Phase 1

Federal PAIN Portfolio PREVIEW

Federal Agencies: AHRQ, CDC, DoD, FDA, NIH, VA

Interagency Pain Research Coordinating Committee

March 27, 2012

Federal Data Call on Pain Activities

Overall categories:

- Science Advances
- Portfolio Analysis – research categories:
  - Basic Research
  - Translational Research
  - Clinical Research
  - Comparative Effectiveness Research
  - Epidemiology
  - Health Disparities
- Education and Dissemination
- Public-Private Partnerships

Basic and translational research

- Underlying molecular mechanism of nerve injury induced pain **DoD, NIH**
- Mechanisms and long term consequences of acute trauma and disease that lead to chronic pain **NIH, VA**
- Quality of life and pathobiology of overlapping chronic pain conditions and non pain conditions **DoD, NIH, VA**
- Drug discovery and development and preclinical testing of novel analgesics , including, alternatives to opioids, and analgesic delivery systems for acute trauma pain and chronic pain **DoD, NIH, VA**
- Therapy development for restoration of nervous system function after nerve injury NPP and SCD **NIH, VA**

Clinical Research

- Evaluation of pharmacological therapies, behavioral interventions, and adjunct therapies for low back pain **AHRQ, DoD, NIH, VA**
- Evaluation of prescription analgesics and prevention and management strategies for drug especially opioids, use and abuse **DoD, FDA, NIH**
- Pain and QOL assessment, pain management, and pain education in the elderly **NIH, VA**
- Tools and registries for pain assessment and outcomes **DoD, NIH**
- Evaluation of therapies for musculoskeletal disorders and osteoarthritis pain **AHRQ, NIH**

Epidemiology and Health Disparities

- Trends in use and abuse of prescription and OTC analgesics, ER, and hospitalizations related to analgesic use **CDC, FDA**
- Surveillance of health practices and risk behaviors relevant to cancer pain and arthritis, from communities to population-wide studies **CDC, NIH**
- Surveillance of health practices and risk behaviors and burden of disease relevant to chronic pain conditions in adults, veterans, and the elderly **CDC, NIH, VA**
- Tracking long-term outcomes, including PTSD and chronic pain, as a consequence of of acute trauma (blast, burn, amputation) **DoD, VA**
- Disparities in access to and delivery of services to manage acute pain, lower back pain, cancer pain, arthritis **CDC, NIH, VA**

