



April 2016

# NIH CHIMPANZEE MANAGEMENT PROGRAM

## Consolidation Should Achieve Cost Savings, but a Clear Implementation Plan Is Needed

Accessible Version

# GAO Highlights

Highlights of [GAO-16-392](#), a report to congressional committees

## Why GAO Did This Study

For over 50 years, the federal government has supported the use of chimpanzees in research; however, NIH recently suspended the use of chimpanzees in agency-supported invasive research. As of January 15, 2016, NIH owned or supported 561 chimpanzees in four facilities, including Chimp Haven, which was established as a federal chimpanzee retirement sanctuary in accordance with the Chimpanzee Health Improvement, Maintenance, and Protection Act. In late 2015, NIH announced that all NIH-owned chimpanzees were eligible for retirement to Chimp Haven.

In 2013, Congress amended the Act authorizing appropriations for NIH's Chimpanzee Management Program through FY2018, with a provision for GAO to evaluate certain aspects of this program. In this report GAO examines: (1) the research and retirement status of chimpanzees owned or supported by NIH; (2) the costs for their care and transfers; and (3) potential cost savings associated with NIH's goal to transfer chimpanzees to Chimp Haven. GAO analyzed laws, regulations, and agency and facility policies, procedures, and data. GAO also visited the facilities, interviewed NIH and facility officials, and reviewed federal internal control standards.

## What GAO Recommends

GAO recommends that the Secretary of Health of Human Services direct NIH to develop a clear implementation plan to meet its goal for the transfer of chimpanzees to Chimp Haven that considers both costs and chimpanzee welfare. In commenting on a draft of this report, HHS concurred with GAO's recommendation.

View [GAO-16-392](#). For more information, contact John E. Dicken at (202) 512-7114 or [dickenj@gao.gov](mailto:dickenj@gao.gov).

April 2016

## NIH CHIMPANZEE MANAGEMENT PROGRAM

### Consolidation Should Achieve Cost Savings, but a Clear Implementation Plan Is Needed

## What GAO Found

NIH-owned and NIH-supported chimpanzees are no longer used in invasive biomedical research, which is research that involves medical treatment outside of normal veterinary care. However, all NIH-owned and NIH-supported chimpanzees are eligible for use in non-invasive research, such as observational and behavioral research, even at the federal chimpanzee retirement sanctuary, Chimp Haven. Most of the 561 chimpanzees that NIH owned or supported as of January 15, 2016, had not been retired to Chimp Haven, which housed 179 NIH-owned chimpanzees at that time.

The costs NIH incurred to care for these chimpanzees varied among the facilities. For example, for the care provided from federal fiscal year 2013 through 2015, the average cost per-chimpanzee per-day incurred by NIH at the four facilities ranged from a low of \$41 to a high of \$61. The characteristics of each facility contributed to cost variations. For example, NIH's costs were lowest at Chimp Haven, which was likely attributable to matching fund requirements Chimp Haven must meet as defined in federal statute. Since FY2013, NIH has transferred 121 chimpanzees to Chimp Haven and incurred a total of \$49,760 (or \$411 per transferred chimpanzee) for those transfers.

NIH's goal to consolidate chimpanzees to Chimp Haven should result in savings, but the lack of long-term planning could diminish savings potential. Savings should occur largely because NIH's costs are lowest at Chimp Haven. NIH has communicated short-term plans to transfer to Chimp Haven 19 of the 382 chimpanzees that continue to be housed at other facilities, but according to agency officials, it has not developed or communicated a clear implementation plan to transfer the remaining chimpanzees, in part because of uncertainties about the available space at Chimp Haven. However, NIH has information about Chimp Haven's current capacity and about anticipated space that will become available as a result of chimpanzee mortality. Absent a clear implementation plan, the four facilities that care for NIH-owned or NIH-supported chimpanzees may not have the information they need to care for the chimpanzees in the most cost-effective way that considers the timing of the transfers and the welfare needs of the chimpanzees. For example, if facility officials have estimates of the number of chimpanzees that are expected to be transferred into or out of their facility within a given timeframe, they can then plan for appropriate increases or decreases in staffing levels. Moreover, the absence of such a plan is inconsistent with federal internal control standards that call for effective communication of quality information.

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**Abbreviations**

CHIMP Act	Chimpanzee Health Improvement, Maintenance, and Protection Act
HIV	human immunodeficiency virus
HHS	Department of Health and Human Services
IOM	Institute of Medicine
NIH	National Institutes of Health
SNPRC	Southwest National Primate Research Center

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April 14, 2016

The Honorable Lamar Alexander  
Chairman  
The Honorable Patty Murray  
Ranking Member  
Committee on Health, Education, Labor, and Pensions  
United States Senate

The Honorable Fred Upton  
Chairman  
The Honorable Frank Pallone, Jr.  
Ranking Member  
Committee on Energy and Commerce  
House of Representatives

For over 50 years, federal agencies have funded projects that used chimpanzees in research. For example, the Department of Health and Human Services (HHS) has funded invasive biomedical research projects that focused on certain human diseases such as hepatitis and human immunodeficiency virus (HIV). The National Institutes of Health (NIH) owned or provided ongoing financial support for many of the chimpanzees used in this research. Over time, evolving research methods and technologies provided alternatives to the use of chimpanzees in these areas of research, and, since 2011, NIH has taken a number of steps that have resulted in suspending the use of its owned or supported chimpanzees in any new invasive biomedical research projects.

As of January 15, 2016, NIH's Chimpanzee Management Program provided for the care and maintenance of 561 NIH-owned or NIH-supported chimpanzees located in four facilities in the United States.<sup>1</sup> One of the facilities, Chimp Haven, was established in 1995 and designated in 2002 as a federal chimpanzee retirement sanctuary to provide for the retirement care of chimpanzees that have been used in

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<sup>1</sup>Under 42 U.S.C. § 283m(g), appropriations are authorized for the care of "chimpanzees otherwise under the ownership or control" of NIH. NIH officials told us that NIH does not use the term "controlled," and refers to the chimpanzees available for NIH research for which it provides funding but does not own as "NIH-supported." As a result, we use the term "NIH-supported" throughout this report.

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federal research, in accordance with the Chimpanzee Health Improvement, Maintenance, and Protection Act (CHIMP Act).<sup>2</sup> NIH provides funding to each of the four facilities for the care, maintenance, and transfer of the chimpanzees. In 2013, NIH announced that the majority of NIH-owned chimpanzees would be moved to the federally funded sanctuary at Chimp Haven as space became available and permanently retired from invasive biomedical research. At the same time, it announced a strategy to select approximately 50 chimpanzees from among those it owned or supported, which would be maintained for such research studies. More recently, in the summer of 2015, the U.S. Fish and Wildlife Service added captive chimpanzees to the Federal List of Endangered and Threatened Wildlife, which added restrictions to the potential use of chimpanzees in such research.<sup>3</sup> After this decision, NIH announced that all of the NIH-owned chimpanzees were now eligible for retirement to the federal sanctuary as space permitted. While the announcement did not address NIH-supported chimpanzees, the CHIMP Act allows for any chimpanzee that is not owned by the federal government to be accepted into the federal chimpanzee retirement sanctuary if the owner transfers the chimpanzee's title.

Since 1995, when NIH stopped breeding chimpanzees, the population of NIH-owned and NIH-supported chimpanzees has decreased due to mortality, and NIH estimates that some chimpanzees that NIH owns could live for another 20 years or more. The CHIMP Act Amendments of 2013 authorized appropriations for the care of NIH-owned or NIH-supported chimpanzees through fiscal year 2018.<sup>4</sup> The law also included a provision

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<sup>2</sup>The CHIMP Act required that the Secretary of the Department of Health and Human Services provide for the establishment and operation of a sanctuary system to provide for the permanent retirement and lifetime care of "surplus" chimpanzees—those that have been used, or were bred or purchased for use, in research conducted or supported by agencies of the federal government and that are no longer needed for such research, as determined by the Secretary. Pub. L. No. 106-551, 114 Stat. 2752 (2000) (codified, as amended, at 42 U.S.C. § 283m). HHS awarded a contract for operating the sanctuary system to Chimp Haven, a private not-for-profit entity. Under the program, chimpanzees accepted into the system may not be used in invasive biomedical research, but could be used for noninvasive behavioral studies or medical studies based on information collected during the course of normal veterinary care that is provided for the benefit of the chimpanzee.

<sup>3</sup>Endangered and Threatened Wildlife and Plants; Listing All Chimpanzees as Endangered Species, 80 Fed. Reg. 34500 (June 16, 2015) (codified at 50 C.F.R. §§ 17.11, 17.40).

<sup>4</sup>Pub. L. No. 113-55, Title III, § 302(a), 127 Stat, 641, 646 (2013) (codified at 42 U.S.C. § 283m(g)).

