabilitation Research (NIDRR) 2012 grantee Annual Performance Report (APR). Grant funding presented in this report is for the APR reporting period June 1, 2011 through May 31, 2012. The report also compares data for 2008 through 2012 on some variables.

Mission

NIDRR's mission is to generate new knowledge and promote its effective use to improve the abilities of people with disabilities to perform activities of their choice in the community, and also to expand society's capacity to provide full opportunities and accommodations for its citizens with disabilities.

Statutory Mandate

NIDRR was established by the 1978 amendments to the Rehabilitation Act of 1973. NIDRR's purpose is to

... provide for research, demonstration projects, training, and related activities to maximize the full inclusion and integration into society, employment, independent living, family support, and economic and social self-sufficiency of individuals with disabilities of all ages ...; promote the transfer of rehabilitation technology to individuals with disabilities through research and demonstration projects ...; ensure the widespread distribution, in usable formats, of practical scientific and technological information ...; identify effective strategies that enhance the opportunities of individuals with disabilities to engage in employment ...; and increase opportunities for researchers who are members of traditionally underserved populations, including researchers who are members of minority groups and researchers who are individuals with disabilities (29 USC §760).

Funding Mechanisms

NIDRR uses eight grant funding mechanisms defined by Catalog of Federal Domestic Assistance (CFDA) numbers:

Advanced Rehabilitation Research Training (ARRT) grants provide funding to institutions of higher education to recruit qualified post-doctoral candidates with clinical, management, basic or engineering research experience and prepare them to conduct independent research on disability and rehabilitation issues [CFDA 84.133P].

Disability and Rehabilitation Research Projects (DRRP) emphasize research and development projects, training, and knowledge translation on rehabilitation topics. DRRP subcategories are: Americans with Disabilities Act National Network (ADA), Traumatic Brain Injury Model Systems Centers, Burn Model Systems Centers, Knowledge Translation (KT) and general DRRPs [CFDA 84.133A].

Field Initiated Projects (FIP) address rehabilitation issues in promising and innovative ways. As the name implies, topics for these projects are chosen by the applicants. Awards are based upon merit and potential impact on the field of rehabilitation [CFDA 84.133G].

Rehabilitation Engineering Research Centers (RERC) conduct programs of advanced engineering and technical research designed to apply technology, scientific achievement, and psychological and social knowledge to solve rehabilitation problems and remove environmental barriers. RERCs are affiliated with institutions of higher education or non-profit organizations [CFDA 84.133E].

Rehabilitation Research and Training Centers (RRTC) conduct coordinated and integrated advanced research to alleviate or stabilize disabling conditions, promote maximum social and economic independence of people with disabilities, or improve rehabilitation methodology or service delivery systems. RRTCs operate in collaboration with institutions of higher education and providers of rehabilitation services and serve as national centers of excellence in rehabilitation research [CFDA 84.133B].

Research Fellowships Program (RFP), also known as the Mary E. Switzer Fellowship, gives individual researchers an opportunity to develop new ideas and gain research experience. Fellows design and work for one year on an independent research project [CFDA 84.133F].

Small Business Innovation Research (SBIR) grants, as administered by NIDRR as a part of the larger mandatory SBIR program, help support the production of new assistive and rehabilitation technology. This two-phase program takes a rehabilitation-related product from development to market readiness [CFDA 84.133S].

Spinal Cord Injury Model Systems Centers (SCIMS) study the course of recovery and outcomes following the delivery of a coordinated system of care for individuals with SCI. Under this program, SCIMS centers provide comprehensive rehabilitation services to individuals with SCI and conduct spinal cord research, including clinical research [CFDA 84.133N].

NIDRR also funds contracts to provide technical support related to NIDRR's internal management and knowledge translation activities.

Annual Performance Reporting System

In 2000, NIDRR launched its web-based grants performance system called the Annual Performance Reporting system. Grantees use this system to provide data about goals and objectives; staffing; budget; research issues such as sample size and method; progress; outputs; and accomplishments. For a new grantee, the first reporting period begins on the start date of the award and extends until May 31 of the following year. Subsequent reporting periods begin June 1 and end May 31. Grantees report data annually in the APR on July 1. Because grants and their associated projects are in various stages of completion, these data provide a snapshot look at grant status as of May 31 in a given year.

Data Categories Used in This Report

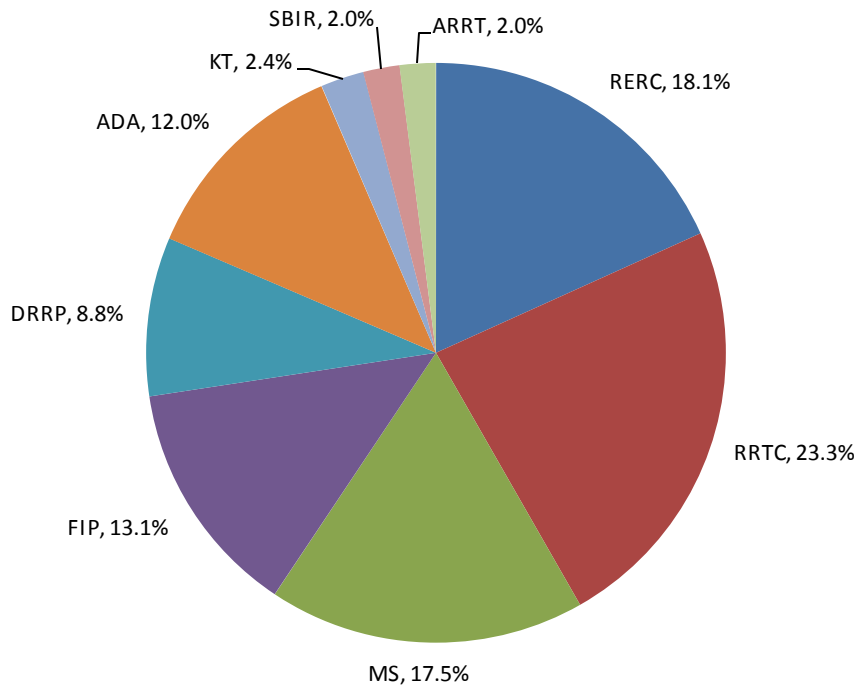
In this report, data are reported under program mechanism categories that differ from the CFDA categories. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the general DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. Please see the Appendix for a full description of program mechanisms used in this report. The Appendix also contains definitions of project type, domain, and research method as used in this report. The source tables cited in the exhibit footnotes refer to the Program Performance Report tables generated from the APR data.

Section 1. NIDRR Funds Received by Grantees

Information on funding comes from the following APR item: *The total amount (exclusive of supplements) of funds that you received from NIDRR for this budget period for this award.* Budget period is not synonymous with reporting period. A budget period is a specific interval of time for which federal funds are being provided from a particular fiscal year to fund approved activities and budget. Budget period is defined as 365 days from the start date of the grant. For multiyear awards, consecutive budget periods proceed immediately from the end of the previous budget period and are 365 days in duration. The amount of funding grantees reported receiving from NIDRR on the 2012 APR refers to the budget year. All other data in this report refer to the 2012 APR reporting period which is from June 1 through May 31.

How much NIDRR funding did grantees receive in the budget period covered by the 2012 APR?

Exhibit 1. Percentage of total NIDRR funding received by grantees, by program mechanism: 2012



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 1.

The table below shows the dollar amount and percentage of total NIDRR funding received by grantees by program mechanism in 2012:

Program mechanism	NIDRR funds received	Percent of total funding received
RRTC	\$23,187,833	23.3
RERC	18,046,939	18.1
MS	17,411,389	17.5
FIP	12,980,919	13.1
ADA	11,916,771	12.0
DRRP	8,792,229	8.8
ARRT	2,686,317	2.7
KT	2,424,997	2.4
SBIR	2,006,889	2.0
Total	99,454,283	100.0

- Exhibit 1 shows the distribution of \$99.5 million in grant funding among nine program mechanisms based on budget period reporting in the 2012 APR. RRTCs reported receiving 23.3 percent of the \$99.5 million in grant funding, followed by RERCs and MS with about 18 percent each. The smallest program mechanisms were ARRT, KT, and SBIR with about 2 percent of total funding each.

Exhibit 2. Number of grants, projects and funding, by program mechanism: 2012

Program mechanism	Number of grants	Number of projects	Average number of projects per grant	Number of grants receiving funding this budget period ¹	NIDRR funds received
RRTC	30	408	14	28	\$23,187,833
RERC	20	246	12	19	18,046,939
MS	45	237	5	40	17,411,389
FIP	88	142	2	72	12,980,919
ADA	14	232	17	11	11,916,771
DRRP	24	233	10	18	8,792,229
ARRT	20	69	3	18	2,686,317
KT	4	19	5	3	2,424,997
SBIR	12	21	2	10	2,006,889
Total	257	1,607	6	219	99,454,283

¹Excludes grants with no-cost extensions.

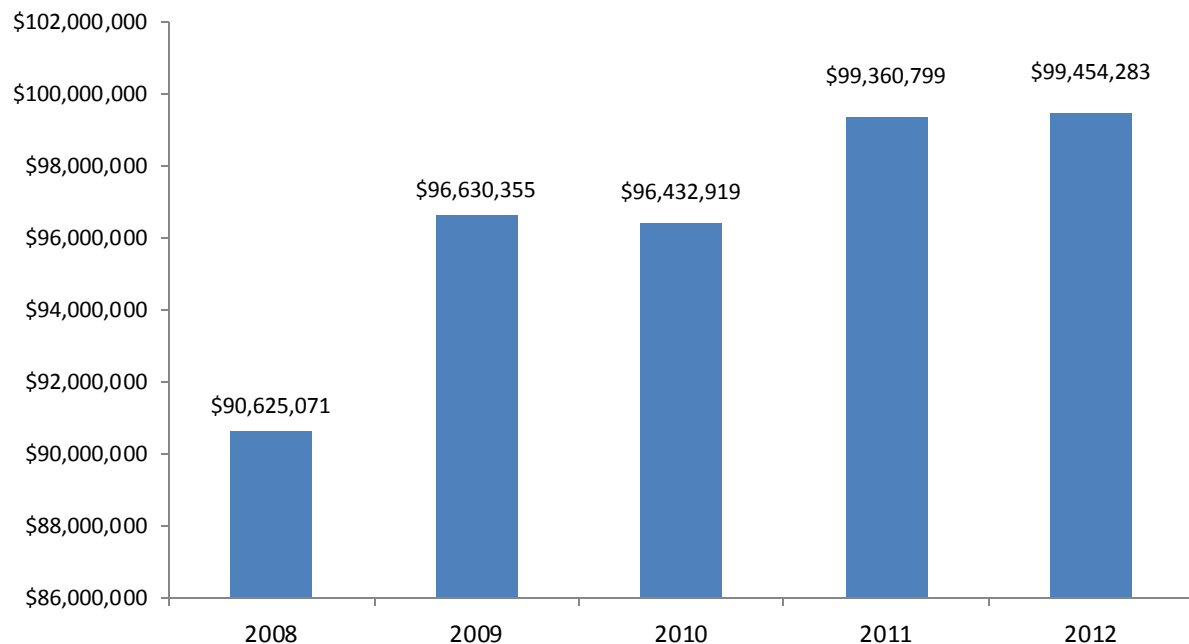
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 1.

- Exhibit 2 shows the dollar amount reported by grantees in each program mechanism and the number of grants and associated projects. In 2012, there were 257 active grants: 219 which received funds during the associated budget period and 38 with no-cost extensions.
- There were 1,607 projects associated with the active grants. Across all program mechanisms, the average number of projects per grant was six. The ADA and RRTC mechanisms had the largest number of average projects per grant with 17 and 14, respectively.

How did the amount of NIDRR grant funding received by grantees change from 2008 through 2012?

Exhibit 3. Funding received by grantees: 2008–2012

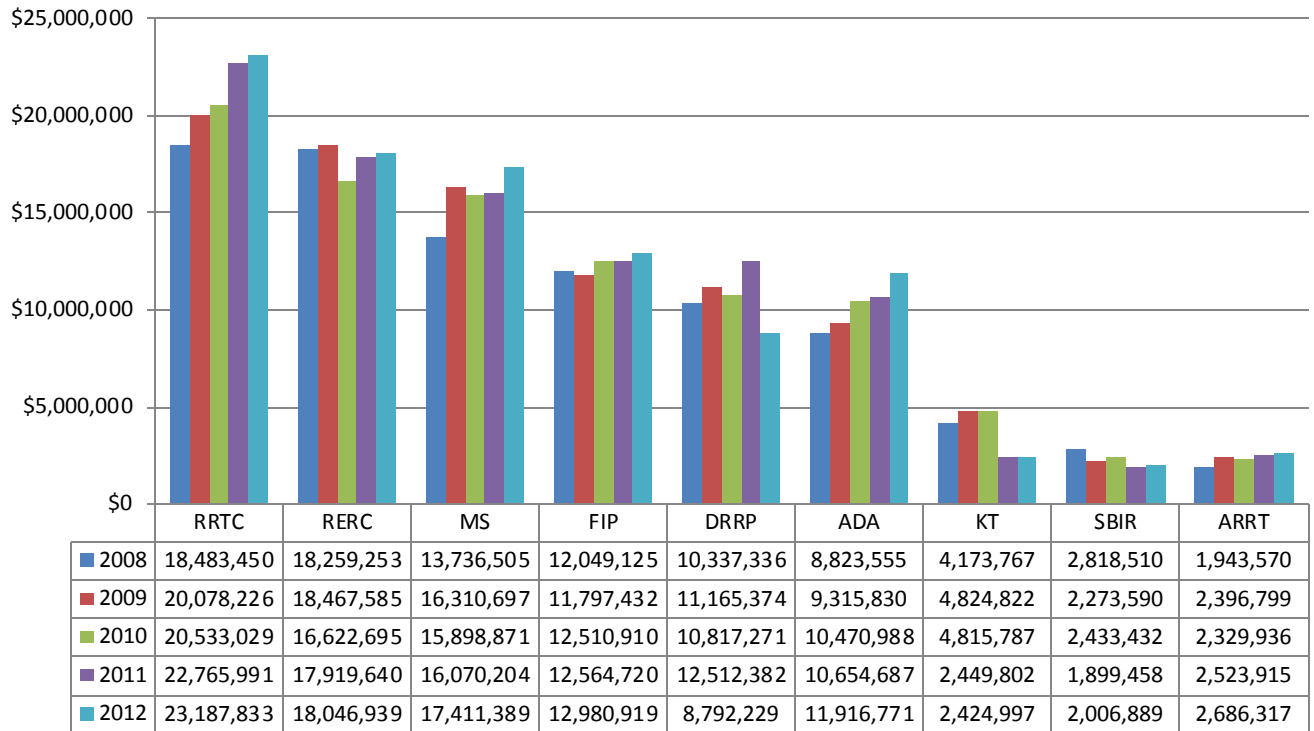


SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 1.

- As reported by grantees in the 2012 APR, overall funding received from NIDRR rose by \$8,829,212 from 2008 through 2012, an increase of 9.7 percent.

How did the amount of NIDRR grant funding received by program mechanisms change from 2008 through 2012?