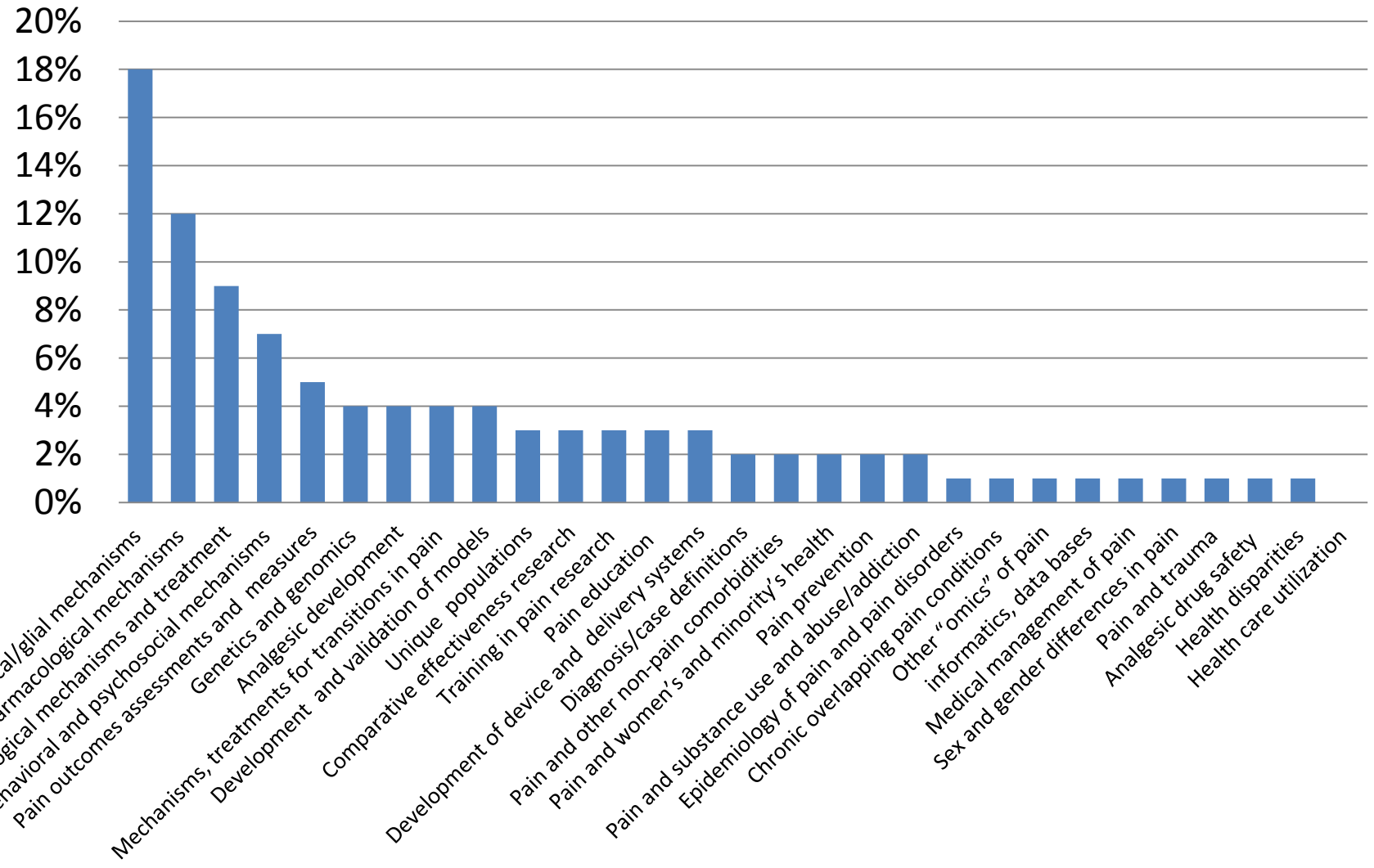
Training, education, and dissemination

- Career development programs for pain research **VA, NIH**
- Training in pain management for burn pain **DoD, VA**
- Training for addiction medicine skills; educating opioid prescribers on opioid utilization and abuse prevention **FDA, NIH**
- Training in Anesthesia **DoD, NIH**
- Academic details, curriculum tools for training in chronic pain management for health care providers **CDC, DoD, NIH, VA**

Summary

- Broad federal pain research portfolio with some degree of specialization among agencies based on agency mission
- Cross-agency support for research on pharmacological and non-pharmacological treatments for musculoskeletal pain disorders, specifically lower back pain and arthritis
- Multiple agencies involved in research and education efforts on prescription drug use and abuse
- Current public-private partnerships focused on CAM therapies for chronic pain, pain management models, arthritis, and drug discovery process