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for GAO to evaluate certain aspects of the status and costs of care for these chimpanzees. In this report, we:

- 1) examined the current research and retirement status of chimpanzees owned or supported by NIH;
- 2) examined the costs for the care and transfer of chimpanzees owned or supported by NIH; and
- 3) evaluated potential cost savings associated with NIH's goal to transfer its chimpanzees to Chimp Haven.

To examine the current research and retirement status of chimpanzees owned or supported by NIH, we reviewed applicable laws, regulations, and agency documents. We examined data from NIH and the four facilities about the numbers and characteristics of the chimpanzees at each facility, as well as their research and retirement status. We interviewed officials from NIH and the four facilities to clarify the data and discern how the data were collected, and on that basis determined that the data were sufficiently reliable for the purpose of our reporting objectives. To obtain contextual information about the characteristics of the NIH-owned or NIH-supported chimpanzees, as well as the physical environments that house them, we conducted site visits to all four facilities.

To examine the costs to care for and transfer NIH-owned or NIH-supported chimpanzees, we collected and analyzed relevant NIH and facility documents, including documents associated with the facilities' grants and contracts and associated NIH payments to each facility for the care of chimpanzees for federal fiscal year 2013 through first quarter 2016. We chose this period because these were the years for which the most recent complete data were available. The contract and grant award years for each facility varied with each other and did not align with the federal fiscal year (October 1 through September 30). To enable comparisons across the four facilities, we calculated the costs per-chimpanzee per-day for each facility by federal fiscal year. Specifically, we first allocated grant award amounts, contract award amounts, or contract invoices associated with chimpanzee care over each year of the respective grant or contract and recalculated these amounts to align with federal fiscal years. We also determined the total number of days of care provided to each chimpanzee within each federal fiscal year, taking into account dates of chimpanzee deaths and transfers either into or out of the facility, and calculated a total number of days of care within each federal fiscal year across all chimpanzees at each facility. We then divided the

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total dollar amount associated with each federal fiscal year by the total number of days of chimpanzee care associated with each fiscal year. We also obtained data on costs incurred for the transportation of chimpanzees during this same period of time. We interviewed officials from NIH and the four facilities to clarify the cost data and determine NIH's process for collecting and verifying the accuracy and reliability of the data. We determined that the data collected were sufficiently reliable for the purpose of our reporting objectives.

To evaluate potential cost savings associated with NIH's goal to transfer its chimpanzees to Chimp Haven, we reviewed applicable laws, regulations, and agency documents, such as NIH's 2014 report to Congress, which discussed cost savings approaches taken by NIH and the facilities, as well as other relevant reports, such as the Institute of Medicine (IOM) report on the use of chimpanzees in scientific research. We interviewed the following: officials from NIH about the institute's cost savings approaches and efforts undertaken or considered to consolidate facilities to achieve savings from improved economies of scale; officials from the four facilities to determine the extent that NIH has communicated its cost savings goals to determine whether NIH's goals were consistently reported; and an expert on the captive chimpanzee population to gain an understanding of the life expectancy of captive chimpanzees and other factors related to their care. We evaluated NIH's plan to ultimately transfer all of its owned or supported chimpanzees to Chimp Haven against relevant federal internal control standards.<sup>5</sup>

We conducted this performance audit from May 2015 through March 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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<sup>5</sup>[GAO-14-704G](#), *Standards for Internal Control in the Federal Government*. [GAO-14-704G](#) (Washington, D.C.: September 2014). Internal control is a process effected by an entity's oversight body, management, and other personnel that provides reasonable assurance that the objectives of an entity will be achieved.

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## Background

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### Overview of Chimpanzees' Use in Federal Research Studies

Due to their genetic proximity to humans, chimpanzees have historically been used in invasive biomedical research projects that study the immune responses in chimpanzees chronically infected with hepatitis virus, HIV, malaria, or with other medical conditions.<sup>6</sup> However, new methods and technologies developed by the biomedical research community have provided alternatives to the use of chimpanzees in several areas of research, and, as a result, the use of chimpanzees in invasive biomedical research declined. In December 2011, the IOM issued a report that concluded that the use of chimpanzees in most biomedical research of human diseases was unnecessary because other experimental models have been developed and some studies can now be done using humans.<sup>7</sup> Subsequently, NIH issued an interim policy suspending support of new research projects using chimpanzees while the agency considered the IOM report. NIH announced, in June 2013, that the majority of its owned chimpanzees would be permanently retired from invasive biomedical research and moved to the federal sanctuary as space became available, and that approximately 50 chimpanzees from among those it owned or supported, would be maintained for such research studies. However, after the June 2015 announcement by the U.S. Fish and Wildlife Service to add captive chimpanzees to the Federal List of Endangered and Threatened Wildlife, NIH announced, in November 2015, that it no longer planned to maintain any chimpanzees for invasive biomedical research. On February 2, 2016, NIH announced that it would limit its future support for research on

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<sup>6</sup>Invasive biomedical research involves invasive medical treatment such as surgery that is outside of normal veterinary medical care and generally includes clinical studies or field trials in animals that have been infected with a disease agent and then serve as models for studying health responses to the disease.

<sup>7</sup>Institute of Medicine, *Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity* (Washington, D.C.: The National Academies Press, 2011).

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chimpanzees consistent with the restrictions imposed on the federal chimpanzee retirement sanctuary.<sup>8</sup>

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## Caring for Chimpanzees

NIH currently owns or supports chimpanzees at four facilities. These facilities are:

- **Alamogordo Primate Facility (Alamogordo)**, which is located on the Holloman Air Force Base in New Mexico, is operated by a for-profit contractor (Charles River Laboratories), and houses chimpanzees that are primarily descendants of the original research population associated with the U.S. space program. This facility houses only chimpanzees—no other types of primates—and, based on current agreements in place, may not accept any new chimpanzees into its facility.
- **Chimp Haven**, the federal chimpanzee retirement sanctuary in Louisiana, is a privately owned facility operated by a not-for-profit entity that provides lifetime care for retired chimpanzees. Under its contract with HHS, the entity receives federal funds for its operations but must also meet matching fund requirements. Chimpanzees that are housed at this facility are considered retired from invasive biomedical research.
- **Michale E. Keeling Center for Comparative Medicine and Research at the University of Texas MD Anderson Cancer Center (Keeling)** is a primate facility in Bastrop, Texas, that houses multiple other types of primates in addition to chimpanzees and is part of an academic facility that serves as both a center for biomedical research and as a center for veterinarian training.
- **Southwest National Primate Research Center (SNPRC)**, which is a primate facility in San Antonio, Texas, houses multiple other types of

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<sup>8</sup>The Use of Chimpanzees in NIH-Supported Research, 81 Fed. Reg. 6873 (Feb.9, 2016). Chimpanzees that are accepted into the federal chimpanzee sanctuary system may not be used for studies or research, except that they may be used for noninvasive behavioral studies or medical studies based on information collected during the course of normal veterinary care that is provided for the benefit of the chimpanzee, provided that any such study involves minimal physical and mental harm, pain, distress, and disturbance to the chimpanzee and the social group in which the chimpanzee lives. 42 U.S.C. § 238m(d)(3); See also 42 C.F.R. Part 9. Throughout this report we refer to these types of research collectively as noninvasive research.

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primates in addition to chimpanzees and is part of a biomedical research facility—the Texas Biomedical Research Institute. It is the only facility among the four that, in addition to NIH-owned chimpanzees, houses NIH-supported chimpanzees. (For more information on the four facilities, see appendixes II through V at the end of this report.)

NIH requires the four facilities housing chimpanzees owned or supported by NIH to comply with the recommendations in the *Guide for the Care and Use of Laboratory Animals, Eighth Edition*.<sup>9</sup> Specifically, the NIH guidance requires the facilities to follow a framework for housing chimpanzees that offers environmental enrichment and animal well-being. For example, facilities are required to follow NIH recommendations on the physical characteristics of space within the facilities, such as allowing chimpanzees the opportunity to rotate into larger enclosures on a regular basis and providing access to natural materials and the outdoors to enhance their environmental complexity. Some examples of environmental complexity could include access to the outdoors, grass, mulch, and natural materials that provide climbing opportunities.

The CHIMP Act Amendments of 2013 authorized appropriations for NIH to continue supporting chimpanzees in research facilities and at Chimp Haven. In addition, NIH indicated in a federal register notice that, although housing chimpanzees in larger groups has the potential to offer greater social complexity and more environmental stimuli than housing them in smaller groups, each facility has well-positioned, knowledgeable staff (i.e., veterinarians and primate behaviorists) who are able to determine a chimpanzee's suitability for group or single housing.<sup>10</sup>

Since 1995, when NIH stopped breeding its captive chimpanzees, the number of NIH-owned and NIH-supported chimpanzees has been decreasing, and the proportion of NIH-owned and NIH-supported chimpanzees that are considered geriatric has increased. Captive

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<sup>9</sup>See National Research Council of the National Academies, *Guide for the Care and Use of Laboratory Animals, Eighth Edition*, (National Academies Press, Washington, D.C., 2011), <http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>, an internationally accepted primary reference on animal care and whose contents form the foundation for the development of comprehensive animal care and use programs.