Exhibit 4. Distribution of grant funds, by program mechanism: 2008–2012



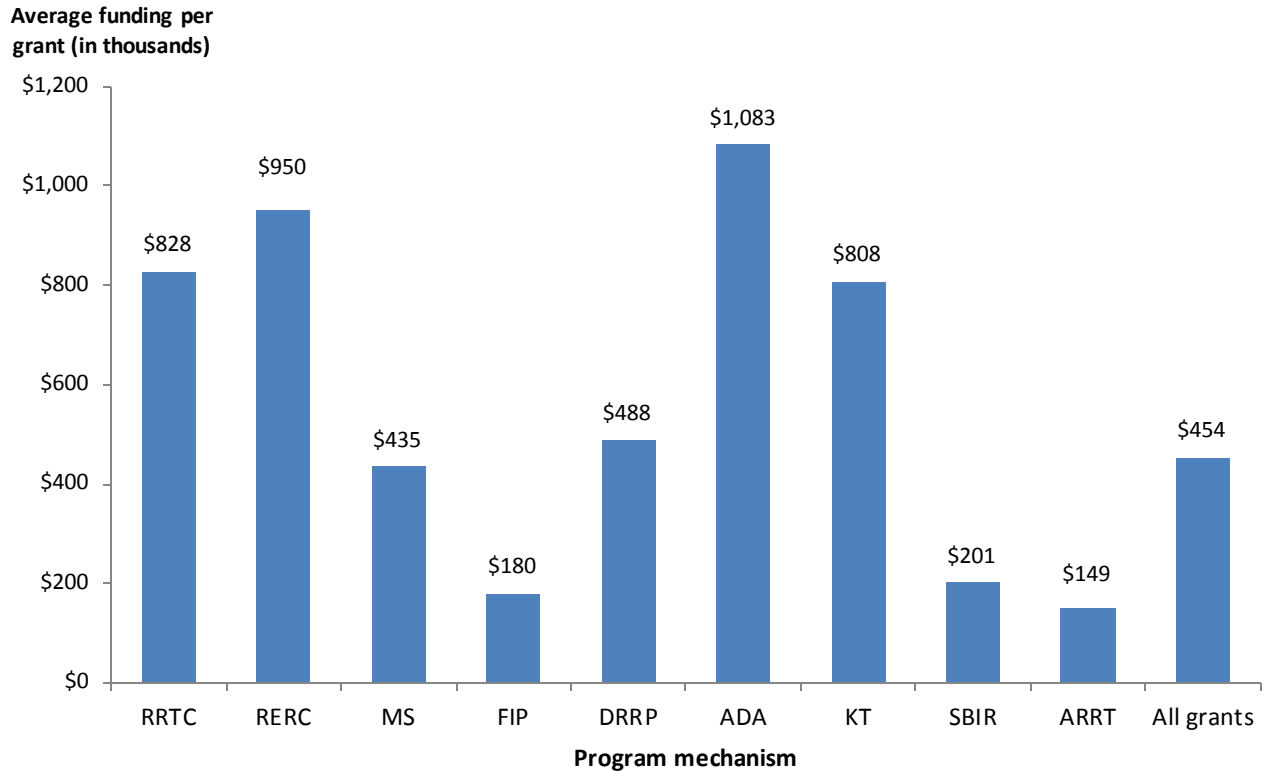
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 1.

- The RRTC, MS, FIP, ADA and ARRT program mechanisms reported increased funding between 2008 and 2012. The RERC, DRRP, KT and SBIR program mechanisms had reduced funding when comparing 2008 and 2012. In addition, RRTC and ADA were the only mechanisms that exhibited a constant upward trend throughout the five years.

What was the average funding received per grant for each program mechanism?

Exhibit 5. Average funding received per grant (in thousands of dollars), by program mechanism: 2012



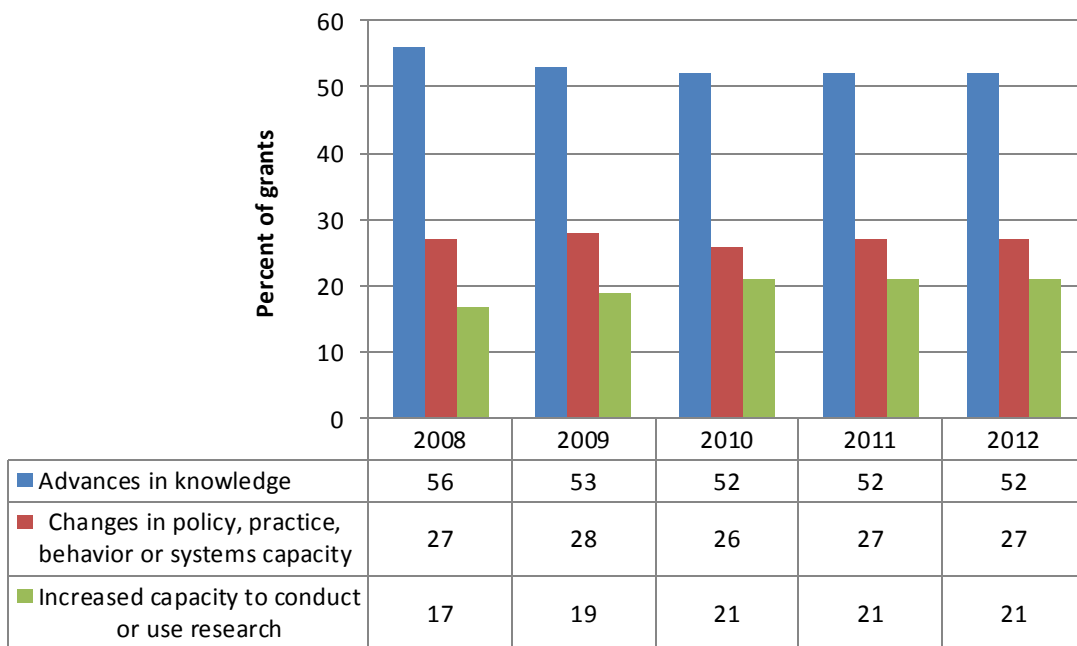
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 1.

- In 2012, the average NIDRR grant received \$454,000.
- ADA and RERC grants had the highest average funding per grant, at \$1 million and \$950,000 respectively. In addition, the average RRTC, DRRP, and KT grants were higher than the overall average, while the MS, FIP, SBIR, and ARRT grants were below the overall average.

What types of changes did grantees expect to produce?

Exhibit 6. Percentage of grants expected to produce select types of changes: 2008–2012



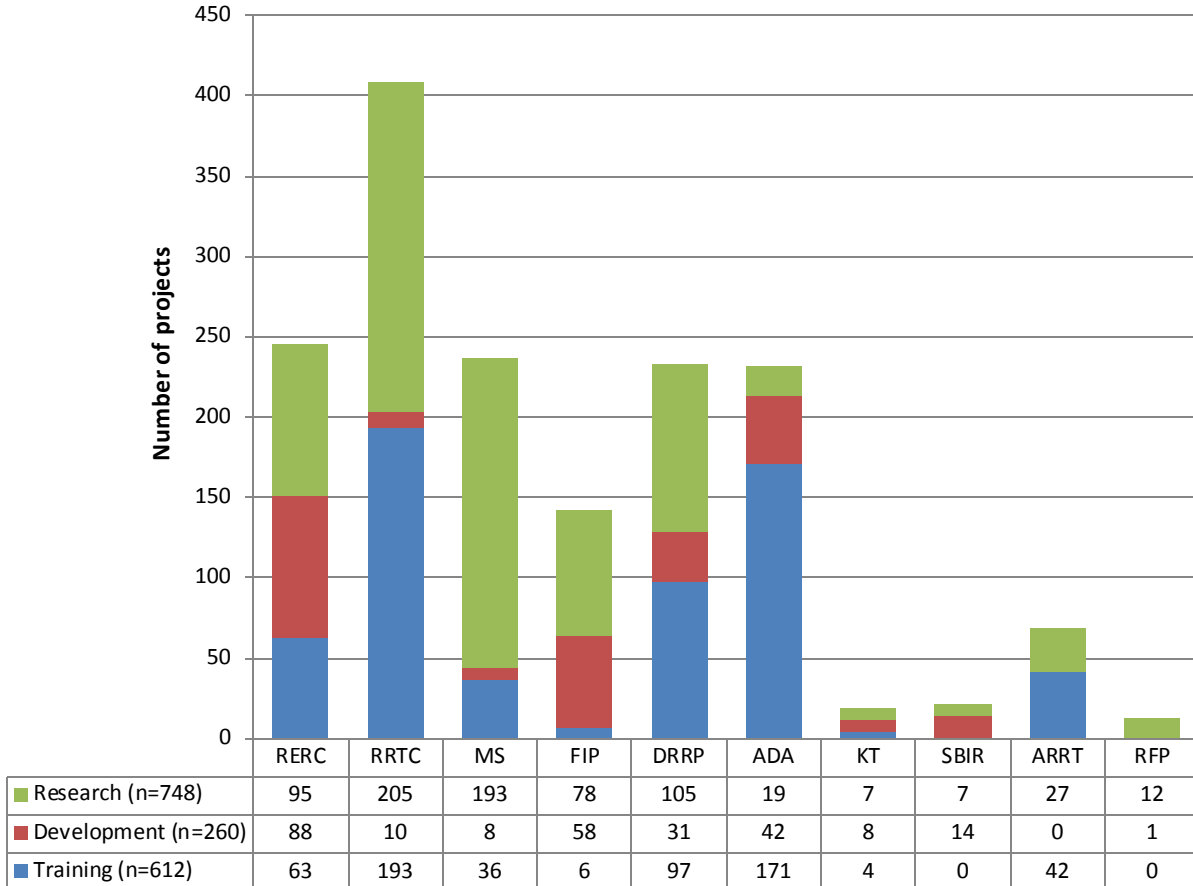
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Grants funded by NIDRR are expected to produce contributions to the field of disability and rehabilitation. In the APR, grantees were asked to select the type of change or improvement that will occur as a result of the grant. Exhibit 6 compares the three types of change over five years.
- In all years, most grants expected to achieve *Advances in knowledge*. This pattern has remained fairly constant from year to year with a slight shift toward changes that produce *Increased capacity to conduct or use research*. In 2008, 17 percent of those responding expected to contribute to increased capacity compared with 21 percent in 2012.

Section 2. Project Information

What types of projects were conducted in the various program mechanisms in 2012?

Exhibit 7. Number of projects, by program mechanism and type of project: 2012



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 2.

- Exhibit 7 shows how many research, development, and training projects were conducted under each program mechanism in 2012. Grantees conducted 1,620 projects during 2012. The most common type of project was research (748), followed by training (612), and development (260).
- RRTC and MS mechanisms conducted the most research projects, with 205 and 193 projects respectively. These two program mechanisms accounted for 53 percent of all research projects.
- RERCs conducted the most development projects with 88, followed by FIPs with 58.

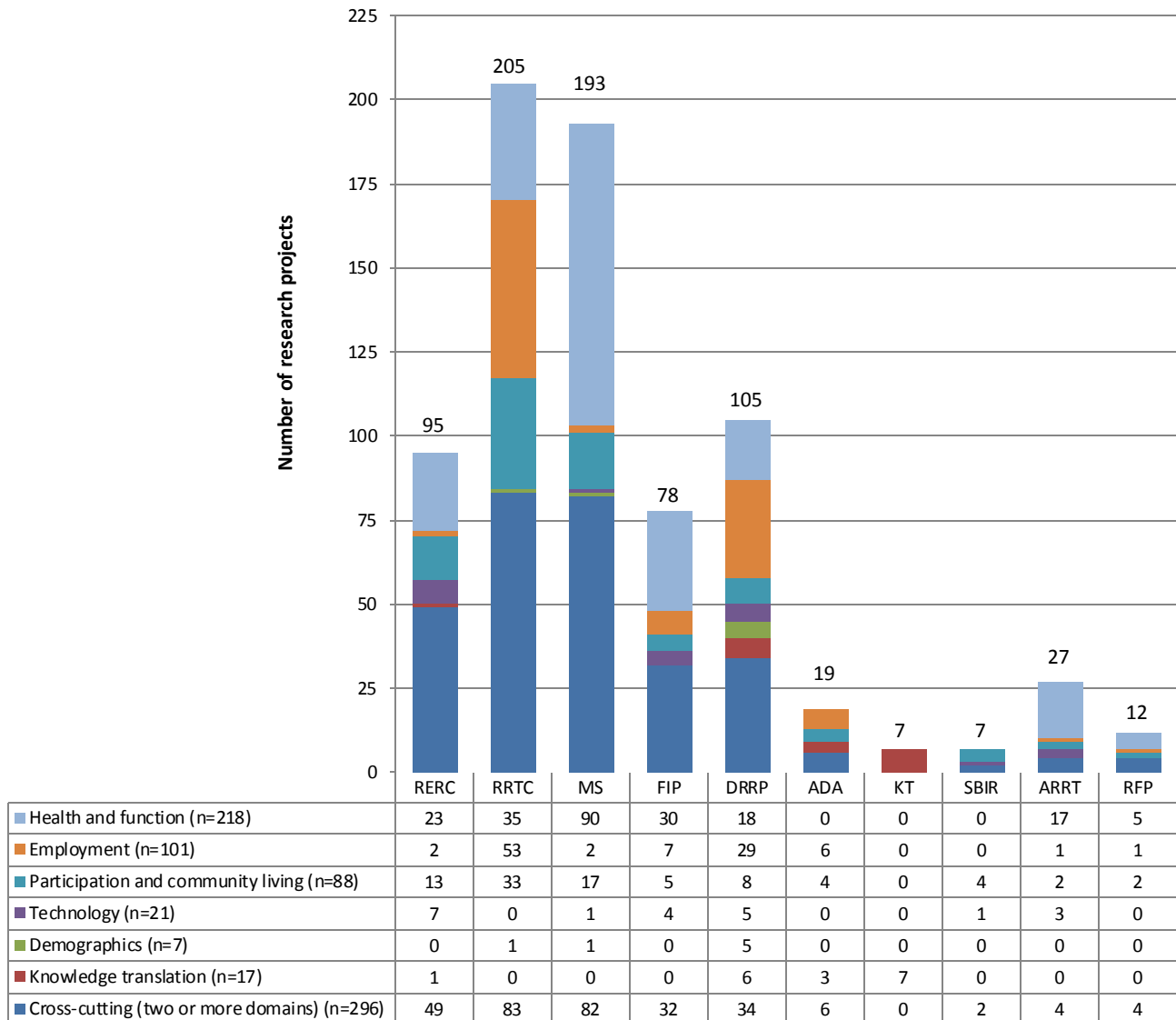
- RRTCs and ADAs conducted the most training projects, with 193 and 171 respectively.
- Looking within program mechanisms, RERC projects were almost evenly divided between research and development. RRTC projects were evenly divided between research and training. MS projects focused primarily on research (193 projects). DRRPs focused on research and training, while ADA center projects were primarily focused on training.

Section 3. Research Projects

A research project is defined as "an intensive systematic study, based on a clear hypothesis or research question that is directed toward producing new scientific knowledge about the subject or problem being studied." This definition was derived from the regulations governing the DRRP program (34 CFR 350.13).

How were research projects distributed among program mechanisms and domains in 2012?

