



Automated Donor Interviewing: First Results from Replication & Expansion Studies

P D Cumming, Talisman Ltd., Vienna, VA
L M Katz, Mississippi Valley Regional Blood Center, Davenport, IA
E L Wallace, Center for Management Systems, Naples, FL

Baltimore October 2004, AABB Abstract SP163

Supported in part by National Heart Lung & Blood Institute (NHLBI) grants HL61111 & HL072635
Quality Donor System is a trademark of Talisman Limited

Background

- Previously reported results from studies at one Midwestern regional blood center (RBC) on implementation of audio video (finger) touch screen computer assisted donor self interviewing (AVT-CASI) have shown the technology to be superior to face-to-face (FTF) interviewing. Donor and staff satisfaction increased by a minimum of a factor of three and often the preference strength was much greater. Donor satisfaction increased with repeat use. Donor time increased by four minutes but staff time decreased by five minutes. Reportable errors and omissions declined more than 60%. Reporting of socially sensitive and stigmatizing behaviors increased by a factor of nine. Other advantages such as increased ability to manage donor surges were also reported. Studies to replicate and expand these results are in process at four RBCs.

Quality Donor System (QDS)


- Donor self-interview module - Audio Video Touch Screen Computer Assisted Self Interviewing (AVT-CASI)
- Staff review module
- Built exclusively with Web technology
- Legible/auditable paper donor history card
- AABB Uniform Donor History Questionnaire (UDHQ)

Donor Self Interview Screen Sample


Medical History

Question 30A

Were you born in, have you lived in, or have you traveled to any African country since 1977?



Laurie Rogenski, RN



Africa Since 1977?

Back **Yes** **???** **No** **Next**

Staff Review Screen Sample

Donor Name: Daniel A Donor Gender: Male Reviewer Login: admin Questionnaire: UDHQ		▼ -Needs Review ▼✓ -Acceptable After Review by Staff ⚠ -Aberrant After Staff Review		✓ -Answer Acceptable ✗ -Donor Deferred Black-N/A	
✓ Question 1	✓ Question 10D	Question 14C	✓ Question 24		
✓ Question 2	✓ Question 10E	Question 14C1	Question 25		
▼✓ Question 3	✓ Question 10E1	Question 14C2	✓ Question 26A		
⚠ Question 4	✓ Question 11	✓ Question 15A	✓ Question 26B		
✓ Question 4A	✓ Question 11A	✓ Question 15B	✓ Question 27A		
✓ Question 4B	Question 11A1	✓ Question 15C	✓ Question 27B		
✓ Question 4C	Question 11A2	✓ Question 16	✓ Question 28		
✓ Question 5	✓ Question 11B	✓ Question 18	✓ Question 29		
✓ Question 5A	Question 11B1	✓ Question 19	✓ Question 30A		
✓ Question 6	▼✓ Question 12	✓ Question 20A	Question 30B		
✓ Question 7	Question 13	✓ Question 20B	✗ Question 30C		

Methods

- Pre & post AVT-CASI implementation studies at four RBCs use surveys to obtain donor and staff satisfaction measures across seven or more variables, recording of donor and staff time required to complete the processes and data from Blood Establishment Computer Systems (BECSs) on donor truthfulness and retention, as well as staff errors and omissions. The design provides current data from the original RBC that has been using the technology for three years plus two RBCs with one year of experience and one center just implementing AVT-CASI. It includes over sampling to fill in gaps in previous research such as new and mobile donor satisfaction and donor retention and expanded sample sizes. RBC collection volumes range from 30,000 to 160,000 units per annum. The new RBCs are located in Tennessee and Louisiana.