<sup>10</sup>Announcement of Agency Decision: Recommendations on the Use of Chimpanzees in NIH-Supported Research, 78 Fed. Reg. 39741, 39743 (July 2, 2013).

chimpanzees have an estimated life expectancy of about 40 years and are considered geriatric at 35 years of age and older, with some captive chimpanzees living more than 50 years.

Although the population is decreasing, as of January 15, 2016, NIH owned or supported 561 chimpanzees and expects that it will continue to own or support some portion of this population for twenty years or more. See table 1 for information on the total number of NIH-owned or NIH-supported chimpanzees by facility, which changes over time as chimpanzees die or are transferred to other facilities.

**Table 1: Total Number of National Institutes of Health (NIH)-Owned or NIH-Supported Chimpanzees by Facility, as of October 1 Each Year from 2013 through 2015 and as of January 15, 2016**

Facility name	As of October 1			As of January 15, 2016
	2013	2014	2015	
Alamogordo Primate Facility	162	155	149	144
Chimp Haven <sup>a</sup>	149	192	184	179
Michale E. Keeling Center for Comparative Medicine and Research	163	157	139	138
Southwest National Primate Research Center	111	104	102	100
Other <sup>b</sup>	60	0	0	0
<b>Total</b>	<b>645</b>	<b>608</b>	<b>574</b>	<b>561</b>

Source: NIH and facility data. | GAO-16-392

<sup>a</sup>The increases in the number of chimpanzees at Chimp Haven were the result of transfers of chimpanzees from other facilities.

<sup>b</sup>In 2013, some NIH-owned chimpanzees were located at New Iberia Research Center in Louisiana. By October 2014, all of those chimpanzees were transported to Chimp Haven.

## NIH Funding for the Care of Its Chimpanzees

NIH provides funding to all four facilities for the cost of care for the chimpanzees it owns or supports. Based on provisions in the CHIMP Act applicable to the federal sanctuary, Chimp Haven must match a portion of the federal funds received under its contract for operating expenses (such as expenses associated with the care of chimpanzees, including expenses for veterinary and other staff, food, medicine, enrichment activities, transportation, and associated overhead). Specifically, Chimp Haven is required to match 1 dollar for every 3 dollars (or 25 percent) in federal funds provided for operating expenses in cash or in kind. The other three facilities have no matching funds requirements. NIH fully funds the cost of the care for the chimpanzees that it owns at these facilities. For the chimpanzees it supports but does not own—which are located only at SNPRC—NIH contributes to the cost of their care. The CHIMP Act Amendments of 2013 authorized appropriations to NIH

through fiscal year 2018 for the care, maintenance, and transportation of chimpanzees that NIH owns or supports. (See table 2.)

**Table 2: Authorization of Appropriations to the National Institutes of Health for Chimpanzee Care, Maintenance, and Transportation under the CHIMP Act Amendments of 2013**

Fiscal year	Authorization
2014	\$12,400,000
2015	11,650,000
2016	10,900,000
2017	10,150,000
2018	9,400,000

Source: CHIMP Act Amendments of 2013, Pub. L. No. 113-55, Title III, § 302(a), 127 Stat, 641, 646 (2013) (codified at 42 U.S.C. 283m(g)). | GAO-16-392

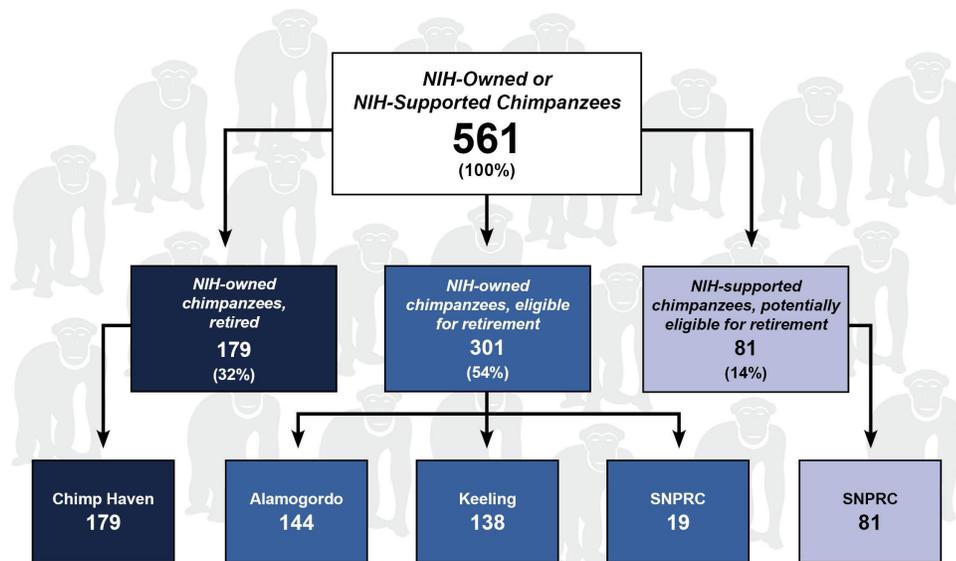
## NIH-Owned and NIH-Supported Chimpanzees Are No Longer Used for Invasive Biomedical Research, but Most Have Not Yet Retired to the Federal Sanctuary

No NIH-owned or NIH-supported chimpanzees are eligible for use in invasive biomedical research. As a result of NIH's recent decision to no longer maintain a colony of chimpanzees for future invasive research, none of the 561 chimpanzees it owned or supported as of January 15, 2016, were considered eligible for such research, and three of the facilities reported that they had not used chimpanzees in invasive research during the period of our review, consistent with NIH's efforts to phase out invasive biomedical research projects.<sup>11</sup> However, all 561 chimpanzees were eligible for non-invasive research, even if retired to the federal retirement sanctuary, Chimp Haven. Non-invasive research studies include observational and behavioral studies and studies that involve the use of blood or tissue samples that are obtained during the course of regular medical care. Two of the four facilities—Chimp Haven and Keeling—reported that they were currently conducting non-invasive research with NIH-owned or NIH-supported chimpanzees. In addition, SNPRC officials reported that they previously provided tissue samples taken during the course of regular medical care to researchers for such research, but no longer do so. While Alamogordo officials reported that no research was currently underway involving chimpanzees at their facility, they reported that non-invasive research had taken place at their facility in recent years.

<sup>11</sup>Only Keeling reported using a chimpanzee for such research during the period of our review; that research was approved by NIH and was concluded in April of 2013.

NIH officials said that all of the chimpanzees it owns or supports may eventually be retired to Chimp Haven, though the timeframes are not yet determined. While NIH no longer allows invasive biomedical research on any of its owned or supported chimpanzees, according to NIH officials, chimpanzees are not considered to be officially retired until physically located at Chimp Haven. As a result, as of January 15, 2016, the 179 chimpanzees housed at Chimp Haven were considered to be retired, and NIH considered the remaining NIH-owned chimpanzees housed at the other facilities to be eligible for retirement to Chimp Haven as space becomes available there. Of the 301 NIH-owned chimpanzees that were eligible for retirement, 144 were housed at Alamogordo, 138 were housed at Keeling, and 19 were housed at SNPRC. SNPRC also houses another 81 chimpanzees supported by NIH, and they potentially could be retired to Chimp Haven if SNPRC opts to transfer ownership. See figure 1.

**Figure 1: Total Number of National Institutes of Health (NIH)-Owned or NIH-Supported Chimpanzees by Retirement Status and Location, as of January 15, 2016**



Legend: SNPRC = Southwest National Primate Research Center.

- Retired NIH-owned chimpanzees housed at the federal chimpanzee retirement sanctuary
- NIH-owned chimpanzees that are eligible for retirement, but not yet housed at the federal sanctuary
- NIH-supported chimpanzees are not owned by the federal government but can be accepted into the federal sanctuary if the owner transfers the chimpanzee's title

Source: GAO analysis of National Institutes of Health (NIH) data. | GAO-16-392

## Costs to Care for and Transport Chimpanzees Varied over Time for a Variety of Reasons

### NIH's Per-Chimpanzee Per-Day Costs Varied over Time and among Facilities

Among the four facilities that currently house NIH-owned or NIH-supported chimpanzees, the average per-chimpanzee per-day costs incurred by NIH for their care have generally been lowest at Chimp Haven and highest at Alamogordo. The average per-chimpanzee per-day costs that NIH incurred for care provided to chimpanzees during the time period covering federal fiscal years 2013 through 2015 ranged from a low of \$41 at Chimp Haven to a high of \$61 at Alamogordo. During this same time period, the average per-chimpanzee per-day costs that NIH incurred for the care of chimpanzees at Keeling and SNPRC (including the combined costs associated with both the NIH-owned and NIH-supported chimpanzees at SNPRC) varied from year to year, but were similar to each other—\$47 and \$49, respectively. In the first quarter of federal fiscal year 2016, the per-chimpanzee per-day costs for care incurred by NIH continued to be lowest at Chimp Haven (\$42), and were similar at Keeling, Alamogordo, and SNPRC (\$52, \$53, and \$54, respectively). See table 3.