Phase 2, October, 2012



Phase 3, March 2013

Top Pain conditions

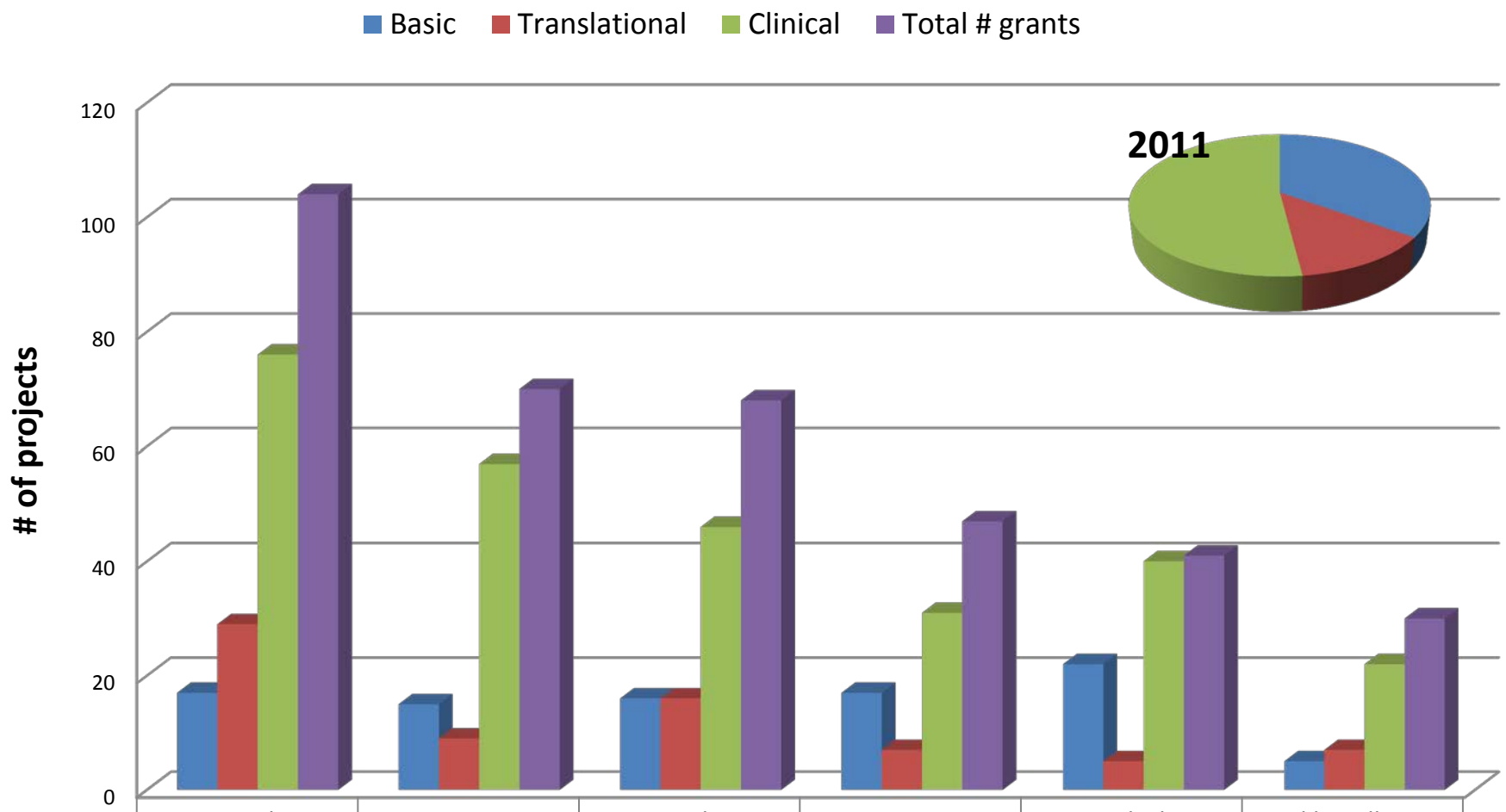
1. Osteoarthritis (OA)
2. Cancer Pain (CA)
3. Low Back Pain (LBP)
4. Irritable Bowel Syndrome (IBS)
5. Headache (HA)
6. Sickle Cell Pain (SC)

Grouped pain

1. Neuropathic Pain
2. Visceral Pain
3. Acute/Subacute Pain
4. TMJ/Orofacial Pain
5. Chronic Pelvic Pain
6. Peripheral Neuropathy
7. Musculoskeletal

1. Top tier 2 categories
2. Pharmacological mechanisms and treatment
3. Non-pharmacological mechanisms and treatment
4. Biobehavioral and pyschosocial mechanisms and treatment
5. Pain outcomes, assessments and measures and novel health information technology as tools for decision making support of pain management
6. Unique Populations
7. Pain and other non-pain comorbidities

To compare number of projects in basic, translational or clinical research for each top condition



	Osteoarthritis	Cancer Pain	Low Back Pain	IBS	Headache	Sickle Cell Pain
Basic	17	15	16	17	22	5
Translational	29	9	16	7	5	7
Clinical	76	57	46	31	40	22
Total # grants	104	70	68	47	41	30

*Total # grants does not equal basic + translational + clinical because one grant can belong to more than one category

Sickle cell pain research by Secondary Code (% of Projects)

Sickle Cell pain	% of Projects
13. Pain outcomes assessments and measures, and novel health information technology as tools for decision making support of pain management	13%
17. Health disparities in pain, pain management, and access to care	11%
1. Neurobiological/glial mechanisms of nociception and pain 5. Development and validation of animal and human pain models	9%
2. Genetics and genomics of nociception and pain 7. Pharmacological mechanisms and treatment 10. Medical management of pain[1] 18. Pain and women's and minority's health research[2]	7%
15. Pain education[3]	5%
8. Non-pharmacological mechanisms and treatment 9. Biobehavioral and psychosocial mechanisms and treatment of pain 11. Analgesic development 12. Development of device and therapy delivery systems 28. Training in pain research	4%
3. Other "omics" of pain 6. Diagnosis/case definitions 27. Pain and other non-pain comorbidities 29. Health care utilization	2%

