Office of Acquisition and Logistics Management

NIH Community Spend Analysis

Final Report

December 4, 2008

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Section 1: Executive Summary

Executive Summary

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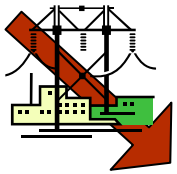
The NIH is facing increasing pressures that drive the requirement for improved purchasing processes

Requirement to Reduce Costs



- Pressure to offset flat budgets to allocate the maximum dollars to research

Increased Researcher Expectations

- Expectations of continuous improvements of product attributes to aid in research performance

New Regulation

- Government regulation in the area of supply chain and logistics putting pressure on executives to comply with mandates (e.g. OMB requirement to implement strategic sourcing, President's Management Agenda for energy, etc.)

Concerns about Continuity of Operation

- The need to effectively manage global supply chains in the face of natural disasters, medical pandemic, supply shortages, etc. requires ensuring that the supply chain can quickly adapt to adverse events and continue operating without disruption

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Multiple data sources were used to provide item level detail to compare prices and estimate shipping and handling charges

	ICs included	Time frame of data	Key data elements	Data Uses
nVISION	All ICs	July 2007 to July 2008	▸ Order date, IC, buyer, procurement method, object classification code, supplier, and total order price	▸ Analyze spend by key data elements ▸ Estimate shipping and handling savings
GDC Stock Master Report	OD	Report run on 10/09/08	▸ Item price, item description, unit of issue and supplier	▸ Price comparison of similar items between GDC, NIDDK and NIAID
AMBIS	NIAID Only	Oct 2007 to Aug 2008	▸ Item description, supplier, supplier catalog number, unit price, order total, and shipping charges	▸ Price comparison of similar items within NIAID and between NIAID, NIDDK, and the GDC ▸ Estimate of shipping and handling charges
POTS	NIDDK Only	Mar 2008 to Sept 2008	▸ Item description, supplier, supplier catalog number and unit price	▸ Price comparison of similar items within NIDDK and between NIAID, NIDDK, and the GDC
Invitrogen	All ICs	Sept 2007 to Sept 2008	▸ SKU number, item description NSN number, IC, quantity purchased, order total, channel	▸ Price comparison of same items between ICs direct purchase price, and GDC purchase price ▸ Used to estimate shipping and handling charges

Due to the numerous free form text fields in NBS, which made it difficult to collect standardized supplier and item description data, the spend analysis team tried to identify other data sources to fill these gaps

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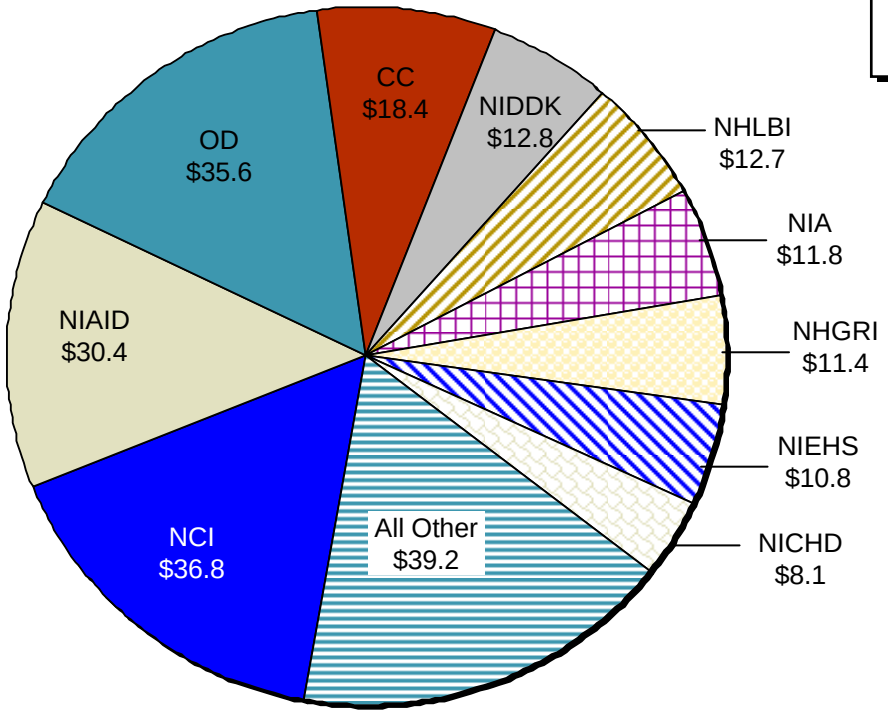
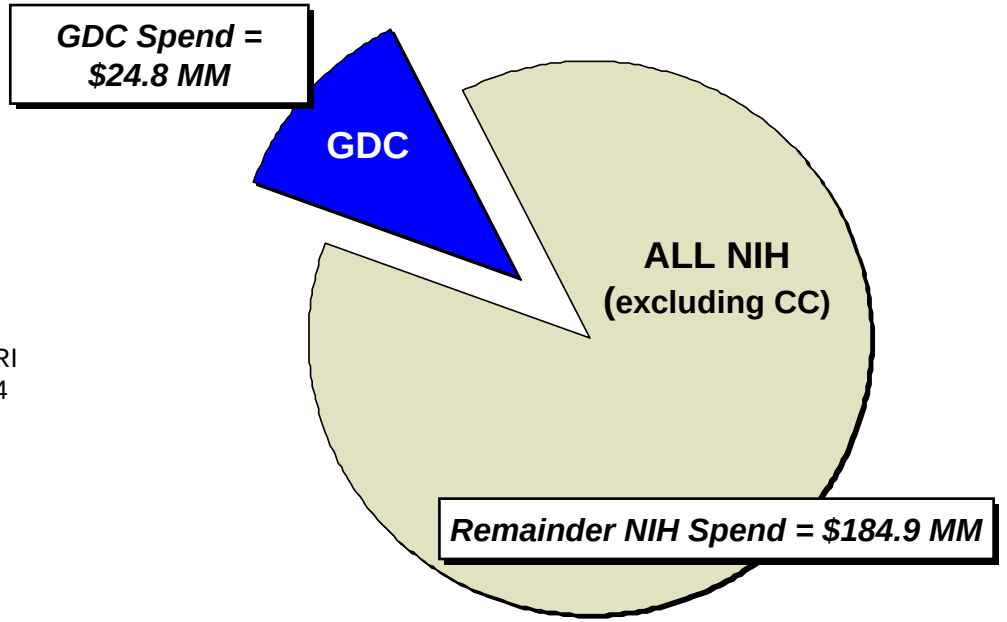
In a 12 month period, the NIH community spent $228.1 Million on supplies and materials or $209.7 Million excluding the Clinical Center

Spend by IC ($ Millions)



Total $ of Spend = $228.1 Million

GDC accounts for 11% of the total NIH spend



- The Clinical Center has been excluded from the remainder of the spend analysis due to use of the Prime Vendor Program for replenishment of supplies

(1) OD Spend includes spending from Project ICs, OD, OD ORS, and OD ORFDO

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

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The spend analysis findings focus on three areas

Areas of Study

1 Procurement Method

- Identifying items ordered through the GDC and those ordered directly from vendors allows GDC to quantify lost sales opportunities

2 Supplier Fragmentation

- Identifying opportunities for consolidating supplier spend allows for increased negotiating power and more streamlined supplier relationships

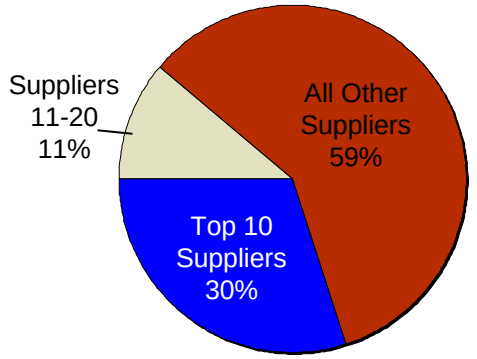
3 Total Price Variance

- Examine variance in prices paid by different NIH customers for the same products from the same or alternate suppliers

Spend Analysis Findings

- 94% of orders were placed on PCard
- Total value of PCard orders was $162.4 MM

- The NIH buys from 17,000 different suppliers



- With over 1,600 buyers the NIH obtains widely different prices for similar items
- Within the same IC, individuals pay different prices for identical items
- One third of the 120 Invitrogen items that the ICs buy direct cost 35-200% more than the GDC's price

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Fully landed costs were calculated to fairly compare the costs of items purchased direct verses from the GDC

Components of Fully Landed Costs

IC	GDC		Included:	Not Accounted For:
$36.76 per order	$9.22 per order + 32% surcharge	**Administrative Costs**	▸ Labor cost of processing orders ▸ PCard assessment charge ▸ GDC surcharge includes buyers, item managers, and distribution	▸ Cost of paying invoices
		+		
2% of product cost	None	**Transportation Costs**	▸ Standard shipping charges ▸ Expedited shipping fees	
		+		
N/A		**Inventory Costs**		▸ Out of scope for this study
		+		
Price of product only		**Product Price**	▸ Price of product charged by vendor	
		Total Landed Cost		

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Items price comparisons revealed that some items cost more and some cost less when ICs purchase directly rather than buying from the GDC

SAMPLE PRICE COMPARISONS

	NIAID Price 1	Total[1] NIAID Cost 1	NIAID Price 2	Total [1] NIAID Cost 2	NIDDK Price 1	Total [1] NIDDK Cost 2	GDC Price	Total[2] Cost to IC	% IC Price is More or (-Less) than GDC	
									Low	High
AAA Batteries (per battery)	$ .75 (Staples)	**$ 14.64**	Not Available	Not Available	$ .86 (Staples)	**$14.75**	$ .28 (Frank Parsons)	**$ 3.85**	280%	283%
Mini Binder Clip (12)	$ .89 (Office Link)	**$ 14.78**	$ 1.08 (Office Link)	**$14.97**	$ 1.09 (Office Link)	**$14.98**	$ .57 (Eagle Business)	**$ 4.23**	249%	254%
Non-Sterile Multi-Channel Basin	$ 35.98 (A. Daigger)	**$ 50.57**	Not Available	Not Available	$ 28.85 (A. Daigger)	**$ 43.30**	$ 23.48 (A. Daigger)	**$ 34.47**	47%	26%
Bio-Rad Cuvette	$ 124.10 (Bio-Rad)	**$ 140.45**	Not Available	Not Available	$121.55 (Bio-Rad)	**$137.85**	$ 121.53 (Bio-Rad)	**$ 163.90**	-14%	-16%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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An estimated $24 to $53 Million in savings from consolidated purchasing can funnel research dollars back to the NIH community

Product cost savings

$18 to $46 Million

Shipping and Handling savings

$ 3.7 Million

Order transaction cost savings

$2 to $3 Million

Other savings

Other savings could include:
- *Inventory*
- *Accounts payable*
- *Reduction in energy costs*

Savings of $24 to $53+ Million = more dollars for research

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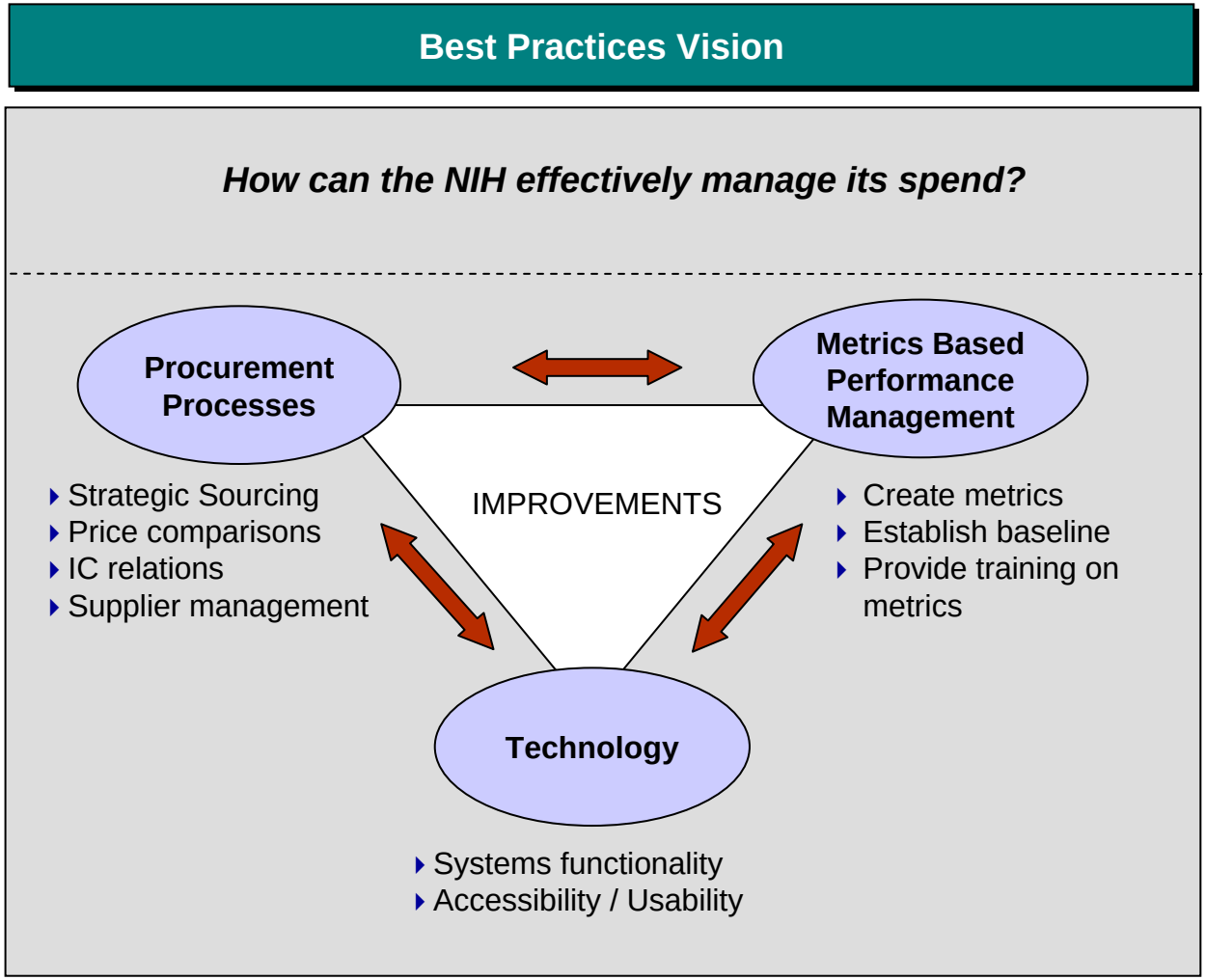
As the NIH needs to find ways to do more with less, this three pronged approach can save money and control costs



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By simplifying the ordering process and/or implementing process improvements, the NIH could realized additional savings on ordering costs

ID	Procurement Processes Recommendations	Next Steps
P1	▸ Rationalize the GDC portfolio because initial findings suggests that the NIH could save significant dollars through consolidated purchasing, initially focusing on low value, generic types of products like gloves and office supplies (*currently in progress*)	▸ Collect sales data from vendors ▸ Identify specific items as targets for consolidated purchasing ▸ Negotiate prices with vendors ▸ Advertise GDC offering to the ICs
P2a	▸ Perform a more comprehensive analysis of price differences based on different methods of buying (purchasing channels) and develop a fulfillment channel strategy that gives the best values to the NIH	▸ Identify item categories for price comparison research ▸ Calculate total landed cost for each item through the various channels ▸ Deliver a purchasing channel strategy for selected groups of items
P2b	▸ Brief Executive Officers on price differences and work with EOs and AOs to help the ICs change their purchasing habits and to adopt new methods that save time and money	▸ Present price comparison findings and purchasing channel strategy to EOs and AOs ▸ Gain acceptance of new purchasing strategy ▸ Train buyers on when and how to use the best purchasing channel for any given item

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Expanding iProcurement's functionality can save time, direct buyers to specific vendors, and provide needed data for future procurement/spend analyses

ID	Technology Recommendations	Next Steps
T1	▸ Initial research suggests that iProcurement has many more capabilities than are currently being utilized and NIH could benefit immensely from a more robust procurement system – Standardized data including drop down menus of vendor names and item descriptions – Reduced time to place an order – "Punch outs" to direct purchaser to vendors that the NIH wants used, often automatically linking the purchaser with the vendor of choice's web site – Eliminates the scenario of different ICs paying varying prices for the same product by directing purchasers to predetermined vendors and standardizing the more generic items	▸ Meet with NBS to present technology findings ▸ Investigate iProcurement's functionality ▸ Develop plan for making system upgrades ▸ After system has been modified, train all users

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Improved metrics allow NIH leadership to make knowledge based decisions

ID	Metrics Based Performance Management Recommendations	Next Steps
M1	▸ Develop and implement comprehensive metrics for NIH leadership to track the efficiency of the procurement process and make it easier to track expenditures on supplies and materials	▸ Identify metrics ▸ Define data collection and calculation ▸ Establish baselines ▸ Roll out metrics program
M2	▸ Facilitate sharing of internal NIH best practices based on established metrics	▸ Establish a performance management committee to discuss metrics and share best practices
M3	▸ Conduct a regularly scheduled spend analysis to report changes, e.g., purchasing trends, major supplies, supplier price differentials, purchasing channels	▸ Determine frequency of conducting spend analyses ▸ Identify and train staff on how to conduct analysis
M4	▸ Establish a vendor scorecarding process to allow the NIH to measure supplier performance throughout the lifecycle of the contract	▸ Identify metrics that will be used to evaluate vendor performance ▸ Define data collection and calculation ▸ Roll out the vendor scorecarding program ▸ Establish vendor rewards/penalties based on performance