**Table 3: National Institutes of Health (NIH)-Incurred Costs Per-Chimpanzee Per-Day for Care of NIH-Owned or NIH-Supported Chimpanzees, Federal Fiscal Year (FFY) 2013 through First Quarter FFY 2016**

Facility	NIH-incurred costs per-chimpanzee per-day				
	FFY2013	FFY2014	FFY2015	Average FFY2013-FFY2015	First Quarter FFY2016
Alamogordo Primate Facility	\$62.00	\$66.88	\$55.14	\$61.43	\$53.08
Chimp Haven <sup>a</sup>	\$42.77	\$41.01	\$39.34	\$40.57	\$41.79
The Michale E. Keeling Center for Comparative Medicine and Research	\$48.59	\$41.93	\$51.92	\$47.37	\$52.41
Southwest National Primate Research Center <sup>b</sup>	\$42.96	\$53.14	\$51.39	\$49.02	\$53.65

Source: GAO analysis of NIH and facility data. | GAO-16-392

Note: The FFY begins on October 1 and ends on September 30. The contract and grant award years for each facility varied with each other and did not align with the FFY. The costs per-chimpanzee per-day shown in the table are based on calculations that enabled comparisons across the four facilities by FFY. Specifically, we developed Alamogordo's per-chimpanzee per-day costs using contract invoices corresponding to each FFY, rather than the estimated costs reflected in the facility's contract award. We developed Chimp Haven's per-chimpanzee per-day costs based on contract award

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amounts and contract invoices corresponding with the applicable FFY. We developed per-chimpanzee per-day costs at the other two facilities using grant award amounts each received, corresponding to the applicable FFY.

<sup>a</sup>NIH's per-chimpanzee per-day costs at Chimp Haven were matched by a 25 percent contribution from Chimp Haven during the time period of our review, as required by law. NIH's per-chimpanzee per-day costs do not reflect Chimp Haven's share of the costs.

<sup>b</sup>NIH's per-chimpanzee per-day costs at the Southwest National Primate Research Center took into account combined costs incurred by NIH for the care of both NIH-owned or NIH-supported chimpanzees. The other three facilities only include costs for NIH-owned chimpanzees because they do not house any NIH-supported chimpanzees. Our calculations include unobligated balances from prior years that NIH was permitted to carry over to cover the costs associated with the care of NIH-owned chimpanzees during the timeframe of our review.

Factors associated with the characteristics of each facility likely contributed to the variation in the costs. For example, the generally lower costs incurred by NIH for chimpanzee care at Chimp Haven compared to the other three facilities were likely attributable to the requirement that Chimp Haven match 1 dollar for every 3 dollars in federal funding for operating expenses—a 25 percent matching requirement that Chimp Haven met throughout the time period we analyzed. Because of these matching requirements, while the actual average cost of care per-chimpanzee per-day on average at Chimp Haven during the time period we analyzed was about \$55, the share of those costs incurred by NIH was about \$41 per-chimpanzee per-day. In contrast to Chimp Haven, NIH fully funded the reported costs or grant awards for chimpanzee care at the other three facilities. In addition, costs may have been lower at the two large primate research facilities, Keeling and SNPRC, compared to Alamogordo because they were likely able to realize economies of scale associated with the sharing of staff and resources with their larger primate programs—officials from both facilities reported that they shared staff and resources in this way. Alamogordo, which only houses chimpanzees, does not have the ability to share resources in this way. However, Alamogordo had notably reduced costs between federal fiscal years 2014 and 2015. Alamogordo officials reported that they were able to do this by taking a number of cost-cutting measures. For example, they reduced staff and associated overhead, made changes to payroll, accounting, and information technology functions, and switched from brand name to generic drugs whenever possible. Through these efforts, costs per-chimpanzee per-day were reduced by more than \$6.00.

At SNPRC costs incurred by NIH varied widely for the NIH-owned compared to the NIH-supported chimpanzees. Of the 100 chimpanzees at SNPRC as of the end of the first quarter of federal fiscal year 2016, NIH owned only 19, and funding for the care of these chimpanzees was provided through a cooperative agreement, which could only be used to fund the care of its NIH-owned chimpanzees. The other 81 chimpanzees

were owned by SNPRC, not NIH, but NIH provided some financial support for those chimpanzees through a different grant—a grant which provided funding for SNPRC’s larger primate program and out of which a portion was used to support some of the care of chimpanzees. Based on an analysis of these two different funding sources, we found that the per-chimpanzee per-day costs incurred by NIH were significantly higher for the NIH-owned chimpanzees at this facility compared to those that were supported by NIH. For example, the average cost per-chimpanzee per-day during the time period covering federal fiscal years 2013 through 2015 was \$78 for the NIH-owned chimpanzees and \$42 for the NIH-supported chimpanzees. According to SNPRC officials, NIH-incurred costs for the NIH-supported chimpanzees are lower at their facility because the grant covering these chimpanzees is designed to be supplemented by other research funds. Differences in costs per-chimpanzee per-day for NIH-owned compared to NIH-supported chimpanzees continued in the first quarter of federal fiscal year 2016, where they were \$81 and \$47, respectively. (See table 4.)

**Table 4: National Institutes of Health (NIH)-Incurred Costs Per-Chimpanzee Per-Day for NIH-Owned and NIH-Supported Chimpanzees at the Southwest National Primate Research Center (SNPRC), Federal Fiscal Year (FFY) 2013 through First Quarter FFY 2016**

	NIH-incurred costs per-chimpanzee per-day				
	FFY2013	FFY2014	FFY2015	Average FFY2013- FFY2015	First Quarter FFY2016
<b>Chimpanzees owned by NIH<sup>a</sup></b>	\$73.99	\$83.29	\$77.02	\$77.99	\$80.69
<b>Chimpanzees supported by NIH<sup>b</sup></b>	\$35.15	\$45.85	\$45.24	\$41.93	\$47.08

Source: GAO analysis of NIH and Facility data. | GAO-16-392

Note: The FFY begins on October 1 and ends on September 30. SNPRC’s award years for its owned chimpanzees and supported chimpanzees did not align with the FFY and did not align with each other. The costs per-chimpanzee per-day shown in the table are based on calculations that enable comparisons across the two awards by FFY.

<sup>a</sup>The FFY2014 through first quarter FFY2016 costs per-chimpanzee per-day for the NIH owned chimpanzees account for the reported costs associated with the care provided to those chimpanzees during those time frames. Our calculations include unobligated balances from prior years that NIH was permitted to carry over to cover the costs associated with the care of NIH-owned chimpanzees during the timeframe of our review.

<sup>b</sup>According to SNPRC officials, the Board of Trustees for Texas Biomed has committed to providing additional financial support in the amount of \$251,000 each year for the next five years for the care of NIH-supported chimpanzees located at SNPRC. According to those officials, this should reduce per-chimpanzee per-day costs incurred by NIH in future years.

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**NIH Has Incurred Costs Associated with Transporting Chimpanzees**

Since the beginning of federal fiscal year 2013, NIH has incurred costs associated with transporting 121 chimpanzees, all from other facilities to Chimp Haven. According to officials from Chimp Haven, the costs for transporting chimpanzees from one facility to another varied depending on factors such as the number of chimpanzees being transported (typically ranging from between 4 and 8 chimpanzees) and the distance of the transport. Consistent with statutory matching requirements for transports made to Chimp Haven, NIH paid for 75 percent of the cost of transportation and Chimp Haven covered the remaining 25 percent. The total cost to transport the 121 chimpanzees was \$66,346, for an average of about \$548 per transported chimpanzee. Of that, NIH paid \$49,760, for an average of about \$411 per transported chimpanzee.

