Benefit Document

Expenditure Approval Process RPI

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Executive Summary of the Initiative and Benefits

The goal of this initiative is to streamline Public Health Division (PHD) expenditure approval processes in order to allow FTE redeployment into other critical program needs by creating more manageable staff workloads. This will be accomplished by simplifying and standardizing documentation requirements and clearly defining expectations and levels of management accountability. This will reduce the number of review and approval steps and clearly define requirements to support audit needs. This initiative was split into three events, with the first focusing on approval for out-of-state travel, the second on approval of nonstandard expenditures and the third looking at Human Resources request processes. This document is only for the second event.

This event focused on the approval process for nonstandard expenditures. Before the RPI, requests typically required approval by at least three managers, including the PHD Deputy Director and there was no standardization of documentation requirements and justification for the expenditure. This led to variable approval requirements and a lengthy approval process, taking an average of 16 days. This lengthy cycle time and inconsistent decision-making criteria led to over processing, staff frustration, and possible loss of grant funds.

The improved process created a simplified and standardized request form, developed a training course for managers on expenditure approval accountability and delegated approval authority to Section Managers for most requests. This will reduce the amount of staff "touch-time" for expenditure approvals, particularly among PHD executive management. The process will also occur more quickly, with the RPI workgroup setting a target of one-day approval for this streamlined process. The process was piloted in two PHD Offices and then implemented Division-wide in July 2009.

The annual benefits from July 2009 through June 2010 of the revised process are estimated at 0.17 FTE from reduced touch-time, valued at $19,972. Additionally, the cycle time was reduced from 16 days to 2 days, on average, error rates decreased from 15% to 8% and overall staff satisfaction with the process increased from 20% to 64%.

Redeployment Plan

The 0.17 FTE estimated annual savings is divided across several dozen staff in the Division, thus it is not possible to provide a specific plan for where those savings are redeployed. These savings will be redeployed to Office and Section level programmatic needs.

Improvement Summary

- **Created a simplified and standardized form** to reduce variability. This reduces the time spent preparing requests by approximately 55 hours per year (annual benefit of $1,675) and reduces error correction time by approximately 9 hours per year (annual benefit of $285.)
- **Delegated approval** to the Section Manager for the overwhelming proportion of requests, reducing the time spent approving requests by approximately 291 hours per year at an annual benefit of $18,012.
  - Section Manager approval time is reduced by 110 hours annually (benefit of $5,641) by standardized form and process for preparers.
  - Office Administrator approval time is reduced by 71 hours annually (benefit of $4,954) by reducing the percentage of requests they must approve from 100% to 21%.
  - Deputy Director approval time is reduced by 110 hours annually (benefit of $7,417) by reducing the percentage of requests they must approve from 100% to 5%.
- **Reduced number of staff involved** by 38-43%, from 7 or 8 to 3:
  - Requestor provides purchase-specific information, explaining business need.
  - Manager (primarily Section Manager) decides the request.
  - Executive Manager (Office Administrator and above) performs an oversight role, using a standardized report to monitor expenditures within their Office. This position is responsible for training all managers on their expectations and following up on purchases requiring additional clarification.
- **Formalized training** for purchase requests and approvers. Managers are required to take training, with attendance documented in the Learning Management System (LMS). This documentation is a critical accountability step for the new delegation of purchase approval.
- **Standardized record retention** to the Section level of final purchase approval, per DAS and DHS audit requirements. Final approval will continue to be attached to invoices processed for payment.
- **Moved from paper to electronic (email) routing** of purchase requests.
- **Added a management tool** to provide better accounting/program fiscal data regarding specific expenditure patterns.

Benefit/outcome description

Cost Savings/Productivity[1]:

- Staff time for processing requests was reduced by standardizing the request process and eliminating additional approvals for most requests. The annualized cost equivalent of staff time in the new process is projected to be $22,020 compared to the cost equivalent of $41,992 in staff time for the old process. Specifically, management time savings associated with reduced review and approval is calculated to be 34 minutes per request (291 hours annually, 0.14 FTE re-deployable) divided across 29 managers at an average level of PEM F. Administrative staff time savings associated with request preparation is projected to be 6 minutes per request (55 hours annually, 0.03 FTE re-deployable), divided across several dozen staff at varying levels throughout PHD. This metric will be reported, as detailed in the Sustainability section.

