U/W Paramed Requirement Billing

Prepared For: BB Certification Panel
Presented By: Phil Hamlett

U/W Paramed Requirement Billing

Champion:

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GEFA Framework (Select Box & Type "X")

- [X] **Customer Competitiveness**
- [ ] **Growth**
- [ ] **Foundation**

GEFA Core Process (Select Box & Type "X")

- [ ] **Assess the Market**
- [ ] **Develop Solutions**
- [X] **Deliver Solutions**
- [ ] **Service Solutions**
- [ ] **LAM**
- [ ] **Enabling**

GE Financial Assurance
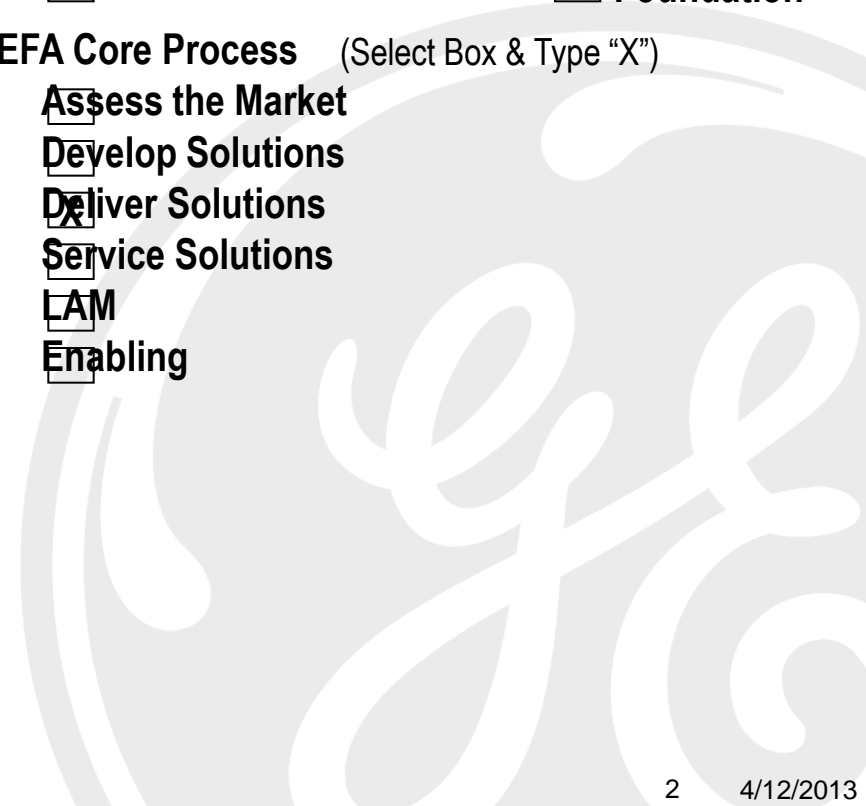
Customer	Sample Comments	Key Output Characteristics Important to Customer (CTQ's)
Fulfillment Services	"We need to able to verify that we have received parameds for which we have paid for."	Payment only on parameds received.
Fulfillment Services	"We want to know the quantity of parameds that we paid for which we never received an application (part I) submission."	Part I receipt verification
Fulfillment Services	"We would like to know which agencies are having the most frequent occurrences of ordering parameds then not submitting the application"	Part I receipt verification
GEFA IBG Strategic Objectives	"How can we optimize this process to reduce capital consumption?"	Payment only on parameds received.

Business Case:

In calendar year 2002, IBG paid out $21MM in policy paramed requirements. The current automated payment process presents a potential situation in which adequate paramed receipt verification is not completed before the vendor is compensated for paramed delivery. 1.2% of disbursements paid out for parameds in CY2002 were for parameds for which receipt could never be verified.

Problem Statement:

The current requirement billing process does not provide adequate capability to insure the reconciliation of discrepancies between payment for and physical receipt of paramed requirements by IBG. For CY2002, $.2MM was disbursed for paramed requirements which were never verified as having been received.

Goal Statement:

By June 1, 2004 have an improved billing reconciliation process in place that is able to fully verify receipt of a paramed requirement before any disbursement is made to vendor.Achieve a 3.79 Zst level on verified parameds.

In Scope:

Electronic paramed requirement billing for CY 2002 and beyond, for FCL,AML and GECA legal entities.

Out of Scope:

Any paramed billing and reconciliation executed as a paper process.

Defect: Any billed paramed requirement paid for for which receipt is not verified.

Opportunity: Each specific electronic billing of a paramed requirement by a vendor.