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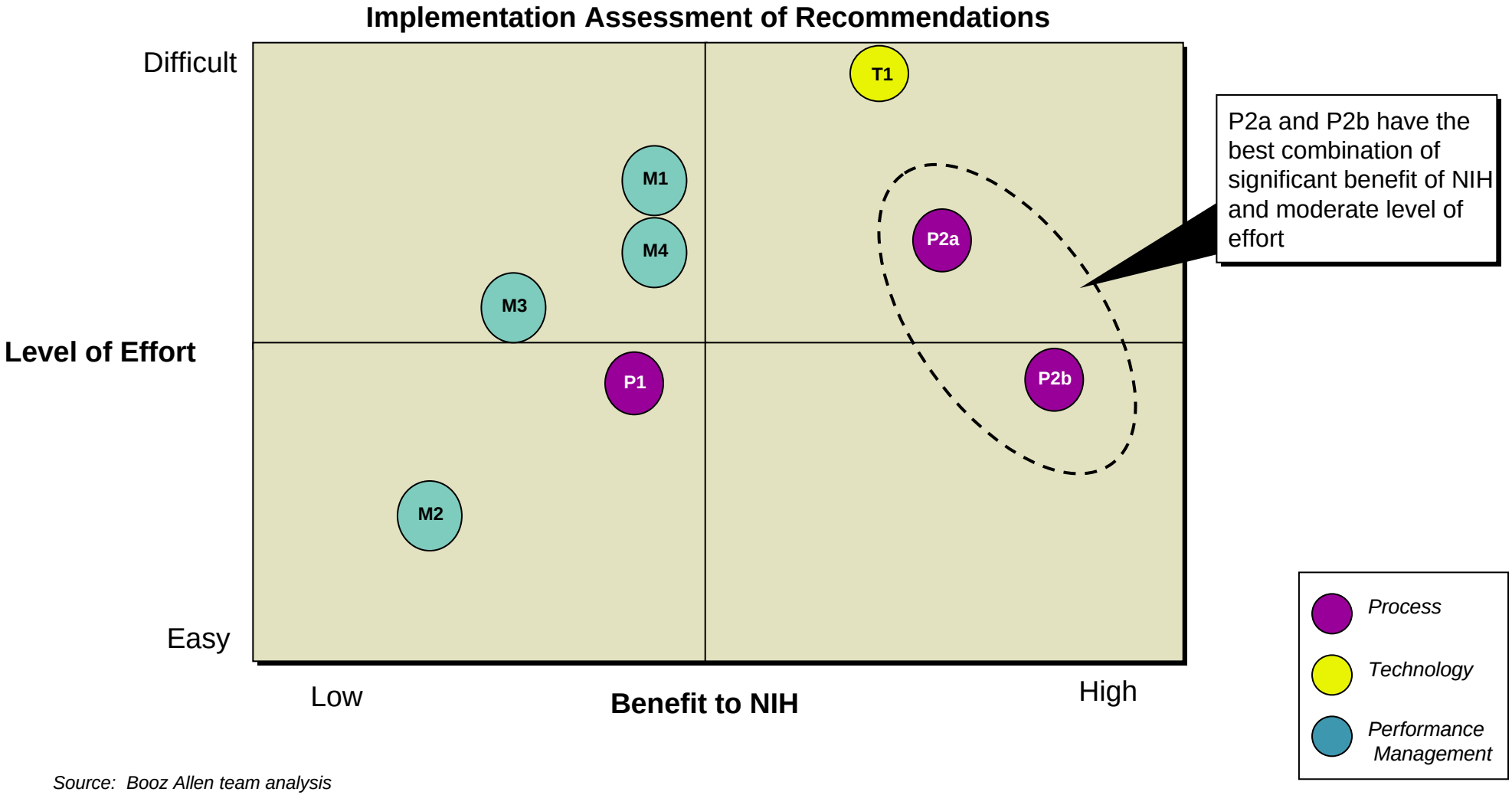
To prioritize the recommendations, we ranked them based on potential impact and ease of implementation



Source: Booz Allen team analysis

Section 2: Introduction

Introduction

- Problem Statement
- Spend Analysis Objectives and Scope
- Study Questions
- Advisory Committee

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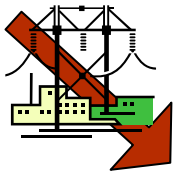
The NIH is facing increasing pressures that drive the requirement for improved purchasing processes

Requirement to Reduce Costs



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DLS received funds from OPASI to conduct a spend analysis to gather comprehensive data on IC purchasing practices

Spend Analysis Objectives	▸ Determine the best way to collect and analyze purchasing data from various institutes and centers ▸ In conjunction with an extensive assessment of the current state, identify next steps for DLS and the NIH community to fully capture spend data and acquire materials more strategically and efficiently ▸ Depending on data availability, analyze NIH material spend to identify opportunities for cost savings, economies of scale and adoption of best practices
Spend Analysis Scope	▸ Encompasses materials procured by a diverse sample of ICs ▸ Covers all items that could be reasonably serviced by the GDC ▸ Results will focus on “order of magnitude” to allow for strategic recommendations and decisions ▸ Evaluates three spend characteristics including: Procurement Method, Supplier Fragmentation, and Price Variance

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The spend analysis feasibility study was conducted with the goal of answering four study questions

Question 1

What is the most appropriate method to gather data associated with the purchasing process? What requirements can be met through existing data sources (i.e., archival data) and what new data needs to be collected?

Question 2

What is the best way to collect evaluation data without imposing an excessive burden on program staff or the public?

Question 3

Does the data provide adequate justification for NIH to change its purchasing process so institutes acquire material from the GDC program?

Question 4

Is there sufficient information within the NIH community to determine whether a consolidated strategic sourcing effort can be used to minimize overall NIH community spend on supplies used to support research?

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An Advisory Committee with representation across the Office of Acquisition and Logistics Management provided assistance with the study

- Two formal meetings of the Committee were held, on September 3 and November 3, 2008. In addition, one-on-one discussions and e-mail exchanges were held with individual committee members on various topics

- Members of the committee are shown below:

NAME	POSITION WITHIN THE OFFICE OF THE DIRECTOR (OD)
Diane Frasier	Director, Office of Acquisition and Logistics Management
Robert Best	Deputy Director, Office of Acquisitions and Logistics Management
Thomas Keith	Acting Associate Director, Office of Logistics and Acquisition Operations
Lonnie Winley	Acting Director, Division of Logistics Services
Laurie Weker	Director, Division of Acquisition Programs
Gregory Holliday	Acting Director, Office of Acquisitions
Georgiann Wilson	Chief, Purchase Card Program Branch
Richard Trott	Acting Chief, Supply and Services Branch
Melissa McKerrow	Budget Analyst

Section 3: Availability and Assessment of Evaluation Data

Availability and Assessment of Evaluation Data (Study Questions 1 and 2)

- Data Collection Methodology
- Overview of Data Sources
- Data Issues
- Recommendations

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The methodology for data collection followed the steps set forth in the OPASI submission

- One full year of nVision data was analyzed
  - Date Range: July 2007–July 2008, based on the date the invoice was posted to the General Ledger
  - August 2007 data was excluded due to limited data. Data from July 2008 was included in the analysis for a total of 12 months of data
- Only fully and partially paid invoices were examined to limit the analysis to actual dollars spent
- Data was pulled based on the Object Classification Code
  - Only supplies and materials that the GDC could carry were examined (a subset of the Object Class Codes that begin with 26)
- Data on each IC was collected from nVision
- Item level detail available though nVision was limited and the team collected a sample of item level detail from various other sources including:
  - NIAID's AMBIS system
  - NIDDK's POTS system
  - Invitrogen's sales data

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Multiple data sources were needed to provide sufficient item level detail to compare prices and estimate shipping and handling charges

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nVision offers easily accessible purchasing data but lacks standardization that limited the level of detail available for the analysis

- The current system (NBS and the nVision data warehouse) is a great step forward for data centralization and allows the NIH to capture data on overall spend by IC, object classification code and procurement method

- As NBS is currently designed, the major data limitations include:
  - Inconsistent supplier names
  - Non-standard item descriptions
  - Inaccurate order quantity
  - Lack of individual prices per item

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The many ways a vendor name is entered into the system required time consuming data cleaning efforts

- PCard Merchant Name and Supplier Name are free form text fields and contain no formatting or standardization
- The ability to aggregate information by vendor is complicated by having a variety of spellings for each vendor
- The spend analysis data originally had over 50,000 unique vendor names
- The team standardized the names of the large vendors and reduced the number of unique vendor names to 17,000
- While much progress was made through this data cleansing exercise, time constraints combined with the large data sample as well as its complexity did not allow for completion of a completely “clean” list of unique vendor names

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A. Daigger appears in the data spelled at least 208 different ways

P-Card Merchant Name	P-Card Merchant Name	P-Card Merchant Name	P-Card Merchant Name	P-Card Merchant Name	P-Card Merchant Name
A DAIGGER & COMPANY	A DAIGGER JG16015	A. DAIGGER & COMPANY	A. DAIGGER/7151559368	DAIGGER & COMPANY	DAIGGER, MARIENA MATTSON, 511628
A . DAIGGER & COMPANY	A DAIGGER& CO	A. DAIGGER & COMPANY, INC	A. DAIGGER/7183567867	DAIGGER (800) 621-7193	DAIGGER, MITCHELE WILLIAMS, 583852
A DAIGGEN	A DAIGGER, INC	A. DAIGGER & COMPANY, INC.	A. DAIGGER/DR. HOWARD	DAIGGER (BROOKS)	DAIGGER, MITCHELLE WILLIAMS, 165289
A DAIGGER	A DAIGGER/JB9266	A. DAIGGER (BD BIOSCIENCE)	A. DAIGGER/DR. KOTARO	DAIGGER (CHEN)	DAIGGER, TEYANA JOSPEH, 137671
A DAIGGER #01524577	A DAIGGER/JWB0267	A. DAIGGER (DLM-7-0005)	A. DAIGGER/TS061307K	DAIGGER (INTRAMALL)	DAIGGER, TEYANA JOSPEH, 360623
A DAIGGER & CO	A DAIGGER/JWB1880/08-32335	A. DAIGGER (HANSEN)	A. DAIGGER/TS061307L	DAIGGER / 1459087	DAIGGER, TSUYOSHI YAMAGUICHI, 127189
A DAIGGER & CO.	A DAIGGER|847-816-5060|IL	A. DAIGGER (NAKAYA)	A.DAIGGER	DAIGGER / 1461224	DAIGGER, TSUYOSHI YAMAGUICHI, 135560
A DAIGGER & COMPANY	A DAIGGER-57185	A. DAIGGER (SILVER)	A.DAIGGER - KR05-77	DAIGGER / 1463854	DAIGGER/JB9107
A DAIGGER & COMPANY (LIU)	A DAIGGER-58105	A. DAIGGER 7170564921	A.DAIGGER - MTK6250	DAIGGER / 1475260	DAIGGER/KIMBLE
A DAIGGER & COMPANY INC	A DAIGGER-58813	A. DAIGGER 7191569438	A.DAIGGER & CO	DAIGGER / 800-621-7193	DAIGGER-EMW-03-13
A DAIGGER & COMPANY INC.	A DAIGGER-58847	A. DAIGGER 7193570363	A.DAIGGER & CO.	DAIGGER 1481714	DAIGGER-O'DONOVAN
A DAIGGER (BROOKS)	A DAIGGER-59246	A. DAIGGER 7233588559	A.DAIGGER 7203620806	DAIGGER 7306623943	DAIGGER-YOULE
A DAIGGER (DLM-7-0005)	A DAIGGER-59389	A. DAIGGER 7234589759	A.DAIGGER 7242595619	DAIGGER 800-621-7193 IL #1462171	DAIGGOR
A DAIGGER (LIU)	A DAIGGER-60423	A. DAIGGER 7239592575	A.DAIGGER 8011688544	DAIGGER 800-621-7193 IL #1464407	
A DAIGGER (MAHDI)	A DAIGGER-62362	A. DAIGGER 7240593957	A.DAIGGER 814176290?/01519275	DAIGGER 800-621-7193 IL #1466536	
A DAIGGER (MAMINISHKIS)	A DAIGGER-62423	A. DAIGGER 7240594015	A.DAIGGER 8157777256	DAIGGER 800-621-7193 IL #1467030	
A DAIGGER (PETERSON)	A DAIGGER-62680	A. DAIGGER 7240594052	A.DAIGGER 8162778404	DAIGGER 8006217193 IL 1457084	
A DAIGGER (SILVER)	A DAIGGER-63003	A. DAIGGER 7241594964	A.DAIGGER AND CO	DAIGGER A	
A DAIGGER 7163562731	A DAIGGER-63817	A. DAIGGER 7242595619	ADAIGGER	DAIGGER A & CO	
A DAIGGER 8052707539	A DAIGGER-64726	A. DAIGGER 7248597464	A-DAIGGER	DAIGGER A & CO.	
A DAIGGER 847-816-5060	A J DAIGGER - 8074715862	A. DAIGGER 7248597476	ADAIGGER - KR07-49	DAIGGER A & COM	
A DAIGGER AND COMPANY	A, DAIGGER	A. DAIGGER 7283615431	A-DAIGGER CO.	DAIGGER A & COMPANY	
A DAIGGER AND COMPANY, INC	A. DAIGER	A. DAIGGER 7297619023	A-DAIGGER LAB	DAIGGER A CO	
A DAIGGER CO	A. DAIGGER	A. DAIGGER 7298619428	IM589-C - DAIGGER	DAIGGER A& CO	
A DAIGGER CO.	A. DAIGGER - 7204574220	A. DAIGGER 7310626487	AMOB: A. DAIGGER	DAIGGER A. CO.	
A DAIGGER COMPANY	A. DAIGGER - MTK6104	A. DAIGGER 7345661081	CCU PR-834 DAIGGER	DAIGGER AND COMPANY	
A DAIGGER INC	A. DAIGGER - MTK6221	A. DAIGGER 8051706652	CL143463- A. DAIGGER	DAIGGER CO.	
A DAIGGER JG13066	A. DAIGGER - MTK6268	A. DAIGGER 8059710786	DAI INDUSTRIAL PRODUCTS	DAIGGER -EMW-11-19	
A DAIGGER JG13167	A. DAIGGER - MTK6379	A. DAIGGER 8073715656	DAIGER	DAIGGER IL 800-621-7193	
A DAIGGER JG13829	A. DAIGGER - MTK6413	A. DAIGGER 8085720399	DAIGER CO.	DAIGGER INC	
A DAIGGER JG13858	A. DAIGGER - MTK6492	A. DAIGGER 8105732974	DAIGER LAB SUPPLIES	DAIGGER INC.	
A DAIGGER JG14037	A. DAIGGER - MTK6846	A. DAIGGER 8129751210	DAIGGER	DAIGGER JG 13635	
A DAIGGER JG14160	A. DAIGGER - MTK7316	A. DAIGGER AND CO	DAIGGER - JBW103 - KANG ZHENG	DAIGGER JG 13636	
A DAIGGER JG14578	A. DAIGGER - MTK7480	A. DAIGGER AND CO.	DAIGGER #021207-3	DAIGGER LAB EQUIPMENT & SUPPLIES	
A DAIGGER JG14702	A. DAIGGER - MTK7581	A. DAIGGER CO.	DAIGGER A & CO	DAIGGER SCIENTIFIC	
A DAIGGER JG15057	A. DAIGGER - MTK7899	A. DAIGGER COMPANY	DAIGGER - IM521-D	DAIGGER VIA INTRAMALL	
A DAIGGER JG15491	A. DAIGGER - MTK8215	A. DAIGGER JG13298	DAIGGER - IM536-D	DAIGGER, #14181, REF #1463738	
A DAIGGER JG15629	A. DAIGGER & CO	A. DAIGGER TS08907F	DAIGGER & CO	DAIGGER, #14181, REF #1467894	
A DAIGGER JG15744	A. DAIGGER & CO.	A. DAIGGER, 1-800-621-7193	DAIGGER & CO, INC.	DAIGGER, 316979, LUFEI SHAN	
A DAIGGER JG16015	A. DAIGGER & CO., INC.	A. DAIGGER, VL11-25	DAIGGER & CO.	DAIGGER, CRISTINA BACKMAN, 421304, 420670	

Different ways of writing the company name increases count of unique vendor names

Using initials and numbers to differentiate orders increases count of unique vendor names

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Standardizing data entry requirements will enable faster, less time consuming, and more robust analysis

Data Issues Example: Batteries

Current Data Issue	Example	Resultant problem
▸ Varying descriptions of same product	▸ Batteries ▸ AA batteries ▸ AA-batteries ▸ Duracell AA Rechargeable Battery ▸ Durmn15RT12Z Battery, Alka, AA, 12 ▸ AA 16 Pack Peggable – Batteries Alkaline Copper	▸ Naming conventions varied widely, making it difficult for the spend analysis team to identify all purchases made for AA batteries
▸ No Unit of Issue	074821 battery Size AAA NIEHS #10299 Batteries AAA – Cornerstone	▸ Not able to determine the price per unit ▸ Cannot compare purchase price of similar products that may be priced differently based on various units per package
▸ Multiple products combined in one item description field	Printer cartridges for Deb; fan for Ashok; scissors for Margaret & Me; facial tissues, AAA batteries; 11X17 Heavy Duty Paper; Copy Paper	▸ Nearly impossible to cull out the specific item price as the price in the system is for the entire order
▸ Spelling mistakes	▸ Duracell AA ***Recharageable*** batteries ▸ Energizer ***Duble*** AA Batteries #524935JBW346 – ***Cooppertop***	▸ Cannot match same product using unique name