Exhibit 8. Number of research projects, by program mechanism and domain: 2012



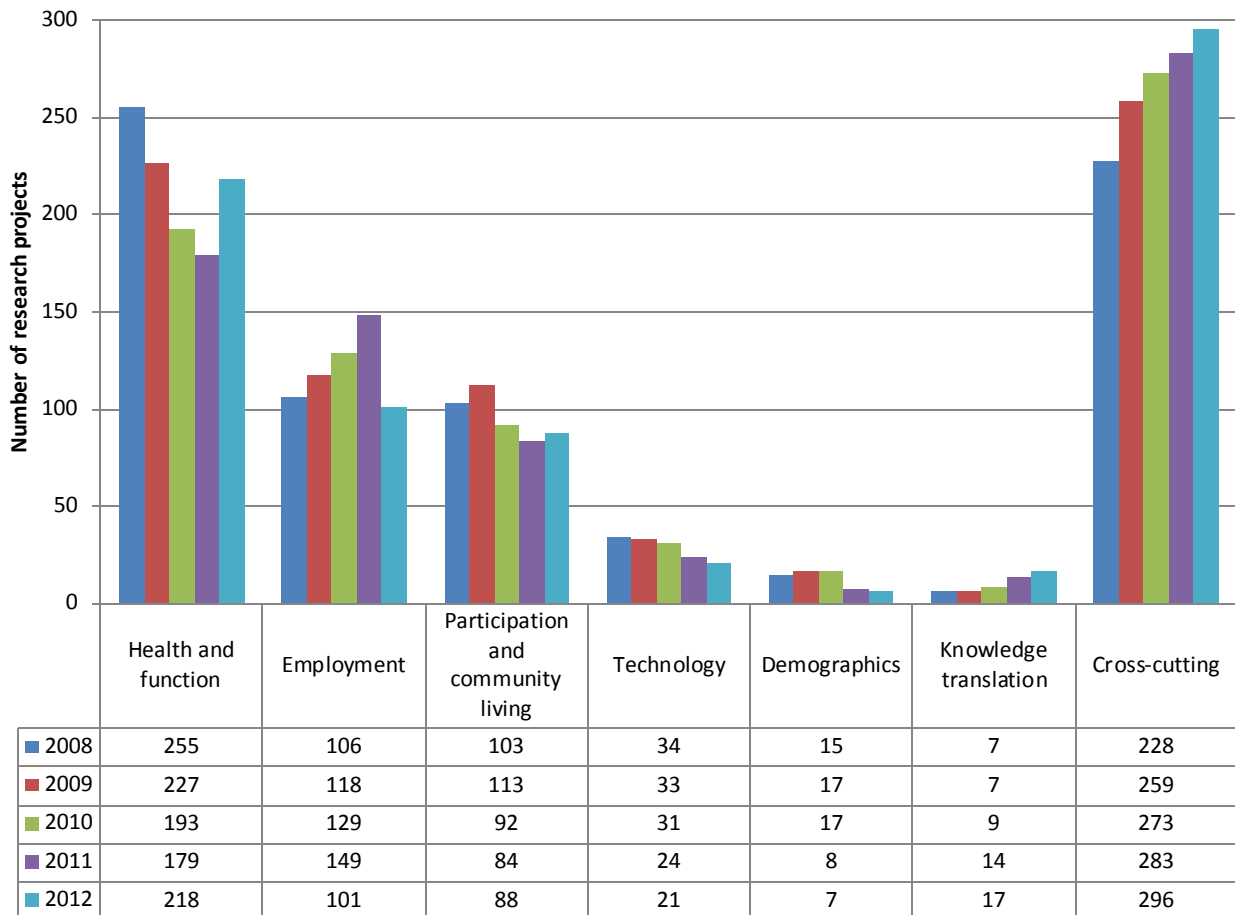
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 9.

- In the APR, grantees were asked: "Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?" Exhibit 8 shows the number of research projects in each program mechanism and domain in 2012.
- Overall, *Cross-cutting* (contributing to two or more domains) was the most commonly identified domain, with 296 of the 748 research projects. *Health and function* was the next most common domain with 218 projects, followed by *Employment* (101 projects) and *Participation and community living* (88 projects).
- Half of RERC research projects were in the *Cross-cutting* domain, while MS and FIP projects focused on the *Health and function* and *Cross-cutting* domains. ARRT projects focused almost exclusively on *Health and function*. *Employment* projects were concentrated in the RRTC and DRRP program mechanisms.

How did the distribution of research projects among domains change from 2008 through 2012?

Exhibit 9. Number of research projects, by domain: 2008–2012

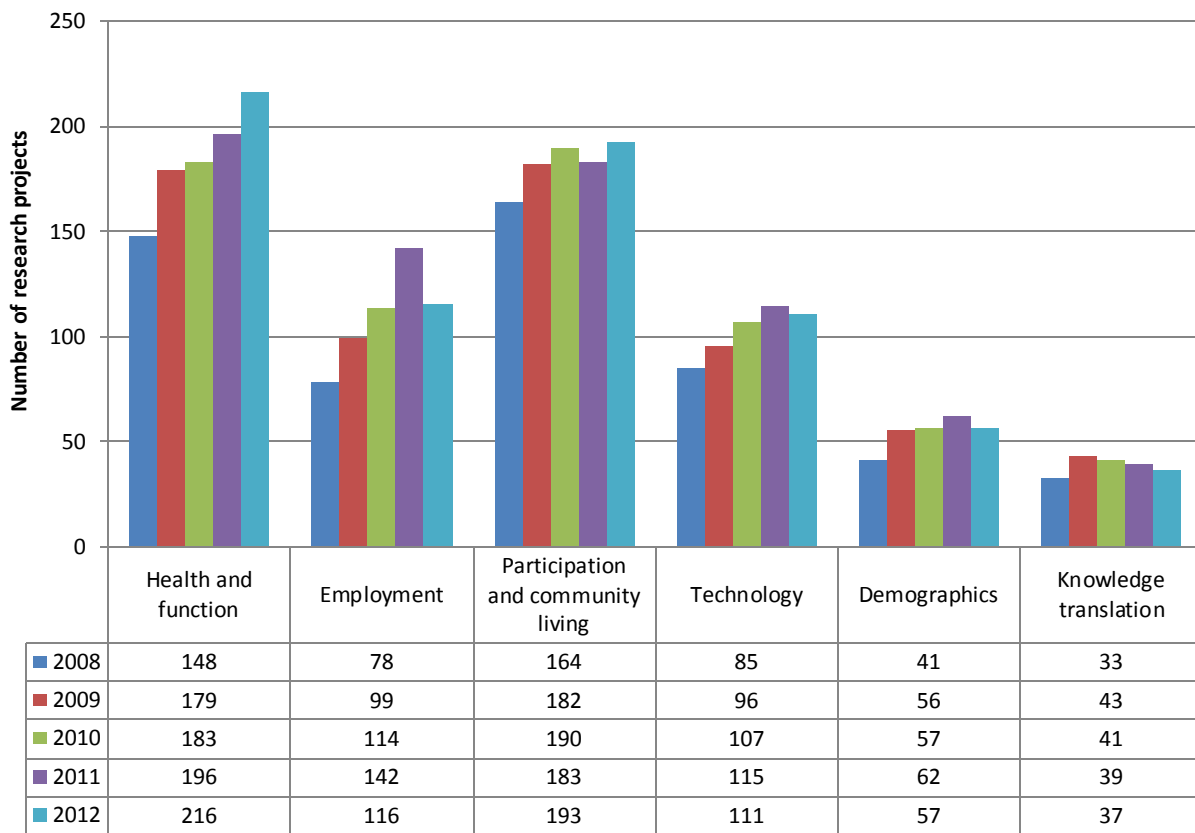


SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 9.

- Exhibit 9 displays the distribution of research projects by domain for 2008–2012.
- Across the 5-year period, the number of *Health and function* projects declined. The number of *Employment* projects steadily increased until 2011 and then declined in 2012. The number of research projects in the *Cross-cutting* and *Knowledge translation* domains showed steady increases.

How did the specified domains for Cross-cutting research projects change from 2008 through 2012?

Exhibit 10. Number of research projects with Cross-cutting focus, by specified domains: 2008–2012

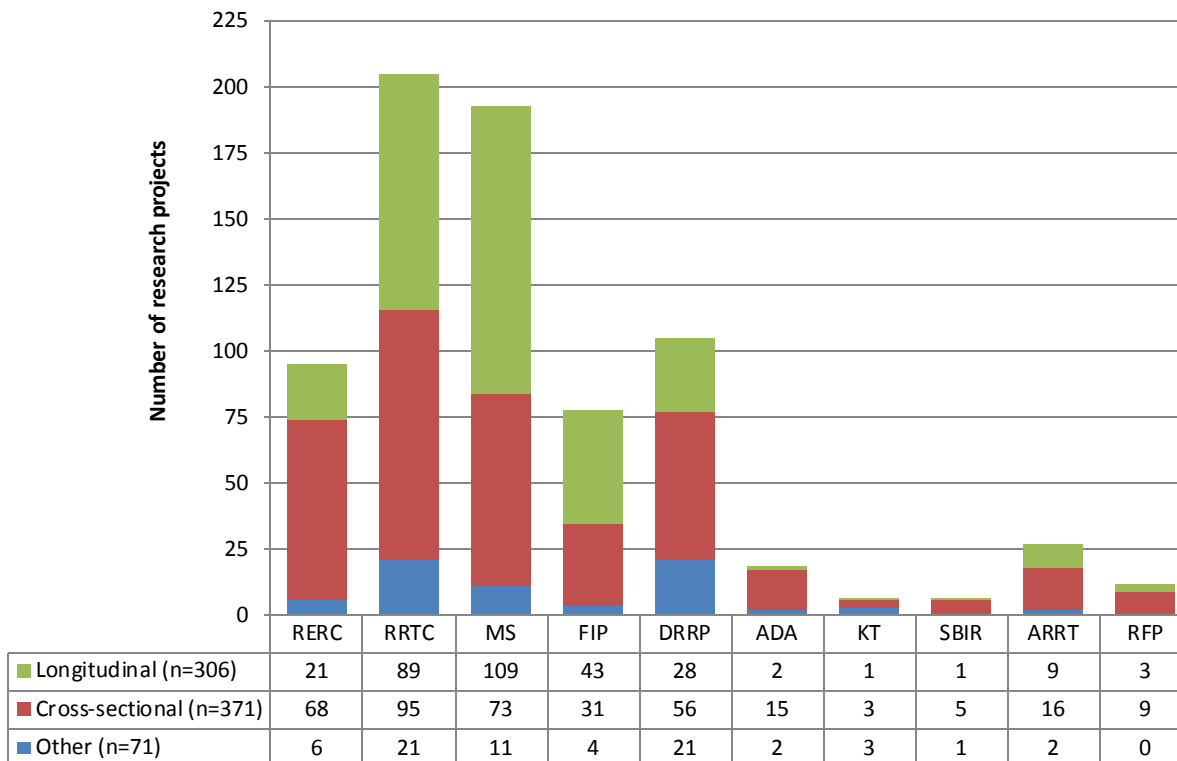


SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Grantees who identified their research projects as *Cross-cutting* were asked to specify which two or more domains applied. Exhibit 10 shows the domains associated with research projects identified as *Cross-cutting* for 2008 through 2012.
- *Health and function* and *Participation and community living* were specified as domains for the *Cross-cutting* research projects more often than the other domains in every year from 2008 through 2012.

What was the distribution of research projects by program mechanism and time dimension (cross-sectional and longitudinal) in 2012?

Exhibit 11. Number of research projects, by program mechanism and time dimension: 2012



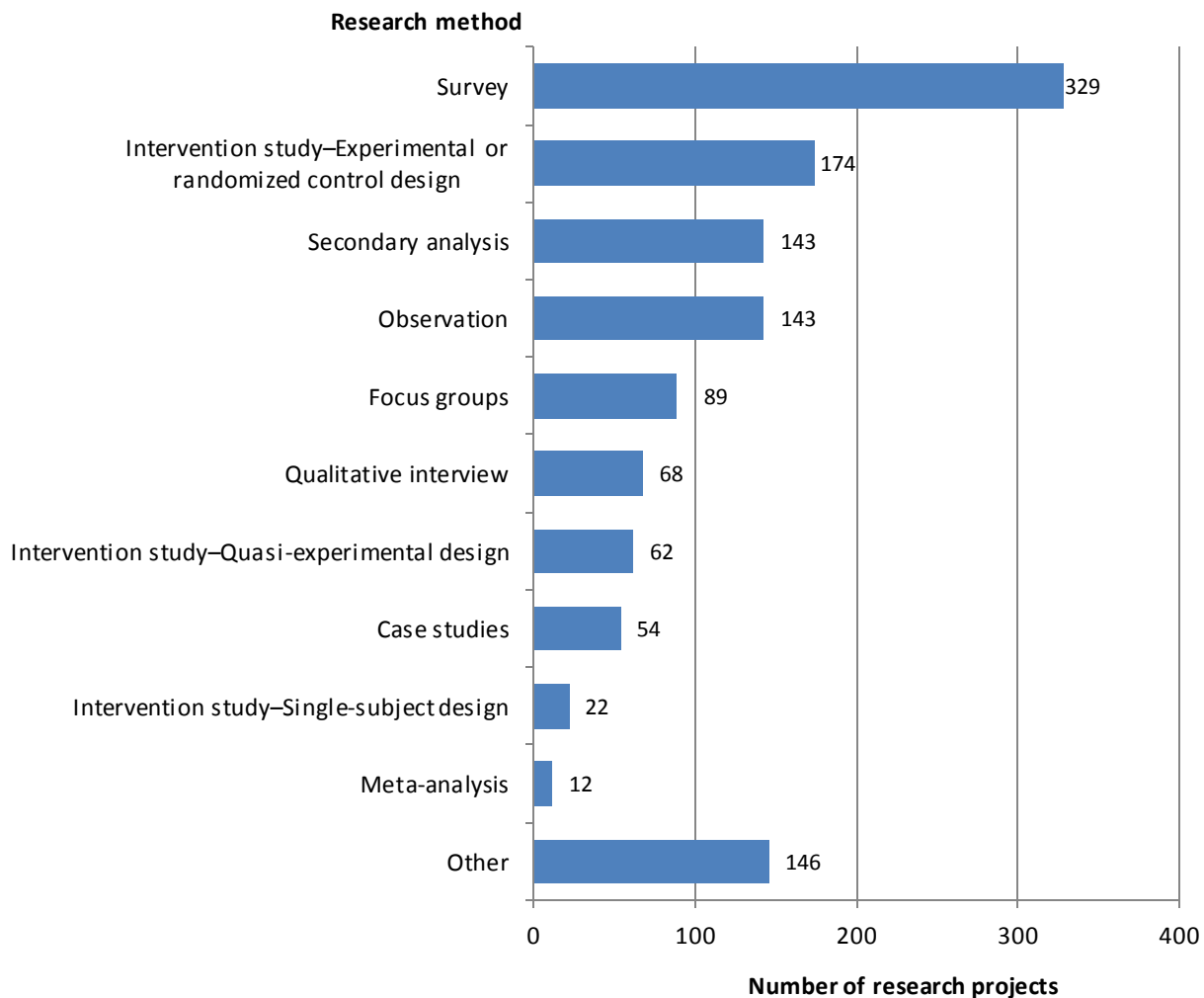
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as either a research or a development project.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 10.

- Grantees were asked to designate the time dimension associated with each research project. *Longitudinal* is defined as repeated measurements taken over many time points. *Cross-sectional* is defined as measurement taken at one point in time. Exhibit 11 shows the time dimension for the 748 research projects in each program mechanism in 2012.
- The 748 research projects conducted 371 *Cross-sectional* studies, 306 *Longitudinal* studies and 71 categorized as *Other*.
- The MS and RRTC program mechanisms conducted the most research projects using a longitudinal design and a cross-sectional design.

What methods or designs did research projects use?