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**NIH's Goal to Consolidate Chimpanzee Population to Chimp Haven Should Result in Savings, but the Lack of Long-Term Planning Could Diminish Potential Savings**

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**NIH's Goal to Consolidate Chimpanzees to Chimp Haven Should Result in Cost Savings**

Because the costs incurred by NIH to care for its owned or supported chimpanzees have generally been lowest at Chimp Haven compared to the costs at the other three facilities that house them, NIH's goal to transfer its chimpanzees to Chimp Haven should result in cost savings for NIH. Further, economies of scale can be achieved by increasing the number of chimpanzees at Chimp Haven and thereby presenting opportunities for cost savings. According to Chimp Haven officials, economies of scale can be achieved when some fixed costs—such as the costs for the upkeep of the facilities that house chimpanzees, staffing experts to care for the chimpanzees, and other costs related to the care and enrichment of the animals—can be applied to large numbers of chimpanzees. In addition, the chimpanzee housing at Chimp Haven—

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which includes large corral habitats and open-air habitats that require less maintenance than caged facilities and can accommodate larger chimpanzee social groups than the housing available at the other facilities—can facilitate cost efficiencies. As a result, once Chimp Haven is at full capacity, which would currently allow it to house up to 229 NIH-owned or NIH-supported chimpanzees, the costs incurred by NIH to care for chimpanzees there will likely be lower than costs incurred in recent years.<sup>12</sup>

NIH officials reported that, in the short-term, they plan to transfer to Chimp Haven all 19 NIH-owned chimpanzees from SNPRC. After these chimpanzees are transferred, 363 NIH-owned or NIH-supported chimpanzees would continue to be housed outside of Chimp Haven. The transfer of these 19 chimpanzees in particular should result in cost savings to NIH in the short-term because during the timeframe of our analysis—federal fiscal year 2013 through the first quarter of federal fiscal year 2016—the costs incurred by NIH to care for the NIH-owned chimpanzees at SNPRC were consistently the highest compared to the costs incurred for any other NIH-owned or NIH-supported chimpanzees and were nearly twice as high as the costs incurred by NIH for the care of chimpanzees at Chimp Haven. Based on the most recent per-chimpanzee per-day costs, on an annualized basis, NIH should save about \$270,000 within one year as a result of the transfer of these 19 chimpanzees to Chimp Haven.<sup>13</sup> NIH will incur some costs associated with transporting these 19 chimpanzees to Chimp Haven; however, the savings associated with the lower costs per-chimpanzee per-day will outweigh these transportation costs over time. For example, if the costs NIH incurs for transporting these chimpanzees is similar to the costs it incurred for recent transports (\$411 per chimpanzee), then total NIH-incurred costs for the transport of the 19 chimpanzees would be about \$8,000. Even if the costs for transferring these 19 chimpanzees should exceed the average of recent transfers, the transfer costs would be less than the estimated annualized savings of \$270,000.

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<sup>12</sup>The CHIMP Act allows for any chimpanzee that is not owned by the federal government to be accepted into the federal chimpanzee retirement sanctuary if the owner transfers the chimpanzee's title. The projections in this report are based on the assumption that title to all NIH-supported chimpanzees will be transferred.

<sup>13</sup>Our NIH-incurred cost calculations for SNPRC include unobligated balances from prior years that NIH was permitted to carry over to cover the costs associated with the care of NIH-owned chimpanzees during the timeframe of our review.

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NIH officials reported that the relocation of chimpanzees to Chimp Haven will occur when space becomes available and within a timeframe that allows for the optimal transition of each individual chimpanzee. NIH's general framework for longer-term plans will prioritize the transfer of NIH-owned chimpanzees ahead of the transfer of NIH-supported chimpanzees. Of the 363 chimpanzees that would continue to be housed outside of Chimp Haven after the transfer of the 19 chimpanzees from SNPRC, there would be 282 NIH-owned chimpanzees, all housed at Keeling and Alamogordo, and 81 NIH-supported chimpanzees, all housed at SNPRC. Given this, longer-term plans would focus first on transfers of those 282 chimpanzees and later on the 81 NIH-supported chimpanzees that continue to be housed at SNPRC. NIH officials reported that among the 282, it plans to first focus on transferring the 138 chimpanzees currently housed at Keeling and then focus on transferring the 144 at Alamogordo. Transferring chimpanzees from either of these two facilities to Chimp Haven should result in some reductions in NIH's costs because the costs incurred by NIH are higher at these two facilities compared to Chimp Haven.

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**NIH Has Not Fully Developed or Communicated a Clear Long-Term Implementation Plan, Diminishing the Potential Savings That Could be Achieved through Consolidation Efforts**

While NIH has informed the facilities of its plan to transfer 19 chimpanzees in the near future, it has not finalized or communicated details on the timing of this transfer, and it has not developed or communicated a clear long-term implementation plan for transporting the remaining chimpanzees that would continue to be housed outside of Chimp Haven. According to agency officials, it has not developed such a plan, in part because of uncertainties about the available space at Chimp Haven.<sup>14</sup> However, as discussed below, information on space availability in the near and long term is available and could be used and updated as needed to help inform planning.

In the absence of this long-term plan, the four facilities that house NIH-owned or NIH-supported chimpanzees do not have the information they need to plan for the care of the NIH-owned or NIH-supported chimpanzees in a cost-effective way that also considers the timing of chimpanzee transfers as well as the welfare needs of the chimpanzee population. For example, staffing needs at each facility are influenced by the number of chimpanzees for which care is provided. If facility officials

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<sup>14</sup>NIH also noted that in November 2015, when it announced that it would no longer maintain a research colony, planning for the location of the colony was no longer a restriction in chimpanzee retirement planning.

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have an estimate of the number of chimpanzees that are expected to be transferred into or out of their facility within a given timeframe, they can then plan for appropriate increases or decreases in staffing levels.

In addition, absent a more clear long-term implementation plan, NIH may not have the information it needs to appropriately plan transfers and avoid costs associated with poor planning. For example, over the past several years, as directed by NIH, facilities have spent funds on preparations for transfers of chimpanzees that were ultimately canceled. Specifically, in 2012 SNPRC spent funds to prepare its facility to receive 110 chimpanzees from the New Iberia Research Center, but NIH officials later decided to cancel that transfer. Similarly, in 2015 Chimp Haven spent funds to arrange for the transport of 6 chimpanzees from Alamogordo, but NIH decided to cancel that transfer on the day the transfer was to take place. NIH incurred costs associated with both of these canceled transfers. Because NIH pays for the care of chimpanzees at these facilities and for costs associated with transfers, the effectiveness of the facilities' and NIH's planning will affect the costs incurred by NIH. Moreover, the absence of this plan is inconsistent with federal internal control standards that call for the effective internal and external communication of the quality information necessary to help an entity achieve its objectives.<sup>15</sup>

Important considerations in developing a long-term plan to consolidate chimps at Chimp Haven include available space, costs, and chimpanzee welfare considerations. Information is available on these considerations from the four facilities and their staff.

## Consideration of Available Space at Chimp Haven

NIH has information it can use to develop reasonable estimates for the number of chimpanzees that can be transferred to Chimp Haven within the next 5 years. Specifically, NIH officials told us that they are aware that Chimp Haven does not yet have the space available to accommodate all of NIH's owned or supported chimpanzees (561 as of January 15, 2016). According to Chimp Haven officials, as of January 15, 2016, Chimp Haven had capacity to house up to 50 chimpanzees in addition to the 179 NIH-owned or NIH-supported chimpanzees it was housing at that time. This means that as of that date the number of NIH-owned or NIH-

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<sup>15</sup>[GAO-14-704G](#).

supported chimpanzees exceeded Chimp Haven’s capacity by 332 chimpanzees. See table 5.

**Table 5: Capacity for Chimpanzees at Chimp Haven, as of January 15, 2016**

<b>Total number of National Institutes of Health (NIH)-owned or NIH-supported chimpanzees</b>	<b>561</b>
Number housed at Chimp Haven	179
Chimp Haven’s capacity for more chimpanzees	50
Total capacity at Chimp Haven for NIH-owned or NIH-supported Chimpanzees	229
Number of NIH-owned or NIH-supported chimpanzees that exceed Chimp Haven’s capacity	332

Source: GAO analysis of facility data. | GAO-16-392

Chimp Haven officials reported that, absent a facility expansion, they anticipate that space to take in more chimpanzees will become available only as Chimp Haven’s chimpanzee population declines due to deaths. These officials also reported that, based on anticipated mortality of NIH-owned and NIH-supported chimpanzees currently housed at other facilities, they expect that some will never be transferred to Chimp Haven because many of these chimpanzees are geriatric and may die before the transfers can be accommodated. Based on the expected rate of death among captive chimpanzees (five to ten percent each year), between about 127 and 230 chimpanzee deaths out of the 561 chimpanzees owned or supported by NIH as of January 15, 2016, could be anticipated within the next five years. Taking into account Chimp Haven’s current capacity to house NIH-owned or NIH-supported chimpanzees (229) and anticipated deaths among all NIH-owned or NIH-supported chimpanzees (127 to 230), estimates could be developed for the number of chimpanzees that could be accommodated there within the next five years and updated as actual information on space availability becomes known. For example, assuming no changes to Chimp Haven’s capacity and that all available space there could be used for NIH-owned or NIH-supported chimpanzees, within the next five years it could be anticipated that between 177 and 280 of the 382 chimpanzees that were housed at other facilities on January 15, 2016, would have either been transported to Chimp Haven or no longer need to be accommodated at Chimp Haven, and that between 102 and 205 chimpanzees would continue to be awaiting space at Chimp Haven.

In addition, Chimp Haven’s capacity to house more chimpanzees may increase during this time period. Specifically, in 2016, Chimp Haven plans to launch a capital campaign to raise funds to build four new habitats which—assuming the fundraising goals are met—would become

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operational sometime after 2017. After the construction of these four habitats, officials expect to accommodate between an additional 100 to 150 chimpanzees. NIH can monitor the progress on this planned expansion and adjust its plans for future chimpanzee transfers accordingly.