Customer	Output	Process	Input	Supplier
Paramed Vendors	Report of paramed billing status	Billing files transferred to IBG via FTP from providers	Electronic billing data	Paramed Vendors
Accounts Payable	Authorization for vendor payment	Billing data manually "scrubbed" by NB personnel	CYB pending and inforce data	Cyberlife policy admin system
		Load procedure executed to load scrubbed billing data to NBPro and verify paramed validity	ImageCop receipted paramed data	ImageCop customer touch system
		NB Rep notified by e-mail of finished load, performs final pass of data to accumulate payment authorizations		
		Payment authorizations issued to accounts payable for final disbursement		
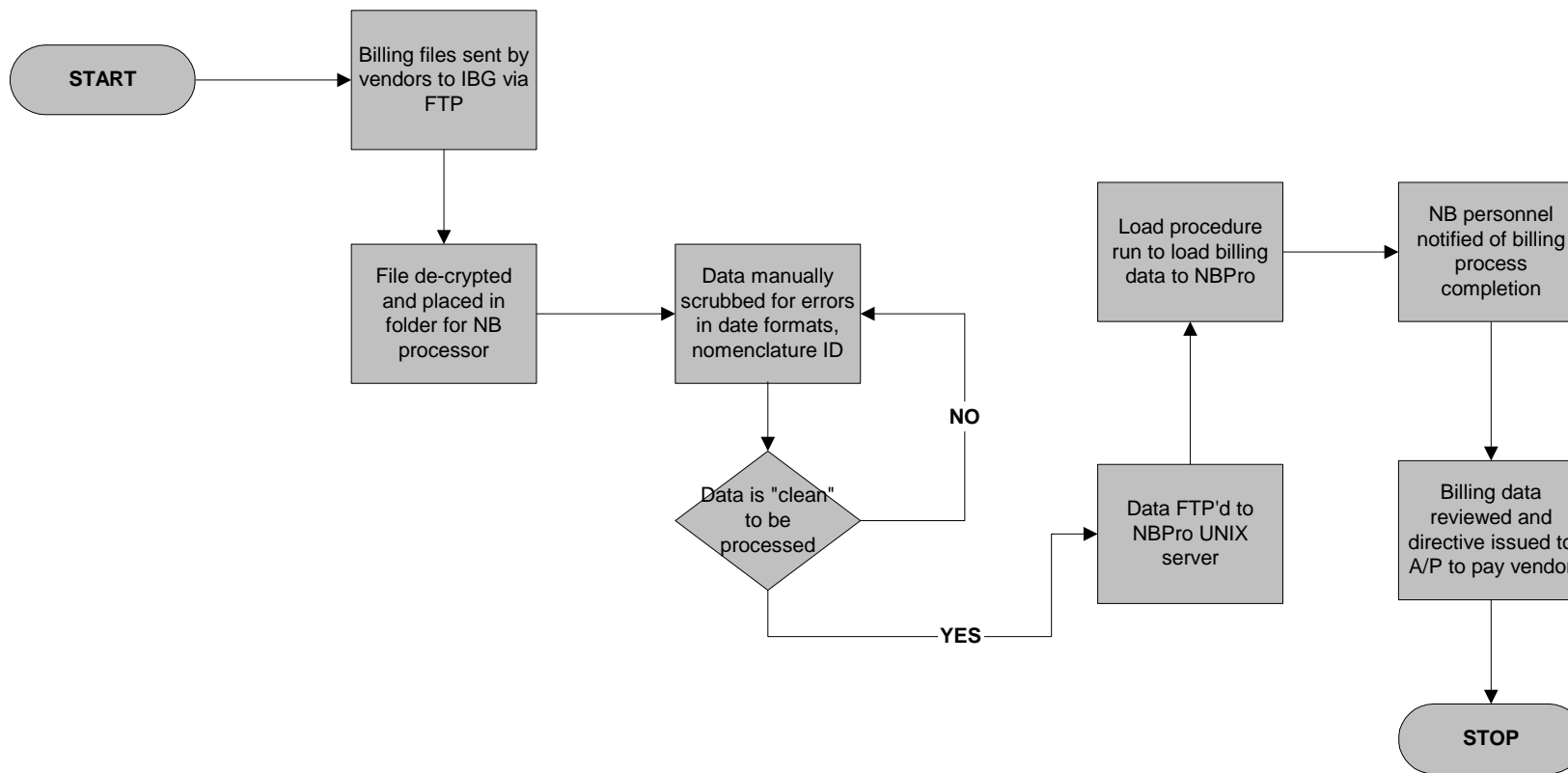
Tighten the process, properly verify receipt of services

CTQ Drill Down Tree
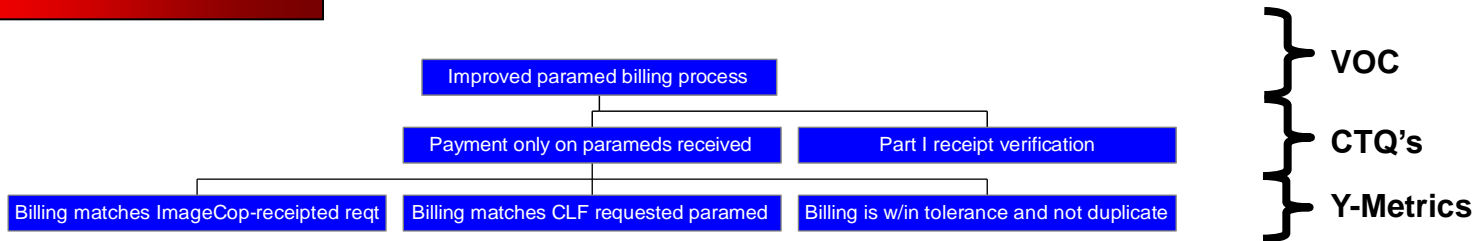
```
            Improved paramed billing process                              VOC

      Payment only on parameds received    Part I receipt verification    CTQ's

Billing matches ImageCop-receipted reqt  Billing matches CLF requested paramed  Billing is w/in tolerance and not duplicate   Y-Metrics
```

CTQ Translation Matrix

CTQ Output Characteristic	Rank	Billing matches Image-Cop receipted requirement	Billing matches requested CLF paramed	Billing is within tolerance and not redundant
Payment only on received parameds	5	9	3	3
Part I receipt verification	3	1	1	1
Totals		48	18	18

Potential Project Y Metrics

Focus on verifying that paid-for parameds have been received

CTQ Performance Standards

CTQ Performance Standards

CTQ (Y Measure)	Output Unit	Operational Definition for Measurement	Performance Standards			
				Discrete		
				DPMO	SIGMA	YIELD
Number of parameds paid for where the paramed was not received	1 billing per paramed received	Money was paid to a provider for a billed paramed but receipt of the paramed was never verified.		11,000	3.79	98.9%

Data Collection Plan

Clarify Data Collection Goals				Operational Definitions and Procedures	
Measure	**Measure Type**	**Data Type**	**Purpose of Collection**	**What**	**How**
Payment on paramed reqts	Input	Discrete	Determine the number of parameds that were paid for but not received.	All parameds billed electronically for CY 2002	Billing data is to be extracted directly from NBPro data warehouse. Paramed receipt data will be pulled from AWD.