Exhibit 12. Number of research projects using particular research methods: 2012



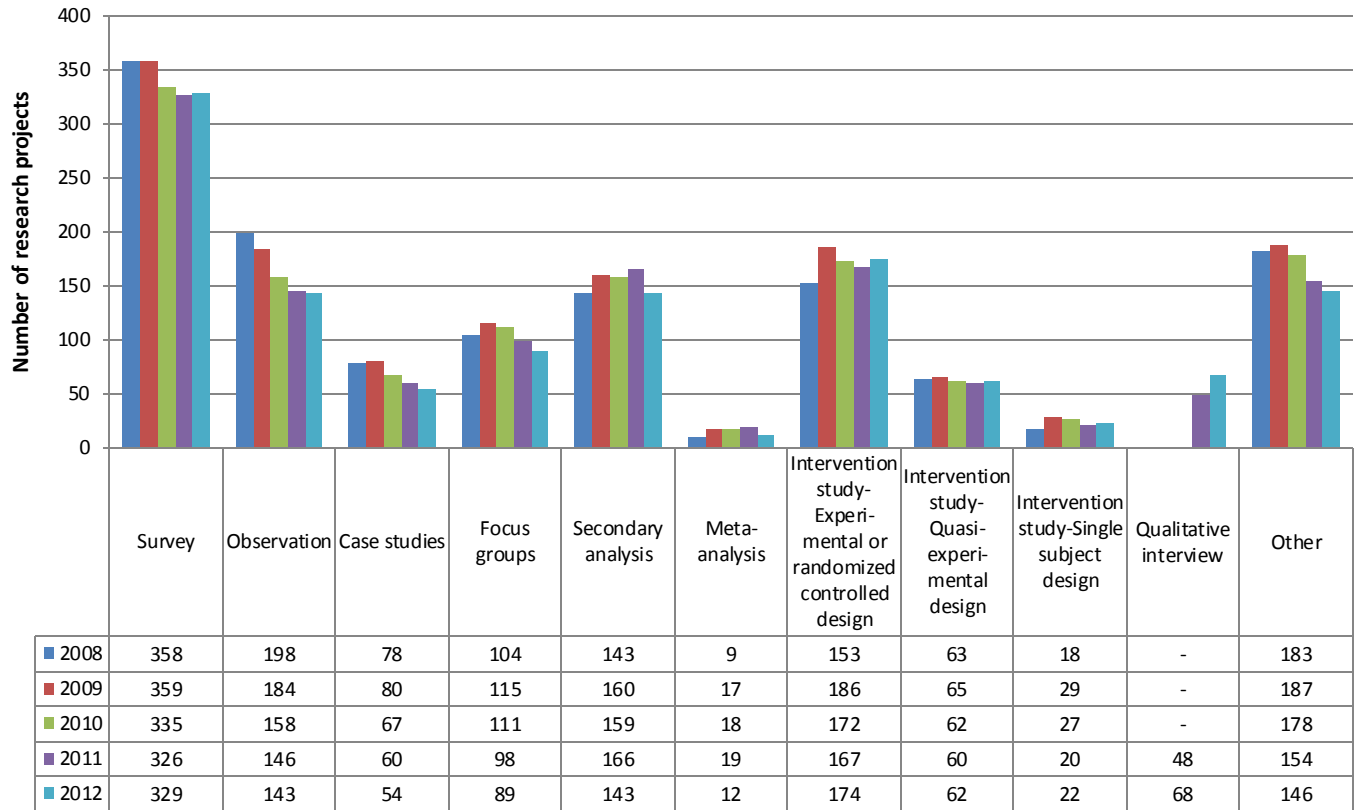
NOTE: Grantees may select more than one research method for each project.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 10.

- Grantees were asked to specify the method or design associated with each research project. Exhibit 12 displays the various methods used in research projects in 2012. Note that grantees may select more than one research method for each project.
- The most common research method used was a *Survey*, occurring in 329 of the 748 research projects. The next most common methods were *Intervention studies-Experimental or randomized control design* with 174 projects, followed by the category *Other*.

How did the use of research methods change from 2008 through 2012?

Exhibit 13. Number of research projects using particular research methods: 2008–2012



– *Qualitative interview* was collected as a separate category beginning in 2011. In 2008 through 2010, *Other* included methods such as literature reviews and qualitative interviews.

NOTE: Grantees may select more than one research method for each project.

SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 10.

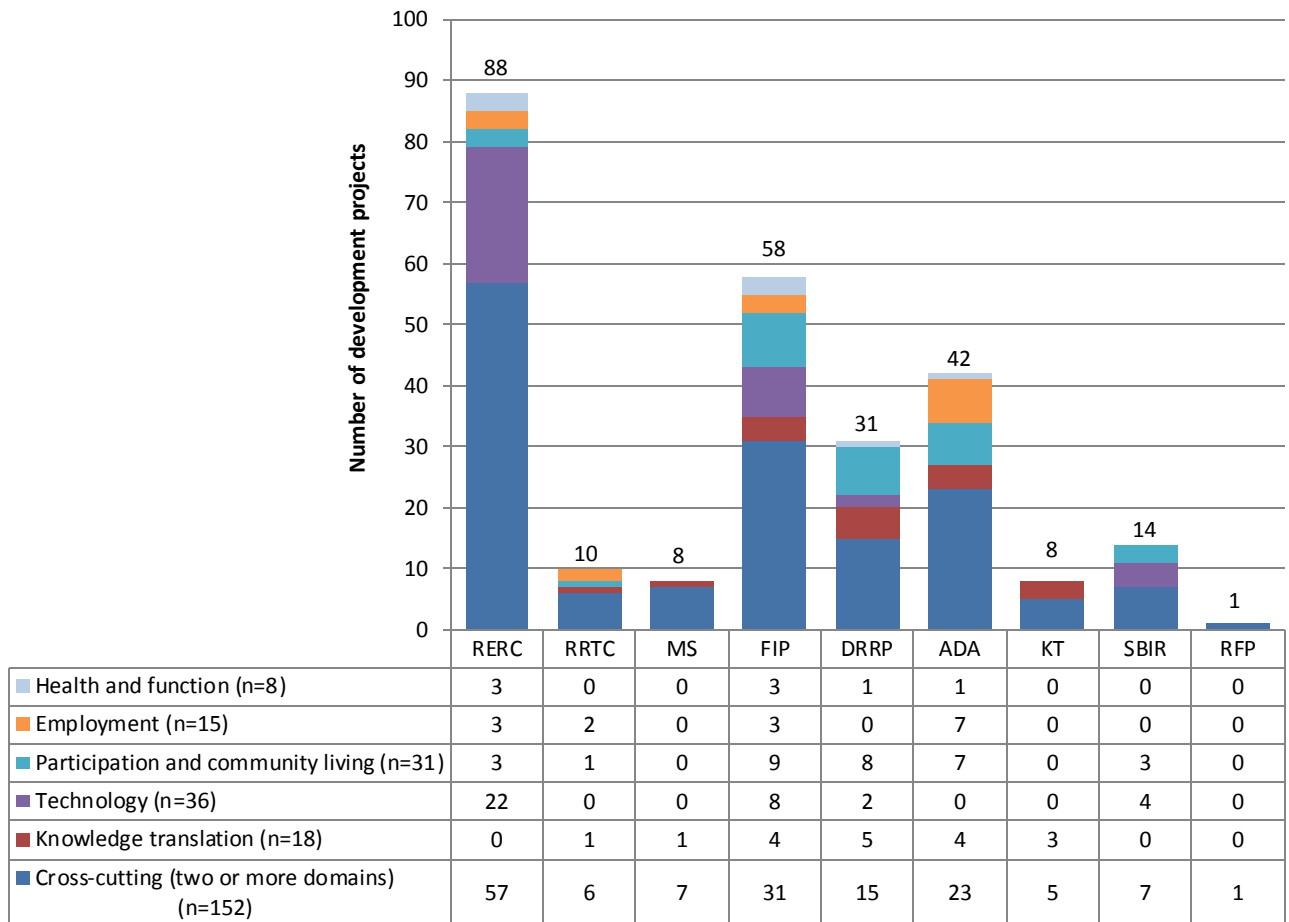
- *Survey* was the most frequently used research method in all five years. The number of research projects using this method decreased slightly from 358 projects in 2008 to 329 projects in 2012.
- By 2011, The use of *Observation* decreased notably over this time period. In 2008, *Observation* was the second most prevalent method (198 projects), yet in 2012 it was less common than *Intervention study-Experimental or randomized controlled design* (174 projects).

Section 4. Development Projects

A development project is defined as "use of knowledge and understanding gained from research to create materials, devices, systems, or methods beneficial to the target population, including design and development of prototypes and processes." This definition was derived from the regulations governing the DRRP program (34 CFR 350.16).

How were development projects distributed among program mechanisms and domains in 2012?

Exhibit 14. Number of development projects, by program mechanism and domain: 2012



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

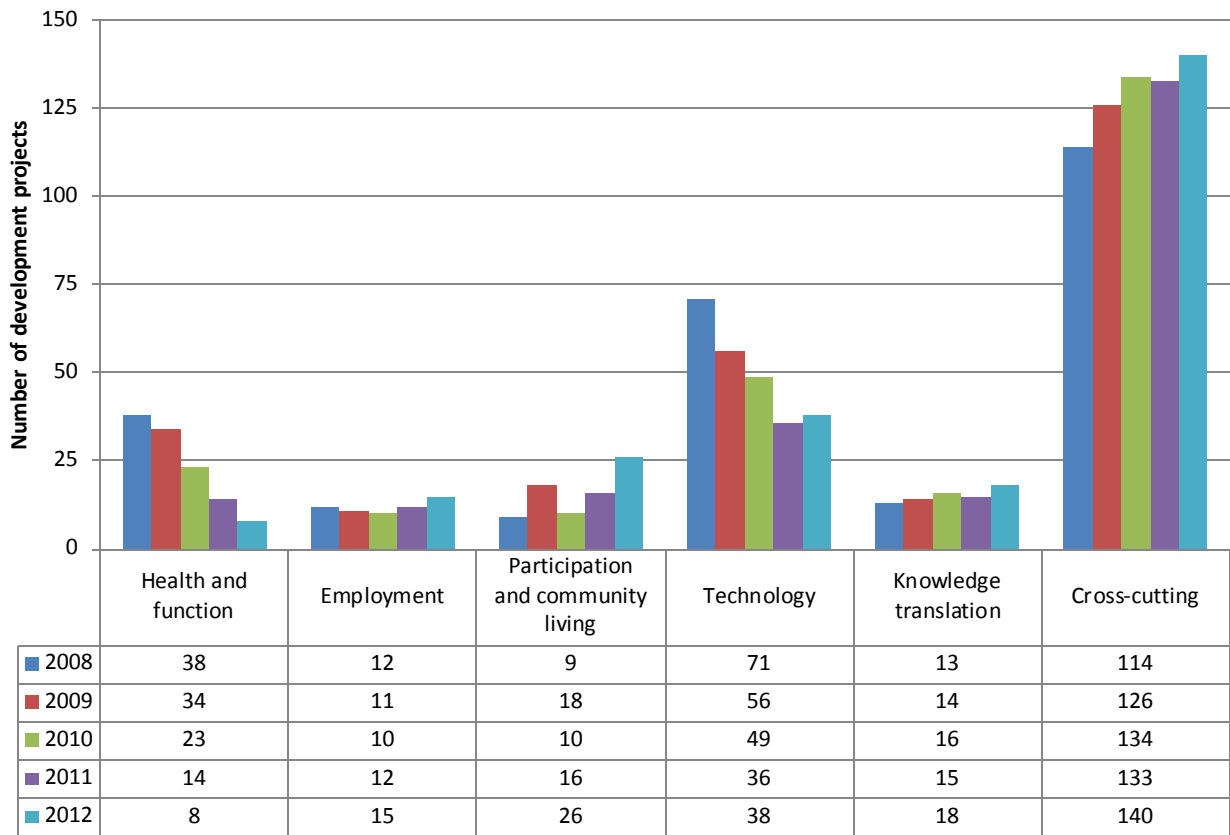
SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 11.

- In the APR, grantees were asked: "Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?" Exhibit 14 shows the percentage of development projects in each domain in 2012.

- Overall, *Cross-cutting* (contributing to two or more domains) was by far the most commonly identified domain, with 152 of the 260 development projects. *Technology* was the next most common domain with 36 projects, followed closely by *Participation and community living* at 31 projects. There were no development projects in the *Demographics* domain in 2012.
- The *Cross-cutting* domain accounted for more than half the development projects in each program mechanism, with the exception of DRRP, with slightly less than half. *Technology* domain projects were concentrated in the RERC program mechanism.

How did the distribution of development projects among domains change from 2008 through 2012?

Exhibit 15. Number of development projects, by domain: 2008–2012



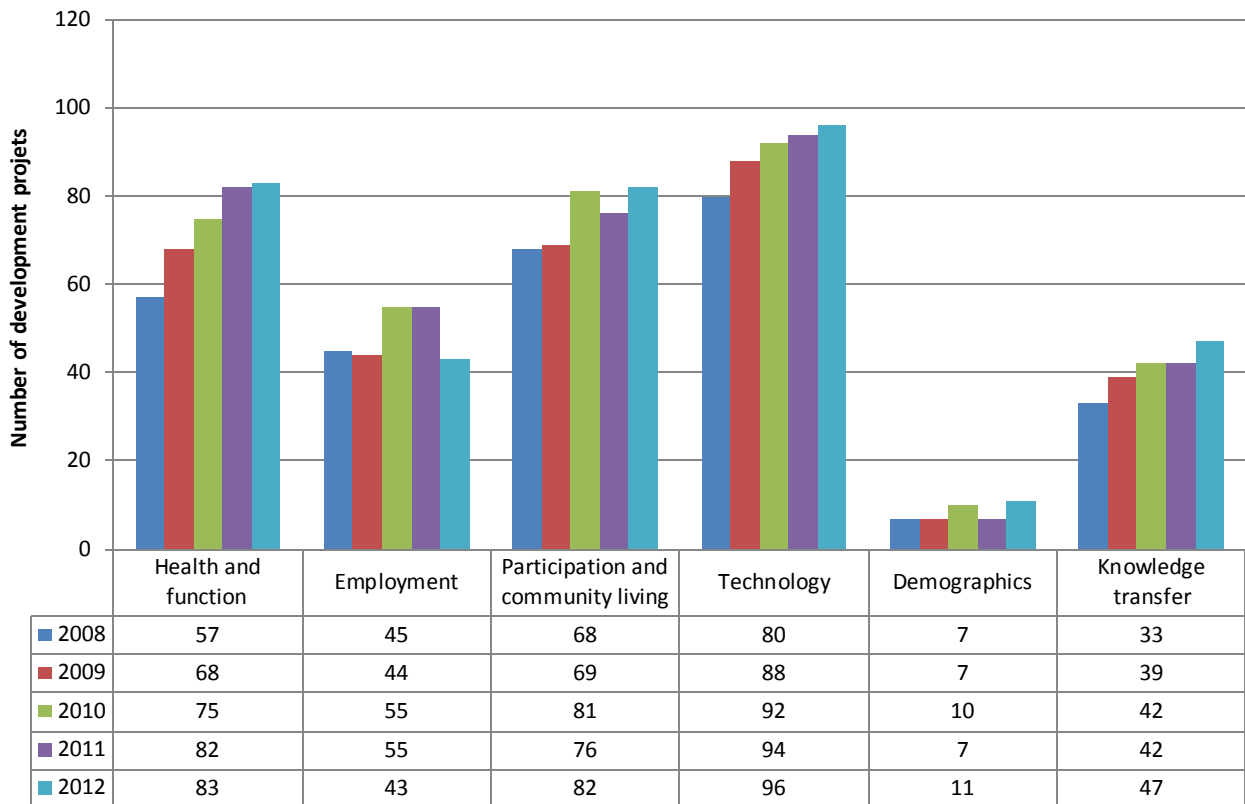
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Exhibit 15 displays the distribution of development projects by domain for 2008 through 2012. In each year from 2008 through 2012, *Cross-cutting*, i.e., contributing to two or more domains, was by far the most dominant domain for development projects. There were no development projects in the *Demographics* domain during this period.

- Across the 5-year period, the number of development projects in the *Cross-cutting* domain increased, while *Health and function* and *Technology* showed a reduction in the number of projects. *Participation and community living* projects gained ground in 2012. *Employment* and *Knowledge translation* remained fairly constant.

How did the specified domains for Cross-cutting development projects change from 2008 through 2012?