### Consideration of Costs

Information about the costs incurred by NIH for the care of chimpanzees at Alamogordo, Keeling, and SNPRC and the potential longer-term costs associated with the care of chimpanzees at each of these facilities can also inform NIH's longer-term planning regarding the transfer of chimpanzees to Chimp Haven. For example, based on NIH's general plan to focus first on the transfer of NIH-owned rather than NIH-supported chimpanzees, and its plan to first transfer the 19 NIH-owned chimpanzees that are housed at SNPRC, NIH can consider the differences in the costs it has historically incurred to care for the chimpanzees at the two facilities that will continue to house NIH-owned chimpanzees—Alamogordo and Keeling. NIH can also consider information about the ability for each of the facilities to financially manage the care for the declining numbers of chimpanzees it houses. For example, as the chimpanzee populations decline, the facilities may incur higher per-chimpanzee per-day costs due to a loss of economies of scale. Keeling and SNPRC may be better able to manage the costs of a declining chimpanzee population because they can allocate resources across their larger primate programs in a way that Alamogordo cannot. According to Keeling and SNPRC officials, they can reduce costs associated with their chimpanzee programs as the facilities' chimpanzee populations decline because they can reallocate staff, facilities, and other overhead to other parts of their larger primate programs. In contrast, while officials at Alamogordo reported that they took steps in recent years to reduce costs at their facility, their ability to reduce costs even further as its chimpanzee population continues to decline is limited. For example, according to facility officials, they can make some staff reductions over time as their chimpanzee population continues to decline. However, regardless of the number of chimpanzees housed there, they will always need at least two veterinarians on staff, even if this includes part-time staff, because one veterinarian is required to be on call at all times. In addition, Alamogordo officials reported that some costs associated with the maintenance of the facility are relatively fixed.

### Consideration of Chimpanzee Welfare

Welfare considerations of the chimpanzees that are transported to Chimp Haven, including the transfer of existing intact social groups and of chimpanzees that would be expected to survive the relocation, might also influence NIH's longer-term planning for the Chimpanzee Management Program. Officials from NIH and each of the facilities reported that the

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maintenance of chimpanzee social groups is important for their well-being, and all noted that transfers to Chimp Haven should be planned in ways that try to maintain these social groups. In addition, experts note that chimpanzees generally are better off in larger social groups, and NIH's guidelines on the standards of care for chimpanzees recommend the development of larger social groups. Based on these considerations, NIH's longer-term plans may take into consideration prioritizing the transfer of chimpanzees that are well-suited for integration into these larger social groups

Officials also reported that transporting any chimpanzee to a new facility and a new social environment causes stress on the chimpanzee, and that certain chimpanzees, such as those that are very old or very sick, may be less able to survive a transfer. Because there are costs incurred in transporting chimpanzees, in addition to animal welfare considerations, transferring chimpanzees that ultimately may not survive for long after the transfer could result in unnecessarily incurred costs.<sup>16</sup> Therefore, identifying and transferring groups of chimpanzees that would most likely live for a number of years after their transitions could reduce transfer costs overall. For example, NIH might ultimately reduce costs by focusing first on transferring groups that include younger and healthier chimpanzees. Facility officials may be in a good position to help NIH identify ideal groups for transfer, as NIH already relies on facility staff to make appropriate decisions about creating chimpanzee social groups within their facilities. Moreover, facility officials told us that they consider their chimpanzees' welfare when establishing these social groups, taking into account factors such as health status and age. For example, all four facilities segregate chimpanzees that are infected with either HIV or a form of hepatitis from all other chimpanzees, and some take steps to segregate older chimpanzees from younger chimpanzees. (See appendixes II – V for statistics on age and health status of chimpanzees at each facility.) In addition, some facility officials reported that they have taken steps to make sure certain long-standing social groups remain

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<sup>16</sup>For example, the recent transfer of thirteen chimpanzees from Keeling to Chimp Haven included eight chimpanzees of advanced geriatric age (ranging from age 40 to age 53) and five non-geriatric chimpanzees, four of which were chronically ill. Five of these chimpanzees died within one year of the transport—three that were of advanced geriatric age and two that were chronically ill. Officials from Keeling noted that the decision to transfer these particular thirteen chimpanzees was made prior to NIH's announcement to not select a research reserve colony, and these chimpanzees were chosen because they were determined to be not good fits for what at the time was an anticipated future research colony. Keeling officials said that they thought the chimpanzees could survive the transfer.

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intact as they reconfigured their facilities to accommodate decreasing chimpanzee populations.

Despite the stresses associated with transferring chimpanzees, Chimp Haven officials reported that the facility has successfully incorporated hundreds of chimpanzees over the years, including older chimpanzees, and they said they take steps to alleviate the stress of the moves on the chimpanzees. For example, chimpanzees are not moved during extreme cold or hot weather, chimpanzees are kept within existing social groups and only introduced into larger social groups when conditions are ideal, and Chimp Haven veterinarians consult with veterinarians from the facilities of origin to discuss any issues related to the care and treatment of ailments.

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## Conclusions

NIH needs to continue to identify ways to be cost effective in its management of a declining chimpanzee population. NIH has established the important goal of maintaining the welfare of its owned and supported chimpanzees in a cost-effective manner and has stated that, as part of its goal, it intends to transfer to Chimp Haven all of its owned then any supported chimpanzees (for which title has been transferred) as space there becomes available. However, it has not developed an implementation plan for achieving this goal that is sufficiently clear and transparent enough to support decision making and has not communicated its plans to the facilities that currently house those chimpanzees, inconsistent with federal internal control standards. While there are still uncertainties about the long-term space availability at Chimp Haven, NIH can use the information currently available related to space, chimpanzee welfare, and costs for care to develop a clear implementation plan for the transfer of its remaining chimpanzees to Chimp Haven, a plan it could update or revise as appropriate. Because knowledge about the anticipated transfers of chimpanzees into and out of the four facilities that currently house NIH-owned and NIH-supported chimpanzees will affect the ability for each of these facilities to manage their costs, and because those costs are paid for in full or in part by NIH, it is important for NIH to clearly communicate its plans with the facilities to ensure that the facilities can take actions that will maximize cost-effective planning for the care of these chimpanzees in the future.

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## Recommendation for Executive Action

To help NIH manage its Chimpanzee Management Program in a cost-effective manner, we recommend that the Secretary of Health and Human Services direct the Director of NIH to develop and communicate a clear implementation plan for meeting its long-term goal that is informed by

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both costs and chimpanzee welfare, and that should be updated as needed. For example, the plan could consider more precise estimates of the volume and timing of transfers to assist the facilities in managing their costs and could consider various aspects of the welfare of the chimpanzees being transferred, such as their ability to survive a transfer and remain or be placed in a compatible social group.

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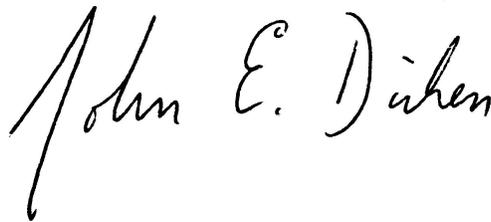
## Agency Comments

In commenting on a draft of this report, HHS concurred with our recommendation and stated that NIH is in the process of developing an implementation plan based primarily on the well-being and safety of the chimpanzees and secondarily on costs. HHS also noted that whether or not the expansion of the federal sanctuary with private funds will occur remains a major factor affecting the date when all of the chimpanzees can be retired. HHS and the four facilities also provided technical comments, which we incorporated as appropriate.

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We are sending copies of this report to appropriate congressional committees; the Secretary of Health and Human Services; and other interested parties. We will also make copies available at no charge on GAO's website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7114 or [dickenj@gao.gov](mailto:dickenj@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix VI.



John E. Dicken  
Director, Health Care

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# Appendix I: Chimpanzee Enclosures at Facilities That House NIH-Owned or NIH-Supported Chimpanzees

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National Institutes of Health (NIH)-owned or NIH-supported chimpanzees are housed in various types of environments based on the available space of each of the four facilities that house them. These include multi-acre habitats, corral habitats, primadomes, and other caged enclosures. All include outdoor space and allow 24-hour, 7-day a week access to indoor facilities for protection from harsh weather conditions. Chimpanzees are combined into social groups that vary in size. Currently, the size of social groups at facilities that house NIH-owned or NIH-supported chimpanzees ranges from between 2 and 23. Images of some of the housing environments are included below.

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## Multi-Acre Habitats

Currently, multi-acre, open-air wooded habitats that house NIH-owned or NIH-supported chimpanzees range in size from three to five acres and have the capacity for larger groups of between 25 and 50 chimpanzees. They are surrounded by a combination of walls, fences, and moats to contain the chimpanzees within the habitat and provide access to indoor enclosures.