Operational Procedures for Collection and Recording				
What	**Where**	**When**	**Who**	**How Many**
Paramed payment & reciept information	All channels with the exception of GELAAC	CY 2002	Phil Hamlett	218,769 Paramed billing records, 9,129,401 AWD paramed records

Method of Validating Measurement System	Segmentation Factors
Validation of paramed billing data against AWD receipt data.	Paramed provider, app. received status, AWD received status, ordering party

Set the foundation for effective data analysis

Attribute R&R

Manual verification of billed paramed data in AWD

Sample Size Calculator for Attribute/Discrete Data

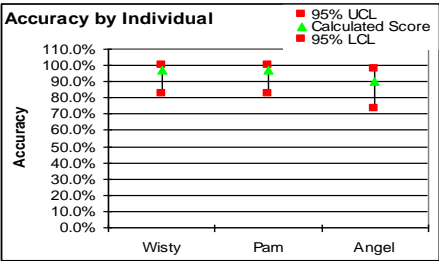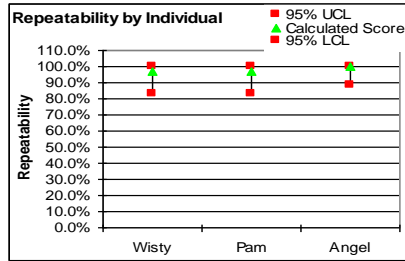|			Enter
1	"N" = Population Size	N =	218000
2	"p" = Proportion Occurrence In Population (Estimated defect rate)	p =	0.0200
3	"E" = Sampling Error	E =	5%
4	"CL" = Confidence Level	CL =	95%
5	"Z" = Z Value (based on CL)	Z =	1.96
6	Required Sample Size: (Large Population)	n =	30
7	Required Sample Size: (Small Population)	n =	30

Need an Example?

Statistical Report - Discrete Data Analysis Method

DATE: 9/30/2003
NAME: GEFA-IBG
PRODUCT: Parameds
BUSINESS: IBG

Source	Repeatability			Accuracy		
	Wisty	Pam	Angel	Wisty	Pam	Angel
Total Inspected	30	30	30	30	30	30
# Matched	29	29	30	29	29	27
False Positives				0	0	3
False Negatives				0	0	0
Mixed				1	1	0
95% UCL	99.9%	99.9%	100.0%	99.9%	99.9%	97.9%
Calculated Score	96.7%	96.7%	100.0%	96.7%	96.7%	90.0%
95% LCL	82.8%	82.8%	88.4%	82.8%	82.8%	73.5%

	Overall Repeat. and Reprod.		Overall Repeat., Reprod., & Accuracy	
Total Inspected	30		30	
# in Agreement	25		25	
95% UCL	94.4%		94.4%	
Calculated Score	83.3%		83.3%	
95% LCL	65.3%		65.3%	

Measurement system is acceptable

Repeatability by Individual
- 95% UCL
- Calculated Score
- 95% LCL

Repeatability: 110.0%, 100.0%, 90.0%, 80.0%, 70.0%, 60.0%, 50.0%, 40.0%, 30.0%, 20.0%, 10.0%, 0.0%

Wisty, Pam, Angel

Accuracy by Individual
- 95% UCL
- Calculated Score
- 95% LCL

Accuracy: 110.0%, 100.0%, 90.0%, 80.0%, 70.0%, 60.0%, 50.0%, 40.0%, 30.0%, 20.0%, 10.0%, 0.0%

Wisty, Pam, Angel

Focus on verifying that paid-for parameds have been received

DPMO Method

- UNITS – 1 paramed per billing
- OPPORTUNITIES – 9,751 billings
- DEFECTS – 2,772 unverified parameds
- DPO - .2842
- DPMO – 284,278
- BASELINE Z_{st} = 2.054

Z_{st} = 2.054

Report 7: Product Performance

Characteristic	Defs	Units	Opps	TotOpps	DPU	DPO	PPM	ZShift	ZBench
1	2772	1	9571	9571	2772.000	0.289625	289625	1.500	2.054
Total	2772			9571		0.289625	289625	1.500	2.054

Plenty of opportunity for process improvement

	$Sigma_{ST}$	# Defects	# Opportunities	DPMO	Yield
Baseline Performance	2.05	2,772	9,751	284,278	71.5%
Project Target	3.79			11,000	98.9%

Rationale:

Detailed analysis of CY2002 billing data reveals that only 1.1% of paramed billings should have gone through the billing process unverified. This indicates a process entitlement of 98.9% yield.
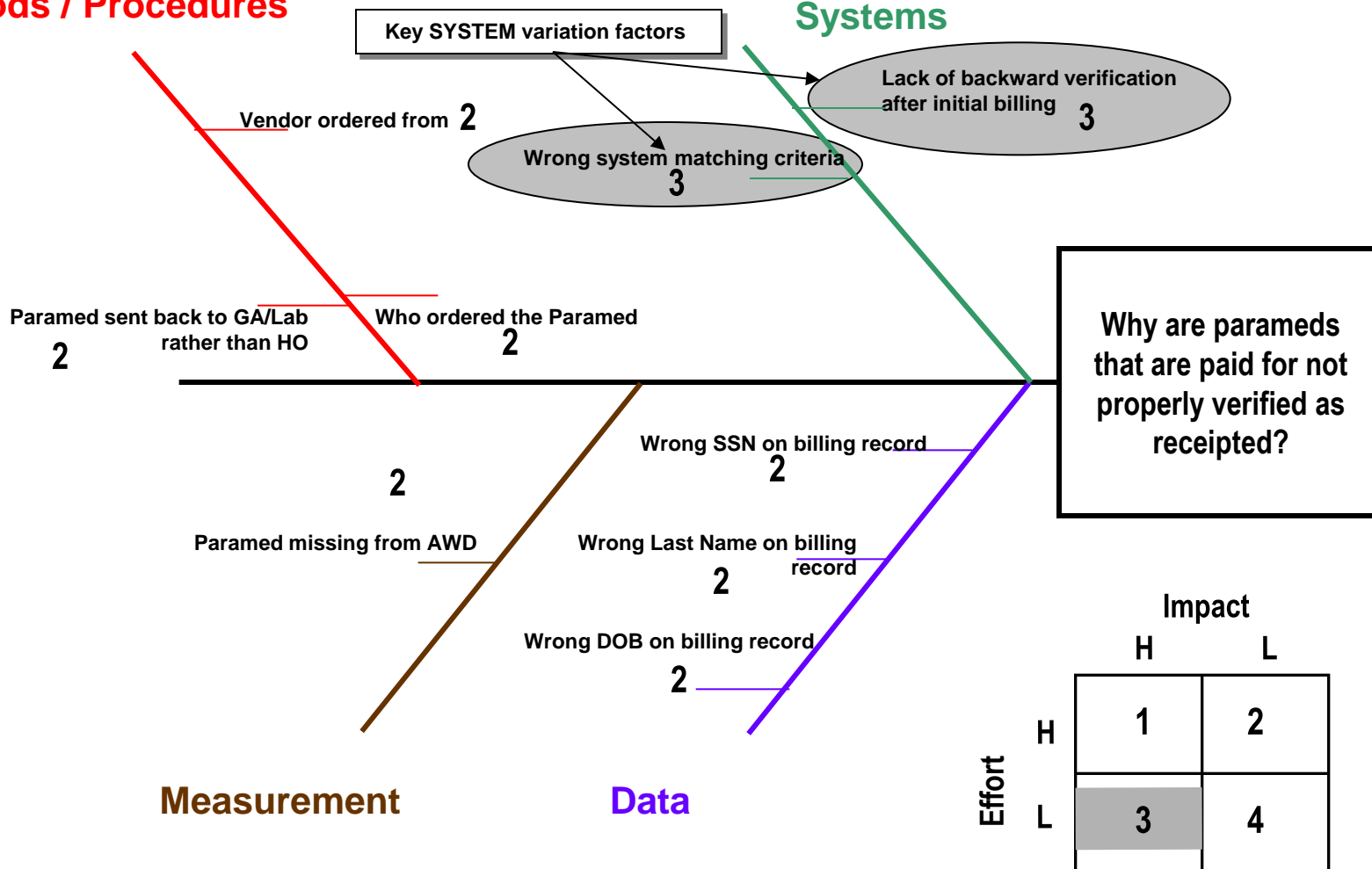
Cause & Effect Analysis