Exhibit 16. Number of development projects with cross-cutting focus, by specified domains: 2008–2012

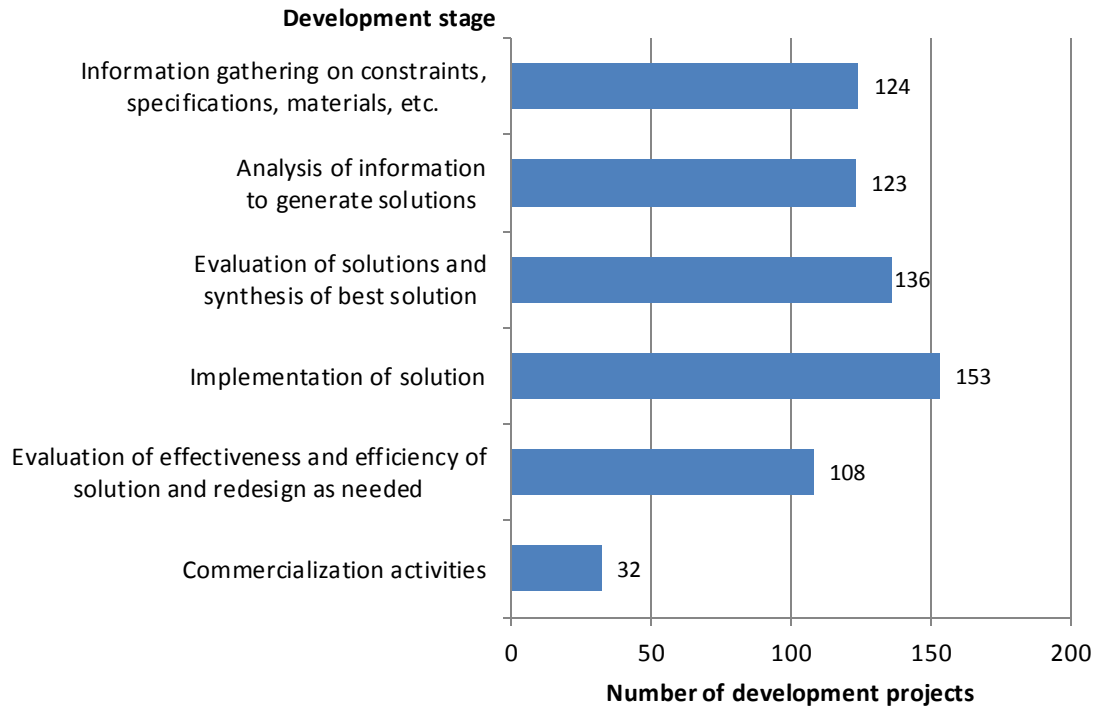


SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Grantees who identified their development projects as *Cross-cutting* were asked to specify which two or more domains applied. Exhibit 16 shows the domains associated with the development projects identified as *Cross-cutting* for 2008 through 2012.
- The most commonly specified domain for the 140 *Cross-cutting* development projects in every year was *Technology*. In addition, in every year *Participation and community living* and *Health and function* were specified more than were *Employment*, *Demographics*, and *Knowledge translation*.

In what stage of the development process were development projects in 2012?

Exhibit 17. Number of development projects, by development stage: 2012



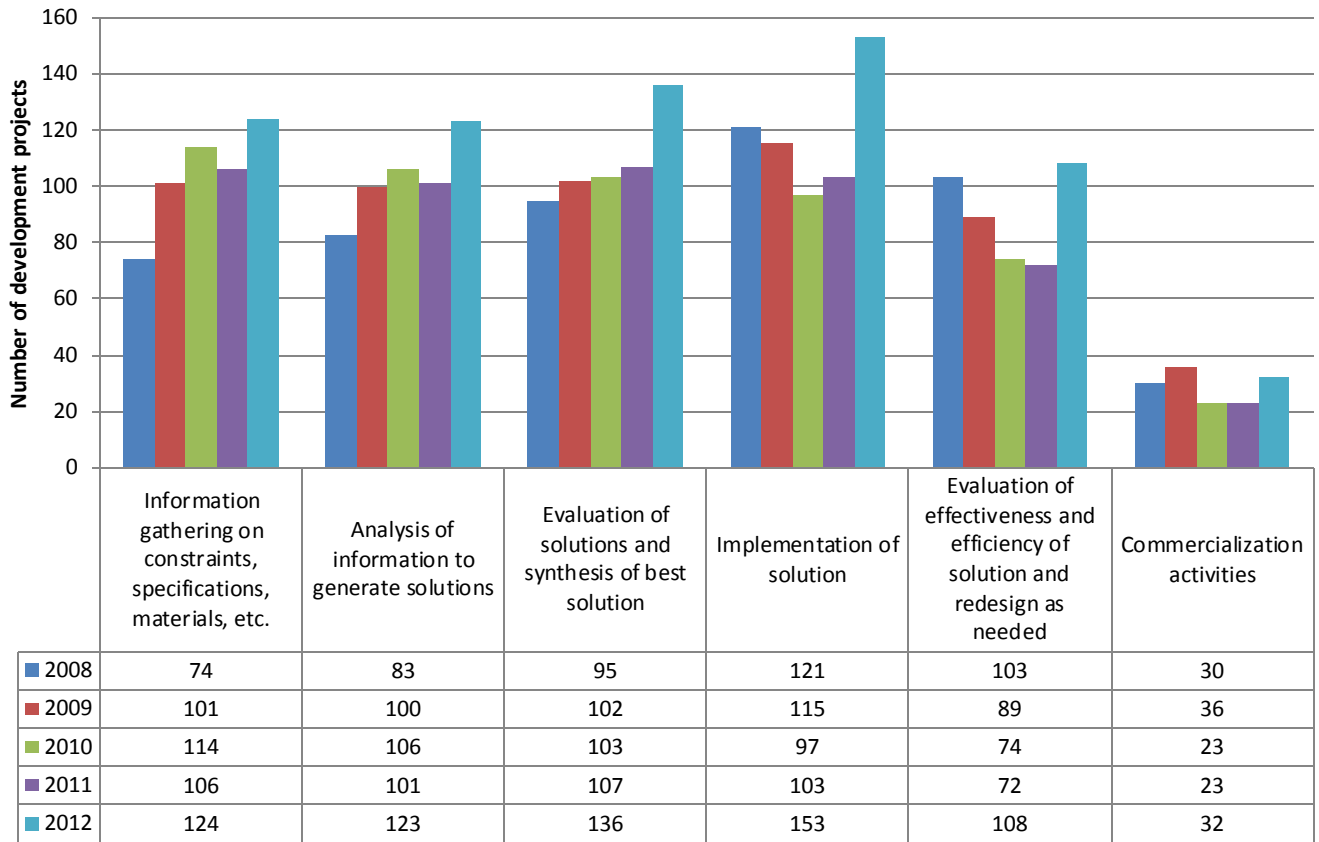
NOTE: Grantees may select more than one development stage for each project. See the Appendix for definitions of each stage.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 11.

- Exhibit 17 shows the development stages for the 260 development projects in 2012. Grantees could select more than one development stage for each project.
- The most frequently cited development stage in 2012 was *Implementation of solution*, while the least common stage was *Commercialization activities*, which applied to 32 of the 260 development projects.

How has development stage status changed from 2008 through 2012?

Exhibit 18. Number of development projects, by development stage: 2008–2012



NOTE: Grantees may select more than one development stage for each project. See the Appendix for definitions of each stage.

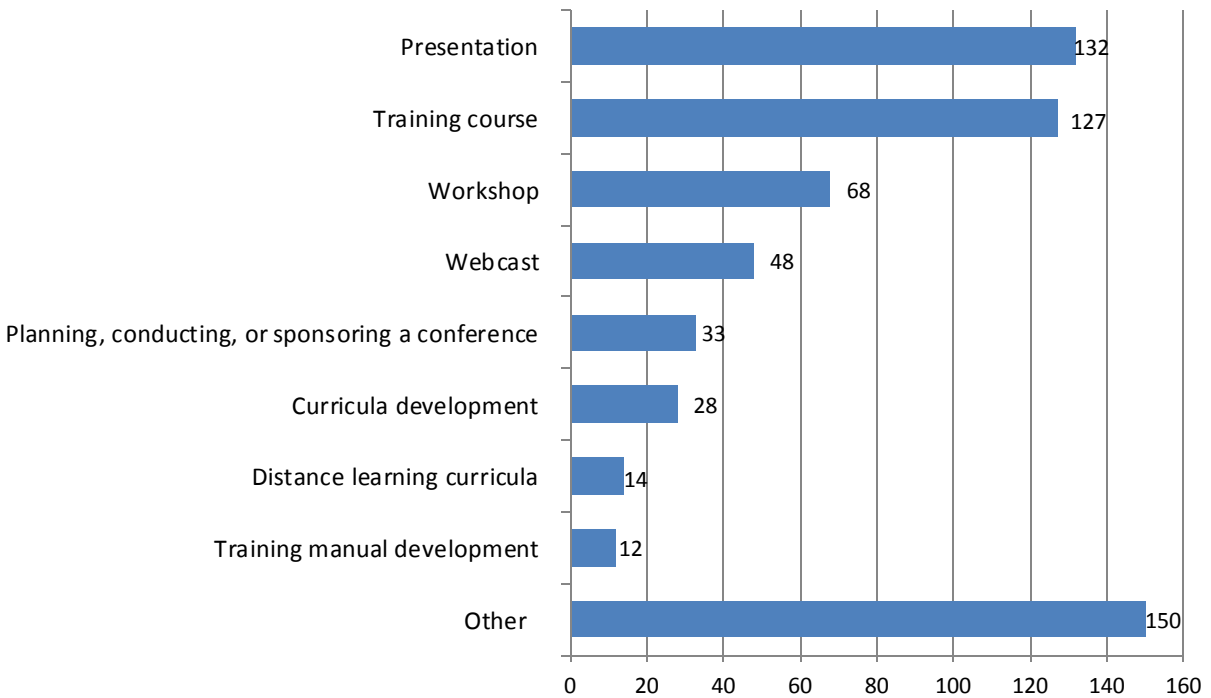
SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 11.

- Development stages vary annually based on the number of years each development project has been funded. For example, when a cohort of grants is in the fourth year, there will be more projects that are in the last few stages of development.
- Exhibit 18 displays the number of development projects reported in each development stage from 2008 through 2012. The most frequently reported development stage in 2012 was *Implementation of solution* with 153 projects, a substantial increase from the 103 projects in 2011. The number of projects reporting *Evaluation of solutions and synthesis of best solution* has steadily increased since 2008. *Commercialization activities* was by far the least common stage in every year. However, the number of development projects increased from 221 to 260 between 2011 and 2012 which may account for the increase in every category of development stage from 2011 through 2012.

Section 5. Training Projects

What types of training projects did grantees conduct in 2012?

Exhibit 19. Number of training projects conducted, by type of activity: 2012

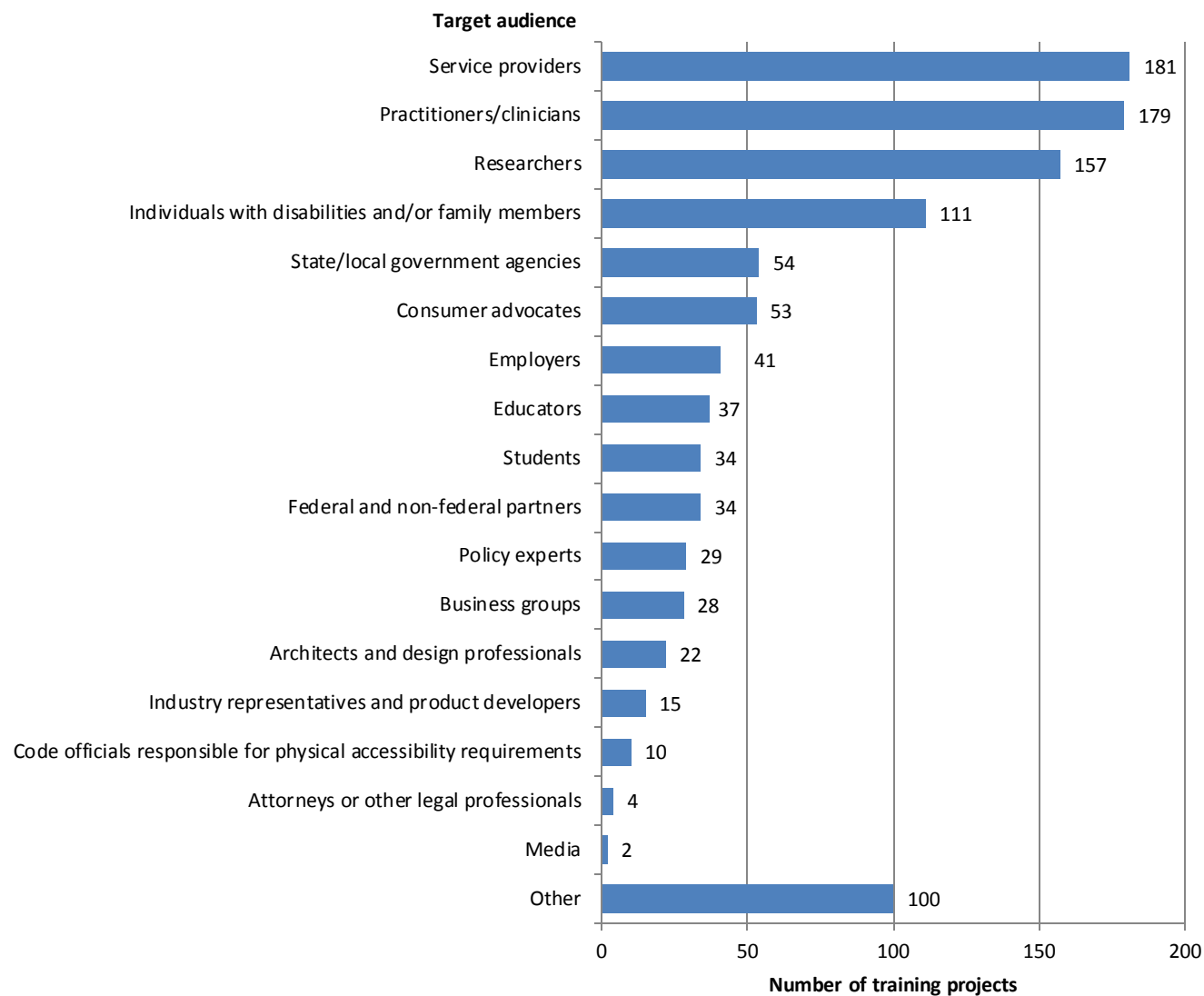


SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 12.

- Grantees were asked to specify the type of training project conducted. Grantees reported 612 training projects. The most common types were *Presentation* (132) and *Training course* (127).

What audiences did NIDRR grants reach through training projects?