Service:

- Cycle time under the improved process is improved by 87% over the old process, taking only 2 days instead of 16 days on average. The workgroup set a target of one-day approval and 50% of requests are currently meeting that target[2]. Improving the cycle time means the merchandise or service ordered will be received and put into service sooner. Additionally there will be fewer outstanding items to be tracked at any given time. Performance metrics will continue to be monitored and process adjustments made to continue progress towards the target. This metrics will be reported, as detailed in the Sustainability section.

Quality:

- Standardizing the request form reduces variability and guides the requestor through the information needed to support the request. Additionally, improved and centralized training for requestors and approvers helps to reduce errors. These combined efforts reduced the error rate from 15% under the old process to 8% (Oct-Nov '09) in the new process. This represents a 44% improvement, although it is still shy of the workgroup target of 5%. The quality metric will continue to be monitored and process adjustments made to continue progress towards the target. This metric will also be reported, as detailed in the Sustainability section.
- Developing a standardized request tracking log allows management to review all request activity, regardless of whether the request was ultimately approved. This provides a more complete view of program activity than reports based only on actual expenditures, and may allow managers to address any issues in real time, rather than after the fact.

People:

- Overall staff satisfaction increased to 64% for the improved process, compared to 20% satisfaction with the previous process.

[1] There were no significant capital expenditures from this event. The staff time needed to develop and implement the event and solutions was not tracked at the time (there was no suggestion that we do so then) and is unable to be easily estimated at this point.
2 The cost savings in the previous section are not dependent on meeting this cycle time target. Both of these improvements result from streamlining the process and reducing the amount of review required for most requests.

- Successful implementation of improvements to the expenditure approval process has provided positive reinforcement of the RPI concept within PHD. 75% of event participants reported the RPI was a high or very high value for their time.

Baseline Information

Baseline data were collected for cycle time, touch-time, error rates and customer satisfaction as listed below:

- Cycle time was measured by a survey of persons making expenditure requests, asking them how long the process typically took from making the request until final decision. The response options were: Less than 1 week; 1-2 weeks; 2-3 weeks; 3-4 weeks; and more than 4 weeks. The baseline measure of 16 days was calculated by assigning the mid-point of the response range (3, 10, 17, 24 and 31 days, respectively) to each response and computing the mean. This is an imprecise measure but there were no existing tracking logs and insufficient time to gather representative data prior to the event.
- Touch-time was measured by interviewing staff involved in the expenditure process. Staff were selected for their different process roles: Preparer; Section Manager approver; Office Administrator approver; and Deputy Director approver. They were asked:
  - What is the average amount of time it takes to complete a typical request?
  - What is the average amount of time it takes to complete a hard or unusual request?
  - What percent of requests are typical? What percent are hard or unusual?
  - What percent of requests do you return for additional information?
  - What is the time needed to make corrections?

  For each role of the process and type of request (typical or hard/unusual), touch-times were separately calculated as the mean of the reported times from the respondents. The times for each role were then weighted by the percentage of the type of request and these weighted times were summed to get a preliminary touch time. The error time was calculated by computing the mean of the error correction times reported by respondents, which was then weighted by the percentage of requests with errors. This weighted error time was then added to the preliminary touch time to generate the overall average time of 101 minutes or 1.69 hours per request. The data spreadsheet shows specifics of these calculations.
- Error rates were measured by a survey of persons reviewing expenditure requests, asking them what percent of requests contained errors. The baseline measure of 15% is the mean of the responses.
- Customer satisfaction was measured by a survey of persons involved in the expenditure process, asking the question, “How satisfied are you with the current process?” Response options were: Very satisfied; moderately satisfied; somewhat satisfied; somewhat dissatisfied; moderately dissatisfied; and very dissatisfied. The baseline measure of 20% is the percentage who reported “Very satisfied” or “Moderately satisfied.”

Logic Description

Cost Savings/Productivity

The new process produces touch-time savings in the following ways:

- Simplified form and training reduces preparation and error time
- Simplified form and standardized approval training reduces Section Manager approval time
- Delegating authority for most items to the Section Manager means the Office Administrator approves only 21% of requests, compared to 100% previously.
- Delegating authority for most items to the Section Manager means the Deputy Director approves only 5% of requests, compared to 100% previously.