[1] Medical management of pain: self management - 2

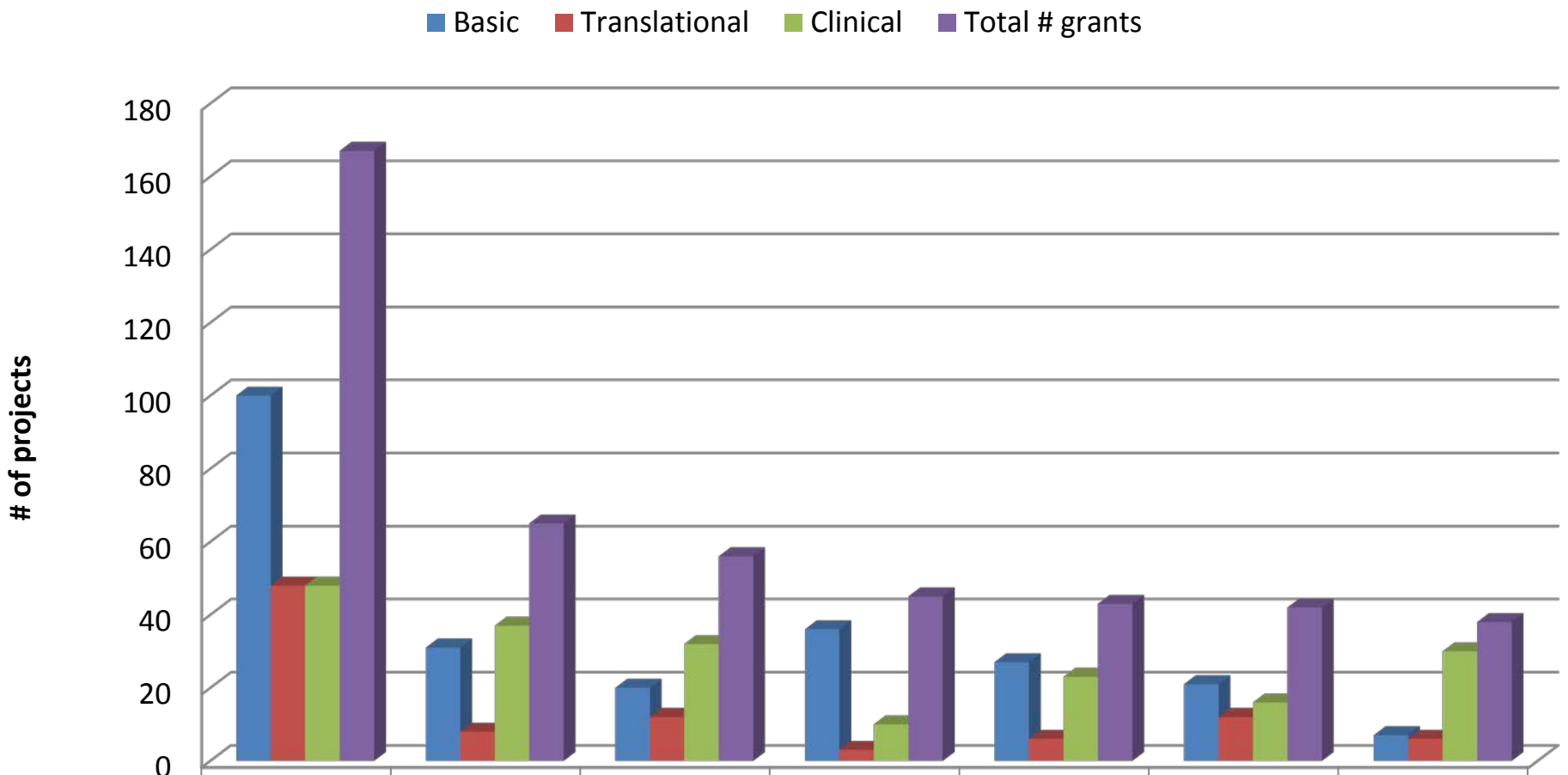
[2] Pain and women's and minority's health research: minorities - 5