Figure 2: Multi-Acre Habitat



Source: GAO. | GAO-16-392

## Corral Habitats

Smaller than multi-acre habitats, corral habitats are fenced open areas that include a variety of climbing structures. Corral habitats generally have capacity for about 10 or more chimpanzees.

Figure 3: Corral Habitat



Source: GAO. | GAO-16-392

## Primadomes

Primadomes are geodesic domes that are typically around 34 feet in diameter. They are designed for smaller groups of chimpanzees compared to multi-acre or corral habitats (up to 8 chimpanzees) and allow them to climb in a fully enclosed caged environment that includes materials such as grass.

Figure 4: Primadomes



Source: GAO. | GAO-16-392

### Other Caged Facilities

In addition to primadomes, other types of caged facilities of varying sizes are used to house NIH-owned or NIH-supported chimpanzees.

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**Appendix I: Chimpanzee Enclosures at  
Facilities That House NIH-Owned or NIH-  
Supported Chimpanzees**

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**Figure 5: Other Caged Facilities**



Source: GAO. | GAO-16-392

# Appendix II: Characteristics of the Alamogordo Primate Facility

Overview: Alamogordo Primate Facility (Alamogordo) is a former research facility located at Holloman Air Force Base in New Mexico. The chimpanzees located at this facility are primarily descendants of chimpanzees that were part of the original research population associated with the space program. NIH funding for the care of chimpanzees at Alamogordo is made through a contract currently held by Charles River Laboratories and has no matching requirements.

Types of chimpanzee housing: Alamogordo has 10,792 square feet of indoor space and 20,348 square feet of outdoor space and has three types of structures for its chimpanzees: primadomes and two other types of caged enclosures all connected to indoor enclosures.

Facility-specific notes about housing: Alamogordo segregates its chimpanzees by sex and infection status. Its social group sizes range from 2 to 12 chimpanzees.

**Table 6: Selected Characteristics of the Alamogordo Primate Facility, as of January 15, 2016**

<b>National Institutes of Health (NIH)-owned or NIH-supported chimpanzees</b>	
Number	144
Age range	17-53
Average age <sup>a</sup>	32
Number geriatric <sup>b</sup>	40
Number infected <sup>c</sup>	27
Number of chronically ill <sup>d</sup>	59
Number non-NIH-owned or NIH-supported chimpanzees	None
Number of full time equivalent veterinarians dedicated to care of NIH-owned or NIH-supported chimpanzees	1.5
Houses other types of primates	No

Source: GAO analysis of facility data. | GAO-16-392

<sup>a</sup>Among NIH-owned or NIH-supported chimpanzees, total chimpanzee years divided by total number of chimpanzees.

<sup>b</sup>Aged 35 years or older.

<sup>c</sup>Infected with human immunodeficiency virus (HIV) or a form of hepatitis.

<sup>d</sup>Chronically ill with a condition other than HIV or a form of hepatitis.

**Appendix II: Characteristics of the Alamogordo  
Primate Facility**

**Table 7: At the Alamogordo Primate Facility, National Institutes of Health (NIH)-Incurred Costs for the Care of Chimpanzees and Numbers of NIH-Owned or NIH-Supported Chimpanzees, Federal Fiscal Year (FFY) 2013 through FFY 2015**

	FFY2013	FFY2014	FFY2015
NIH-incurred costs for chimpanzee care provided during the FFY, in millions <sup>a</sup>	\$3.75	\$3.88	\$3.06
Number of chimpanzees as of October 1	171	162	155
Changes in chimpanzee population since October 1	Not applicable	Not applicable	Not applicable
Transfers in	0	0	0
Transfers out	0	0	0
Deaths	9	7	6

Source: GAO analysis of NIH and facility data. | GAO-16-392

<sup>a</sup>The contract years did not align with the FFYs, and payments were not always made in the same FFY that costs of chimpanzee care was incurred. We calculated the FFY costs by aligning the actual contract payment amounts that were associated with the chimpanzee care that was provided within each FFY.

# Appendix III: Characteristics of the Chimp Haven Federal Chimpanzee Retirement Sanctuary

Overview: Chimp Haven is the federal chimpanzee retirement sanctuary and is located in Louisiana. NIH funding for the care of chimpanzees at Chimp Haven is made through a contract with matching requirements—it must match 1 dollar for every 3 dollars for operating expenses.

Types of chimpanzee housing: Chimp Haven is built on 200 acres of outdoor space and has four types of chimpanzee housing, including: multi-acre outdoor habitats, enclosures, corral habitats, and two types of caged enclosures—all connected to indoor enclosures.

Facility-specific notes about housing: Chimp Haven segregates its chimpanzees by infection status. Its social group sizes range from 3 to 23 chimpanzees.

**Table 8: Selected Characteristics of Chimp Haven, as of January 15, 2016**

<b>National Institutes of Health (NIH)-owned or NIH-supported chimpanzees</b>	
Number	179
Age range <sup>a</sup>	3-57
Average age <sup>b</sup>	30
Number geriatric <sup>c</sup>	55
Number infected <sup>d</sup>	70
Number of chronically ill <sup>e</sup>	79
Number non- NIH-owned or NIH-supported chimpanzees	14
Number of full time equivalent veterinarians dedicated to care of NIH-owned or NIH-supported chimpanzees	1.5
Houses other types of primates	No

Source: GAO analysis of facility data. | GAO-16-392

<sup>a</sup>Note: While there has been a moratorium on the breeding NIH-owned or NIH-supported chimpanzees since 1995, a small number of accidental births occurred at the New Iberia Research Center. These younger chimpanzees were recently transferred to Chimp Haven.

<sup>b</sup>Among NIH-owned or NIH-supported chimpanzees, total chimpanzee years divided by total number of chimpanzees.

<sup>c</sup>Aged 35 years or older.

<sup>d</sup>Infected with human immunodeficiency virus (HIV) or a form of hepatitis.

<sup>e</sup>Chronically ill with a condition other than HIV or a form of hepatitis.

**Appendix III: Characteristics of the Chimp Haven Federal Chimpanzee Retirement Sanctuary**

**Table 9: At the Chimp Haven Federal Chimpanzee Retirement Sanctuary, National Institutes of Health (NIH)-Incurred Costs for the Care of Chimpanzees and Numbers of NIH-Owned or NIH-Supported Chimpanzees, Federal Fiscal Year (FFY) 2013 through FFY 2015**

	FFY2013	FFY2014	FFY2015
NIH-incurred costs for chimpanzee care provided during the FFY, in millions <sup>a</sup>	\$2.09	\$2.54	\$2.72
Number of chimpanzees as of October 1	110	149	192
Changes in chimpanzee population since October 1	Not applicable	Not applicable	Not applicable
Transfers In	50 <sup>b</sup>	58 <sup>b</sup>	13 <sup>c</sup>
Transfers Out	0	0	0
Deaths <sup>d</sup>	11	15	21

Source: GAO analysis of NIH and facility data. | GAO-16-392

<sup>a</sup>The contract years did not align with the FFYs and the contracts included allowances for both care of chimpanzees and chimpanzee transfers. Also, payments for chimpanzee care were not always made in the same FFY that costs were incurred. We calculated the FFY costs by aligning the actual contract award or payment amounts that were associated with the chimpanzee care provided within each FFY, excluding any payments for chimpanzee transfers.

<sup>b</sup>These chimpanzees were transported to Chimp Haven from the New Iberia Research Center.

<sup>c</sup>These chimpanzees were transported to Chimp Haven from the Michale E. Keeling Center for Comparative Medicine and Research.

<sup>d</sup>According to facility officials, two-thirds of the deaths that occurred during this three year period were among geriatric chimpanzees and most others were among chronically ill chimpanzees. In 2015, five of the deaths were among chimpanzees that had recently been transferred to Chimp Haven from Keeling, three of which were of advanced geriatric age and two of which were chronically ill.

# Appendix IV: Characteristics of the Michale E. Keeling Center for Comparative Medicine and Research

Overview: Michale E. Keeling Center for Comparative Medicine and Research (Keeling) is part of the University of Texas MD Anderson Cancer Center in Bastrop, Texas. Its mission is to eliminate cancer and allied diseases. NIH funding for the care of chimpanzees owned and supported by NIH at Keeling is made through grants with no matching requirements.

Types of chimpanzee housing: Keeling has 16,309 square feet of indoor chimpanzee housing and 54,999 square feet of outdoor housing. Outdoor housing facilities include corral habitats and primadomes, which are all connected to indoor housing.

Facility-specific notes about housing: According to officials, Keeling's chimpanzee management plan calls for separation of social groups according to infection status. Its social group sizes range from 2 to 10 chimpanzees.