Section 4: Analysis of Purchasing Data

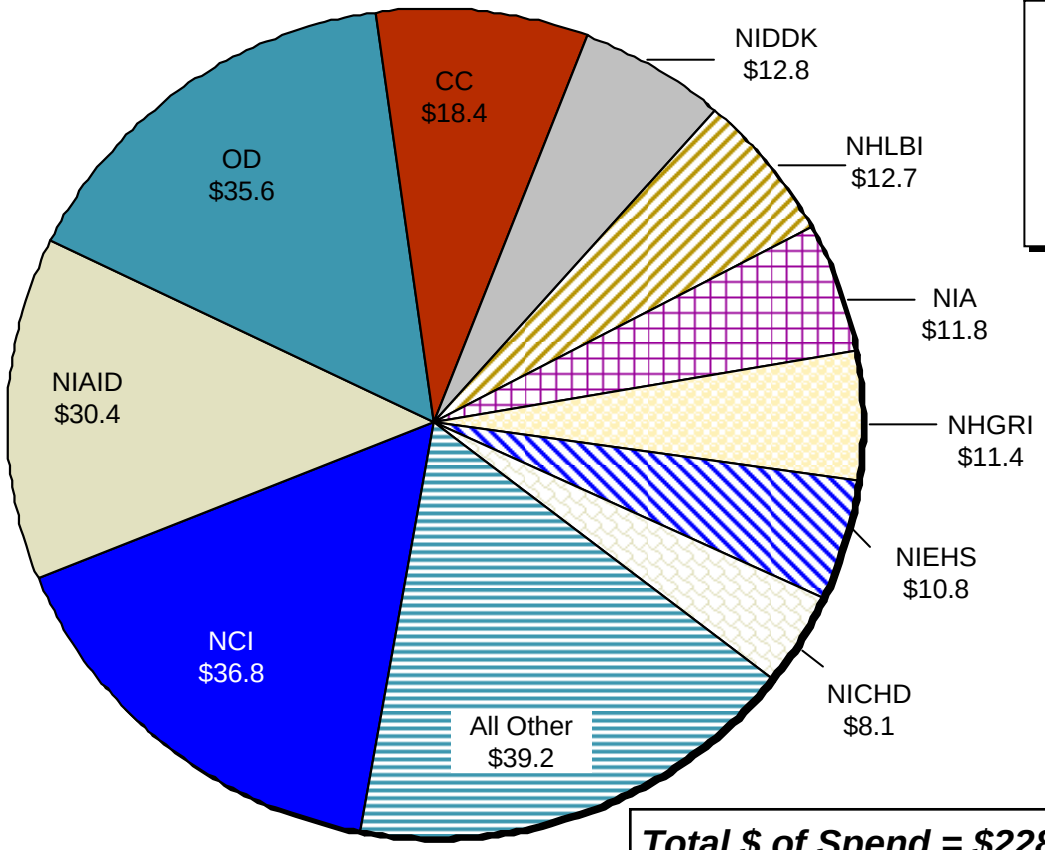
Analysis of Purchasing Data (Study Questions 3 and 4)

- Overall NIH Spend
- Procurement Method
- Supplier Fragmentation
- Order Transaction Costs
- Price Variance
- Consolidated Purchasing

Office of Acquisition and Logistics Management

The NIH community spent $228.1 Million on supplies and materials in a 12 month period

Spend by IC ($ Millions)



Total $ of Spend = $228.1 Million

Key Insights

- Six Institutes and Centers (ICs) account for nearly 2/3 of the NIH community's spend on supplies and materials
- The top 10 ICs account for 83% of the total spend

(1) OD Spend includes spending from Project ICs, OD, OD ORS, and OD ORFDO

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Office of Acquisition and Logistics Management

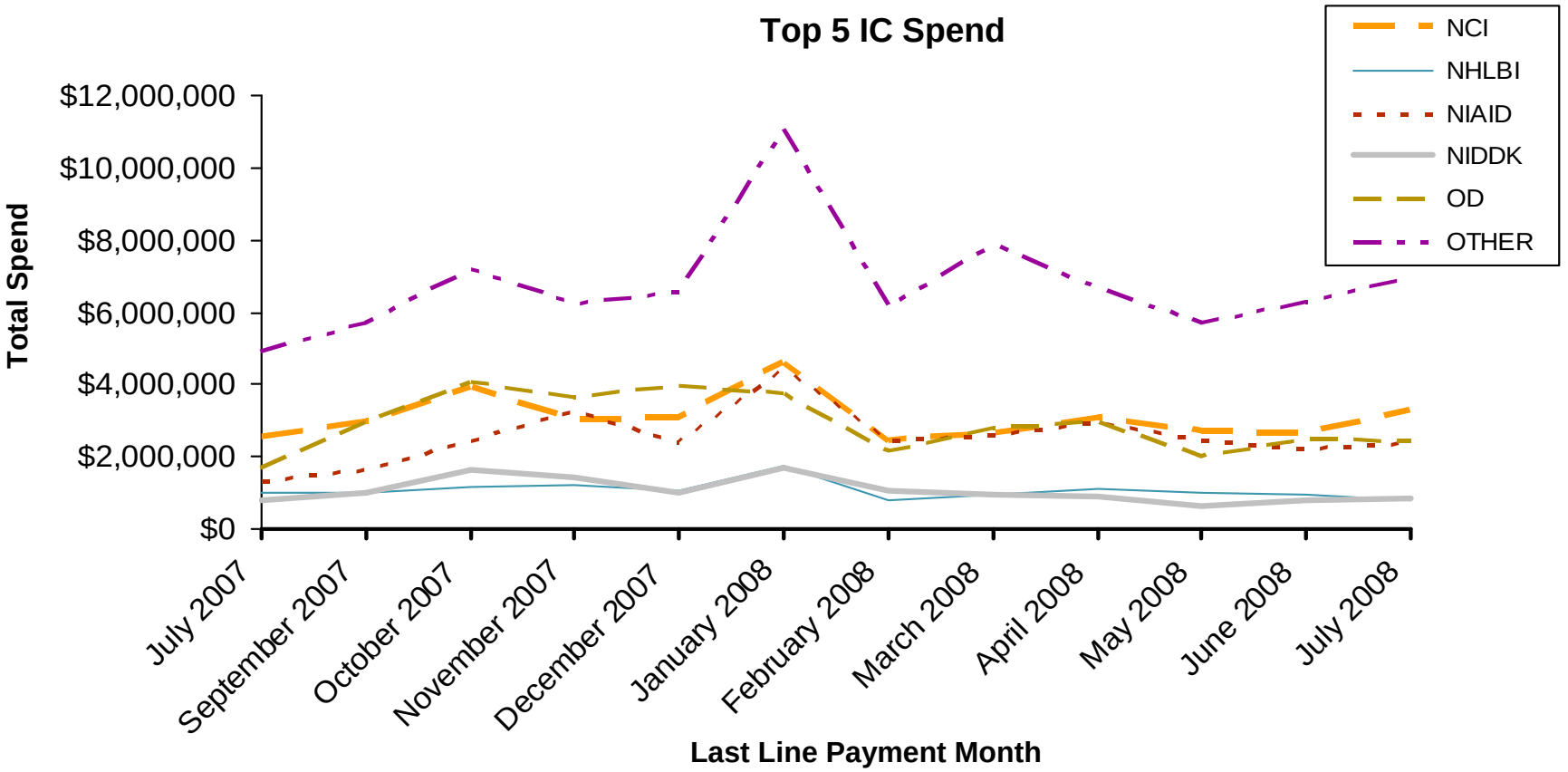
The Clinical Center has been excluded from the remainder of the spend analysis due to use of the Prime Vendor Program for replenishment of supplies

- Use of the Defense Supply Center Philadelphia (DLA Prime Vendor Orders) skews the results since the Clinical Center's $37.4 Million spent with this one vendor accounts for 2/3 of all orders placed by the Clinical Center and 98% of their orders placed on contracts

- By using the Prime Vendor program through the DLA, the Clinical Center is able to avoid paying the GDC's surcharge and still benefit from daily shipments of supplies at the same price that the GDC is able to obtain using the same channel

Office of Acquisition and Logistics Management

The ICs appear to follow a similar monthly spending pattern



Determine whether this pattern occurs year over year, and then use this information to forecast needs and procure accordingly to ensure items are available when needed for research

(1) This analysis excludes the Clinical Center

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

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The spend analysis findings focus on three areas

Areas of Study

1 Procurement Method

- Identifying items ordered through the GDC and those ordered directly from vendors allows GDC to quantify lost sales opportunities

2 Supplier Fragmentation

- Identifying opportunities for consolidating supplier spend allows for increased negotiating power and more streamlined supplier relationships

3 Total Price Variance

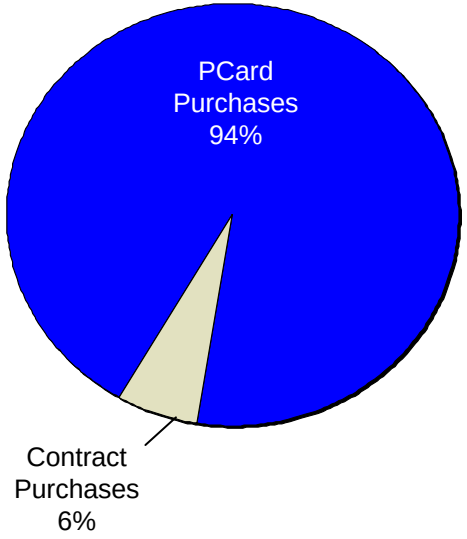
- Examine variance in total landed prices paid by different NIH customers for the same products from the same or alternate suppliers

Office of Acquisition and Logistics Management

PCards were the most commonly used method to purchase supplies and materials and accounted for 94% of all purchases

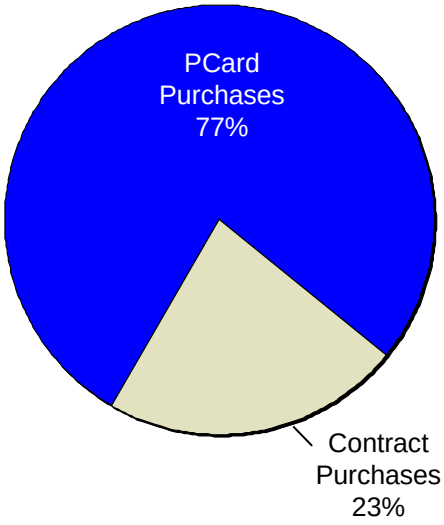
Method of Purchase

Total # of Orders



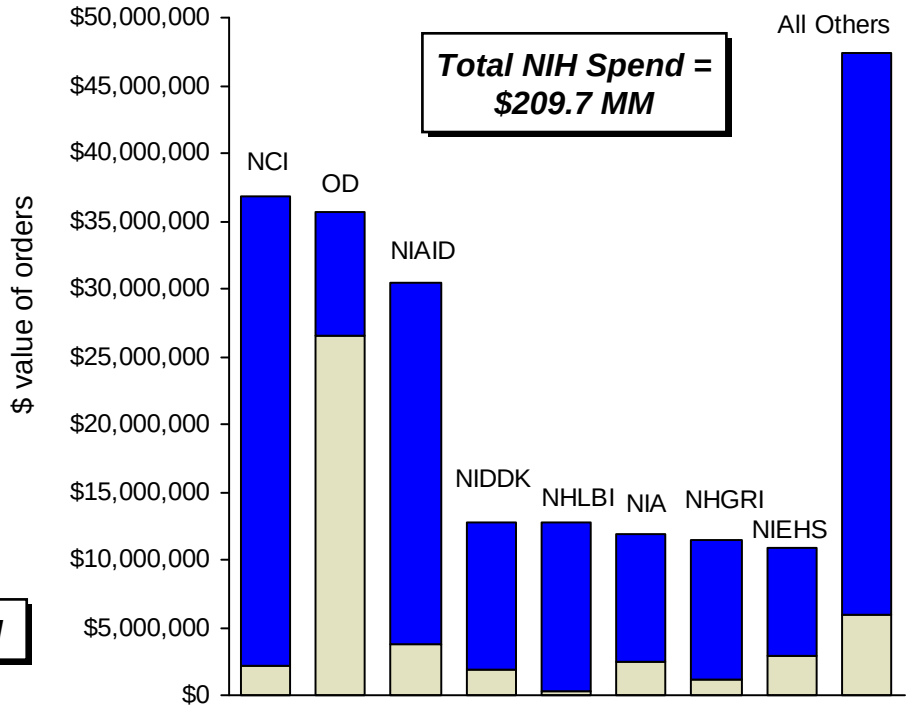
Total # of Orders = 329,712

Total $ Value of Orders



Total $ Value of Orders = $209.7 MM

$ Value of Contract and PCard Purchases by IC



Key Observation

- Contract purchases totaled $47.4 Million while PCard purchases totaled $162.4 Million
- The large volume of PCard transactions makes it more difficult for NIH to measure compliance with FAR Guidelines and small business goals

(1) These charts exclude the Clinical Center

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

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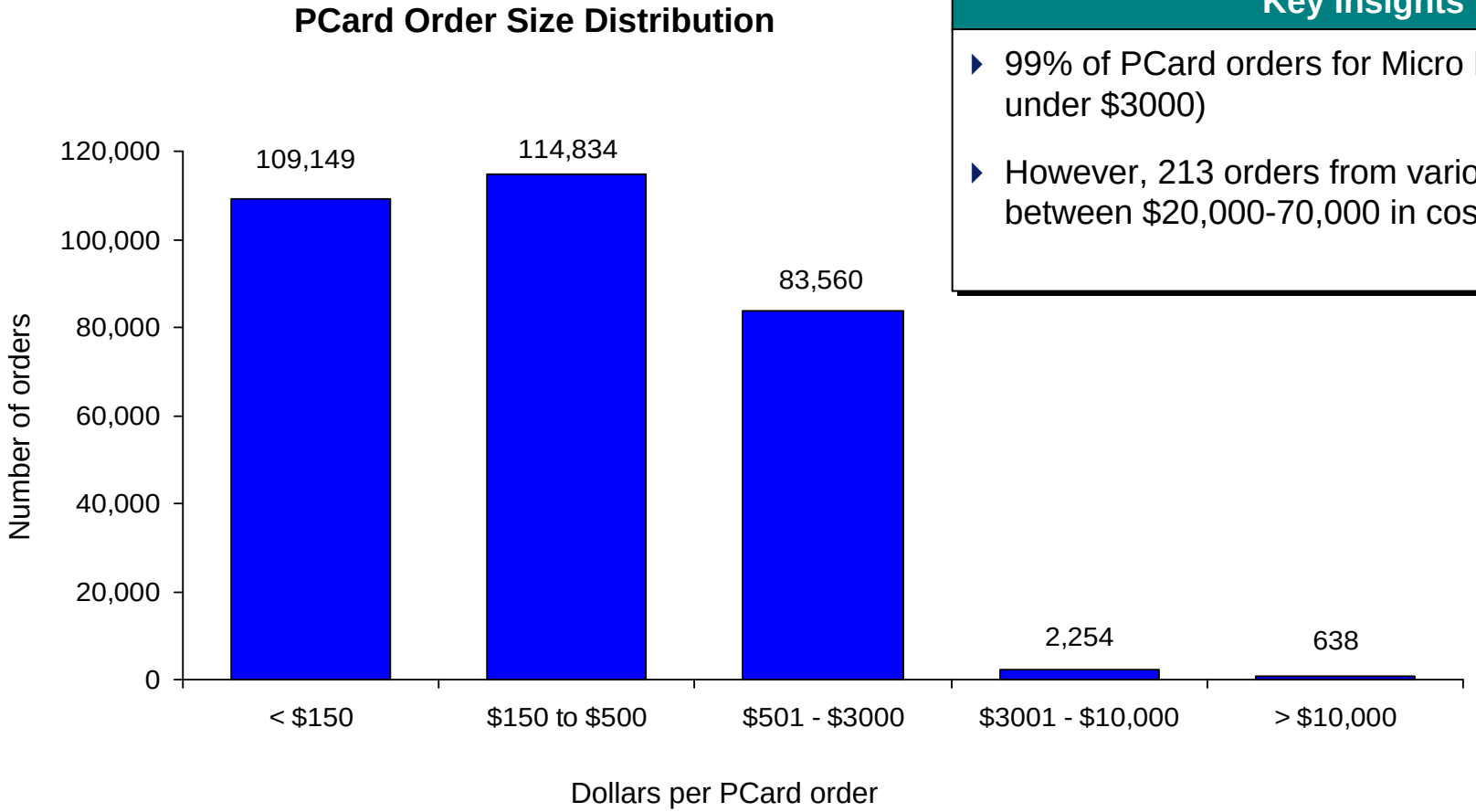
PCards are most often used for relatively small orders



Key Insights

- 99% of PCard orders for Micro Purchases (orders under $3000)
- However, 213 orders from various ICs were between $20,000-70,000 in cost

(1) This analysis excludes the Clinical Center

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

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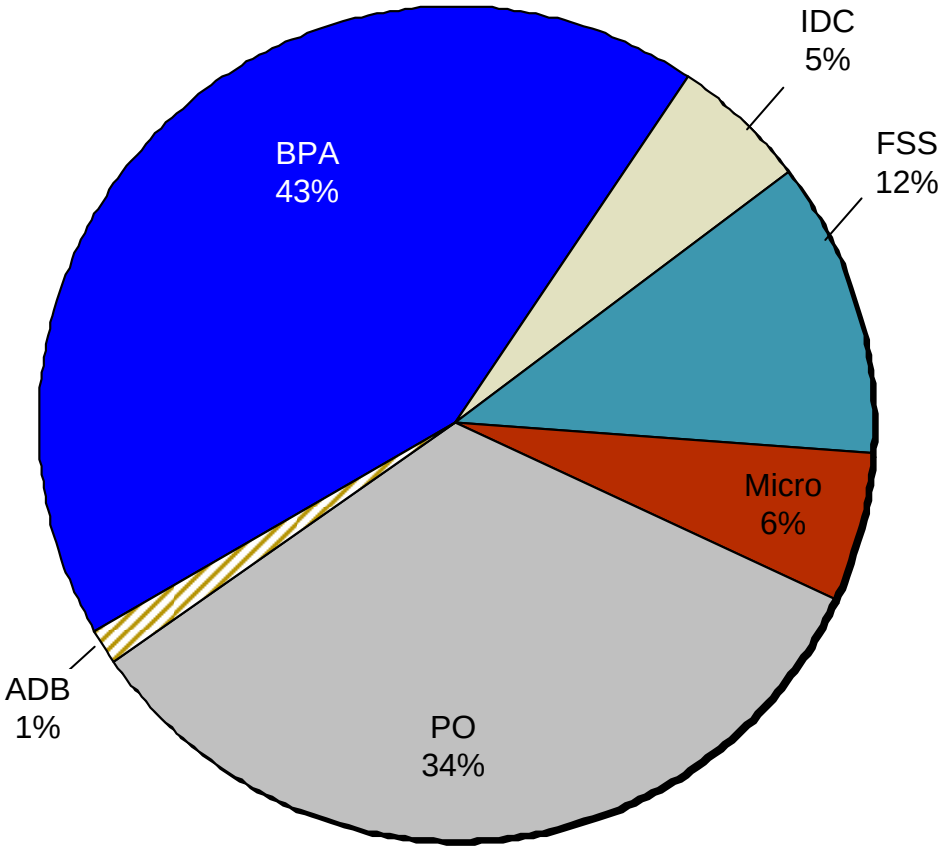
Of the purchases made using contracts, the NIH community uses primarily Blanket Purchase Agreements and Purchase Orders