Participating Centers

- Mississippi Valley Regional Blood Center, Davenport IA - - MVRBC
- Lifeline/West Tennessee Regional Blood Center, Jackson, TN - - JTN
- Lifeblood/Mid-South Regional Blood Center, Memphis, TN - - MTN
- LifeShare Blood Centers, Shreveport, LA - - SLA
- Dartmouth-Hitchcock Medical Center, Lebanon, NH - - LNH

Preliminary Results From Expanded/Three Centers QDS Studies - 2004

Percentage Donor Satisfaction Over Time

MVRBC 2001 and 2004* - Preliminary Data

	2001	2004	Diff 2004-2001	Preference Ratio 2004
A. All Donors				
1. Video system understandable & clear?	91.8%	97.1%	5.1%	46.1
2. Privacy?	92.3%	97.3%	4.6%	59.3
3. Truthful?	67.7%	80.6%	13.3%	23.9
4. Time satisfaction?	86.9%	91.1%	4.4%	33.4
5. Own or use PC?	81.4%	84.0%	3.5%	5.2
6. Access to web/Internet	NA	85.7%		6.0
B. Repeat donors with both FTF & QDS				
1. Prefer video(1) or staff(5)	68.3%	77.1%	5.5%	12.3
2. Video more(1) or less(5) understandable?	37.1%	49.0%	11.1%	16.1
3. More likely to donate again?	43.6%	51.9%	7.7%	15.8
4. Used QDS before today?	30.3%	67.6%	38.2%	2.1
Number of surveys completed	1505	889		

* Percentages are of donors who prefer or strongly prefer the given choice (1+2). Ratios are of donors who prefer or strongly prefer the given choice (1+2) to those who favor or strongly favor the opposite choice (4+5). Surveys conducted Fall 2001 and March-May 2004. Preliminary data.

Cross Center Donor Satisfaction

Three Blood Centers 2004* - Preliminary Data

	Percentages			
	MVRBC	MTN	JTN	Aggregated
A. All Donors				
1. Video system understandable & clear?	97.1%	95.6%	97.9%	96.9%
2. Privacy?	97.3%	96.0%	97.0%	96.9%
3. Truthful?	80.6%	80.2%	82.2%	81.0%
4. Time satisfaction?	91.1%	90.8%	91.8%	91.2%
5. Own or use PC?	84.0%	86.1%	85.0%	84.9%
6. Access to web/Internet	85.7%	89.8%	87.1%	87.3%
B. Repeat donors with both FTF & QDS				
1. Prefer video(1) or staff(5)	77.1%	70.8%	70.5%	73.8%
2. Video more(1) or less(5) understandable?	49.0%	48.5%	46.6%	48.3%
3. More likely to donate again?	51.9%	52.4%	48.8%	51.3%
4. Used QDS before today?	67.6%	65.2%	74.3%	68.5%
Number of surveys completed	889	619	680	2188

*Percentages are of donors who prefer or strongly prefer the given choice (1+2). Surveys conducted March-May 2004. Preliminary data.