Exhibit 20. Number of training projects targeting specific audiences: 2012



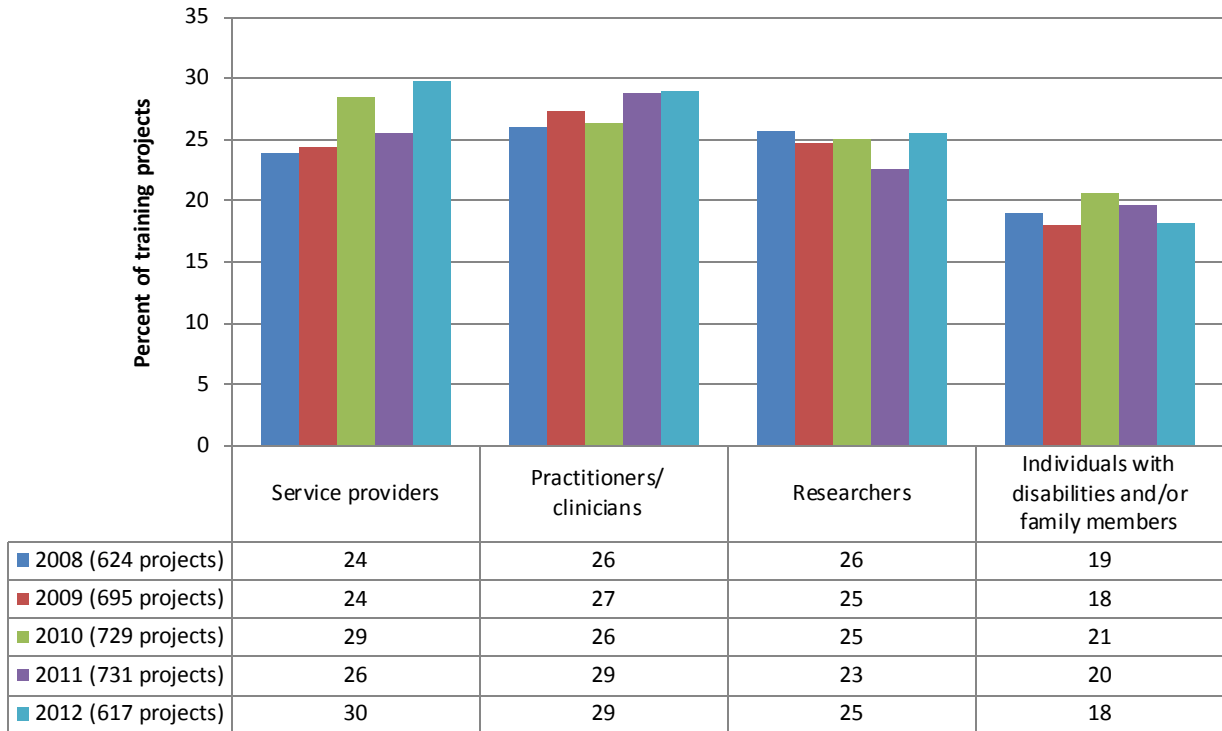
NOTE: Grantees may select up to two target audiences for each training project. This question is not applicable to RFP grants. Only ADA grants report the number of training activities targeting *State/local government agencies*, *Business groups*, *Architects and design professionals*, *Code officials responsible for physical accessibility requirements*, and *Attorneys or other legal professionals*.

SOURCE: NIDRR 2012 Annual Performance Reports, Program Performance Report Table 12.

- Grantees were asked to select no more than two primary target audiences for each training project. The three most common target audiences for the 612 training projects were *Service providers* (served by 181 projects), *Practitioners/clinicians* (179 projects), and *Researchers* (157 projects).

How have the top four audiences for training projects changed from 2008 to 2012?

Exhibit 21. Percentage of training projects, by top four audiences and year: 2008–2012



NOTE: Grantees may select up to two target audiences for each training project.

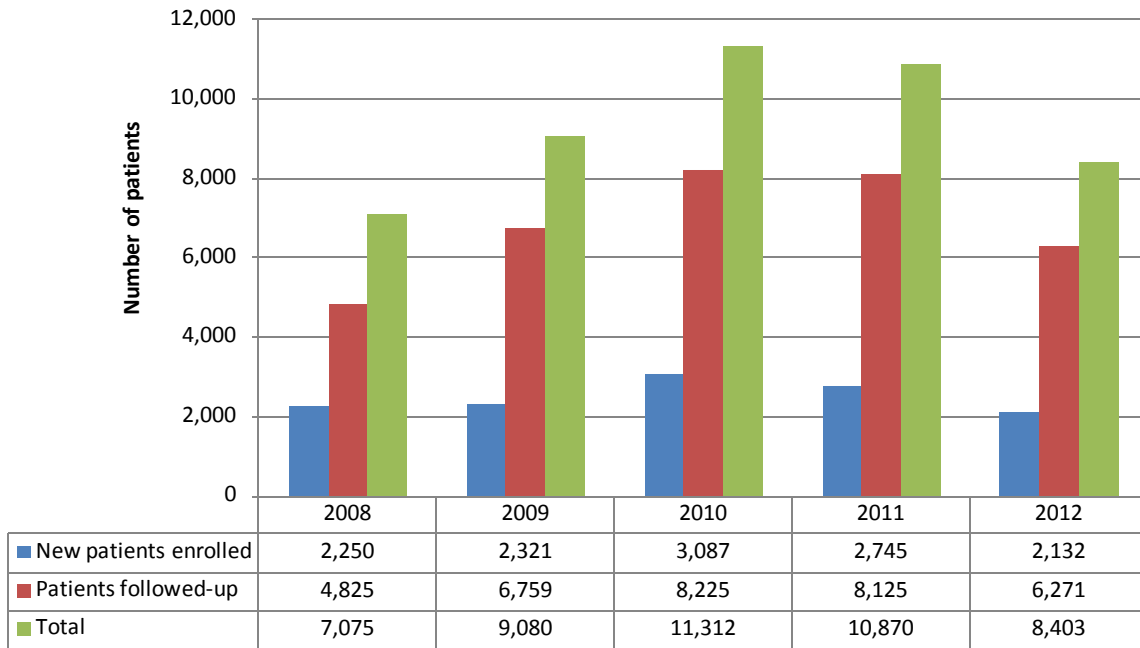
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Exhibit 21 shows the percentage of training projects for the top four audiences. In 2012 the top four were: *Service providers*; *Practitioners/clinicians*; *Researchers*; and *Individuals with disabilities and/or family members*.
- When comparing 2008 and 2012, the percentage of training projects that targeted the top four audiences remained fairly constant from year to year. The largest spread was for *Service providers*, with a 6 percentage point increase from 2008 through 2012.

Section 6. Model Systems Data Sets

How many new patients were enrolled or provided follow-up by model systems in 2008 through 2012?

Exhibit 22. Number of model systems patients enrolled or provided follow-up: 2008–2012



SOURCE: NIDRR 2008–2012 Annual Performance Reports, Program Performance Report Table 17.

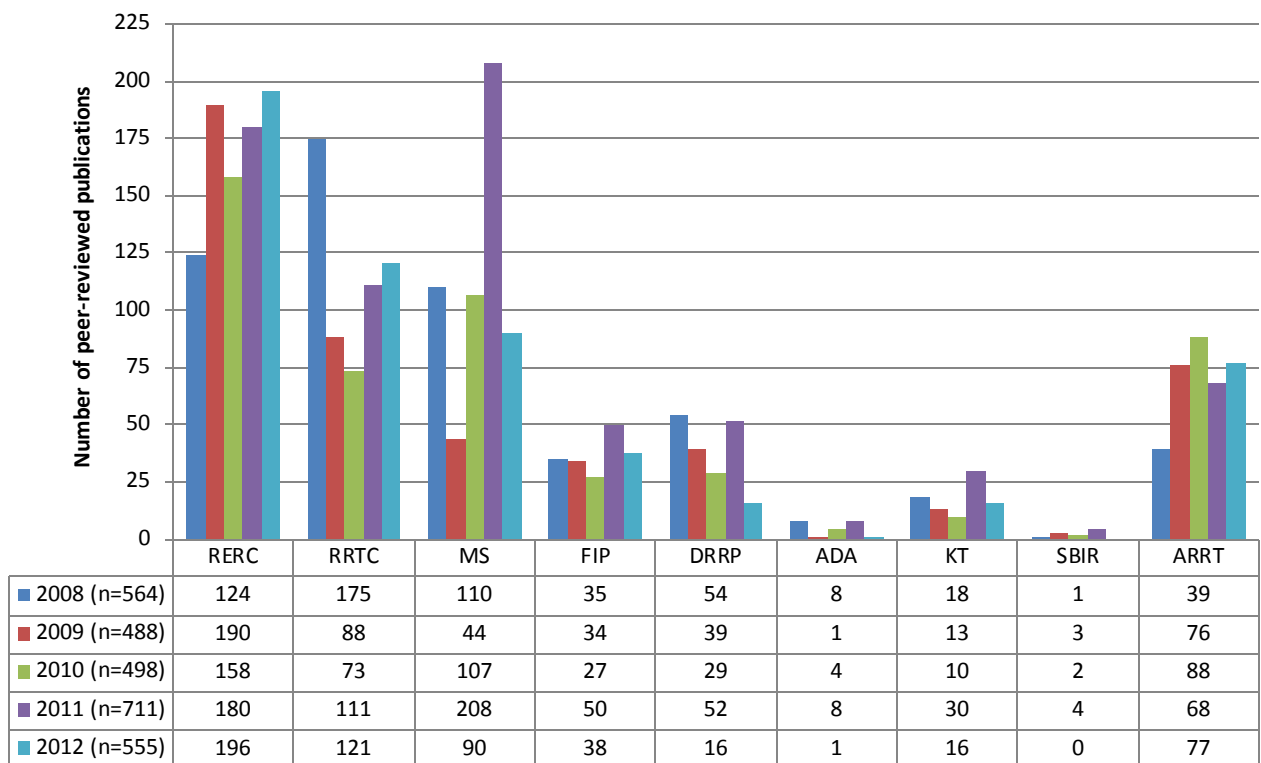
- Exhibit 22 displays the number of model systems patients enrolled or provided follow-up in 2008 through 2012. NIDRR funds three model systems: Spinal Cord Injury, Traumatic Brain Injury, and Burn. As part of their research activities, model systems collect and contribute data on patient characteristics, diagnoses, causes of injury, interventions, outcomes, and costs to a uniform national database. In the APR, each MS grantee was asked to provide the following information for the grant: (1) number of new patients enrolled and added to the database during the reporting period; and (2) number of patients followed up during the reporting period.
- The number of patients enrolled and the number of patients who were followed up in the model systems increased each year from 2008 through 2010, then decreased slightly in 2011 and more substantially in 2012.

Section 8. Products

In the *Outputs* section of the APR, grantees reported on four types of outputs: Type 1, *Publications*; Type 2, *Tools, measures, and intervention protocols*; Type 3, *Technology products and devices*; and Type 4, *Informational products*. Grantees were also asked to identify their *most important* outputs: those that contribute the most to achieving the outcome-oriented goals for the award by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice or system capacity.

How many publications (Type 1 outputs) were produced from 2008 through 2012?

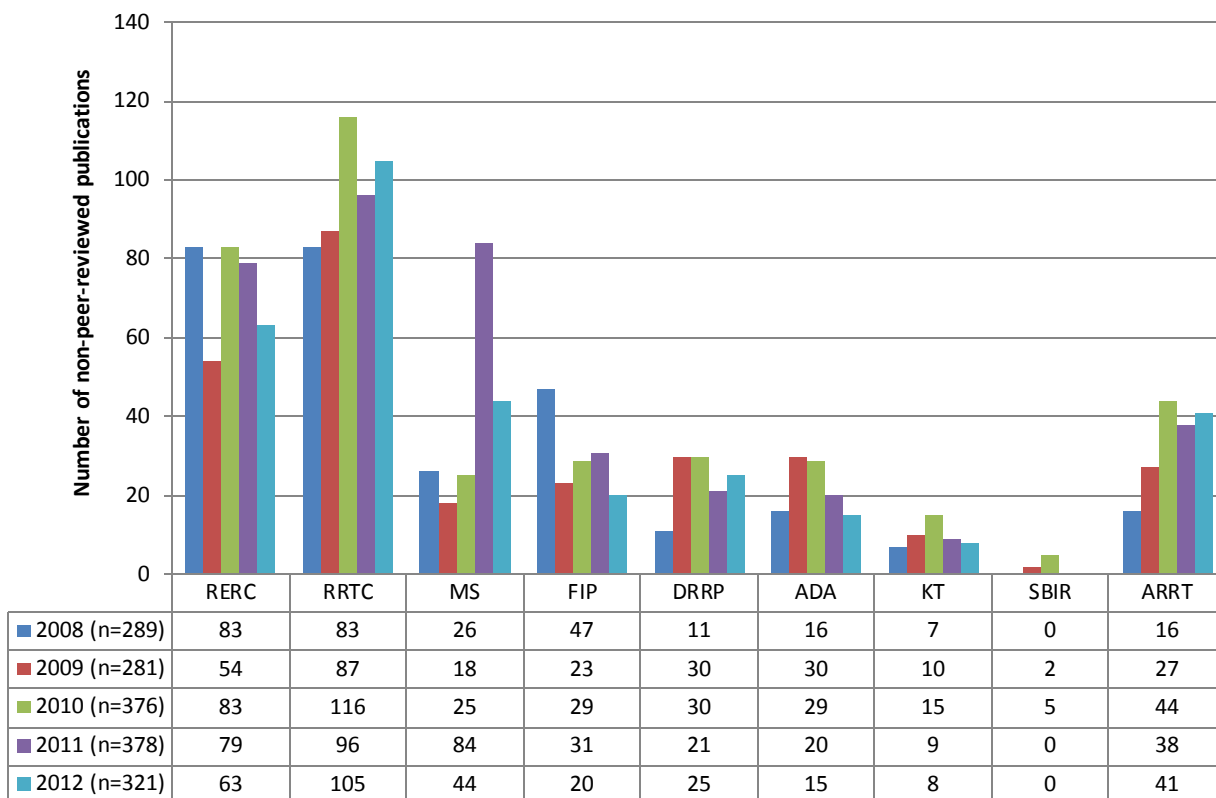
Exhibit 23. Number of peer-reviewed publications, by program mechanism and year: 2008–2012



SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Grantees reported all peer-reviewed publications produced during the current reporting period that were directly funded by the grant, excluding documents currently in review, accepted for publication, in press, or self-published. Exhibit 23 shows the distribution of those publications among program mechanisms.
- Among program mechanisms, RERC grants accounted for the largest number of peer-reviewed publications in all years, except 2008 and 2011. RRTCs reported the most peer-reviewed publications (175) in 2008 and MS grantees reported 208 peer-reviewed publications in 2011.

Exhibit 24. Number of non-peer-reviewed publications, by program mechanism and year: 2008–2012



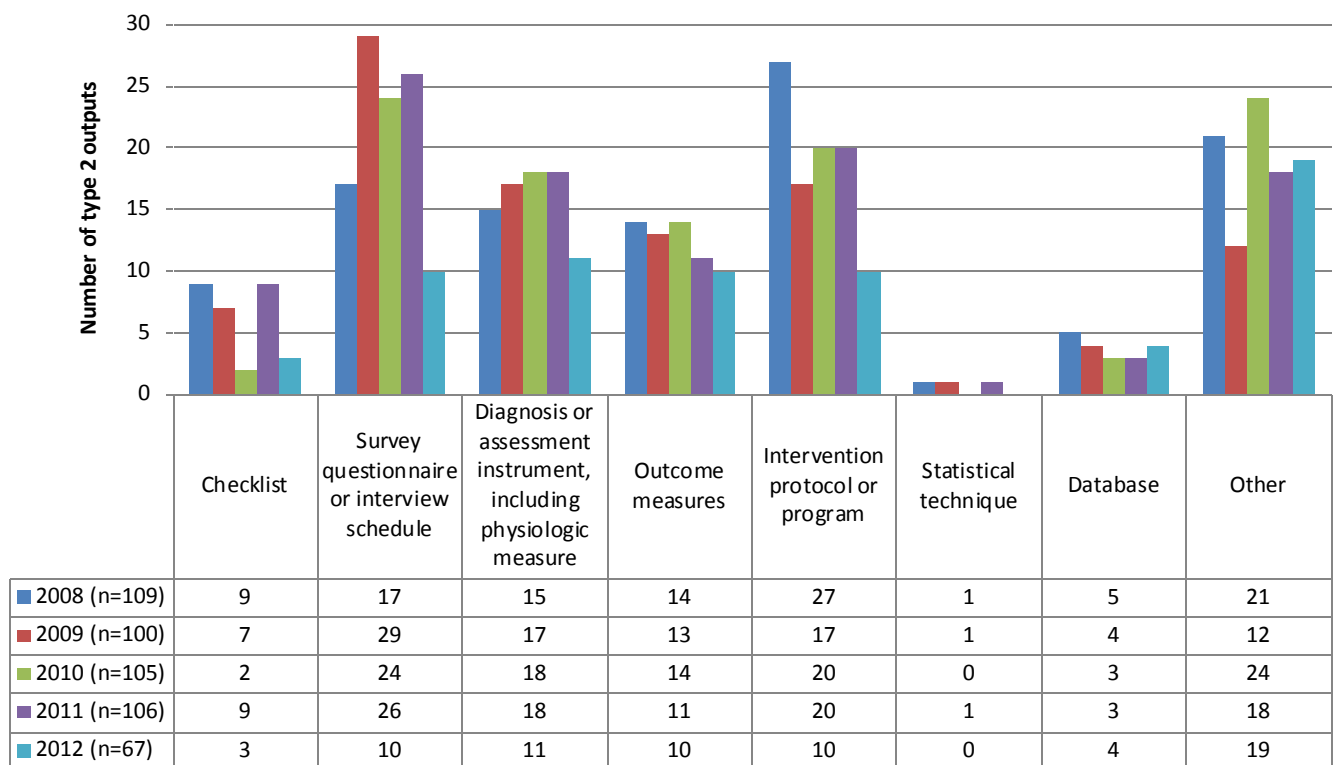
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Grantees reported all non-peer-reviewed publications produced during the current reporting period that were directly funded by the grant, excluding documents currently in review, accepted for publication, in press, or self-published. Exhibit 24 shows the distribution of those publications among program mechanisms.
- Across all years and program mechanisms, the RRTC grants produced the largest number of non-peer-reviewed publications. The only exception was in 2008 when RRTC and RERC grants both reported 83 publications.