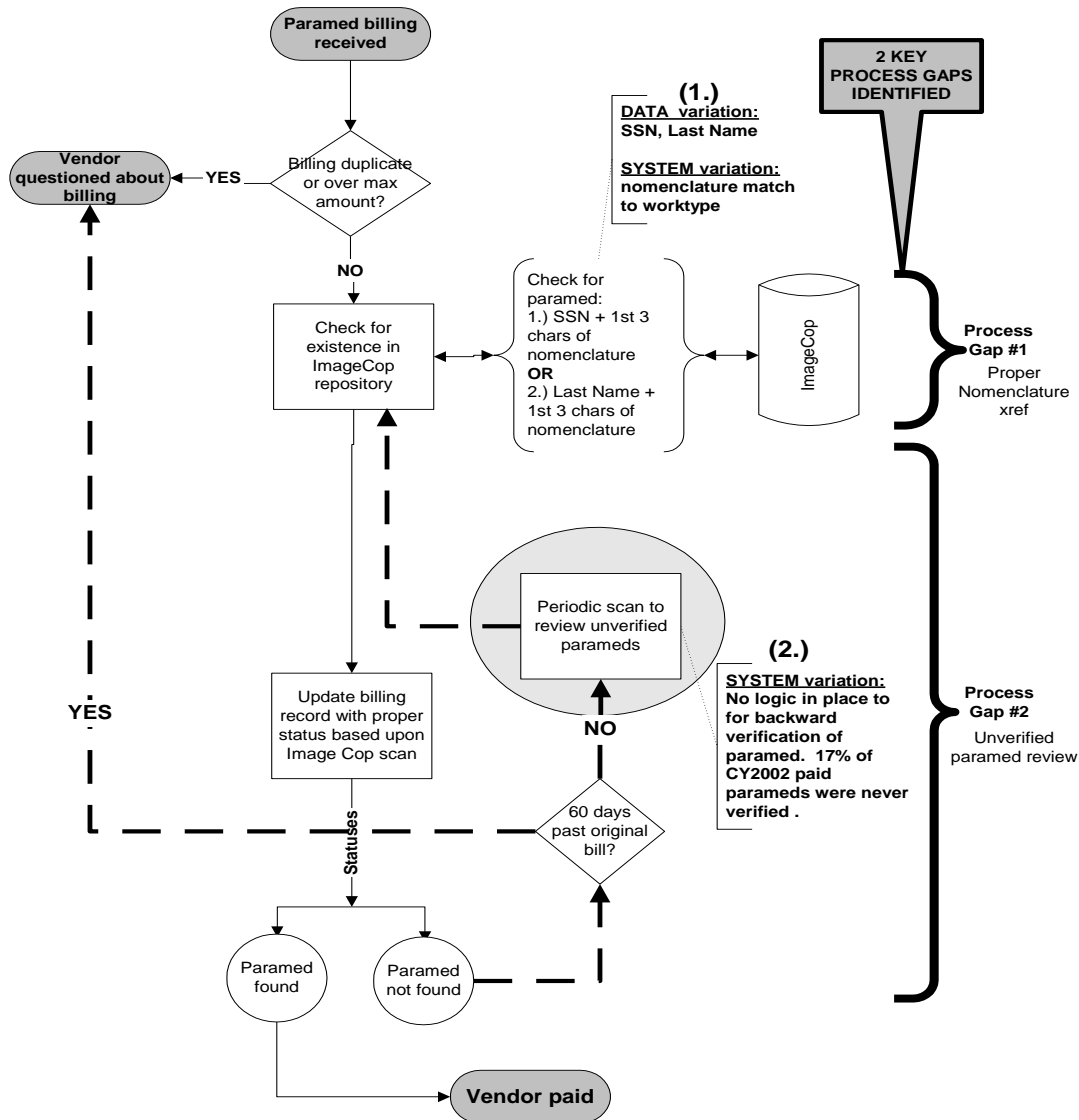**Potential Causes (Xs)**   **Effect (Y)**

Methods / Procedures   **Systems**

Key SYSTEM variation factors

Lack of backward verification
after initial billing **3**

Vendor ordered from **2**

Wrong system matching criteria
3

Paramed sent back to GA/Lab
rather than HO   Who ordered the Paramed
2   **2**

**Why are parameds
that are paid for not
properly verified as
receipted?**

Wrong SSN on billing record
2

2

Paramed missing from AWD   Wrong Last Name on billing
record
2

Wrong DOB on billing record
2

Measurement   **Data**

Impact

	H	L
H	1	2
L	3	4

Effort

Detailed Process Analysis - **Paramed verification in ImageCop**

Paramed billing received

(1.)
DATA variation:
SSN, Last Name

SYSTEM variation:
nomenclature match to worktype

2 KEY PROCESS GAPS IDENTIFIED

Billing duplicate or over max amount?