[3] Pain education: health care provider - 1; patient – 1

N=30

% of projects in a secondary code within top condition	Top Conditions					
Secondary Code	OA	Cancer	LBP	IBS	HA	SICKLE
1. Neurobiological/glial mechanisms of nociception and pain:	8%	12%	6%	19%	16%	9%
2. Genetics and genomics of nociception and pain:	1%	3%	0%	4%	3%	7%
3-Other "omics" of pain:	5%	1%	1%	5%	0%	2%
4. Mechanisms of and treatments for transitions in pain phases:	3%	2%	4%	5%	6%	0%
5. Development and validation of animal and human pain models:	1%	4%	4%	10%	11%	9%
6. Diagnosis/case definitions:	14%	0%	2%	0%	4%	2%
7. Pharmacological mechanisms and treatment:	4%	12%	3%	2%	5%	7%
8. Non-pharmacological mechanisms and treatment:	28%	12%	26%	5%	4%	4%
9. Biobehavioral and psychosocial mechanisms and treatment of pain:	7%	8%	13%	10%	3%	4%
10. Medical management of pain	0%	4%	3%	1%	0%	7%
a. Self management approaches (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%
b. Team based treatment approaches	0%	0%	0%	0%	0%	0%
11. Analgesic development:	0%	0%	0%	0%	0%	4%
12. Development of device and therapy delivery systems:	1%	2%	0%	0%	1%	4%
13. Pain outcomes assessments and measures, and novel health information technology as tools for decision making support of pain management:	6%	2%	9%	5%	5%	13%
14. Development of informatics, data bases, and information technologies as tools for pain research:	1%	0%	3%	1%	0%	0%
15. Pain education	5%	11%	0%	0%	0%	5%
a. Health care provider education (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%
b. Caregiver education	0%	0%	0%	0%	0%	0%
c. Patient education	0%	0%	0%	0%	0%	0%
d. Public education	0%	0%	0%	0%	0%	0%
16. Epidemiology of pain and pain disorders:	1%	1%	1%	2%	4%	0%
17. Health disparities in pain, pain management, and access to care:	1%	5%	0%	0%	0%	11%
18. Pain and women's and minority's health research	0%	2%	1%	4%	4%	7%
a. women (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%
b. minorities	0%	0%	0%	0%	0%	0%
19. Unique populations	8%	14%	4%	5%	6%	0%
a. Pediatric (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%
b. Elderly	0%	0%	0%	0%	0%	0%
c. end of life	0%	0%	0%	0%	0%	0%
d. Disabled	0%	0%	0%	0%	0%	0%
e. military	0%	0%	0%	0%	0%	0%
20. Sex and gender differences in pain	1%	0%	2%	3%	3%	0%
a. Male (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%
b. female	0%	0%	0%	0%	0%	0%
21. Comparative effectiveness research:	0%	1%	8%	1%	3%	0%
22. Pain and substance use and abuse/addiction	0%	0%	1%	0%	0%	0%
23. Analgesic drug safety	0%	0%	0%	1%	0%	0%
24. Pain and trauma	1%	0%	0%	0%	0%	0%
25. Pain prevention	5%	1%	3%	2%	1%	0%
26. Chronic overlapping pain conditions in an individual	0%	0%	0%	1%	1%	0%
27. Pain and other non-pain comorbidities	1%	1%	1%	1%	9%	2%
28. Training in pain research	2%	2%	3%	9%	13%	4%
29. Health care utilization	0%	0%	3%	0%	0%	2%
	100%	100%	100%	100%	100%	100%

To compare number of projects in basic, translational or clinical research for each grouped condition



	Neuropathic Pain	Visceral	Acute/ Subacute	TMJ/ Orofacial	Chronic Pelvic Pain	Peripheral Neuropathies	Musculo-skeletal
Basic	100	31	20	36	27	21	7
Translational	48	8	12	3	6	12	6
Clinical	48	37	32	10	23	16	30
Total # grants	167	65	56	45	43	42	38

*Total # grants does not equal basic + translational + clinical because one grant can belong to more than one category