How many tools, measures, and intervention protocols (Type 2 outputs) were produced from 2008 through 2012?

Type 2 outputs focus on the *most important* tools, measures, or intervention protocols directly funded by the grant during the reporting period. *Tool* is defined as an instrument or process created to acquire quantitative or qualitative information, knowledge, or data on a specific disability or rehabilitation issue. Tool includes measures and intervention protocols. Grantees reported up to two Type 2 outputs that represent the *most important* accomplishments for the current reporting period, including an explanation of how the tool was validated or tested. *Most important* tools refer to those that contribute the most to achieving the outcome oriented goals for this grant by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

Exhibit 25. Number of most important tools, measures, and intervention protocols (Type 2 outputs), by type of output and year: 2008–2012



NOTE: Grantees may report a maximum of two *most important* Type 2 outputs.

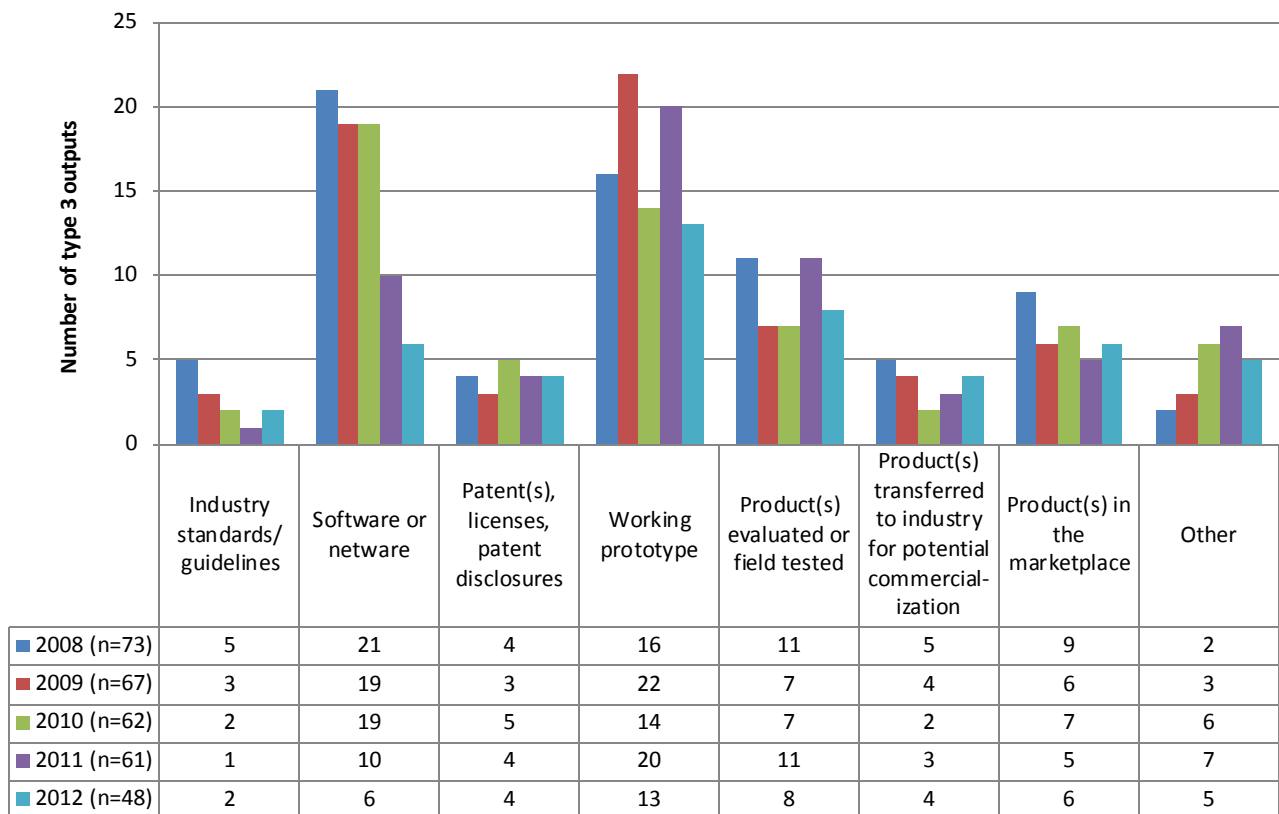
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- The total number of type 2 outputs was fairly constant from 2008 through 2011, but declined to 67 in 2012.
- *Intervention protocol or program* declined the most over the 5-year period, while *Diagnosis or assessment instrument* and *Outcome measures* did not vary much over the same period.

How many technology products and devices (Type 3 outputs) were produced from 2008 through 2012?

Technology products and devices are: industry standards and guidelines; software or netware, inventions; patents, licenses, and patent disclosures; working prototypes; products evaluated or field tested; products transferred to industry for potential commercialization; and products in the market place. Grantees reported up to two Type 3 outputs that represent the *most important* accomplishments for the current reporting period, including an explanation of how the product or device was validated or tested. *Most important* technology products and devices refer to those that contribute the most to achieving the outcome oriented goals for this grant by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

Exhibit 26. Number of most important technology products and devices (Type 3 outputs), by type of output and year: 2008–2012



NOTE: Grantees may report a maximum of two *most important* Type 3 outputs.

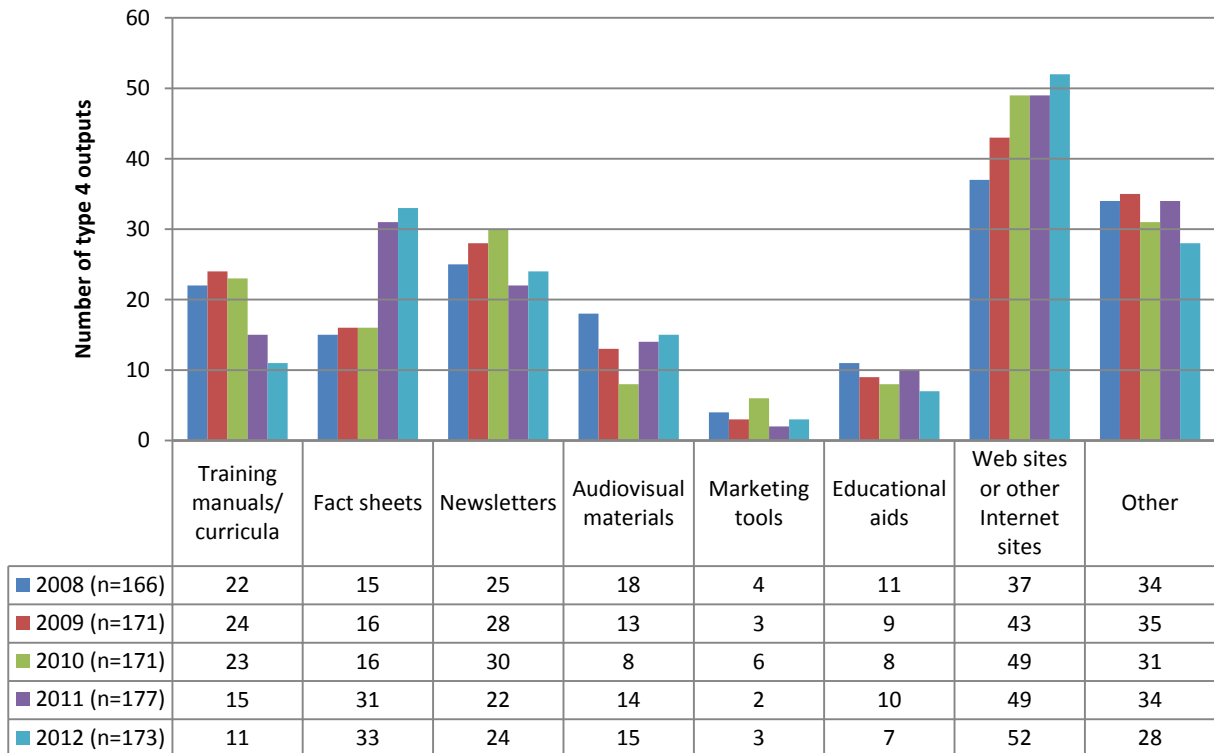
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- The total number of type 3 outputs has steadily declined from 2008 through 2012.
- *Software or netware* declined the most over the 5-year period, while *Patent(s), licenses, patent disclosures* and *Product(s) transferred to industry for potential commercialization* remained fairly constant over the same period.

How many informational products (Type 4 outputs) were produced from 2008 through 2012?

Informational products include training manuals or curricula; fact sheets; newsletters; audiovisual materials; marketing tools; educational aids; and Web sites or other Internet sites that were produced in conjunction with research and development, training, dissemination, knowledge translation, or consumer involvement activities. Grantees reported up to two Type 4 outputs that represent the *most important* accomplishments in the current reporting period, including an explanation of how the informational product was validated or tested. *Most important* informational products refer to those that contribute the most to achieving the outcome oriented goals for this grant by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

Exhibit 27. Number of most important informational products (Type 4 outputs), by type of output and year: 2008–2012



NOTE: Grantees may report a maximum of two *most important* Type 4 outputs.

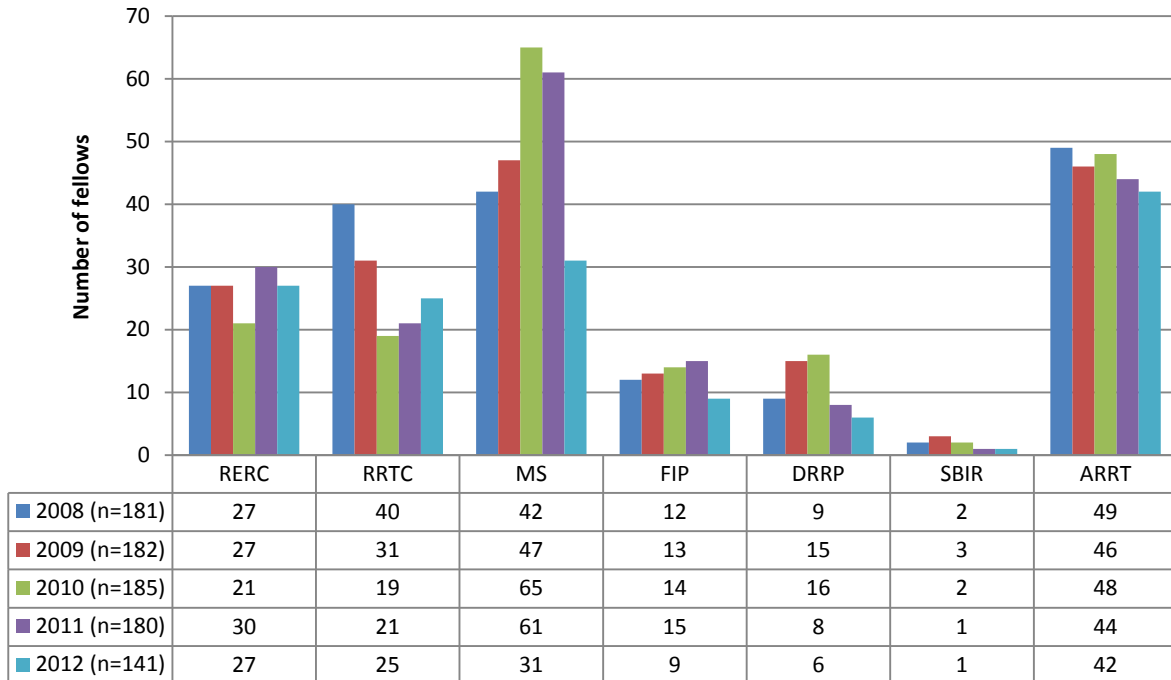
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- The total number of type 4 outputs increased slightly from 166 in 2008 to 173 in 2012.
- *Fact sheets* and *Web sites or other Internet sites* increased the most over the 5-year period, while *Training manuals/curricula* have declined since 2009.

Section 9. Fellows and Graduate Students

How many fellows and graduate students were supported by NIDRR grants from 2008 through 2012?

Exhibit 28. Number of fellows supported by NIDRR grants, by program mechanism and year: 2008–2012

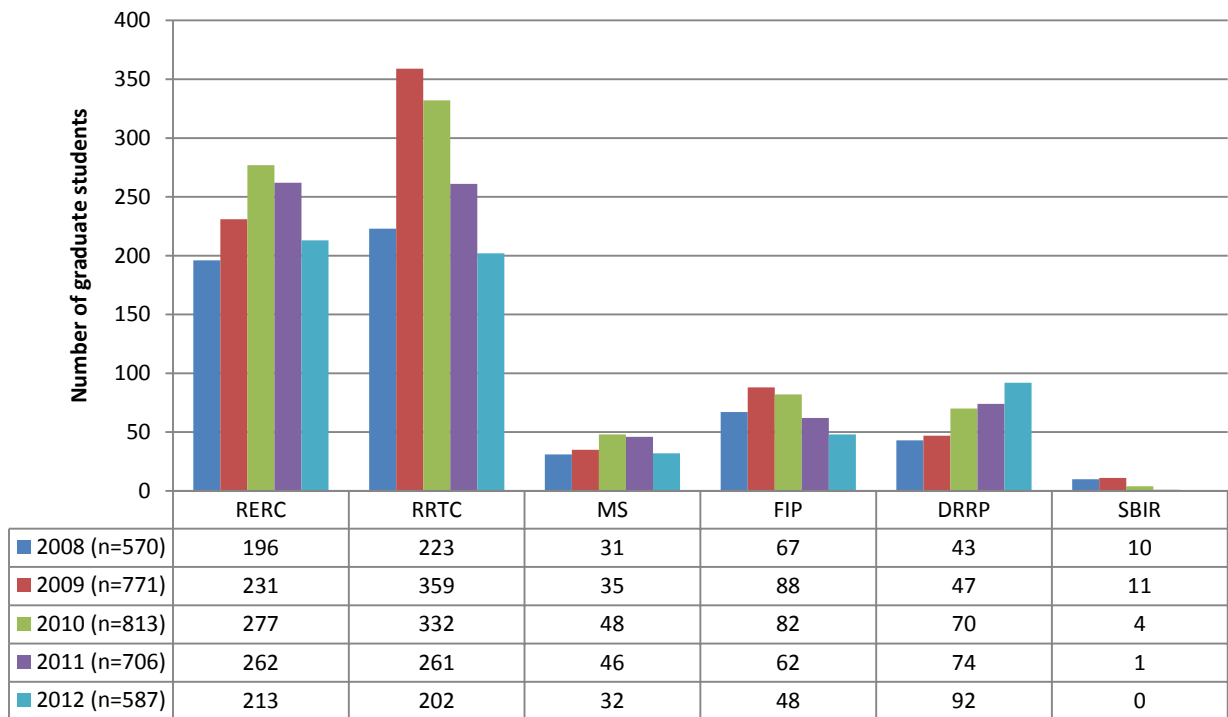


NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model system under the category MS. ADA and KT grants do not support fellows. This question is not applicable to RFP grants.

SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- In 2012, NIDRR grants supported 141 research fellows, a decline from the fairly consistent number in 2008 through 2011. Most fellows were concentrated in the MS and ARRT program mechanisms.

Exhibit 29. Number of graduate students supported by NIDRR grants, by program mechanism and year: 2008–2012



NOTE: DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model systems under the category MS. ADA, KT and ARRT grants do not support graduate students. This question is not applicable to RFP grants.

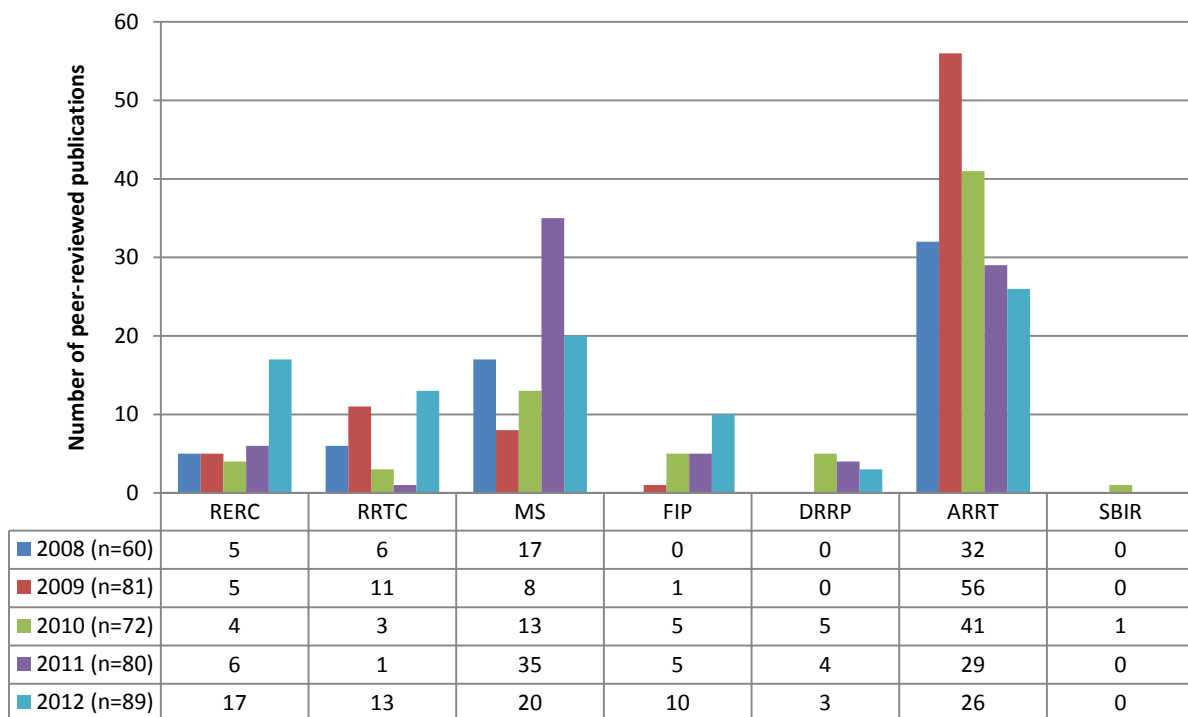
SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- In 2012, NIDRR grants supported 587 graduate students, about the same as in 2008, despite gains in 2009, 2010, and 2011. Most graduate students were concentrated in the RERC and RRTC program mechanisms.

How many peer-reviewed publications were produced by fellows and graduate students?

Grantees were asked to list the peer-reviewed publications based on NIDRR-funded research, published in the current reporting period, that were authored by fellows or graduate students who are currently part of a grantee’s training program or had been in the past 3 years. The fellow or graduate student need not have been the first author, so long as he or she was listed among the authors of the publication. Exhibits 30 and 31 display the number of peer-reviewed publications that were authored by fellows and graduate students in each program mechanism.

Exhibit 30. Number of peer-reviewed publications authored by fellows, by program mechanism and year: 2008–2012

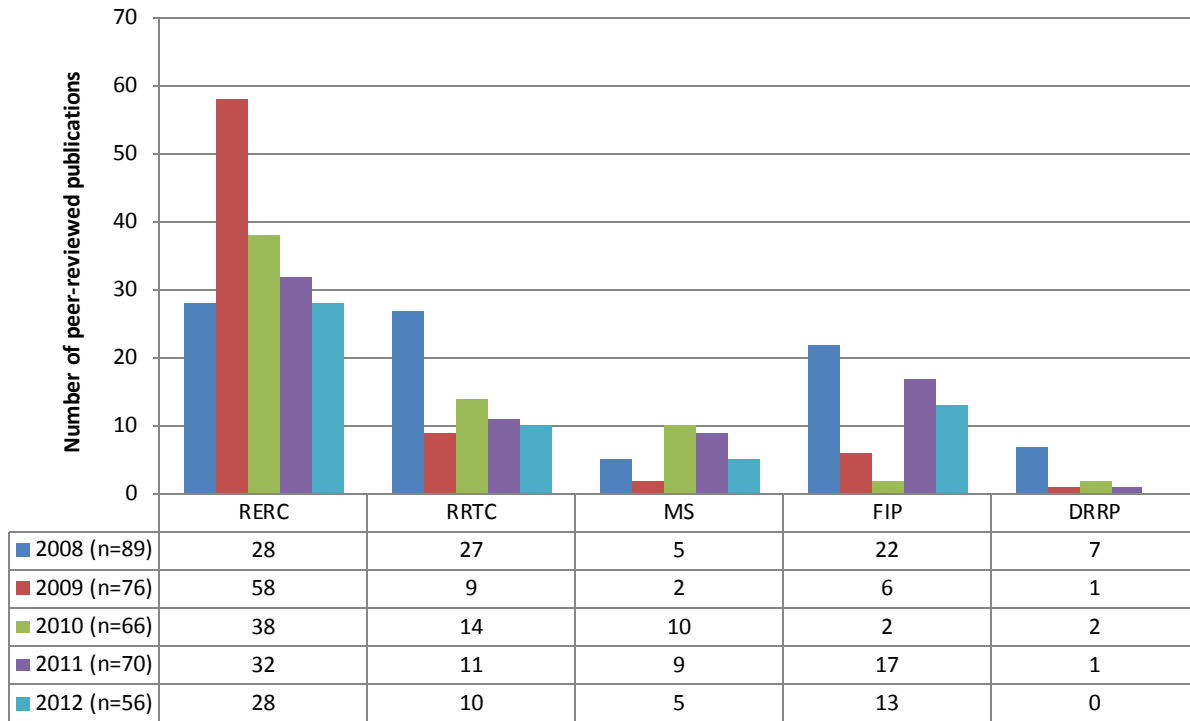


NOTE: DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model systems under the category MS. ADA and KT grants do not support fellows. This question is not applicable to RFP grants.

SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Of the 89 peer-reviewed publications authored by fellows in 2012, ARRT fellows produced 26 of those publications. However, the number of publications from this group has been declining from a high of 56 in 2009. The next closest contribution came from MS fellows with 20 publications. RERC and FIP fellows showed a sizable increase in publications in 2012 compared with previous years.

Exhibit 31. Number of peer-reviewed publications authored by graduate students, by program mechanism: 2012



NOTE: TBI and burn model systems are combined with SCI model systems under the category MS. ADA, KT and ARRT grants do not support graduate students. This question is not applicable to RFP grants.

SOURCE: NIDRR 2008–2012 Annual Performance Reports database, July 23, 2012.

- Of the 56 peer-reviewed publications produced by graduate students in 2012, half originated at RERCs. Since 2008, this program mechanism has been the leading producer of the peer-reviewed publications authored by NIDRR-supported graduate students.

Project Types

Research project is defined as "an intensive systematic study, based on a clear hypothesis or research question that is directed toward producing new scientific knowledge about the subject or problem being studied." This definition was derived from the regulations governing the DRRP program (34 CFR 350.13).

Development project is defined as "use of knowledge and understanding gained from research to create materials, devices, systems, or methods beneficial to the target population, including design and development of prototypes and processes." This definition was derived from the regulations governing the DRRP program (34 CFR 350.16).

Program Mechanisms as Used in This Report

Advanced Rehabilitation Research Training Projects (ARRT) provide funding to institutions of higher education to recruit qualified post-doctoral candidates with clinical, management, basic or engineering research experience and prepare them to conduct independent research on disability and rehabilitation issues.

Americans with Disabilities Act National Network (ADA) is a subcategory of DRRP, but is presented as a separate category in this report. The ADA network was formerly known as Disability and Business Technical Assistance Centers (DBTAC).

Disability and Rehabilitation Research Projects (DRRP) emphasize research and development projects, training, and knowledge translation on rehabilitation topics. DRRP subcategories are: Knowledge Translation (KT), Americans with Disabilities Act National Network (ADA), Traumatic Brain Injury Model Systems Centers (TBI), Burn Model Systems Centers, and "general" DRRPs. In this report, the DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS.

Field-Initiated Projects (FIP) address rehabilitation issues in promising and innovative ways. As the name implies, topics for these projects are chosen by the applicants. Awards are based upon merit and potential impact on the field of rehabilitation.

Knowledge Translation (KT) Projects are a subcategory of DRRP, but are presented as a separate category in this report.

Model Systems (MS) study the course of recovery and outcomes following the delivery of a coordinated system of care. MS centers provide comprehensive rehabilitation services and conduct research, including clinical research. There are three model systems: Spinal Cord Injury (SCI), Traumatic Brain Injury (TBI), and Burn. The TBI and Burn model systems are funded as a subcategory of DRRP, but are combined with SCI for this report.

Rehabilitation Engineering Research Centers (RERC) conduct programs of advanced engineering and technical research designed to apply technology, scientific achievement, and psychological and social knowledge to solve rehabilitation problems and remove environmental barriers. RERCs are affiliated with institutions of higher education or non-profit organizations.

Rehabilitation Research and Training Centers (RRTC) conduct coordinated and integrated advanced research to alleviate or stabilize disabling conditions, promote maximum social and economic independence of people with disabilities, or improve rehabilitation methodology or service delivery systems. RRTCs operate in collaboration with institutions of higher education and providers of rehabilitation services and serve as national centers of excellence in rehabilitation research.

Research Fellows Program (RFP), also known as the Mary E. Switzer Fellowship, gives individual researchers an opportunity to develop new ideas and gain research experience. Fellows design and work for one year on an independent research project. RFP grants began reporting through the APR in 2009. These grants are also known as Mary E. Switzer Fellowships.

Small Business Innovation Research (SBIR) grants, as administered by NIDRR as a part of the larger mandatory SBIR program, help support the production of new assistive and rehabilitation technology. This two-phase program takes a rehabilitation-related product from development to market readiness. SBIR Phase I grants do not report through the APR.

Domains

Domains come from the NIDRR Long-range Plan, 2005-2009.

Health and function encompasses research to achieve outcomes at the individual level—improved functioning, fitness, and health, including mental health. This domain also addresses goals at the system level, such as more effective service delivery systems, better access (financial and logistical) to healthcare services, and the assessment of rehabilitation effectiveness.

Employment represents research on employment-related activities and strategies to improve employment outcomes and labor force participation.

Participation and community living represents the interaction with the social and built environment in a way that maximizes full inclusion and integration of people with disabilities. This domain focuses on direct supports that increase the availability of acceptable options and opportunities to make choices and enhance participation in everyday activities.

Technology for access and function is essential to community integration, employment, and health and function, and plays a major role in enabling a good fit between individuals with disabilities and the environment.

Demographics emphasizes describing and characterizing people with disabilities to provide a better understanding of the phenomenon of disability.

Cross-cutting, while not a Long-range Plan domain, is used in the APR when two or more domains apply to a project.

Research Methods

These are the definitions contained in the APR instructions.

Survey. In a sample survey, data are collected from a sample of a population to determine the incidence, distribution, and interrelation of naturally occurring events and conditions. The overriding concern in the sample survey strategy is to collect information in such a way that conclusions can be drawn about elements of the population that are not in the sample as well as about elements that are in the sample.

Observation, or naturalistic study, is a study where no explicit intervention is given but organizations or groups or individuals are observed naturally carrying out their business or practices and this is documented in a detailed way.

Case studies. A case study is an analytic description of an event, a process, an institution, or a program.

Focus groups combine both interviewing and observation skills and allow the observation of a large amount of interaction on a topic in a short time.

Secondary analysis is an approach rather than a design because the data that are involved have already been acquired under an original design for data collection, using some technique such as self-administered questionnaires.

Meta-analysis is a way of averaging “effect sizes” from several studies. Effect size is proportional to the difference in outcome between a treatment group and a comparison group.

Intervention study—Experimental design or randomized control design. Some units of study are randomly assigned to a treatment group and some are assigned to one or more comparison groups. Random assignment means that every unit available to the experiment has a known probability of being assigned to each group and that the assignment is made by chance, as in the flip of a coin. The program’s or intervention’s effects are estimated by comparing outcomes for the treatment group with outcomes for each comparison group.

Intervention study—Quasi-experimental design. Similar to a true experimental design/randomized control trial in that both designs consist of a treatment group and one or more comparison groups. However, with a quasi-experimental design, membership in a treatment group or comparison group is not randomly assigned. This difference is important because it implies that, since the groups will not be equivalent, causal statements about treatment effects may be substantially weakened.

Intervention study—Single-subject design. May involve only one participant but typically include multiple participants (e.g., 3 to 8) in a single study. Each participant serves as his or her own control. Performance prior to intervention is compared to performance during and/or after intervention. In most cases, a research participant is an individual, but it is possible for each participant to be a group whose performance generates a single score per measurement period, i.e., the rate of problem behavior performed by all children within a classroom during a 20-minute period.

Qualitative Interview. Structured or unstructured interviews where the goal is understand something from the respondent’s point of view and to understand the meaning of their experiences. This category was added to the APR in 2011.

Other. Select ‘other’ only if none of the listed categories apply.

Development Stages

Information gathering on constraints, specifications, materials, etc. Searching for pertinent information and facts and developing reasonable forecasts or making assumptions where information is not possible or reliable. All the measurable factors, constraints, and features that might be of importance to filter out the best solution must be localized and analyzed.

Analysis of information to generate solutions. Separating the problem from the general problem solution, clarifying the real problem from the apparent ones, and stating the independent-to-dependent relationships.

Evaluation of solutions and synthesis of best solution. Combining elementary components to build up multiple families of alternatives before yielding a detailed solution. This phase also requires detailed analysis, which involves defining and setting up criteria to test results, verifying and validating a system, and optimizing component features.

Implementation of solution. Implementation encompasses all the processes involved in getting a new product operating properly in its environment, including installation, configuration, running, testing, and making necessary changes.

Evaluation of effectiveness and efficiency of solution and redesign as needed. New tools, methods, and procedures, which were previously unknown or develop over time.

Commercialization activities. The product or device has been built, evaluated, and field-tested. Grantee has identified an industry partner (e.g., company or organization) and is engaged in discussions about the feasibility of producing and marketing the product or device for distribution to customers.