Vendor questioned about billing ← **YES**

NO

Check for paramed:
1.) SSN + 1st 3 chars of nomenclature
OR
2.) Last Name + 1st 3 chars of nomenclature

ImageCop

Check for existence in ImageCop repository

Process Gap #1
Proper Nomenclature xref

Periodic scan to review unverified parameds

(2.)
SYSTEM variation:
No logic in place to for backward verification of paramed. 17% of CY2002 paid parameds were never verified .

Process Gap #2
Unverified paramed review

YES

Update billing record with proper status based upon Image Cop scan

NO

Statuses

60 days past original bill?

Paramed found

Paramed not found

Vendor paid

Key Observations

(1.) Only 193 of 38,186 (0.5 %) originally unverified CY2002 billings were due to problems with external data (SSN, Last Name)

(2.) An additional 15,326 of 38,186 (40%) of originally unverified CY2002 billings verified when backward verification utilized.

System factors (nomenclature and backward verification) impact process more than data factors (SSN, Last Name)

Screen the X's - Data-related variation vs. System variation

Potential X's can be placed into the following affinity model:

Data-related variation

- **Wrong SSN on billing record**
- **Wrong Last Name on billing record**
- **Wrong DOB on billing record**
- **Paramed missing from AWD**

2002 Billing Analysis (Comparison of Billing data to AWD 4Q 2001 - 1Q2003)		
	Unverified CY 2002 Paramed Billings (defects)	38,186
1	Billings matched by SSN	-34,329
2	Net of #1, matched by Last Name + DOB	-955
3	Of #2, 260 are GELAAC and are received by paper	-260
4	Of #3, billings verified using correct CLF data	-193
	Total paramed billings left unverified in 2002 by performing manual data matching	**2,449**

Manual paramed verification using existing data reveals that only 2,449 of 38,186 (6%) originally unverified parameds were truly never verified as being receipted

Data vs. system analysis portrays two very different pictures of paramed verification

System Variation

- **Lack of backward verification after initial billing**
- **Flawed system matching criteria**

2002 Billing Analysis (Retroactive verification of received parameds)		
	Unverified CY 2002 Paramed Billings (defects)	38,186
	Billings verified after backward verification	-15,326
	Total paramed billings left unverified in 2002 using current system processing	**22,860**

Using current system processing, 22,860 of 38,186 (59%) originally unverified parameds still appear as having never been receipted.

System variation X's provide the best potential for improvement

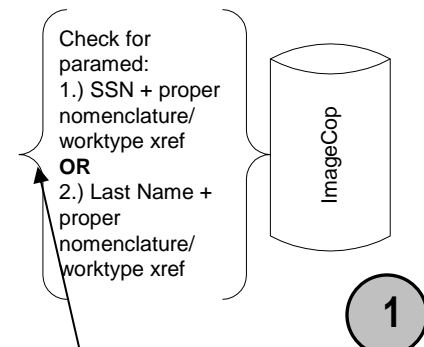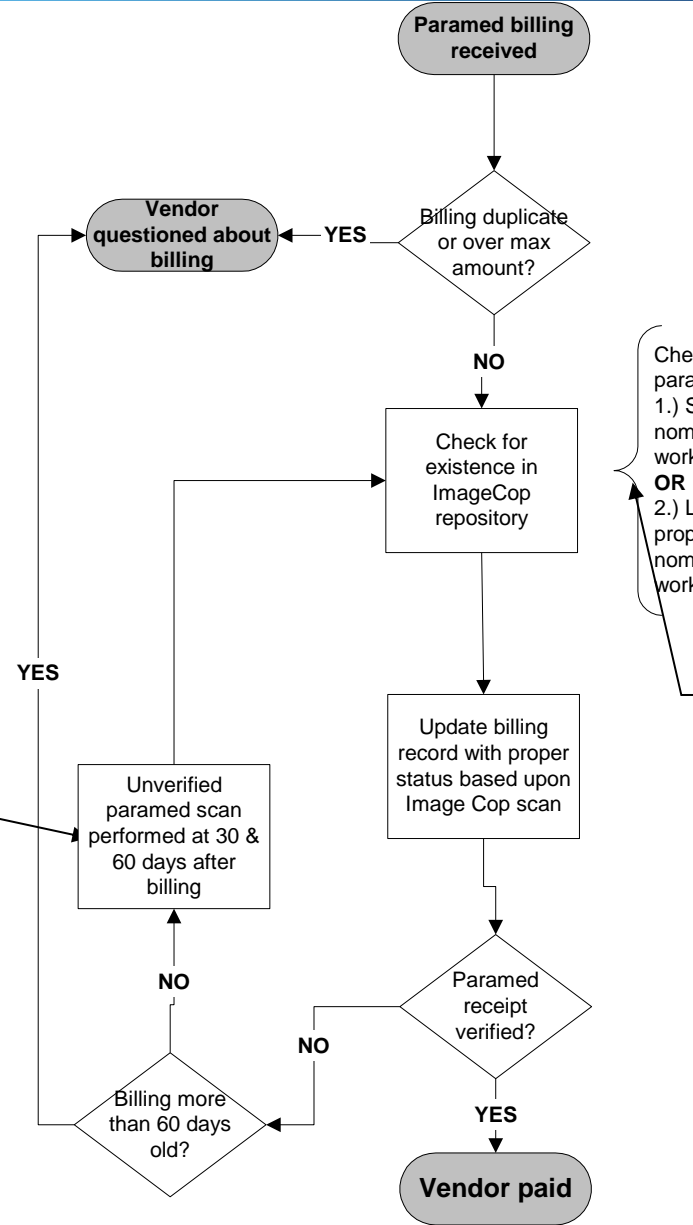Evaluate the solutions against specific selection criteria…

Pugh Matrix		**Data Variation**				**System Variation**			
		Fix SSN data		**Fix Last Name Data**		**Implement backward verification**		**Fix nomenclature matching**	
Solution Selection Criteria	**Weight**	**Score**	**Weighted Score**	**Score**	**Weighted Score**	**Score**	**Weighted Score**	**Score**	**Weighted Score**
Likelihood of verification	10	10	100	9	90	9	90	9	90
Ease of Implementation	8	1	8	1	8	10	80	8	64
Immediate process impact	7	2	14	2	14	7	49	10	30
Total			**122**		**112**		**219**		**184**

* Score = Solution's ability to address selection criteria (1 is low and 10 is high)

Improving the nomenclature matching logic and providing backward verification are the best areas of focus for process improvement.