Touch time benefits are divided into three parts, with the total touch time being the sum of the parts. The three parts are preparation time, error correction time and approval time. The three parts are summed to provide the total touch time. These are first calculated on a per request basis and then annualized by multiplying the per request amounts by an estimated 514 requests per year[3]. The overall benefits of the new process are calculated by subtracting the time and cost of a request under the new process from the time and cost of a request under the old process.

The following table shows the formulas used for calculating the per request touch time of each part, the results from these calculations under the old and new processes and the change from the new process. (More detailed calculations are in the attached data spreadsheet.) In general, the formulas are the amount of time performed by the role for each type of request which is then multiplied (weighted) by the percentage of each request type and further weighted by the percent of requests that need that role's time. Summing these times gives an overall average time per request, which is then used for further calculations. In this table, times are shown in minutes, unless otherwise indicated.

Touch Time, per request	Old Process	New Process	Δ
Preparation Time[4]			
(Prep time typical request x % of typical requests) + (Prep time hard request x % of hard requests)	(27x.82)+ (49x.18)= 31 = .51hr	(19x.82)+ (48x.18)= 24 = .40hr	-7 = -.11hr
Error Correction Time			
(Error correction minutes x % of requests with errors)	(13x.15)= 2 = .03hr	(10x.08)= .08 = .01hr	-1 = -.02hr

[3] This is the actual total for calendar year 2008.

[4] Since preparation time happens for 100% of requests, the extra weighting for percent of requests needing that role's time is eliminated, since it is just multiplying by 1.0. For section manager approvals however (which are also 100%), this factor is shown for consistency with the formulas for the other approval levels.

Approval Time			
(((Section Manager[4] time typical request x SM % of typical requests) x overall % of typical requests) + ((SM time hard request x SM % of hard requests) x overall % of hard requests)) +	(37x1.0x.82)+ (85x1.0x.18)= 46+	(31x1.0x.82)+ (41x1.0x.18)= 33+	-13 +
(((Office Administrator time typical request x OA % of typical requests) x overall % of typical requests) + ((OA time hard request x OA % of hard requests) x overall % of hard requests)) +	(5x1.0x.82)+ (30x1.0x.18)= 9+	(5x.25x.82)+ (15x.05x.18)= 1+	-8 +
(((Deputy Director time typical request x DD % of typical requests) x overall % of typical requests) + ((DD time hard request x DD % of hard requests) x overall % of hard requests))	(10x1.0x.82)+ (30x1.0x.18)= 14=	(15x.05x.82)+ (15x.05x.18)= 1=	-13 = -34 =
	69 = 1.14hr	35 = .58hr	-.57hr
Total Touch Time, per request			
Preparation time + Error Correction Time + Approval Time	31+2+69= 102 = 1.69hr	24+.08+35= 60 = 1.0hr	-42 = -.69hr

To calculate estimated annual benefits, the per request touch-time benefits are multiplied by 514, which is the actual count of non-standard expenditure requests in calendar year 2008. Costs are based on the hourly rate associated with the process task and are listed in the assumptions section. The following table summarizes touch-time benefits from the new process.

	Δ from new process		
Touch Time Benefits	Hours	Cost	FTE
Preparation, per request	-0.11	-$3.26	
Preparation time, annualized hours	**-55**	**-$1,675**	**-0.03**
Error correction time, per request	-0.02	-$0.55	
Error correction time, annualized hours/$	**-9**	**-$285**	**-0.00**
Approval time, per request	-0.57	-$35.04[5]	
Approval time, annualized	**-291**	**-$18,012**	**-0.14**
Overall touch time, per request	-0.69	-$38.86	
Overall touch time, annualized	**-356**	**-$19,972**	**-0.17**

Assumptions

- The McKinsey weighted DHS hourly cost of $30.82 ($64,105 fully loaded annual / 2080 hrs. per year) was used for preparation and error time calculations, as these tasks may be performed by positions from Office Assistants through PEM-level managers, depending on the particular request.

[5] This incorporates the different time and hourly rates for section managers, office administrators and the deputy director. The calculations to generate this number are in the data spreadsheet but not included here to reduce complexity. The hourly rate for each approver role is listed in the assumptions section.