**Table 10: Selected Characteristics of the Michale E. Keeling Center for Comparative Medicine and Research, as of January 15, 2016**

<b>National Institutes of Health (NIH)-owned or NIH-supported chimpanzees</b>	
Number	138
Age range	13-53
Average age <sup>a</sup>	30
Number geriatric <sup>b</sup>	35
Number infected <sup>c</sup>	5
Number of chronically ill <sup>d</sup>	76
Number non- NIH-owned or NIH-supported chimpanzees	None
Number of full time equivalent veterinarians dedicated to care of NIH-owned or NIH-supported chimpanzees	2
Houses other types of primates	Yes <sup>e</sup>

Source: GAO analysis of facility data. | GAO-16-392

<sup>a</sup>Among NIH-owned or NIH-supported chimpanzees, total chimpanzee years divided by total number of chimpanzees.

<sup>b</sup>Aged 35 years or older.

<sup>c</sup>Infected with a form of hepatitis.

<sup>d</sup>Chronically ill with a condition other than a form of hepatitis.

<sup>e</sup>Also houses rhesus monkeys, squirrel monkeys, and owl monkeys within the larger primate center.

**Appendix IV: Characteristics of the Michale E. Keeling Center for Comparative Medicine and Research**

**Table 11: At the Michale E. Keeling Center for Comparative Medicine and Research, National Institutes of Health (NIH)-Incurred Costs for the Care of Chimpanzees and Numbers of NIH-Owned or NIH-Supported Chimpanzees, Federal Fiscal Year (FFY) 2013 through FFY 2015**

	FFY2013	FFY2014	FFY2015
NIH-incurred costs for chimpanzee care provided during the FFY, in millions <sup>a</sup>	\$2.95	\$2.45	\$2.77
Number of chimpanzees as of October 1	167	163	157
Changes in chimpanzee population since October 1	Not applicable	Not applicable	Not applicable
Transfers In	0	0	0
Transfers out	0	0	13 <sup>b</sup>
Deaths	4	6	5

Source: GAO analysis of NIH and facility data. | GAO-16-392

<sup>a</sup>The grant award years did not align with the FFYs, and payments were not always made in the same FFY that costs of chimpanzee care was incurred. We calculated the FFY costs by aligning the actual grant payment amounts that were associated with the chimpanzee care that was provided within each FFY.

<sup>b</sup>These chimpanzees were transported to Chimp Haven.

# Appendix V: Characteristics of the Southwest National Primate Research Center

Overview: Southwest National Primate Research Center (SNPRC) of the Texas Biomedical Research Institute is a research facility in San Antonio, Texas, that conducts basic and applied research in the biomedical and behavioral sciences. Its research is focused on many human diseases including cardiovascular disease and infectious diseases such as hepatitis and acquired immunodeficiency syndrome (AIDS). NIH funding for the care of chimpanzees owned and supported by NIH at SNPRC is made through grants with no matching requirements.

Types of chimpanzee housing: SNPRC has various types of caged housing units for chimpanzees including primadomes and other types of caged enclosures.

Facility-specific notes about housing: SNPRC segregates its chimpanzees by infection status. Its social group sizes currently range from 2 to 6 chimpanzees.

**Table 12: Selected Characteristics of the Southwest National Primate Research Center, as of January 15, 2016**

<b>National Institutes of Health (NIH)-owned or NIH-supported chimpanzees</b>	
Number	100
Age range	20-51
Average age <sup>a</sup>	28.3
Number geriatric <sup>b</sup>	14
Number infected <sup>c</sup>	52
Number of chronically ill <sup>d</sup>	2
Number non- NIH-owned or NIH-supported chimpanzees	26
Number of full time equivalent veterinarians dedicated to care of NIH-owned or NIH-supported chimpanzees	0.87
Houses other types of primates	Yes <sup>e</sup>

Source: GAO analysis of facility data. | GAO-16-392

<sup>a</sup>Among NIH-owned or NIH-supported chimpanzees, total chimpanzee years divided by total number of chimpanzees.

<sup>b</sup>Aged 35 years or older.

<sup>c</sup>Infected with human immunodeficiency virus (HIV) or a form of hepatitis.

<sup>d</sup>Chronically ill with a condition other than HIV or a form of hepatitis.

<sup>e</sup>Also houses baboons, macaques, and marmosets within the larger primate center.

**Appendix V: Characteristics of the Southwest  
National Primate Research Center**

**Table 13: At the Southwest National Primate Research Center, National Institutes of Health (NIH)-Incurred Costs for the Care of Chimpanzees and Numbers of NIH-Owned or NIH-Supported Chimpanzees, Federal Fiscal Year (FFY) 2013 through FFY 2015**

	<b>FFY2013</b>	<b>FFY2014</b>	<b>FFY2015</b>
NIH-incurred costs for chimpanzee care provided during the FFY, in millions <sup>a</sup>	\$1.78	\$2.08	\$1.94
Number of chimpanzees as of October 1	115	111	104
Chimpanzees supported by NIH	91	89	84
Chimpanzees owned by NIH	24	22	20
Changes in chimpanzee population since October 1	Not applicable	Not applicable	Not applicable
Transfers in	0	0	0
Transfers out	0	0	0
Deaths	4	7	2

Source: GAO analysis of NIH and facility data. | GAO-16-392

<sup>a</sup>The grant award years did not align with the FFYs, and payments were not always made in the same FFY that costs of chimpanzee care was incurred. We calculated the FFY costs by aligning the actual grant payment amounts that were associated with the chimpanzee care that was provided within each FFY. These amounts include funding for both NIH-owned and NIH-supported chimpanzees. Our calculations include unobligated balances from prior years that NIH was permitted to carry over to cover the costs associated with the care of NIH-owned chimpanzees during the timeframe of our review.

# Appendix VI: Comments from the Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation  
Washington, DC 20201

MAR 28 2016

John Dicken  
Director, Health Care  
U.S. Government Accountability Office  
441 G Street NW  
Washington, DC 20548

Dear Mr. Dicken:

Attached are comments on the U.S. Government Accountability Office's (GAO) report entitled, "*NIH Chimpanzee Management Program: Consolidation Should Achieve Cost Savings, but a Clear Implementation Plan is Needed*" (GAO-16-392).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

A handwritten signature in black ink that reads "Jim R. Esquea".

Jim R. Esquea  
Assistant Secretary for Legislation

Attachment

**GENERAL COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT REPORT ENTITLED: NIH CHIMPANZEE MANAGEMENT PROGRAM: CONSOLIDATION SHOULD ACHIEVE COST SAVINGS, BUT A CLEAR IMPLEMENTATION PLAN IS NEEDED (GAO-16-392)**

The Department appreciates the review conducted by the Government Accountability Office (GAO) on the NIH Chimpanzee Management Program and the opportunity to provide comments on its draft report.

**GAO Recommendation**

The GAO recommends the Secretary of Health and Human Services direct the Director of NIH to develop and communicate a clear implementation plan for meeting its long-term goal that is informed by both costs and chimpanzee welfare, and that should be updated as needed.

**HHS Response**

HHS concurs with the recommendation in the GAO report, and the NIH is in the process of developing a clear implementation plan for the retirement of NIH-owned and -supported chimpanzees. This plan will be based primarily on consideration of their well-being and safety and secondarily on costs.

The rate limiting factor in retirement of the chimpanzees is the capacity of the Federal Chimpanzee Sanctuary. Whether or not expansion of the sanctuary with private funds will occur remains a major factor affecting the date when all of the chimpanzees can be retired. The Agency is finalizing a plan outlining the move of the NIH-owned and -supported chimpanzees to the Federal Chimpanzee Sanctuary over the next decade.

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# Appendix VII: GAO Contact and Staff Acknowledgments

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## GAO Contact:

John E. Dicken (202) 512-7114 or [dickenj@gao.gov](mailto:dickenj@gao.gov)

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## Staff Acknowledgements

In addition to the contact named above, individuals making key contributions to this report include Gerardine Brennan, Assistant Director; Lori Fritz; Matt Gever; Keith Haddock; Carolina Morgan; Laurie Pachter; and Jennifer Whitworth.

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# Appendix VIII: Accessible Data

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## Agency Comment Letter

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Text of Appendix VI:  
Comments from the  
Department of Health and  
Human Services

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Page 1

DEPARTMENT OF HEALTH & HUMAN SERVICES  
OFFICE OF THE SECRETARY  
Assistant Secretary for Legislation Washington, DC 20201  
MAR 28 2016

John Dicken  
Director, Heath Care  
U.S. Government Accountability Office  
441 G Street NW  
Washington, DC 20548

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Jim R. Esquea

Assistant Secretary for Legislation

Attachment

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Page 2

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Accessible Text

**Accessible Text for Figure 1: Total Number of National Institutes of Health (NIH)-Owned or NIH-Supported Chimpanzees by Retirement Status and Location, as of January 15, 2016**

NIH-Owned or NIH-Supported Chimpanzees : 561 (100%)

Retired : 179 (32%)

Eligible for Retirement : 382(68%)

1. Chimp Haven : 179

2. Alamogordo : 144

3. Keeling : 138

4. Southwest National Primate Research Center (SNPRC) : 100

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