New Pilot Solution

Change	Old Process	New Process
1	Paramed matched to ImageCop by SSN + 1st 3 chars of nomenclature or Last Name + 1st 3 chars of nomenclature	Full cross-reference implemented for nomenclature ID to ImageCop worktype. Actual ImageCop worktype used to compare with either SSN or Last Name
2	No "after-the-fact" attempts at verifying parameds that were paid for before being properly verified	Thirty and sixty day backward verification implemented to double-check parameds not originally verified during initial processing. Parameds unverified after 60 days kicked out for review

Paramed billing received

Billing duplicate or over max amount? — YES → **Vendor questioned about billing**

NO → **Check for existence in ImageCop repository**

Check for paramed:
1.) SSN + proper nomenclature/worktype xref
OR
2.) Last Name + proper nomenclature/worktype xref

ImageCop

Update billing record with proper status based upon Image Cop scan

Paramed receipt verified? — YES → **Vendor paid**

NO → **Billing more than 60 days old?** — NO → **Unverified paramed scan performed at 30 & 60 days after billing** — YES →

2

30/60 day backward verification
• Unverified parameds checked @ 30 days and 60 days after initial processing
• Same matching logic used as for initial receipt check
• Parameds unverified at 60 days kicked out for review

1

New cross-ref table (sample)

Nomencl.	Seq.	Worktype
PAR0100	1	APPII
PAR0100	2	TELEMED
PAR0100	3	PARTII
PAR0200	1	APPII
PAR0200	2	TELEMED
PAR0200	3	PARTII
PAR0300	1	APPII
PAR0300	2	TELEMED
PAR0300	3	PARTII

Root Cause Analysis - Lack of backward verification

	Before Backward Verification	After Backward Verification
Verified	180583	195909
Not Verified	38186	22860

Proper backward verification on billing results in immediate defect reduction of 40%.
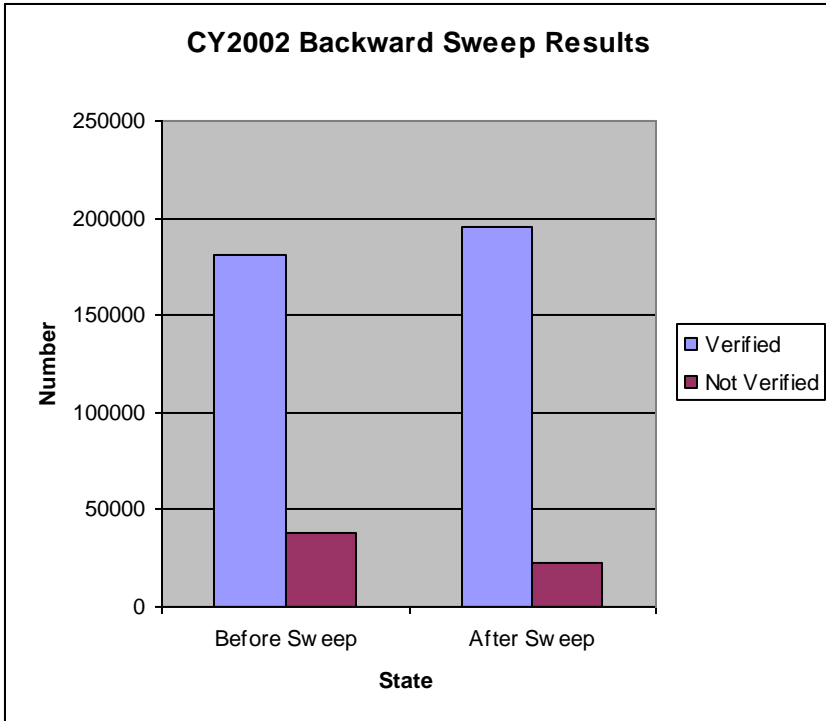
### Chi-squared analysis: (test for independence)

$H_o =$ No statistical difference between questionable billings before and after backward verification of paramed billing data

$H_a =$ There is a statistical difference between questionable billings before and after backward verification of paramed billing data

```
Before S After Sw    Total

  Verified   180583   195909   376492

     1.88E+05 1.88E+05


   Not verified    38186    22860    61046

     30523.00 30523.00


Total    218769    218769    437538
Chi-Sq =311.941 +311.941 +
       1.9E+03 +1.9E+03 = 4471.574
DF = 1,  P-Value = 0.000
```
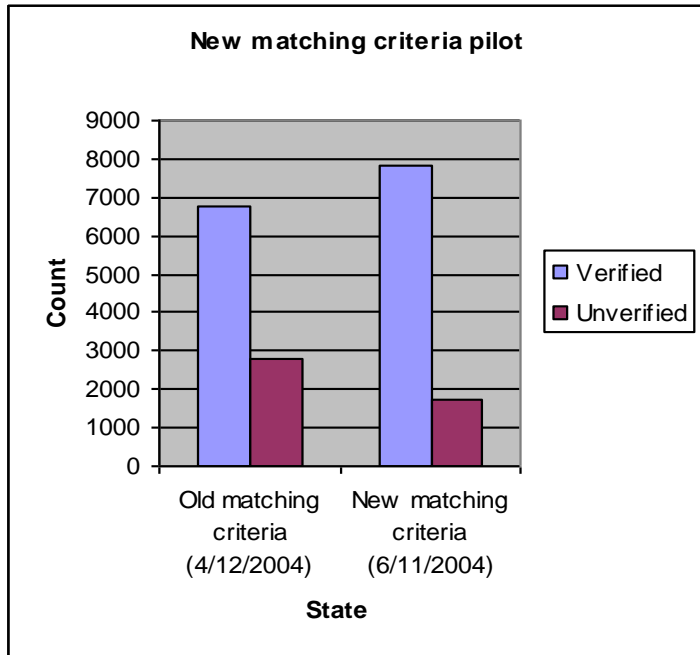
CY2002 Backward Sweep Results

Conclusion:

Reject H_o , there is a statistical difference between questionable billings before and after backsweep of paramed billing data