Spend % by Contract Type



Total $ of Spend = $47.4 Million

Key Insights

- 83% of all orders placed on contracts used either a BPA or PO (including Micro Purchases) as the contract vehicle
- When BPAs and POs over $3,000 require comparing three price quotes, the order to ship time is increased

LEGEND:

BPA =	Blanket Purchase Agreement
IDC =	Indefinite Delivery Contract
FSS =	Federal Supply Schedule Delivery Order
Micro =	Purchase order under $3K
PO =	Open Market up to $100K
ADB =	Order placed through ADB system

(1) This chart excludes the Clinical Center and its largest supplier the Defense Supply Center

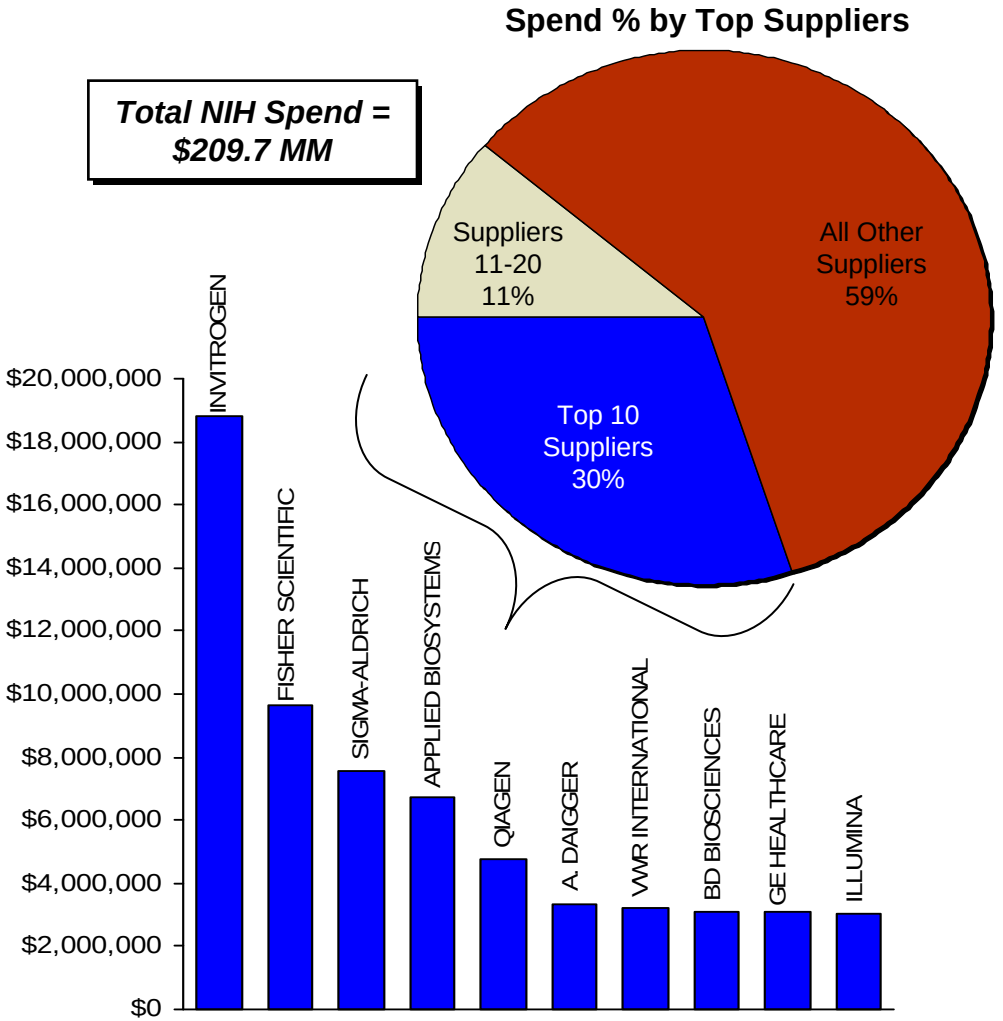
Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Office of Acquisition and Logistics Management

The NIH community purchases from approximately 17,000 different suppliers providing much opportunity for consolidation

Key Insights

- Relying on a large supplier base with non consolidated purchasing may hinder opportunities to develop strategic relationships that could lead to joint cost improvement initiatives
- Cost of quality control is reduced when there are less suppliers; further quality control costs are reduced when the supplier relationships are strategic
- Consolidating suppliers does not necessarily mean restricting or standardizing all products but in some cases standardization may make sense for non-critical items e.g. office supplies



(1) Charts exclude the Clinical Center and its largest supplier the Defense Supply Center

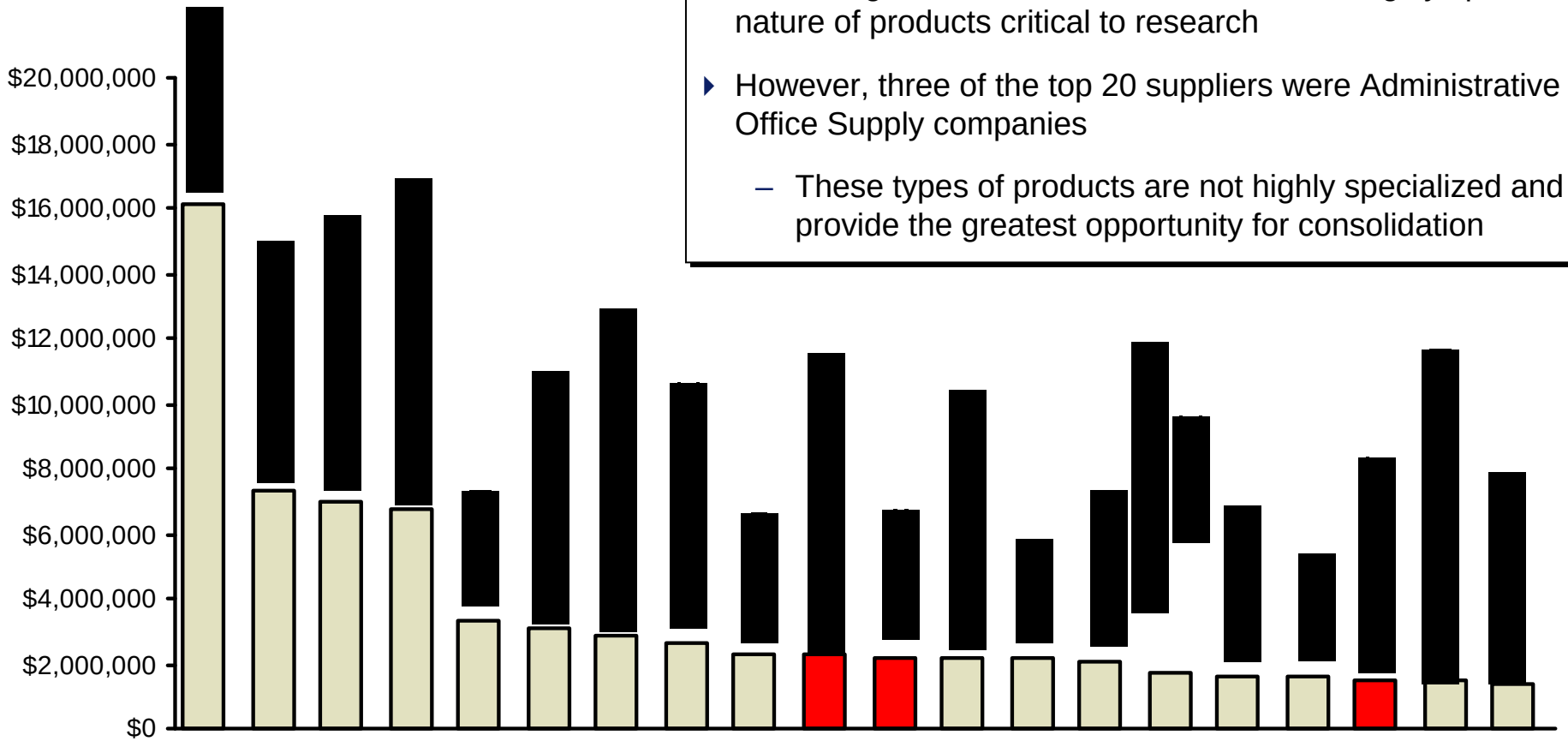
Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Office of Acquisition and Logistics Management

The high volume of direct purchases through PCards contributes to the NIH's fragmented supplier base

Key Insights

- Some fragmentation is inevitable due to the highly specialized nature of products critical to research
- However, three of the top 20 suppliers were Administrative and Office Supply companies
  - These types of products are not highly specialized and may provide the greatest opportunity for consolidation



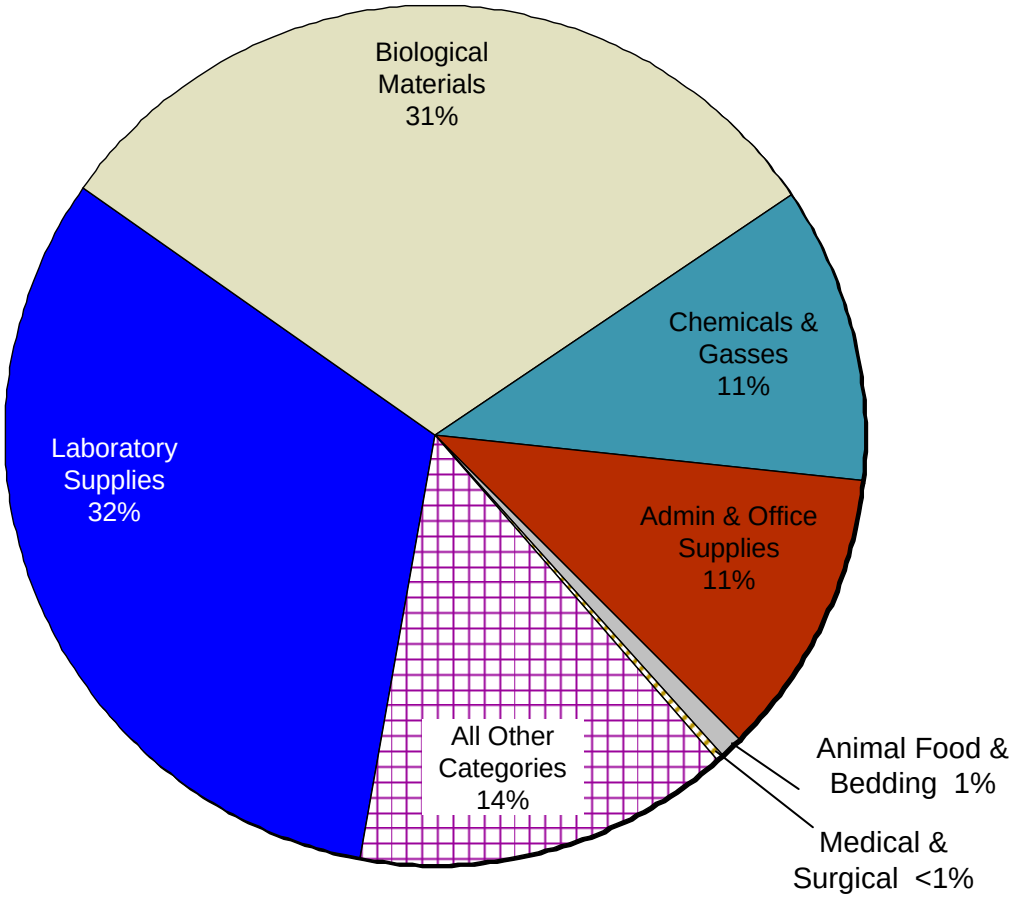
(1) Charts exclude the Clinical Center and its largest supplier the Defense Supply Center

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Office of Acquisition and Logistics Management

The 17,000 suppliers are spread over seven object categories, in which two-thirds of the NIH's spend is on Laboratory Supplies and Biological Materials

Spend by Object Category ($ Millions)



Spend by Object Category (in Rank Order)

Laboratory Supplies	$ 67.3 Million
Biological Materials	$ 64.3 Million
Chemicals and Gasses	$ 23.6 Million
Administrative and Office	$ 22.2 Million
Animal Food and Bedding	$ 1.9 Million
Medical and Surgical	$ 950 Thousand
All Other Categories	$ 29.4 Million
Total $ of Spend	**$ 209.7 Million**

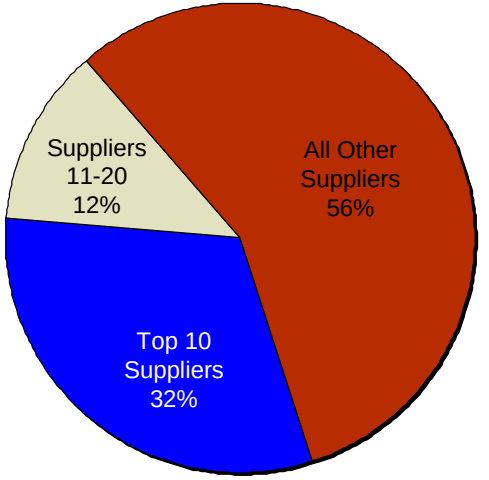
(1) Charts exclude the Clinical Center and its largest supplier the Defense Supply Center
Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Office of Acquisition and Logistics Management

Nearly one third of the money spent for Laboratory Supplies is purchased through 10 suppliers

Laboratory Supplies	
Top Supplies	**$ Value of Orders**
Fisher Scientific	$ 5,977,763
Invitrogen	$ 3,634,061
VWR International	$ 2,665,277
Applied Biosystems	$ 1,915,871
Sigma-Aldrich	$ 1,334,232
Government Scientific Source (GSS)	$ 1,252,615
GE Healthcare	$ 1,247,312
A. Daigger	$ 1,080,890
Tecniplast	$ 1,063,256
Qiagen	$ 1,034,332
Sum of Top 10 Suppliers	**$21,205,607**
TOTAL NIH SPEND ON LABORATORY ITEMS	**$ 67,263433**

Spend % by Top Suppliers



Key Insights

- The remaining $46 Million not spent with these suppliers is spread among 7,000 other vendors
- Of the 7,000 suppliers, half had sales to the NIH of less than $500 in one year

(1) This table excludes the Clinical Center

(2) Laboratory Materials include Object Classification Codes 26.51, 26.54, 26.57, 26.5A, 26.5D, and 26.8B

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

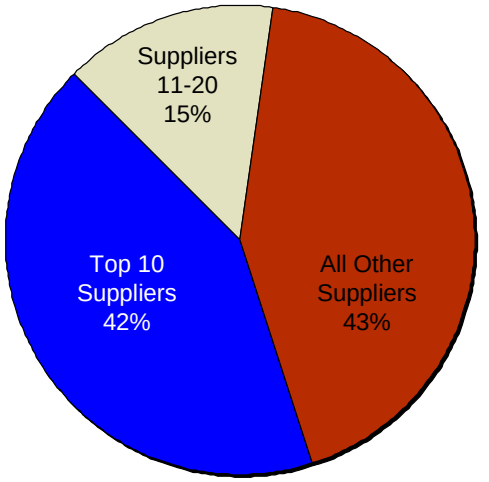
Office of Acquisition and Logistics Management

In the second largest item category, the 10 largest suppliers account for over 40% of the total spend

Biological Materials	
Top Supplies	**$ Value of Orders**
Invitrogen	$ 9,517,618
Applied Biosystems	$ 3,395,543
Illumina	$ 2,291,744
Sigma-Aldrich	$ 2,228,323
Affymetrix	$ 2,209,750
BD Biosciences	$ 2,014,659
Qiagen	$ 1,822,706
Miltenyi Biotech	$ 1,401,083
Roche	$ 1,228,161
Goldbelt Raven	$ 1,223,936
Sum of Top 10 Suppliers	**$ 27,333,562**
TOTAL NIH SPEND ON BIOLOGICAL MATERIALS	**$ 64,343,315**

(1) This table excludes the Clinical Center
(2) Biological Material Object Classification Codes Include: 26.16, 26.13 and 26.23
Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Spend % by Top Suppliers



Key Insights

- The NIH community purchases biological materials from nearly 4,000 suppliers
- Four of the Top 10 suppliers of Biological Materials are also among the Top 10 suppliers of Laboratory material (Invitrogen, Applied Biosystems, Sigma-Aldrich, and Qiagen)

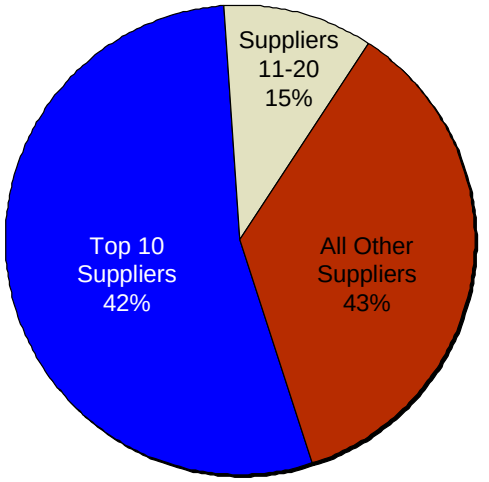
Office of Acquisition and Logistics Management