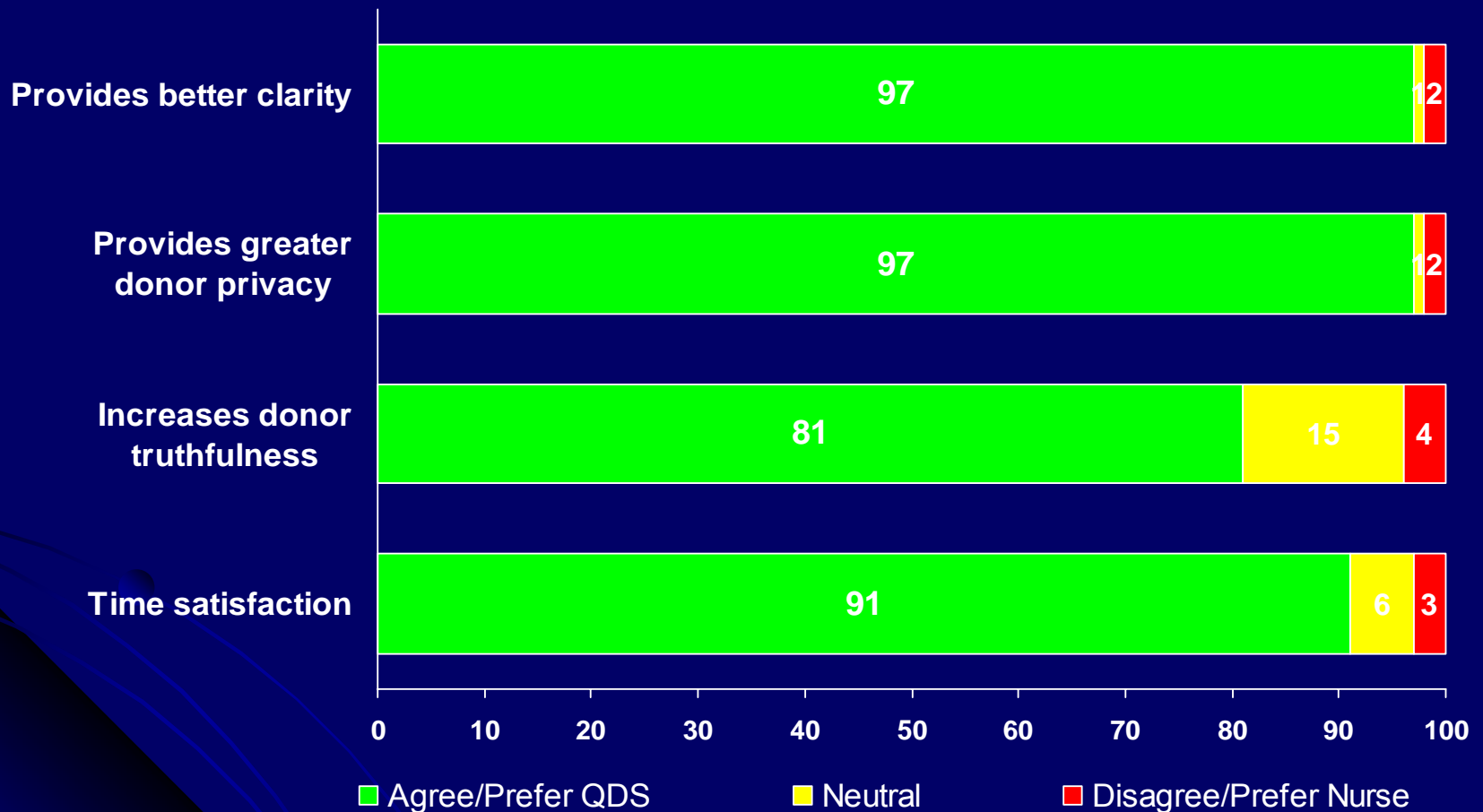
Donor Satisfaction Preference Ratios

Three Blood Centers 2004* - Preliminary Data

	Preference Ratios			
	MVRBC	MTN	JTN	Aggregated
A. All Donors				
1. Video system understandable & clear?	46.1	30.8	73.6	45.2
2. Privacy?	59.3	34.3	72.7	51.7
3. Truthful?	23.9	17.9	16.1	19.1
4. Time satisfaction?	33.4	25.1	41.1	32.3
5. Own or use PC? (Yes/No)	5.2	6.2	5.7	5.6
6. Access to web/Internet (Yes/No)	6.0	8.8	6.8	6.9
B. Repeat donors with both FTF & QDS				
1. Prefer video(1) or staff(5)	12.3	7.5	8.8	9.7
2. Video more(1) or less(5) understandable?	16.1	15.7	10.8	14.4
3. More likely to donate again?	15.8	11.7	14.9	14.2
Number of surveys completed	889	619	680	2188

*Ratios are of donors who prefer or strongly prefer the given choice (1+2) to those who favor or strongly favor the opposite choice (4+5)..
Surveys conducted March-May 2004. Preliminary data.