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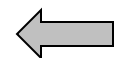
Root Cause Analysis - System matching criteria

New matching criteria pilot

Results of parallel run of piloted process to current process

Hooper Invoice # 409210984		
	Old matching criteria (4/12/2004)	New matching criteria (6/11/2004)
Verified	6791	7829
Unverified	2772	1742

Enhanced matching criteria nets greater success for verifying paramed receipt. Defects with piloted solution show <u>immediate defect reduction of 37%</u>

Chi-squared analysis: (test for independence)

H$_o$ = No statistical difference between paramed billing verifications for old & new matching methods

H$_a$ = There is a statistical difference between paramed billing verifications for old & new matching methods

Conclusion:

Reject H$_o$,there is a statistical difference between paramed billing verifications for old & new matching methods

```
              Old match New match    Total
Verified        6791      7829      14620
               7306.94   7313.06

Unverified      2772      1742       4514
               2256.06   2257.94

Total           9563      9571      19134

Chi-Sq = 36.431 + 36.400 +
        117.993 +117.894 = 308.718
DF = 1  P-Value = 0.000
```

Data Collection Plan

Clarify Data Collection Goals				Operational Definitions and Procedures	
Measure	**Measure Type**	**Data Type**	**Purpose of Collection**	**What**	**How**
Paramed verification	Input	Discrete	Determine if parameds are being properly verified	Hooper Holmes Invoice #409210984 Originally ran 4/12/2004	Billing and receipted paramed data is to be extracted directly from NBPro data warehouse.

Operational Procedures for Collection and Recording				
What	**Where**	**When**	**Who**	**How Many**
Paramed payment & receipt information	All channels with the exception of GELAAC	Hooper Holmes billing for month of March 2003	Phil Hamlett	9,751 paramed billing records and corresponding paramed receipts

Method of Validating Measurement System	Segmentation Factors
Validation of paramed billing data against ImageCop receipted paramed data	Paramed provider, app. received status, ImageCop received status, ordering party

Establish the improved process measurement system

Attribute R&R

G ○ ○

Manual verification of billed paramed data in ImageCop

Sample Size Calculator for Attribute/Discrete Data

Enter

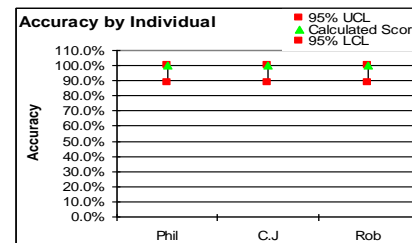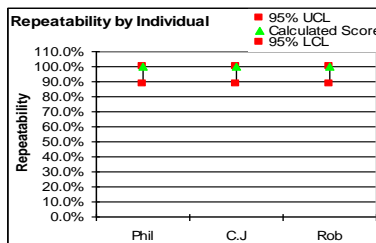|			
1	"N" = Population Size	N =	218000
2	"p" = Proportion Occurrence In Population (Estimated defect rate)	p =	0.0200
3	"E" = Sampling Error	E =	5%
4	"CL" = Confidence Level	CL =	95%
5	"Z" = Z Value (based on CL)	Z =	1.96
6	Required Sample Size: (Large Population)	n =	30
7	Required Sample Size: (Small Population)	n =	30

[Need an Example?](#)

Statistical Report - Discrete Data Analysis Method

DATE: 6/22/2004
NAME: Genworth
PRODUCT: Parameds
BUSINESS: Protection

Source	Repeatability			Accuracy		
	Phil	C.J	Rob	Phil	C.J	Rob
Total Inspected	30	30	30	30	30	30
# Matched	30	30	30	30	30	30
False Positives				0	0	0
False Negatives				0	0	0
Mixed				0	0	0
95% UCL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Calculated Score	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
95% LCL	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%

	Overall Repeat. and Reprod.		Overall Repeat., Reprod., & Accuracy	
Total Inspected	30		30	
# in Agreement	30		30	
95% UCL	100.0%		100.0%	
Calculated Score	**100.0%**		**100.0%**	
95% LCL	88.4%		88.4%	

Measurement system is acceptable

Repeatability by Individual

- 95% UCL
- Calculated Score
- 95% LCL

Accuracy by Individual

- 95% UCL
- Calculated Score
- 95% LCL

Using ImageCop as verification source is reliable

Before & After Performance Assessment

	$Sigma_{ST}$	# Defects	# Opportunities	DPMO	Yield
Baseline Performance	2.05	2,772	9,751	284,278	71.5%
Project Improvement	2.847	867	9,751	88,914	90.1%

$Z_{st} = 2.847$

DPMO Method

- UNITS – 1 paramed per billing
- OPPORTUNITIES – 9,751 billings
- DEFECTS – **867** unverified parameds
- DPO - .0088
- DPMO – 88,914
- BASELINE Z_{st} = 2.847

Report 7: Product Performance

Characteristic	Defs	Units	Opps	TotOpps	DPU	DPO	PPM	ZShift	ZBench
1	867	1	9751	9751	867.000	0.088914	88914	1.500	2.847
Total	867		9751		0.088914	88914	1.500	2.847

Significant process improvement verified

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FMEA   **- Examine the implementation contingencies**

| Item/Function	Potential Failure Modes	Potential Effects of Failure	SEV	Potential Causes of Failure	PROB	Current Design Controls	DET	RPN	Recommended Actions	Target Date and Responsibility	Actions Taken	Action Results			
												New SEV	New PROB	New DET	New RPN
Nomenclature /worktype xref not properly coded	ImageCop Worktype not properly identified for billing nomenclature	Billing not properly matched to receipted data	10	Oversight of billing nomenclature as valid ImageCop worktype	4	None	5	200	Periodically review nomenclatures for proper cross-reference to worktype	Phil Hamlett (6/1/2004)	Nomenclatures scanned for cross-reference completeness	10	2	5	100
No means of examining backward verification information for paramed receipt	No reporting mechanism present to report on new status	No way to verify that paramed was received within 60 days of invoice	8	BO reports not properly updated with new status information	10	None	1	80	Provide BO detail report to review 60-day status	Phil Hamlett (6/302004)	RFS #060200017 submitted to IT to provide new reporting	8	1	1	8
All paramed imaging not present in ImageCop	No feed present from AWD to Image Cop for all parameds imaged at ICC	Billing not properly matched to receipted data	10	ImageCop has no automated method to get all image data from AWD	10	None	9	900	Request automated AWD image data feed from GENIUS	Phil Hamlett (7/312004)	GENIUS bug #5794 submitted to IT to provide AWD data feed	10	2	9	180