Over half of the top suppliers of Chemicals and Gasses are also key suppliers for Laboratory Supplies and Biological Materials

Chemicals and Gases	
Top Supplies	**$ Value of Orders**
Sigma-Aldrich	$ 3,904,931
Invitrogen	$ 3,843,434
Applied Biosystems	$ 1,364,321
Qiagen	$ 670,106
GE Healthcare	$ 642,005
Roberts Oxygen	$ 529,510
Roche	$ 468,738
Bio-Rad	$ 465,655
Pierce	$ 420,863
Fisher Scientific	$ 409,778
Sum of Top 10 Suppliers	**$ 12,719,340**
TOTAL NIH SPEND ON CHEMICALS AND GASSES	**$ 23,625,662**

(1) This table excludes the Clinical Center
(2) Chemicals and Gasses Object Classification Codes Include: 26.13 and 26.23
Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Spend % by Top Suppliers



Key Insights

- This item category has the fewest number of unique vendors (approx. 1,700) as compared to the other major item categories
- Six of these Top 10 suppliers are also among the Top 10 suppliers of Laboratory Supplies and Biological Materials (Sigma-Aldrich, Invitrogen, Applied Biosystems, Qiagen, GE Healthcare, and Fisher Scientific)

Office of Acquisition and Logistics Management

Office Supplies may offer the greatest opportunity for consolidation since many of the suppliers had low dollar value of sales

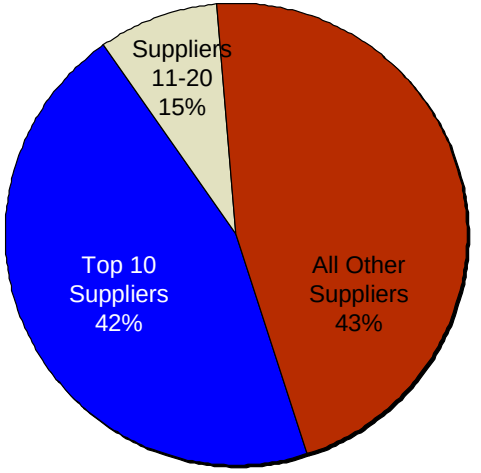
Administrative and Office Supplies	
Top Supplies	**$ Value of Orders**
CDW Government	$ 2,237,583
Staples	$ 2,178,124
Office Depot	$ 1,416,123
O'Neill Computer Products	$ 965,251
World Wide Technology	$ 945,099
Dell	$ 712,340
Benjamin Office Supply	$ 502,493
GovConnection	$ 446,438
Insight Public Sector	$ 375,311
Office Link	$ 306,864
Sum of Top 10 Suppliers	**$ 10,085,627**
TOTAL NIH SPEND ON OFFICE SUPPLIES	**$ 22,248,346**

(1) This table excludes the Clinical Center

(2) Administrative and Office Supply Object Classification Codes Include: 26.6A, 26.6L, 26.6N, 26.6Z, 26.7A, 26.7L, 26.7Z, 26.81, 26.86, 26.87, 26.91

Source: nVISION data extracted Sep. 2008 (fully or partially paid orders between July 2007 and July 2008)

Spend % by Top Suppliers



Key Insights

- Of the 4,500 different suppliers, nearly a quarter of the suppliers had sales of less than $100 and 60% had sales less than $500
- OD has negotiated a BPA with Office Depot and HHS has negotiated discounted prices with Staples
  - –By using existing contracts, the NIH may be able to negotiate better prices with these suppliers over the long term

Office of Acquisition and Logistics Management

Applicable transaction costs needed to be added to the product price to fairly compare the landed costs of items purchased direct and from the GDC

Components of Fully Landed Costs

	Included:	Not Accounted For:
Administrative Costs	▸ Labor cost of processing orders ▸ PCard assessment charge	▸ Cost of paying invoices
+		
Transportation Costs	▸ Standard shipping charges ▸ Expedited shipping fees	
+		
Inventory Costs		▸ Out of scope for this study
+		
Product Price	▸ Price of product charged by vendor	
Total Landed Cost		

Office of Acquisition and Logistics Management

The total cost of a PCard order is approximately $36.76 per order

Time to complete a PCard Order

Activity	Average Time to Complete
Complete form 1861	7 - 8 minutes
Submit form for approval	4 - 5 minutes
Cardholder enter transaction into log	10 - 13 minutes
Cardholder place order with vendor	9 - 10 minutes
Reconcile PCard	8 - 9 minutes
Total Time	**38– 45 minutes**

- The average PCard order takes an average of 42 minutes
- At a fully loaded cost of $46.08 per hour, this equates to $32.26 per PCard order

Cost to complete a PCard Order

PCard Cost Category	Cost
Labor Cost	$ 32.26
PCard transactional cost	$ 4.50
Total Cost	**$ 36.76**

- Each PCard order has a transaction cost with the financial institution
- It was $4.50 per transaction, but currently it is being charged as an assessment to the ICs; we believe it is assessed to breakeven

(1) A fully loaded rate was estimated using the hourly salary for a GS 11, Step 5 in the Washington DC area ($32/hour) with a fully burdened rate of plus 44%
Source: http://www.opm.gov/oca/08tables/indexGS.asp

Office of Acquisition and Logistics Management

The total cost of a GDC order is approximately $9.22 per order

Time to complete a GDC order

Activity	Average Time to Complete
Log on to iProcurement	2 minutes
Search and select items	5 minutes
Approval and checkout process	5 minutes
Total Time	**12 minutes**

- Placing a GDC order represents the process an NIH employee follows to purchase an item from the GDC
- The average GDC order takes an average of 12 minutes to complete
- At a fully loaded cost of $46.08 per hour, this equates to $9.22 per GDC order

(1) A fully loaded rate was estimated using the hourly salary for a GS 11, Step 5 in the Washington DC area ($32/hour) with a fully burdened rate of plus 44%
Source: http://www.opm.gov/oca/08tables/indexGS.asp

Office of Acquisition and Logistics Management

NIH could realistically save about $2-3 Million per year if select supplies were ordered from the GDC

Order Method Cost Comparison

Purchase Method	Cost per Order
PCard	$ 36.76
GDC	$ 9.22
Difference	**$ 27.54**

- The annual number of PCard orders is 310,435
- If all supplies were ordered from the GDC, this would save an estimated $8.5 million per year
- Realistically, NIH could expect to order 20–35% of supplies through the GDC, resulting in $1.7-3.0 million savings to the NIH community

(1) A fully loaded rate was estimated using the hourly salary for a GS 11, Step 5 in the Washington DC area ($32/hour) with a fully burdened rate of plus 44%
(2) Data excludes the Clinical Center
Source: http://www.opm.gov/oca/08tables/indexGS.asp

Office of Acquisition and Logistics Management

An estimated $3.7 M in shipping and handling costs was calculated using data from Invitrogen and NIAID's AMBIS system

- Shipping and Handling costs are not consistently captured in nVision, therefore, an estimate of shipping and handling costs was derived from the following methodology:

1. All item descriptions entitled "shipping and handling" were extracted from AMBIS and totaled $601,000

2. NIAID's shipping and handling cost was calculated as a percentage of NIAID's $30.4 Million total spend shipping

$$\frac{\text{NIAID's Shipping Cost}}{\text{NIAID's Total Spend}} = \frac{\$\ 601{,}000}{\$\ 30{,}430{,}587} = \mathbf{2\%}$$

3. Since NIAID shipping and handling costs accounted for 2% of their total spend, the same percentage was applied to the total NIH spend (excluding the GDC and the Clinical Center)

2% x $185 M = **$3.7 MM**

4. The estimated $3.7 Million shipping and handling cost estimated was validated by considering Invitrogren's total shipping and handling costs equate to $700,000

5. It was deduced that the $3.7 Million cost was a reasonable estimate considering that Invitrogren, the NIH's largest vendor, accounted for 19% of the $3.7 Million shipping and handling cost estimate

Office of Acquisition and Logistics Management

The transaction costs were divided by the average number of items per order to allocate costs to a single item

- Research from NIAID item level detail indicated that there were approximately 2.65 items per order, so all order costs need to be divided by 2.65 to get the costs on a per item level

- PCard additional costs total $13.87 plus transportation costs
  - Order costs included the cost of the time it takes to fully complete a PCard order plus the transaction cost of the PCard
    - Order administrative cost is $32.26/2.65 = $12.17
    - PCard transaction cost is $4.5/2.65 = $1.70
  - Transportation costs are shown to be an average of 2% of product price

- GDC additional costs total $3.48 plus the current surcharge of 32%
  - Order costs include the time it takes to order from the GDC, which is $9.22/2.65 = $3.48
  - GDC current surcharge is 32%, but with more volume flowing through the warehouse, this surcharge could be lowered

Office of Acquisition and Logistics Management

A price comparison reveals that Corning items purchased directly through the manufacturer are less expensive than identical items from a distributor

LABORATORY SUPPLIES

	NIAID Price	Total(1) NIAID Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
6 Well Plate	$ 119.64 (Fisher Scientific)	**$ 135.90**	$ 55.42 (Corning)	**$ 76.63**	77%
24 Well Plate	$ 154.65 (Fisher Scientific)	**$ 171.61**	$ 67.51 (Corning)	**$ 92.59**	85%
12 Well Plate	$ 138.42 (Fisher Scientific)	**$ 155.06**	$ 89.97 (Corning)	**$ 122.24**	27%
25 ml Pipette	$ 117.08 (Fisher Scientific)	**$ 133.29**	$ 61.96 (Corning)	**$ 85.27**	56%
50 ml Pipette	$ 129.43 (Thomas Scientific)	**$ 145.89**	$ 86.65 (Corning)	**$ 117.86**	24%
Classic Rainin Pipette	$ 205.13 (Rainin)	**$ 223.10**	$ 179.49 (Rainin)	**$ 240.41**	-7%
260 ml Flask	$ 132.75 (Nunc)	**$ 149.28**	$ 48.52 (A. Daigger)	**$ 67.53**	121%
500 ml Filter Unit	$ 58.00 (A.Daigger)	**$ 73.03**	$ 61.09 (A.Daigger)	**$ 84.12**	-13%
1 L Filter Unit	$ 99.00 (A.Daigger)	**$ 114.85**	$ 99.00 (A.Daigger)	**$ 134.16**	-14%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

Office of Acquisition and Logistics Management

Not all items are less expensive through the GDC

LABORATORY SUPPLIES

	NIAID Price 1	Total(1) NIAID Cost 1	NIDDK Price 1	Total (1) NIDDK Cost 2	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC	
							Low	High
Bio-Rad Cuvette	$ 121.55 (Bio-Rad)	**$137.85**	Not Available	Not Available	$ 121.53 (Bio-Rad)	**$ 163.90**	-16%	
Bio-Rad Cuvette	$ 124.10 (Bio-Rad)	**$ 140.45**	$121.55 (Bio-Rad)	**$137.85**	$ 121.53 (Bio-Rad)	**$ 163.90**	-14%	-16%
Non-Sterile Multi-Channel Basin	$ 35.98 (A. Daigger)	**$ 50.57**	$ 28.85 (A. Daigger)	**$ 43.30**	$ 23.48 (A. Daigger)	**$ 34.47**	47%	26%
Sterile Multi-Channel Basin	$ 48.40 (A. Daigger)	**$ 63.24**	Not Available	Not Available	$ 49.10 (A. Daigger)	**$ 68.29**	-7%	

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

Office of Acquisition and Logistics Management

Gloves are an excellent opportunity for the ICs to benefit from GDC's lower prices

MEDICAL AND SURGICAL SUPPLIES

	NIAID Price	Total[(1)] NIAID Cost	GDC Prime Vendor Price	Total[(2)] Cost to IC	% IC Price is More or (-Less) than GDC
Glove, Esteem Nitrile Size: SM	$ 22.29 (VWR)	**$ 36.60**	$ 8.15 (DSCP)	**$ 14.24**	157%
Glove, Ntr Purple Size: LG	$ 13.25 (VWR)	**$ 27.39**	$ 5.52 (DSCP)	**$ 10.77**	154%
Glove, Safeskin Silver Nitrile	$ 14.44 (Fisher Scientific)	**$ 28.60**	$ 7.22 (DSCP)	**$ 13.01**	120%
Glove, Vinyl Pow, Size: SM	$ 4.22 (VWR)	**$ 18.18**	$ 4.14 (DSCP)	**$ 8.94**	103%
Glove, Latex Ster Size: 6 ½, 7, 7 ½, 8	$ 26.10 (VWR)	**$ 40.50**	$ 14.86 (DSCP)	**$ 23.09**	75%
Glove, Evolution One Size: XS, S, M, XL	$ 7.81 (VWR)	**$ 21.84**	$ 7.06 (DSCP)	**$ 12.79**	71%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

Office of Acquisition and Logistics Management

Selected Office Supplies are another lucrative area for savings when purchased through the GDC

ADMINISTRATIVE AND OFFICE SUPPLIES

	NIAID Price 1	Total[1] NIAID Cost 1	NIAID Price 2	Total [1] NIAID Cost 2	NIDDK Price 1	Total [1] NIDDK Cost 2	GDC Price	Total[2] Cost to IC	% IC Price is More or (-Less) than GDC	
									Low	High
AAA Batteries (per battery)	$ .75 (Staples)	**$ 14.64**	Not Available	Not Available	$ .86 (Staples)	**$14.75**	$ .28 (Frank Parsons)	**$ 3.85**	280%	283%
AA Batteries (per battery)	$ 1.00 (Staples)	**$ 14.89**	$ .69 (Staples)	**$14.58**	$ .83 (Staples)	**$14.72**	$ .53 (Frank Parsons)	**$ 4.18**	249%	256%
Mini Binder Clip (12)	$ .89 (Office Link)	**$ 14.78**	$ 1.08 (Office Link)	**$14.97**	$ 1.09 (Office Link)	**$14.98**	$ .57 (Eagle Business)	**$ 4.23**	249%	254%
Binder Clip 1” (12)	$ 3.91 (Office Depot)	**$ 17.86**	Not Available	Not Available	Not Available	Not Available	$ 1.79 (Eagle Business)	**$ 5.84**	206%	

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

Office of Acquisition and Logistics Management

Selected Office Supplies are another lucrative area for savings when purchased through the GDC (continued)

ADMINISTRATIVE AND OFFICE SUPPLIES

	NIAID Price 1	Total[1] NIAID Cost 1	NIAID Price 2	Total [1] NIAID Cost 2	NIDDK Price 1	Total [1] NIDDK Cost 2	GDC Price	Total[2] Cost to IC	% IC Price is More or (-Less) than GDC	
									Low	High
Scientific Calculator	$ 20.39 (Staples)	**$ 34.67**	Not Available	Not Available	Not Available	Not Available	$ 15.25 (Chesney)	**$ 23.61**	47%	
Heavy Duty Staples	Not Available	Not Available	Not Available	Not Available	$ 5.57 (Office Link)	**$ 19.55**	$ 4.36 (Kops)	**$ 9.23**	112%	
Post-it 3X3 (12)	$ 8.25 (US Carbon & Ribbon)	**$ 2.29**	Not Available	Not Available	Not Available	Not Available	$ 5.90 (A. Daigger)	**$ 11.27**	98%	
Post-it 4X6 Assorted	$ 9.99 (Staples)	**$ 24.06**	Not Available	Not Available	$ 9.99 (Office Depot)	**$ 24.06**	$ 5.41 (George Allen)	**$ 10.62**	127%	

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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A price comparison at NIAID reveals that buyers within the same IC pay different prices for identical products

ADMINISTRATIVE AND OFFICE SUPPLIES

	NIAID Price 1	NIAID Price 2	% Price Differential
Sharpie Highlighter	$ 13.99 (Staples)	$ 12.99 (Staples)	8%
Sharpie Twin Tip	$ 1.70 (Gerry Smith Office Supplies	$ 2.00 (Office Link)	4%
Sharpie Fine	$ 4.40 (US Carbon & Ribbon)	$ 5.00 (Benjamin Office Supplies)	6%
Post-it Flag Highlighters	$ 7.76 (O'Neill Computer Products)	$ 8.62 (First Call Office Products)	4%

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A price comparison between NIAID and GDC reveals a clear price differential for Biomax film

PHOTO PAPER AND SUPPLIES

	NIAID Price 1	Total(1) NIAID cost 1	NIAID Price 2	Total (1) NIAID cost 2	GDC Price	Total(2) cost to IC	% IC Price is More or (-Less) than GDC	
							Low	High
Film, Biomax MR-2	$ 510.15 (Perkin Elmer)	**$ 534.22**	$ 558.98 (Fisher Scientific)	**$ 584.03**	$ 249.00 (Carestream Health)	**$ 332.16**	61%	76%
Film, Biomax XAR	$ 185.00 (Molecular Imaging Systems)	**$ 202.57**	Not Available	Not Available	$ 165.00 (Carestream Health)	**$ 221.28**	(-11%)	
Film, Biomax LT-2	$ 578.85 (Fisher Scientific)	**$ 604.30**	$ 213.53 (Carestream Health)	**$ 231.67**	$ 206.00 (Carestream Health)	**$ 275.40**	(-16%)	119%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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When the ICs buy Invitrogen items that are also carried at the GDC, they pay an average of 19% more

- Invitrogen contacted DLS indicating their interest in consolidating supply, and as a result of these preliminary discussions, they provided DLS with item level detail on quantity ordered and total sales amounts
- The GDC currently sells approximately 120 items that the ICs also purchase direct from Invitrogen
- One third of the items that the ICs buy direct cost 35-200% more than the GDC's price
- The following four slides include a price comparison for all items that the ICs and GDC both purchase from Invitrogen