% of projects in a secondary code within grouped condition	Grouped Conditions						
Secondary Code	Neuro pathic	Visceral	Acute/ Subacute	TMJ/ Orofacial	chronic pelvic pain	peripheral neuropathi	Musculo-skeletal
1. Neurobiological/glial mechanisms of nociception and pain:	24%	25%	11%	23%	23%	23%	6%
2. Genetics and genomics of nociception and pain:	8%	3%	2%	9%	6%	6%	2%
3-Other "omics" of pain:	1%	4%	1%	1%	4%	0%	2%
4. Mechanisms of and treatments for transitions in pain phases:	10%	6%	5%	0%	1%	11%	8%
5. Development and validation of animal and human pain models:	7%	9%	5%	11%	13%	9%	8%
6. Diagnosis/case definitions:	1%	0%	0%	1%	1%	0%	8%
7. Pharmacological mechanisms and treatment:	7%	3%	2%	10%	6%	11%	0%
8. Non-pharmacological mechanisms and treatment:	5%	4%	4%	0%	2%	6%	28%
9. Biobehavioral and psychosocial mechanisms and treatment of pain:	3%	9%	6%	7%	4%	5%	11%
10. Medical management of pain	1%	1%	0%	0%	0%	2%	4%
a. Self management approaches (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%	0%
b. Team based treatment approaches	0%	0%	0%	0%	0%	0%	0%
11. Analgesic development:	7%	0%	6%	1%	0%	5%	2%
12. Development of device and therapy delivery systems:	5%	0%	4%	5%	5%	0%	6%
13. Pain outcomes assessments and measures, and novel health information technology as tools for decision making support of pain	2%	6%	6%	3%	1%	3%	6%
14. Development of informatics, data bases, and information technologies as tools for pain research:	1%	2%	1%	1%	4%	0%	0%
15. Pain education	0%	0%	1%	0%	0%	0%	0%
a. Health care provider education (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%	0%
b. Caregiver education	0%	0%	0%	0%	0%	0%	0%
c. Patient education	0%	0%	0%	0%	0%	0%	0%
d. Public education	0%	0%	0%	0%	0%	0%	0%
16. Epidemiology of pain and pain disorders:	0%	3%	5%	1%	8%	0%	0%
17. Health disparities in pain, pain management, and access to care:	0%	0%	0%	0%	0%	2%	0%
18. Pain and women's and minority's health research	0%	3%	2%	1%	6%	2%	2%
a. women (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%	0%
b. minorities	0%	0%	0%	0%	0%	0%	0%
19. Unique populations	3%	4%	7%	1%	0%	3%	2%
a. Pediatric (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%	0%
b. Elderly	0%	0%	0%	0%	0%	0%	0%
c. end of life	0%	0%	0%	0%	0%	0%	0%
d. Disabled	0%	0%	0%	0%	0%	0%	0%
e. military	0%	0%	0%	0%	0%	0%	0%
20. Sex and gender differences in pain	0%	3%	2%	9%	1%	0%	0%
a. Male (subcategories are all set to zero)	0%	0%	0%	0%	0%	0%	0%
b. female	0%	0%	0%	0%	0%	0%	0%
21. Comparative effectiveness research:	2%	1%	4%	2%	0%	0%	4%
22. Pain and substance use and abuse/addiction	0%	0%	0%	0%	0%	0%	0%
23. Analgesic drug safety	1%	1%	1%	0%	0%	0%	0%
24. Pain and trauma	3%	0%	4%	0%	0%	0%	0%
25. Pain prevention	2%	2%	5%	0%	0%	2%	2%
26. Chronic overlapping pain conditions in an individual	1%	1%	0%	1%	8%	2%	0%
27. Pain and other non-pain comorbidities	1%	2%	5%	6%	5%	2%	0%
28. Training in pain research	6%	8%	6%	6%	2%	9%	2%
29. Health care utilization	0%	0%	1%	0%	0%	0%	0%

Neuropathic Pain
Research by Secondary Code (% of Projects)

Neuropathic Pain	
1. Neurobiological/glial mechanisms of nociception and pain	24%
4. Mechanisms of and treatments for transitions in pain phases	10%
2. Genetics and genomics of nociception and pain	8%
5. Development and validation of animal and human pain models 11. Analgesic development 7. Pharmacological mechanisms and treatment	7%
28. Training in pain research	6%
8. Non-pharmacological mechanisms and treatment 12. Development of device and therapy delivery systems	5%
9. Biobehavioral and psychosocial mechanisms and treatment of pain 19. Unique populations1 24. Pain and trauma	3%
13. Pain outcomes assessments and measures, and novel health information technology as tools for decision making support of pain 21. Comparative effectiveness research 25. Pain prevention	2%
Others	1%
[1]Unique Populations: Pediatric=4; Elderly=3; End of Life=1	N = 167

Phase 4 June, 2013

selected areas for more detailed analyses

- Overview of the Research Area
- Potential for Overlap or Shared interests Among Agencies or NIH Institutes
- Relevance to Other Conditions
- Opportunities to Share Resources or Collaborate
- Potential Gaps: Research needed but not Represented in the Portfolio