- Costs for Section Managers, Office Administrators and the Deputy Director are based on the weighted average of those positions in PHD. These were calculated at Step 5 of the current salary range plus an additional one-third for benefits. (See data spreadsheet for details.) These were used for approval costs instead of the McKinsey basis because this event specifically aimed to (among other things) reduce executive manager time, which is of a higher cost than the overall DHS average. Section Manager time is valued at $51.26/hr., Office Administrator time at $69.57/hr. and Deputy Director time at $67.49/hr.

Service

The new process improves cycle time through the following ways:

- Simplified form and user training guides the requestor through the preparation process, including what level of information is needed to support the request. This reduces time spent asking about what is needed for each request.
- Standardized form and user training reduces errors and this reduces the number of requests that have to be returned for further information.
- Emailing requests and approvals reduces the time needed to send paper requests from one office to another.
- Delegation of approval authority to the Section Manager in the vast majority of cases reduces the time that was previously needed to receive approval from Office Administrators and/or the PHD Deputy Director.

Cycle Time from Request Submission to Approval/Denial	Data source	Avg. Days
Baseline	Survey	16
Target	RPI workgroup	1
Actual (3 month average, Aug-Oct '09)	Tracking Log	2
Improvement		87%

Assumptions

- This baseline data is based on a retrospective survey of process users, as noted in the Baseline section. There was no existing data source of cycle time from the initial request submission and insufficient time to conduct accurate measurements prior to the event.

Quality

The new process improves quality by reducing the amount of error correction and/or rework through the following improvements:

- Simplified form and requestor training guides the requestor through the preparation process, including what level of information is needed to support the request. This reduces requests returned for further information and/or justification.
- Standardized form and training reduces errors by providing a consistent process, no matter what type of nonstandard expenditure is being requested. This reduces the number of requests that have to be returned for further information.

- Providing standardized training to approvers informs them of their responsibility and accountability for expenditure approvals and increases their knowledge about how to reliably make decisions about expenditure requests. This reduces the number of requests returned for additional justification and/or information.

Requests Containing Errors	Data Source	Req. w/Error	Total Req.	Error Rate
Baseline	TI baseline measurement			15%
Target	RPI workgroup			5%
Actual (3 month average, Aug-Oct '09)	Tracking Log	9	107	8%
Improvement				44%

Assumptions

- The error rate will continue to improve to the 5% target as the entire Division becomes more familiar with the new process and by targeting interventions to staff that repeatedly make mistakes. This metric will continue to be monitored and process adjustments made for continuing progress towards the target. These metrics will also be reported, as detailed in the Sustainability section.

<u>People</u>

The new process improves overall user satisfaction within PHD by:

- Providing faster response to expenditure requests, as outlined in the Service section
- Decreasing items returned due to errors or for further information, as outlined in the Quality section
- Standardizing the documentation needed for a request, as outlined in the Quality section

Customer Satisfaction	Data Source	Pre-Event	Post-Event	Δ new process
Percent "Very" or "Moderately" satisfied with the process	Customer survey	20%	64%	44%

Assumptions

- That staff satisfaction with the process is related to cycle time, quality and standardization improvements. Open-ended responses from our user survey support this assumption.

Sustainability Plan (June 1, 2009 though May 31, 2010)

The RPI team lead compiles a tracking log of all expenditure requests in PHD, which calculates cycle time and error rate information. The RPI team lead will monitor these metrics and make adjustments to the process or user intervention as needed to ensure continued progress towards cycle time and quality goals.

The RPI team lead (with the PHD Transformation Team) will conduct another customer satisfaction survey of staff using the expenditure process in May, 2010. These results will be used to make further process adjustments, as indicated.

Ongoing Metrics (on going)

On a monthly basis, the RPI Team lead will report the total number of expenditure requests, average cycle time and error rate percentage (from the expenditure tracking log) to the PHD Transformation Team, who will forward those metrics to PMO. Responses to the customer satisfaction survey in May 2010 will be analyzed and reported to PMO by the PHD Transformation Team.

The count of expenditure requests will be multiplied by the calculated $38.86 value of touch-time savings per request to generate the monthly touch-time savings total.

Annualized Projection Amount

The only metric with a projected dollar amount is touch-time savings, with an annualized estimated savings of $19,972.

Attachments:

☒ Data Spreadsheet

☐ Reinvestment Plan

☐ Business Case

References:

Surveys – customer/client: Included in data spreadsheet

Reports – internal/external: N/A

Web links: N/A