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
100 MM DNTP SET	$ 159.93	**$ 177.00**	$ 123.75	**$ 166.83**	6%
OLIGOFECTAMINE REAGENT	$ 234.48	**$ 253.04**	$ 179.95	**$ 241.01**	5%
LIBRARY EFF DH5	$ 136.61	**$ 153.21**	$ 99.91	**$ 135.36**	13%
NOVEX SHARP PS PROT	$ 119.72	**$ 135.98**	$ 97.76	**$ 132.52**	3%
SEEBLUE PLUS2 500 UL	$ 112.56	**$ 128.68**	$ 95.96	**$ 130.14**	-1%
ATTACHMENT FACTOR 100ML	$ 15.00	**$ 29.17**	$ 12.35	**$ 19.78**	47%
GUANIDINE HYDROCHLORIDE 500G	$ 122.15	**$ 138.47**	$ 55.75	**$ 77.07**	80%
NP TRANSFER BUF(20X) 1 L	$ 118.19	**$ 134.42**	$ 97.25	**$ 131.85**	2%
NUPAGE 4-12% BT GEL	$ 107.57	**$ 123.60**	$ 94.64	**$ 128.40**	-4%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

INVITROGEN ITEMS

	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
DISTILLED WATER (ULTRAPURE) 500ML	$ 21.18	**$ 35.48**	$ 7.99	**$ 14.02**	153%
DMEM 500ML, PLASTIC, E-Z HOLD	$ 6.00	**$ 20.00**	$ 3.95	**$ 8.69**	130%
LB BROTH 500ML, PLASTIC, E-Z HOLD	$ 9.66	**$ 23.72**	$ 5.28	**$ 10.44**	127%
DMEM 500ML, PLASTIC, E-Z HOLD	$ 4.39	**$ 18.35**	$ 3.57	**$ 8.19**	124%
DMEM 500ML, PLASTIC, E-Z HOLD	$ 5.39	**$ 19.37**	$ 3.96	**$ 8.70**	123%
DMEM 500ML, PLASTIC, E-Z HOLD	$ 4.96	**$ 18.93**	$ 3.98	**$ 8.73**	117%
RPMI 1640 500ML, PLASTIC, E-Z HOLD	$ 4.86	**$ 18.83**	$ 3.96	**$ 8.71**	116%
PBS, PH 7.4 500ML, PLASTIC, E-Z HOLD	$ 4.10	**$ 18.05**	$ 4.21	**$ 9.04**	100%
PBS, PH 7.4 1000ML, PLASTIC, E-Z HOLD	$ 7.94	**$ 21.97**	$ 7.24	**$ 13.03**	69%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
PEN STREP GLUTAMINE, 100ML	$ 18.21	**$ 32.45**	$ 14.60	**$ 22.75**	43%
1 KB PLUS DNA LADDER 250 UG	$ 124.57	**$ 140.93**	$ 73.55	**$ 100.57**	40%
PCR SUPERMIX 100 REACTIONS	$ 60.82	**$ 75.91**	$ 41.18	**$ 57.83**	31%
TRACKIT LAMBDA/HINDIII FRAG. 100	$ 64.71	**$ 79.88**	$ 45.30	**$ 63.28**	26%
TRACKIT 1 KB DNA LADDER 100	$ 78.01	**$ 93.44**	$ 54.60	**$ 75.55**	24%
TRACKIT PHIX174/HAEIII FRAG. 100	$ 118.50	**$ 134.74**	$ 85.15	**$ 115.88**	16%
GENETICIN 5G	$ 238.91	**$ 257.56**	$ 174.60	**$ 233.96**	10%
BENCHMARK PRESTAIN PROT LADDER	$ 111.42	**$ 127.52**	$ 86.51	**$ 117.67**	8%
PLATINUM PFX DNA POLYMERASE 100 REACTIONS #95	$ 79.25	**$ 94.71**	$ 64.55	**$ 88.69**	7%
TRACKIT 1 KB PLUS DNA LADDER 100	$ 83.84	**$ 99.39**	$ 68.68	**$ 94.14**	6%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
PLATINUM TAQ HIGH FIDELITY 100 REACTIONS	$ 115.63	**$ 131.82**	$ 92.76	**$ 125.93**	5%
GENETICIN 20ML	$ 65.71	**$ 80.90**	$ 56.15	**$ 77.60**	4%
SUPERSCRIPT 1ST STRAND SYSTEM	$ 311.16	**$ 331.25**	$ 238.70	**$ 318.57**	4%
PLAT SYBR QPCR 100 100	$ 189.55	**$ 207.21**	$ 148.50	**$ 199.50**	4%
DISTILLED WATER 500ML, PLASTIC, E-Z HOLD	$ 7.18	**$ 21.19**	$ 4.27	**$ 9.11**	133%
HBSS 500ML, PLASTIC, E-Z HOLD	$ 6.63	**$ 20.64**	$ 4.10	**$ 8.89**	132%
DPBS 500ML, PLASTIC, E-Z HOLD	$ 4.98	**$ 18.95**	$ 4.10	**$ 8.89**	113%
DPBS 500ML, PLASTIC, E-Z HOLD	$ 4.75	**$ 18.72**	$ 4.10	**$ 8.89**	110%
GLYCEROL 500ML	$ 28.40	**$ 42.84**	$ 13.04	**$ 20.70**	107%
PENICILLIN STREPTOMYCIN SOL 20ML	$ 6.32	**$ 20.31**	$ 5.56	**$ 10.82**	88%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

Office of Acquisition and Logistics Management

There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
SSC, 20X 1000ML, PLASTIC, E-Z HOLD	$ 25.45	**$ 39.83**	$ 16.15	**$ 24.80**	61%
GENTAMICIN 10ML	$ 24.02	**$ 38.37**	$ 16.60	**$ 25.39**	51%
ADVANCED D-MEM 500ML, PLASTIC, E-Z HOLD	$ 14.36	**$ 28.52**	$ 11.70	**$ 18.92**	51%
T4 POLYNUCLEOTIDE KINASE 200 UN	$ 129.42	**$ 145.88**	$ 71.75	**$ 98.19**	49%
0.5-10KB RNA LADDER 25 APP	$ 123.98	**$ 140.33**	$ 72.80	**$ 99.58**	41%
T4 DNA LIGASE 500 UN	$ 170.85	**$ 188.14**	$ 99.11	**$ 134.31**	40%
100 BP DNA LADDER 50 UG	$ 71.90	**$ 87.21**	$ 52.57	**$ 72.87**	20%
PLATINUM PCR SUPERMIX HIGH FI 100 REACTIONS	$ 116.73	**$ 132.93**	$ 93.20	**$ 126.50**	5%
RECOVERY CELL CULTURE FREEZING 50ML	$ 77.73	**$ 93.15**	$ 65.10	**$ 89.41**	4%
TAQ DNA POLYMERASE 500 U	$ 201.06	**$ 218.95**	$ 158.29	**$ 212.42**	3%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
SS ONE STEP RT-PCR WITH PLATINUM TAQ	$ 147.35	**$ 164.16**	$ 118.22	**$ 159.53**	3%
PLATINUM PCR SUPERMIX 100 RXN	$ 99.60	**$ 115.47**	$ 83.20	**$ 113.30**	2%
PLATINUM TAQ DNA POLYMERASE 250 REACTIONS	$ 167.21	**$ 184.42**	$ 136.00	**$ 183.00**	1%
PLATINUM BLUE PCR SUPERMIX 100 RXNS	$ 107.60	**$ 123.63**	$ 93.11	**$ 126.38**	-2%
ONE SHOT MEDH5A T1 COMBO	$ 234.22	**$ 252.78**	$ 205.65	**$ 274.94**	-8%
PLATINUM TAQ DNA POLYMERASE 500 REACTIONS	$ 248.97	**$ 267.82**	$ 220.95	**$ 295.13**	-9%
LIPOFECTAMINE 2000 REAGENT 1.5 ML	$ 307.50	**$ 327.52**	$ 297.13	**$ 395.69**	-17%
RPMI 1640 500ML, E-Z HOLD	$ 4.72	**$ 18.69**	$ 3.93	**$ 8.67**	115%
TRYPSIN 0.25% EDTA 100ML, E-Z HOLD	$ 5.65	**$ 19.64**	$ 5.20	**$ 10.34**	90%
TRYPSIN .05% EDTA 100ML, PLASTIC, E-Z HOLD	$ 5.46	**$ 19.44**	$ 5.20	**$ 10.34**	88%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
PBS, PH 7.4, 10X 500ML, PLASTIC, E-Z HOLD	$ 10.90	**$ 24.99**	$ 8.68	**$ 14.94**	67%
L GLUTAMINE, 100X 100ML, PLASTIC, E-Z HOLD	$ 12.58	**$ 26.71**	$ 12.65	**$ 20.18**	32%
GLUTAMAX I, 100X 100ML, PLASTIC, E-Z HOLD	$ 17.56	**$ 31.79**	$ 15.60	**$ 24.07**	32%
URELINK HIPURE FILTER MAXI 10 REACTIONS	$ 164.63	**$ 181.80**	$ 102.44	**$ 138.70**	31%
OPTI MEM I 500ML, PLASTIC, E-Z HOLD	$ 17.77	**$ 32.00**	$ 16.45	**$ 25.19**	27%
URELINK PLASMID MAXI 10 REACTIONS	$ 133.56	**$ 150.10**	$ 93.08	**$ 126.34**	19%
SBCLNG EFF DH5@ COMP CELLS 2.0ML)	$ 62.14	**$ 77.26**	$ 47.66	**$ 66.39**	16%
10 MM DNTP MIX 100 UL	$ 41.95	**$ 56.66**	$ 36.40	**$ 51.53**	10%
-GEL DOUBLE COMB 2% 18-PAK	$ 183.36	**$ 200.90**	$ 149.75	**$ 201.15**	0%
MEMBR/FILTER PAPER 20/PK	$ 116.12	**$ 132.32**	$ 98.26	**$ 133.19**	-1%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
OP10 ONE SHOT KIT 20 RXN	$ 255.10	**$ 274.08**	$ 210.57	**$ 281.44**	-3%
-GELS 1.2% 18/PK	$ 147.99	**$ 164.82**	$ 127.90	**$ 172.31**	-4%
-GEL 0.8% 18/PK	$ 147.06	**$ 163.88**	$ 127.90	**$ 172.31**	-5%
-GELS 2% 18/PK	$ 143.86	**$ 160.61**	$ 127.90	**$ 172.31**	-7%
SUPERSCRIPT III REV TRANSCRIPT 10,000 UN	$ 203.37	**$ 221.31**	$ 179.61	**$ 240.57**	-8%
BL21(DE3) OS 20 RXN	$ 205.91	**$ 223.90**	$ 182.30	**$ 244.12**	-8%
SUPERSCRIPT II 10000 UN	$ 190.92	**$ 208.61**	$ 174.72	**$ 234.11**	-11%
MAX EFF DH5@ 1ML (5 X 0.2ML)	$ 152.42	**$ 169.34**	$ 146.52	**$ 196.89**	-14%
RELOCK XCELL EACH	$ 300.00	**$ 319.87**	$ 286.99	**$ 382.31**	-16%
URELINK PURIF RACK	$ 73.36	**$ 88.70**	$ 130.00	**$ 175.08**	-49%

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(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
DF MMBR/FLTR PAPRSNDW 20 EA	$ 117.63	**$ 133.85**	$ 96.72	**$ 131.15**	2%
LN MMBR & FLTR PAPRSNDW 20 EA	$ 131.49	**$ 147.99**	$ 101.01	**$ 136.82**	8%
ISGLYSDS RUN BUF(10X)500ML	$ 11.42	**$ 25.52**	$ 7.98	**$ 14.01**	82%
ISGLY TRANS BUF (25X)500ML	$ 30.10	**$ 44.57**	$ 22.88	**$ 33.68**	32%
GICMARK XP WESTERN STD 250 UL	$ 221.08	**$ 239.37**	$ 189.60	**$ 253.75**	-6%
RK12 W RANGE MW STD,1ML 1 ML	$ 112.73	**$ 128.86**	$ 88.40	**$ 120.17**	7%
MPLYBLUE SAFESTAIN 1 L	$ 100.47	**$ 116.35**	$ 71.56	**$ 97.94**	19%
EDIUM 131 500ML EACH	$ 57.24	**$ 72.26**	$ 53.17	**$ 73.66**	-2%
MOPS SDS RNBUF 20X 500 ML	$ 49.76	**$ 64.62**	$ 40.55	**$ 57.01**	13%
MES SDS RUNBUF 20X 500 ML	$ 50.10	**$ 64.97**	$ 40.84	**$ 57.38**	13%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
TRANSFER BUF (20X) 125 ML	$ 16.47	**$ 30.67**	$ 12.65	**$ 20.18**	52%
LDS SAMPLE BUF (4X) 10 ML	$ 9.64	**$ 23.71**	$ 7.30	**$ 13.12**	81%
NUPAGE 10% BT GEL 1.0MM 10W 10 PER BOX	$ 111.82	**$ 127.92**	$ 94.64	**$ 128.40**	0%
NUPAGE 10% BT GEL 1.0MM 15W 10 PER BOX	$ 114.76	**$ 130.93**	$ 94.64	**$ 128.40**	2%
NUPAGE 10% BT GEL 1.5MM 10W 10 PER BOX	$ 112.64	**$ 128.76**	$ 94.64	**$ 128.40**	0%
NUPAGE 4-12% BT GEL 1.0MM12W 10 PER BOX	$ 108.32	**$ 124.36**	$ 94.64	**$ 128.40**	-3%
NUPAGE 4-12% BT GEL 1.0MM15W 10 PER BOX	$ 111.05	**$ 127.14**	$ 94.64	**$ 128.40**	-1%
NUPAGE 4-12% BT GEL 1.5MM 10W 10 PER BOX	$ 113.93	**$ 130.08**	$ 95.45	**$ 129.47**	0%
NUPAGE 12% BT GEL 1.0MM 10W 10 PER BOX	$ 114.75	**$ 130.91**	$ 94.64	**$ 128.40**	2%
MEDIA AMP AGAR 20 POUCHES	$ 199.98	**$ 217.85**	$ 141.82	**$ 190.68**	14%
RYPSIN/EDTA 100ML 100 ML	$ 17.65	**$ 31.87**	$ 16.15	**$ 24.80**	29%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
RYPSIN NEUTRALIZER 100ML 100 ML	$ 17.17	**$ 31.39**	$ 16.15	**$ 24.80**	27%
NTH-A-FREEZE 50ML 50 ML	$ 52.29	**$ 67.21**	$ 48.00	**$ 66.84**	1%
NTAMICIN/AMPHOTERICIN 10PK EACH	$ 44.00	**$ 58.75**	$ 44.00	**$ 61.56**	-5%
GS 25ML 25 ML	$ 63.38	**$ 78.52**	$ 56.05	**$ 77.47**	1%
UREA, AMMONIA FREE 2KG	$ 104.38	**$ 120.34**	$ 50.00	**$ 69.48**	73%
AGAROSE 500G	$ 415.37	**$ 437.55**	$ 287.13	**$ 382.49**	14%
BUFFER SATURATED PHENOL 100ML	$ 74.44	**$ 89.80**	$ 43.92	**$ 61.46**	46%
S.O.C. MEDIUM 10X10ML	$ 68.02	**$ 83.25**	$ 26.15	**$ 38.00**	119%
TRIS-HCL, PH 8.0, 1M 1000ML	$ 33.56	**$ 48.11**	$ 16.08	**$ 24.70**	95%
ETHIDIUM BROMIDE 10MG/ML	$ 42.81	**$ 57.54**	$ 16.10	**$ 24.73**	133%
SSPE, 20X 1000ML, PLASTIC, E-Z HOLD	$ 47.90	**$ 62.73**	$ 14.85	**$ 23.08**	172%
DEOXYRIBONUCLEASE	$ 267.99	**$ 287.23**	$ 150.50	**$ 202.14**	42%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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There are 122 price comparisons of Invitrogen products sold direct to the ICs and also sold by the GDC (continued)

	INVITROGEN ITEMS				
	Direct Invitrogen Price	Total(1) Direct Cost	GDC Price	Total(2) Cost to IC	% IC Price is More or (-Less) than GDC
DNASE I AMP GRADE 100 UN	$ 82.66	**$ 98.19**	$ 48.77	**$ 67.85**	45%
PROTEINASE K 100 MG	$ 81.10	**$ 96.60**	$ 48.00	**$ 66.84**	45%
PROTEINASE K SOL. RNA 5 ML (100 MG)	$ 101.56	**$ 117.47**	$ 58.10	**$ 80.17**	47%
URELINK PLASMID MIDI 25 REACTIONS	$ 173.25	**$ 190.59**	$ 108.16	**$ 146.25**	30%
URELINK HIPURE FILTER MIDI 25 REACTIONS	$ 206.96	**$ 224.97**	$ 122.20	**$ 164.78**	37%
OPO TA CLON/ TOP10 20 RXN	$ 377.49	**$ 398.91**	$ 291.20	**$ 387.86**	3%
SC-TOPO TA KIT, TOP10P10 20 RXN	$ 404.91	**$ 426.88**	$ 300.00	**$ 399.48**	7%
OPO TA/DH5A(20) 20 RXN	$ 380.70	**$ 402.19**	$ 295.20	**$ 393.14**	2%
OPO TA CLONING KIT SEQU 20 RXN	$ 406.10	**$ 428.09**	$ 309.10	**$ 411.49**	4%
SC-TOPO TA SEQ.,TOP10 20 RXN	$ 405.86	**$ 427.85**	$ 311.64	**$ 414.85**	3%
OPO TA CLON DUAL TOP10 20 RXN	$ 416.85	**$ 439.06**	$ 311.40	**$ 414.53**	6%

(1) Includes cost of ordering by PCard of $12.17 and $1.70 PCard transaction cost (assuming 2.65 items per PCard order), and average NIH shipping cost of 2% of purchase price

(2) Includes cost of ordering by IC from GDC of $3.48 (assuming 2.65 items per order) and GDC current surcharge of 32%