Plans in place to deal with contingencies

'p' control chart analysis - **Results of paramed verification after June 1st implementation**

Use of 'p' control chart illustrates a process in control

Sample	Date	Parameds	Verified	%
1	6/10/2004	9561	8711	91.11%
2	6/14/2004	12358	11079	89.65%
3	6/15/2004	336	334	99.40%
4	6/17/2004	1593	1433	89.96%
5	6/18/2004	222	156	70.27%
6	7/13/2004	8576	7674	89.48%
7	7/14/2004	3986	3668	92.02%
8	7/15/2004	385	385	100.00%
9	7/20/2004	1683	1447	85.98%
10	8/16/2004	4314	3895	90.29%
11	8/17/2004	1584	1417	89.46%
12	8/18/2004	9767	8758	89.67%

P Chart Analysis for Paramed Verification after June 1, 2004

3.0SL=0.9096
$\overline{P}$=0.9005
-3.0SL=0.8914
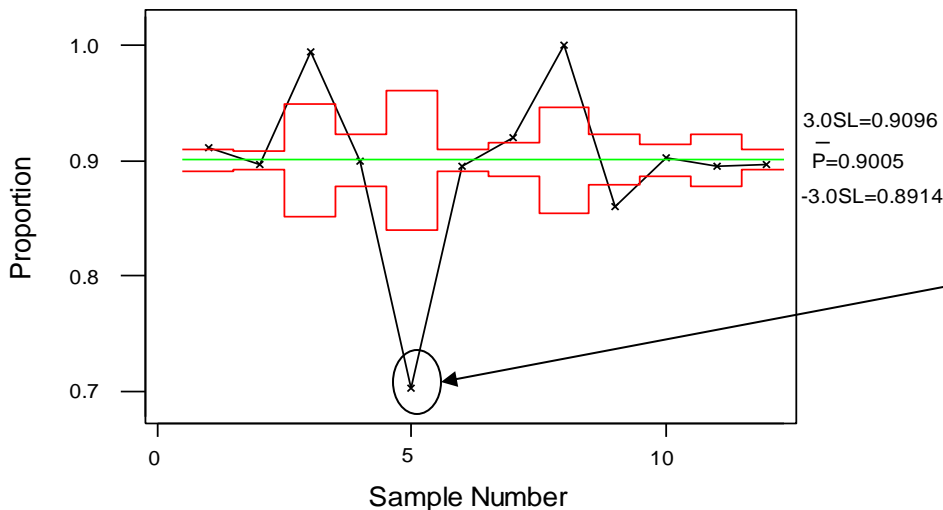
This outlier represents a small sample from Superior Mobile Medics

'p' chart analysis shows a stable verification process

Process tools in place — **Leverage Business Objects reporting capabilities**

INFOVIEW

Delete   Search

Categories: BillValidation   7 available documents This list was last refreshed: Jun 2

My InfoView

Corporate Documents

Personal Documents

Inbox Documents

Scheduled Documents

Create Documents

	Name ▲	From	Date
	Bill Validation Full Detail Report	BillVal	May 13 2004 09:50:03
	Bill Validation Full Detail Report(LTC)	MilleR2	Jun 04 2004 17:17:15
	Bill Validation Non-Paid Detail Report	BillVal	Nov 29 2001 15:24:24
	Bill Validation Summary Report	MilleR2	Nov 29 2001 10:52:26
	Bill Validation Summary Report (LTC)	MilleR2	Jun 04 2004 17:17:15
	Nomenclature Count and Amounts	BillVal	May 07 2004 10:23:07
	Recent Bills	MilleR2	May 18 2004 14:27:01

Reporting tools are available in Business Objects that allow review of both original billing status and the review status (if necessary). Bill analyst will get a comprehensive look at any issues with a particular paramed billing.

Invoice	Last Name	First Name	SSN	DOB	Status	Review_status	Review_date
14154	Barker	Michael	264331605	9/27/1956	HOLD - No Record of Reqmnt Ordered	PAID - No Pending Record	7/15/2004
14154	Bedient	Christopher	508274591	7/29/1978	HOLD - No Record of Reqmnt Ordered	HOLD - No Pending Record	7/15/2004
14154	Bedient	Kama	505020232	3/25/1978	HOLD - No Record of Reqmnt Ordered	HOLD - No Pending Record	7/15/2004
14154	Bennett	Antone	295685936	10/1/1970	HOLD - No Record of Reqmnt Ordered	HOLD - No Pending Record	7/15/2004
14154	Bobo	Camille	428211435	9/23/1970	PAID - No Record of Reqmnt Ordered	PAID - No Pending Record	7/15/2004
14154	Bobo	Roderick	426477896	3/18/1973	PAID - No Record of Reqmnt Ordered	PAID - No Pending Record	7/15/2004
14154	Boling	Terry	402783388	10/13/1952	PAID		
14154	Brand	Brian	427535831	1/19/1972	HOLD - No Record of Reqmnt Ordered	PAID - No Pending Record	7/15/2004
14154	Branscum	Starr	451946766	7/28/1951	PAID - No Record of Reqmnt Ordered	PAID - No Pending Record	7/15/2004

Proper tools supplied to verify paramed receipt

Impact areas for new process

- Other Genworth entities (LTC) now leverage this bill paying process to find discrepancies in their billings
- 30/60 day backward verifications now performed on paramed billings
- Questionable paramed billings can be researched before payment is issued
- Flexible nomenclature-to-worktype mechanism will allow easy portability of implementation to other UW requirement types
- Verification on other requirement types will reap residual benefit because of nomenclature/worktype cross-referencing
- Standardized invoice dating to make sure of consistency in the audit process

Business Transition Logistics

- Business Process Owner: Vickie Campbell
- Associate in charge of process execution: C.J. Revely
- Process technical lead: Rob Miller
- Metrics and Monitoring Ownership: Phil Hamlett
- FMEA in place to address process contingencies

New process and transition plan set up business for success

APPENDIX