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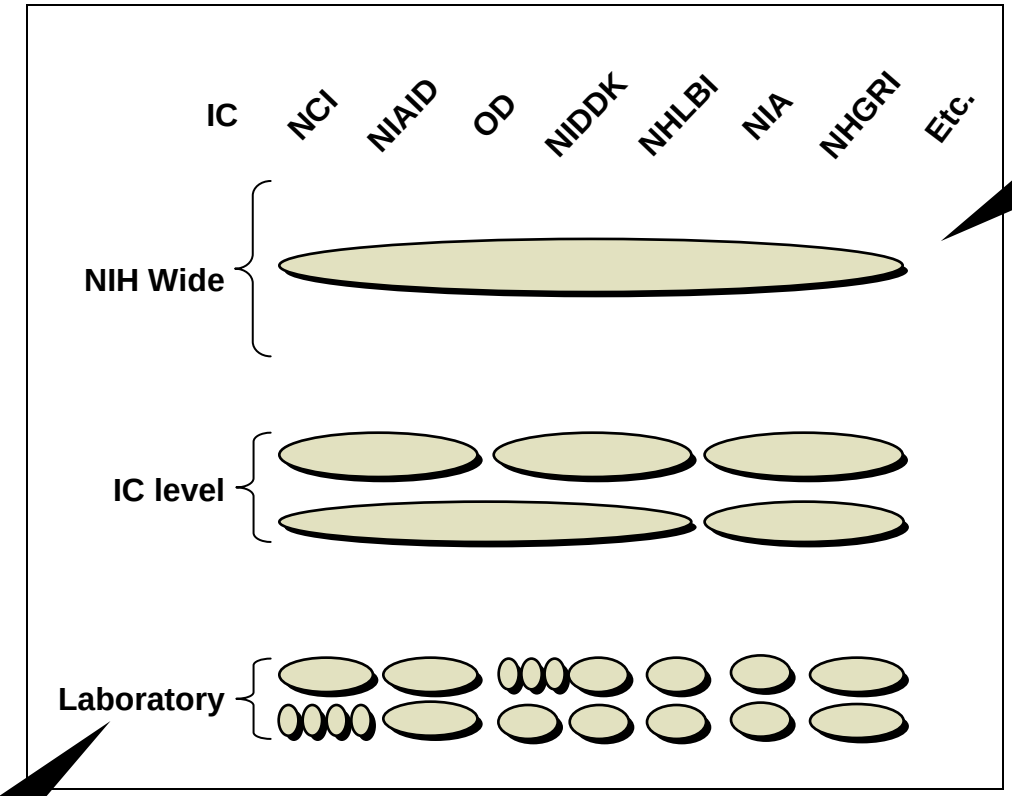
Fragmented suppliers, price differences for similar items, and limited leverage in price negotiations lead to unnecessary spending by the NIH

Consolidated Purchasing Approach for Realized Savings



Utilizing best practices, consolidated purchasing offers many benefits to NIH, including greater standardization of products and pricing, savings in shipping, improved vendor relationships and many more

The current NIH purchase strategy indicates about 90% of the IC's purchasing is done directly with vendors

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Consolidated purchasing can increase the speed and agility of the acquisition process while improving product quality and reducing costs

- Results from this spend analysis provide NIH leadership with a better understanding of the current processes and costs associated with ordering supplies and materials

Consolidation of Sourcing Channels	NIH Current State	Best Practices
Number of Suppliers	▸ Overall, more than 17,000 unique vendor names ▸ Top 20 suppliers account for over 40% of the total spend	▸ Optimized supply base determined by individual commodity strategies
Variable Costs		
Transaction Costs	▸ Different costs are incurred by ICs when placing orders on PCards as compared with placing orders through the GDC	▸ Transaction costs included when calculating total cost of ownership
Product Costs	▸ With over 1,600 individuals purchasing supplies and materials, the NIH obtains widely different prices for similar items	▸ Lower and more standardized prices from suppliers due to purchasing leverage
Inventory Costs	▸ Inventory holding costs are not optimized when safety stock of common items is held at multiple locations across the ICs	▸ A multi-echelon inventory strategy based on demand usage profiles

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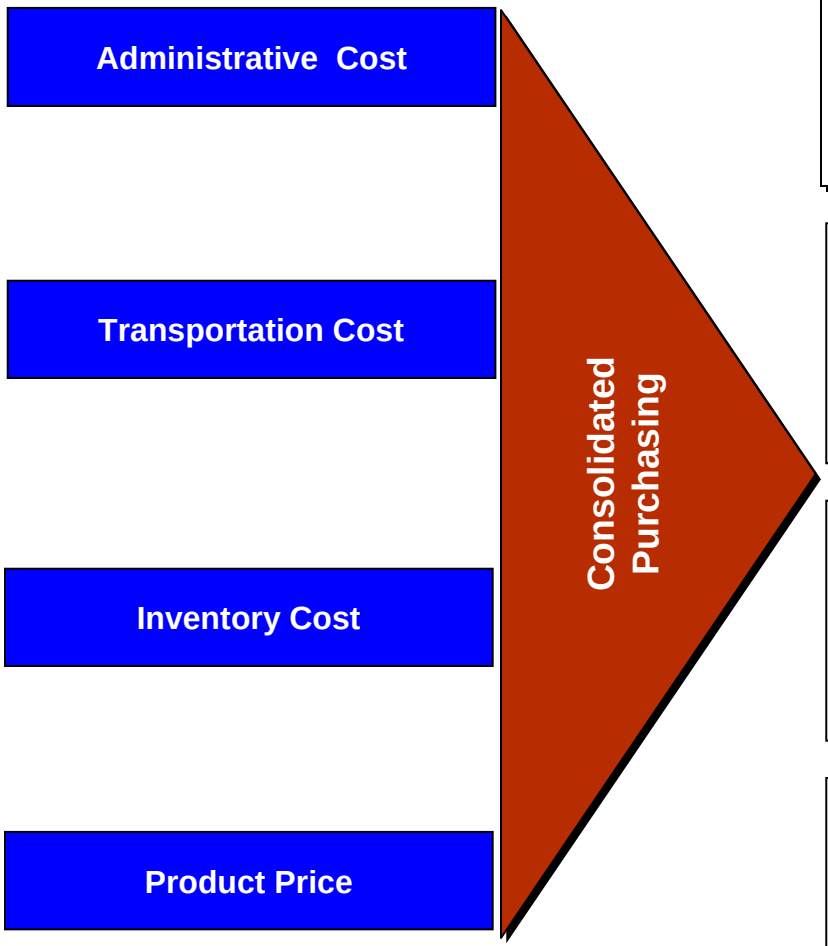
Consolidated purchasing will lead to less time and money consumed in transactional costs overall as well as lower prices on selected items



- Administrative time and resources in OFM's accounts payable department are reduced when numerous small invoices are consolidated into one large invoice
- Buyer productivity is increased when purchasing is consolidated and the purchasing costs per dollar spent is reduced with less transactions

- Transportation costs are minimized, as the longest leg (vendor to the NIH) is maximized by transporting larger volumes less frequently
  - Reduces overall transportation costs
  - "Green" alternative as this uses less fuel and creates less green house gases

- Numerous areas holding stock will inevitably total more inventory than holding safety stock at one distribution location
- A large number of SKUs (from lack of standardization) requires a larger amount of overall safety stock as safety stock must be held for each item thereby increasing the total inventory dollars

- Purchasing leverage will drive prices lower
- Reducing the number of overall suppliers allows for improved vendor relationships and partnering to create cost savings for both parties

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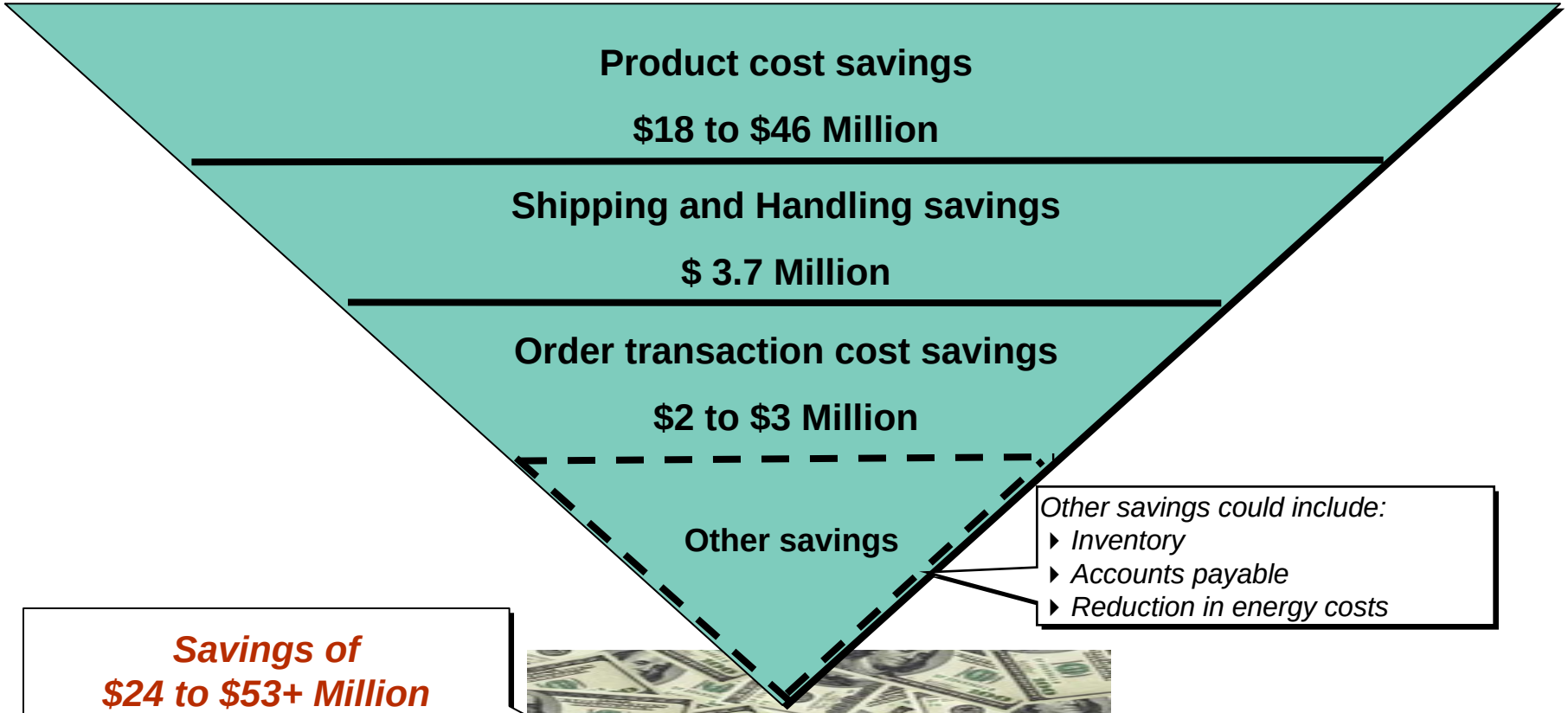
Estimated $24 to $53 Million in savings from consolidated purchasing funnels research dollars back to the NIH community



Section 4: Recommendations

Recommendations

- Best Practices Vision
- Procurement Processes
- Technology
- Performance Management

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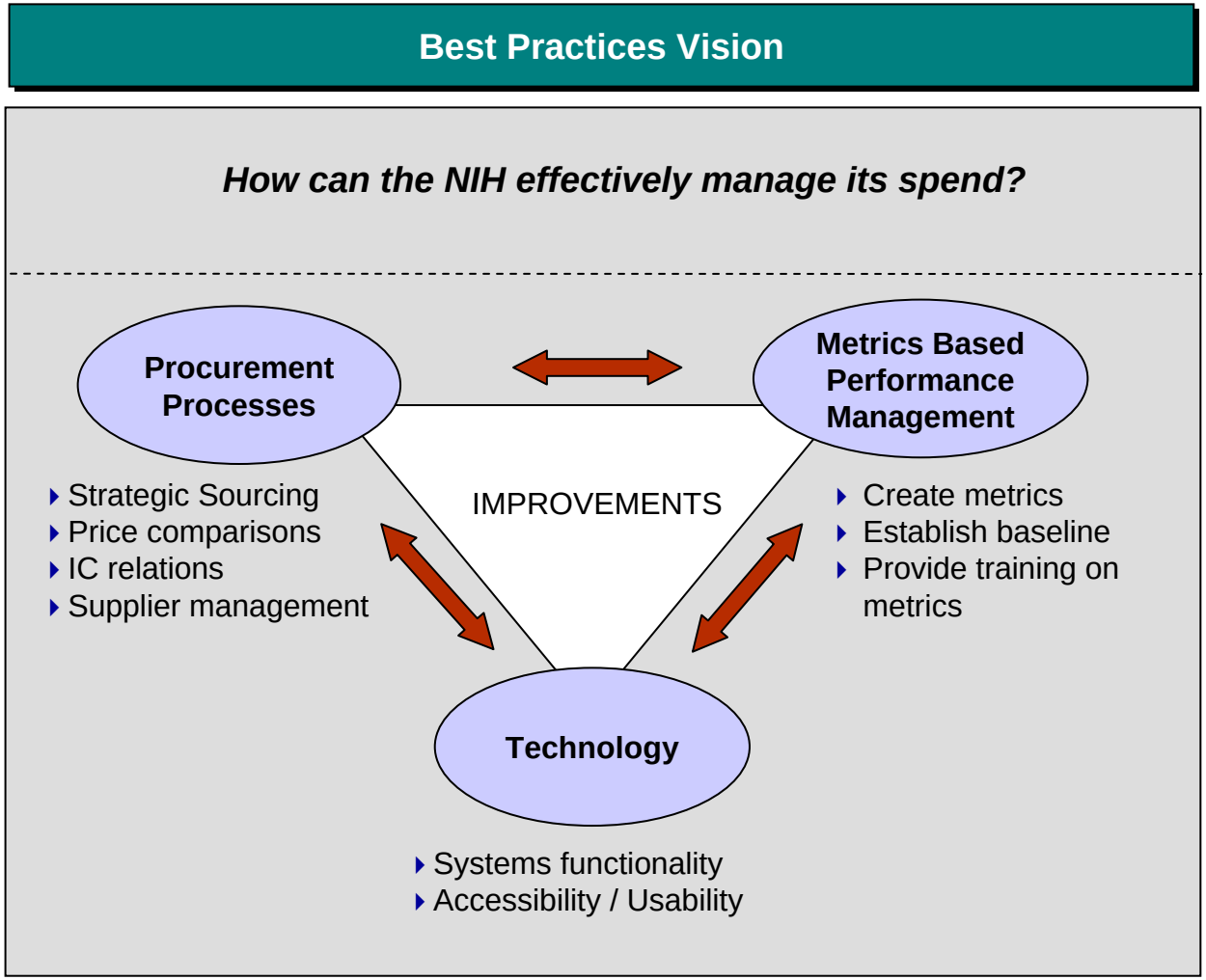
As the NIH needs to find ways to do more with less, this three pronged approach can save money and control costs



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By simplifying the ordering process and/or implementing process improvements, the NIH could realized additional savings on ordering costs

ID	Procurement Processes Recommendations	Next Steps
P1	▸ Rationalize the GDC portfolio because initial findings suggests that the NIH could save significant dollars through consolidated purchasing, initially focusing on low value, generic types of products like gloves and office supplies (*currently in progress*)	▸ Collect sales data from vendors ▸ Identify specific items as targets for consolidated purchasing ▸ Negotiate prices with vendors ▸ Advertise GDC offering to the ICs
P2a	▸ Perform a more comprehensive analysis of price differences based on different methods of buying (purchasing channels) and develop a fulfillment channel strategy that gives the best values to the NIH	▸ Identify item categories for price comparison research ▸ Calculate total landed cost for each item through the various channels ▸ Deliver a purchasing channel strategy for selected groups of items
P2b	▸ Brief Executive Officers on price differences and work with EOs and AOs to help the ICs change their purchasing habits and to adopt new methods that save time and money	▸ Present price comparison findings and purchasing channel strategy to EOs and AOs ▸ Gain acceptance of new purchasing strategy ▸ Train buyers on when and how to use the best purchasing channel for any given item

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Expanding iProcurement's functionality can save time, direct buyers to specific vendors, and provide needed data for future procurement/spend analyses

ID	Technology Recommendations	Next Steps
T1	▸ Initial research suggests that iProcurement has many more capabilities than are currently being utilized and NIH could benefit immensely from a more robust procurement system – Standardized data including drop down menus of vendor names and item descriptions – Reduced time to place an order – "Punch outs" to direct purchaser to vendors that the NIH wants used, often automatically linking the purchaser with the vendor of choice's web site – Eliminates the scenario of different ICs paying varying prices for the same product by directing purchasers to predetermined vendors and standardizing the more generic items	▸ Meet with NBS to present technology findings ▸ Investigate iProcurement's functionality ▸ Develop plan for making system upgrades ▸ After system has been modified, train all users

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Improved metrics allow NIH leadership to make knowledge based decisions

ID	Metrics Based Performance Management Recommendations	Next Steps
M1	▸ Develop and implement comprehensive metrics for NIH leadership to track the efficiency of the procurement process and make it easier to track expenditures on supplies and materials	▸ Identify metrics ▸ Define data collection and calculation ▸ Establish baselines ▸ Roll out metrics program
M2	▸ Facilitate sharing of internal NIH best practices based on established metrics	▸ Establish a performance management committee to discuss metrics and share best practices
M3	▸ Conduct a regularly scheduled spend analysis to report changes, e.g., purchasing trends, major supplies, supplier price differentials, purchasing channels	▸ Determine frequency of conducting spend analyses ▸ Identify and train staff on how to conduct analysis
M4	▸ Establish a vendor scorecarding process to allow the NIH to measure supplier performance throughout the lifecycle of the contract	▸ Identify metrics that will be used to evaluate vendor performance ▸ Define data collection and calculation ▸ Roll out the vendor scorecarding program ▸ Establish vendor rewards/penalties based on performance

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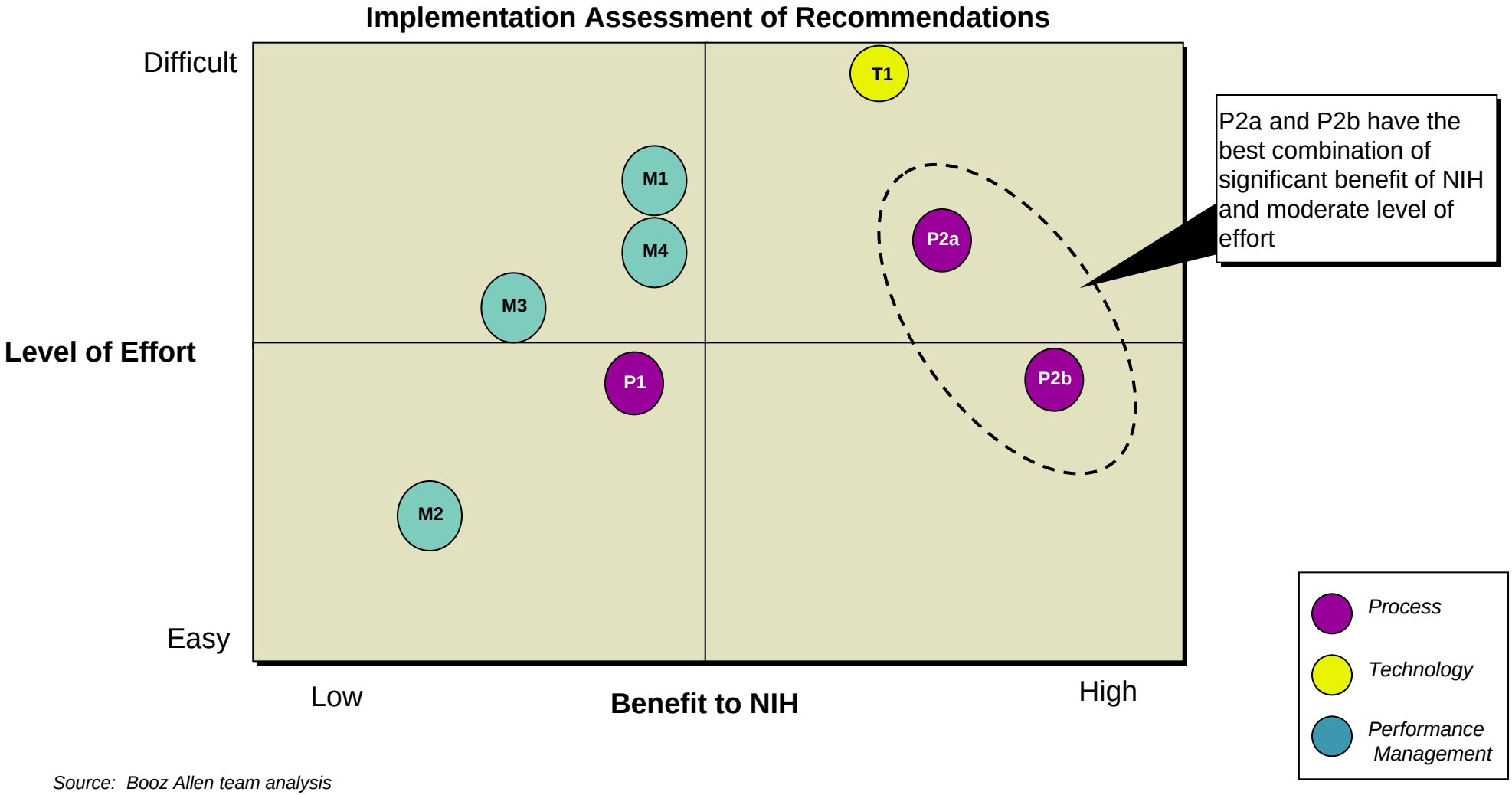
To prioritize the recommendations, we ranked them based on potential impact and ease of implementation



Source: Booz Allen team analysis

Appendices

Appendices

- Appendix A: Variables Used for Analysis
- Appendix B: Object Classes Included in Analysis
- Appendix C: Methodology for Item Price Comparisons

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Award Created Date
Definition	Date on which the award was created.
Rationale	Used to analyze trends in orders over time
Data Limitations	None Noted

Variable	Award Line Item Description
Definition	Text description of the product or service requested on a specific line of an Award. Up to the first 800 characters will be displayed. For Awards created in PRISM or converted Awards, this will be the line item description sourced from PRISM. For P-Card Awards, this will be the line item description sourced from Oracle
Rationale	Used to determine supplies and materials purchased
Data Limitations	Content of free text entry is highly variable and does not allow for easy identification of items purchase or comparison across multiple order lines

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Award Line Item No.
Definition	A unique identifier for a specific line within an Award. For Awards created in PRISM or converted Awards, this will be the line number sourced from PRISM. For P-Card Awards, this will be the line number sourced from Oracle
Rationale	Used to identify each unique lines on an order
Data Limitations	None Noted

Variable	Award No.
Definition	Unique identifier for the acquisition document. For awards generated in PRISM, the Award No. will follow the PIID format. For awards generated in Oracle and P-Card documents, the Award No. will be a unique numeric sequence
Rationale	Used to determine type of award
Data Limitations	None Noted

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Buyer IC
Definition	Standard acronym, based on NBS role-mapping, for the NIH Institute or Center where the individual authorized to negotiate prices, and create awards for goods and services is assigned
Rationale	Used to identify IC for buyer if any additional information or clarification on an order was required
Data Limitations	None Noted

Variable	Buyer Name
Definition	Name of individual authorized to negotiate prices, and create awards for goods and services
Rationale	Used to identify buyer if any additional information or clarification on an order was required
Data Limitations	None Noted

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Inventory Organization
Definition	Code that identifies the warehouse where the item is stored
Rationale	Used to identify items stored at the GDC – Gaithersburg Distribution Center or at the SSS – Self Service Stores
Data Limitations	None Noted

Variable	Item
Definition	National Stock Number used to identify materials in the warehouse
Rationale	Used to identify items purchased by the GDC in an attempt to compare prices to those paid by other ICs
Data Limitations	GDC is the only organization that uses this variable as a unique identifier for items purchased

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Item Category Code
Definition	Two character numerical code used to group items with similar characteristics
Rationale	Used to group items purchased by the GDC into item categories aligned with object classifications used to compare the different types of items purchased by the GDC and the ICs
Data Limitations	GDC is the only organization that uses this variable as way to categorize items

Variable	Item Category Description
Definition	Text that describes the numerical code used to group items with similar characteristics
Rationale	Used to group items purchased by the GDC into item categories aligned with object classifications used to compare the different types of items purchased by the GDC and the ICs
Data Limitations	GDC is the only organization that uses this variable as way to categorize items

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Last Line Payment Date
Definition	Latest payment date for a specific award line item
Rationale	Used to limit the data extraction to orders paid between July 2007 and July 2008
Data Limitations	None Noted

Variable	Line Payment Status
Definition	Status of the payments against a specific award line item number
Rationale	Used to limit the data extraction to only “Partially Paid” and “Fully Paid” values
Data Limitations	None Noted

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Object Class Code
Definition	A 4 character classification code according to the type or nature of services, articles, or other items involved. This study included only Object Class 26 (supplies and materials)
Rationale	Used to extract data for supplies and materials and to identify larger object categories for analysis
Data Limitations	Cannot be used to items purchased by the GDC (must use Item Category Code instead)

Variable	Object Class Description
Definition	Text description for an object class code
Rationale	Used to extract data for supplies and materials and to identify larger object categories for analysis
Data Limitations	Cannot be used to items purchased by the GDC (must use Item Category Description instead)

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Payment Amt
Definition	Amount paid towards a specific award line or a project on the line
Rationale	Used to calculate the total payments for other combinations of variables (e.g., by supplier, by IC)
Data Limitations	This amount may include the amount paid for more than one item, and may include shipping and handling charges, hazardous material charges, and other charges that are not separately identified in the item description field

Variable	P-Card Purchase Indicator
Definition	Flag indicating that the requisition or award is being paid for with a purchase card
Rationale	Used to determine P-Card orders
Data Limitations	None Noted

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	P-Card Merchant Name
Definition	Name of the supplier of the goods and services for an award
Rationale	Used in creation of New Combined Supplier Name
Data Limitations	Content of free text entry is highly variable (e.g., misspelled merchant names, multiple abbreviations, addition of buyer initials) and does not allow for easy comparison across orders. Additionally, data field is blank for purchases placed on a contract.

Variable	Project IC
Definition	Standard Acronym for the NIH Institute or Center that funds the requisition or award
Rationale	Used to identify the IC that paid for the supplies and materials purchased
Data Limitations	None Noted

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Data Dictionary
nVision Variables Extracted for Use in Spend Analysis

Variable	Supplier Name
Definition	Name of the supplier of the goods and services for an award
Rationale	Used in creation of New Combined Supplier Name
Data Limitations	Shows Supplier name only when purchases were made on contract and shows “IMPAC GOVERNMENT SERVICES” for all P-Card orders.

Variable	Unit Price
Definition	Supplier's price for one unit of the supply or material
Rationale	Initially planned to use to identify unit cost of items
Data Limitations	Data inaccuracies in Quantity Ordered field make it impossible to use this variable to determine unit price accurately.

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Data Dictionary
Variables Created For Use in Spend Analysis

Variable	New Combine Supplier
Definition	Combines data from P-Card Merchant field for orders placed on P-Cards and from Supplier Name for orders placed on contracts. Data in this field was cleaned and standardized as much as possible by the research team.
Rationale	Used for all analysis of Suppliers
Data Limitations	Content of field is based on free text entry and non-standardized results remain as the team was not able to clean 100% of the data due to time constraints and uncertainty about some data entered by the original buyers

Variable	Last Line Payment Month & Year
Definition	Shows data from Last Line Payment Date variable as month and year
Rationale	Used to analyze trends in orders over time
Data Limitations	None Noted

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.13	**Biological materials - direct use** Cost of enzymes, coenzymes, bacteria and cell cultures for biomedical research. Included are items such as restriction enzymes, lysozyme, albumin, phosphatases, ligases, transfereases, dehydrogenases, kinases, transcription systems, RNA, DNA, and polymerases. Prior to FY 84 these items were charged to 26.52, Chemicals - Direct Use and 26.3A, Medical and Surgical, Including X-Ray, Photographic and X-Ray File-Direct Use.
26.16	**Media for propagation tissue cultures - direct use** Any liquid, gel, or powder used to maintain and support cell growth. This includes microbiological media, bacteriological media, tissue culture media plated media, tubed media, buffered salts, and identification systems. Media is a term which can be used in connection with the propagation of tissue cultures for the detection and/or identification of a virus.
26.23	**Biological materials – inventory** See description of 26.13
26.3A	**Medical & surgical, including x-ray, photographic and x-ray file - direct use** Medical and veterinary supply and material commodities used in laboratory and clinical research. This code is to be assigned to supply and material commodities included in FSC's 6510, 6515, 6525, and 6545. Excludes such commodities used for dental related research included under sub-object class 26.3D.
26.3B	**Surgical-hospital supplies S&SF**

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.3Z	**Other medical and dental supplies - direct use** Includes those medical, dental and veterinary supply and material items not otherwise classified. This code is to be cited by authorized, requisitioning officials only.
26.31	**Supplies and materials for additional emergency hospitals**
26.33	**Supplies and materials for community hospitals**
26.36	**Supplies and materials that increase hospital capacity**
26.38	**Supplies and materials for replacement of hospital stocks**
26.39	**Supplies for repackaging (other than medical/dental supplies)**
26.4A	**Medical & surgical including x-ray photography & x-ray film – inventory** Medical and veterinary supply and material commodities used in laboratory and clinical research. This code is to be assigned to supply and material commodities included in FSC's 6510, 6515, 6525, and 6545. Excludes such commodities used for dental related research included under sub-object class 26.3D.
26.4Z	**Other medical and dental supplies – inventory** Includes those medical, dental and veterinary supply and materials items not otherwise classified.

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.5A	**Laboratory supplies – inventory** All commodities, not identified elsewhere in this group, normally consumed or expended during laboratory activity. This code is to be assigned to all supply and material commodities included in Federal Supply Classification group 66, except laboratory glassware (26.54) items included in FSC 6640. Includes balances, clamps, filters, stopcocks, measures, stoppers, syringes, thermometers.
26.5B	**Chemicals – inventory** All chemicals and gases required for clinical, laboratory or plant maintenance use. This code is to be assigned to all individual non-medicinal chemical elements and compounds included in FSC group 68, except pest control agents and disinfectants (26.8R) included in FSC 6840.
26.5C	**Forage including feed for research animals – inventory** All animal food and bedding used in the maintenance of research animals. This code is to be assigned to all commodities included in FSC 8710, Forage and Feed and to those commodities included in FSC's 8910 and 8915 when procured for the purpose of research animal maintenance.
26.5D	**Glassware (Lab) – inventory** All glassware items required for use in research laboratories. This code is to be assigned to all disposable and reusable laboratory glassware items included inf FSC 6640. Includes screwcaps, bottles, graduated cylinders, petri dishes, test tubes, pipets, beakers.
26.5Z	**All other - inventory** Includes those items of laboratory supplies and chemicals not otherwise classified.

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.51	**Laboratory supplies - direct use** See description of 26.5A
26.52	**Chemicals - direct use** See description of 26.5B
26.53	**Forage including feed for research animals - direct use** See description of 26.5C
26.54	**Glassware (Lab) – direct use** See description of 26.5D
26.57	**Laboratory glassware S&SF**
26.58	**Chemicals S&SF**
26.59	**All Other - direct use** See description of 26.5Z
26.6A	**ADPE supplies** Supplies acquired such as magnetic tape, containers, reels, tabulating paper, punched cards and paper tape.
26.6L	**Office supplies - direct use** Items of supplies and materials normally intended for administrative or clerical use. Includes those items of supply and material included in FSC's 7510, 7520, 7530 and 7540.

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.6N	**Office supplies S&SF**
26.6Z	**All other administrative supplies - direct use** All administrative supplies not specifically identified in this grouping.
26.7A	**ADPE Supplies - inventory** See description of 26.6A
26.7L	**Office supplies - inventory** See description of 26.6L
26.7Z	**All other administrative supplies - inventory** See description of 26.6Z
26.8A	**Kitchen & dietetic (excludes subsistence) - direct use** Comprises those supply and material commodities used in food preparation and serving operations. Includes such items as are included in FSC 7300, Food Preparation and Serving Equipment and those included in FSC 8540, Toiletry Paper Products.
26.8B	**Laboratory supplies S&SF**
26.8C	**Forms & envelopes S&SF**

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.8E	**Uniforms of non-medical personnel - direct use** All wearing apparel and protective clothing acquired for non-medical personnel. Comprises those items included in FSC 84, Clothing Individual Equipment and Insignia. Excludes those clothing items for use in medical facilities grouped in FSC 6532.
26.8J	**Housekeeping and janitorial supplies - direct use** All items utilized in the domestic up-keep of offices and laboratories. Includes those items of supply and material included in the following FSC's: 7200 Household and commercial furnishing and appliances 7900 Cleaning equipment and supplies 8100 Containers, packaging, and packing supplies 8500 Toiletries
26.8K	**Housekeeping supplies S&SF**
26.8L	**Dry ice S&SF**
26.8N	**All other maintenance supplies - direct use** All other supplies used for maintenance purposes that are not otherwise classified.
26.8P	**Animal food & bedding S&SF**
26.8X	**Laundry supplies - direct use** All commodities required to launder and process wearing apparel, bed clothing and drapes.

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.8Z	**All other - direct use**
26.81	**Paper stock-printing & printing supplies - direct use** Items of supplies and materials, procured for use in the processes of printing duplicating/copying and microform duplicating, are to be assigned this code.
26.82	**Photographic paper and supplies - direct use** Paper and supplies used in the developing of film and other photographic processes.
26.83	**Microfilm - direct use** Comprises all processed microfilm included in FSC 7670.
26.84	**Other unexposed film - direct use** Comprises all processed film included in FSC 6770. Does not include processed microfilm (26.83) and X-ray film (26.3A) or 26.3D. Includes still picture film and motion picture film.
26.85	**Pictures prints negatives etc - visual aids - direct use** Comprises pictures, slides, illustrations, charts and other graphic or pictorial items to be used as a visual aid.
26.86	**Envelopes**
26.87	**Forms & envelopes - direct use** Includes standard forms, agency forms, envelopes and stationery included in FSC's 7530 and 7540.

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The following Object Classifications were included in the NIH Spend Analysis

Object Classification Codes and Descriptions

Object Classification Code	Object Classification Description
26.89	**All other printing & photographic supplies - direct use** All other printing and photographic supplies and materials not otherwise classified.
26.9J	**Housekeeping and janitorial supplies - inventory** All items utilized in the domestic up-keep of offices and laboratories.
26.9Z	**All other**
26.91	**Paper stock for printing & printing supplies - inventory** See description of 26.81
26.92	**Photographic paper and supplies – inventory** See description of 26.82
26.94	**Other unexposed film – inventory** See description of 26.84
26.96	**Forms and envelopes – inventory** See description of 26.87
26.99	**All other printing & photographic supplies – inventory** All other printing and photographic supplies and materials not otherwise classified.

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Items for price comparison were identified using this methodology

- Using this methodology, the team identified approximately 50 items for price comparison analysis
  1. Data from GDC's Stock Master Report, NIAID's AMBIS and NIDDK's POTS system were imported into Microsoft Access
  2. Item description specific key words like "Biomax" or "Kodak" were used to define the search criteria. For example, when Biomax film products were searched, 58 unique item descriptions including the word "Biomax" were displayed
  3. Based on the search results, each unique item was compared to the GDC's item descriptions to find a match for comparison
  4. When identical items descriptions were found, the item's price and unit of issue was confirmed.
     - For GDC items
       - The unit of issue was confirmed in NBS
       - The price was confirmed using the price of that item on the most current fully received purchase order
     - For NIAID and NIDDK items
       - Unit of issue was confirmed on the vendor's website
       - Price was difficult to confirm on the vendor's website since the majority of buyers typically receive an undisclosed NIH discount on items and the price listed on a vendor's website today would more than likely not reflect the price for that item a year to six months ago