All Donors Satisfaction Percentages Three Blood Centers* March-May 2004 (N=2,188)

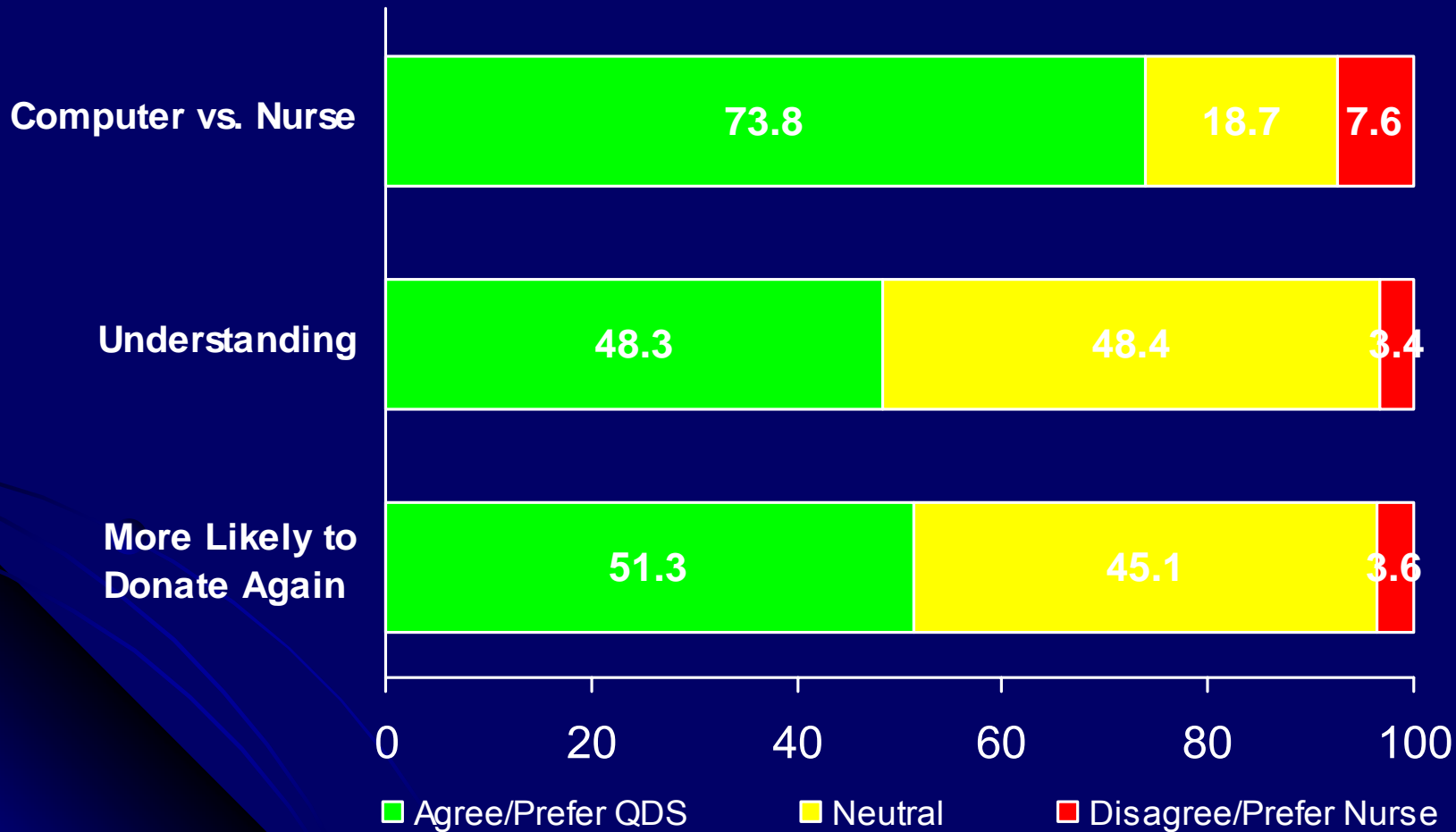


*Preliminary data

Repeat Donor Satisfaction Percentages

Three Blood Centers*

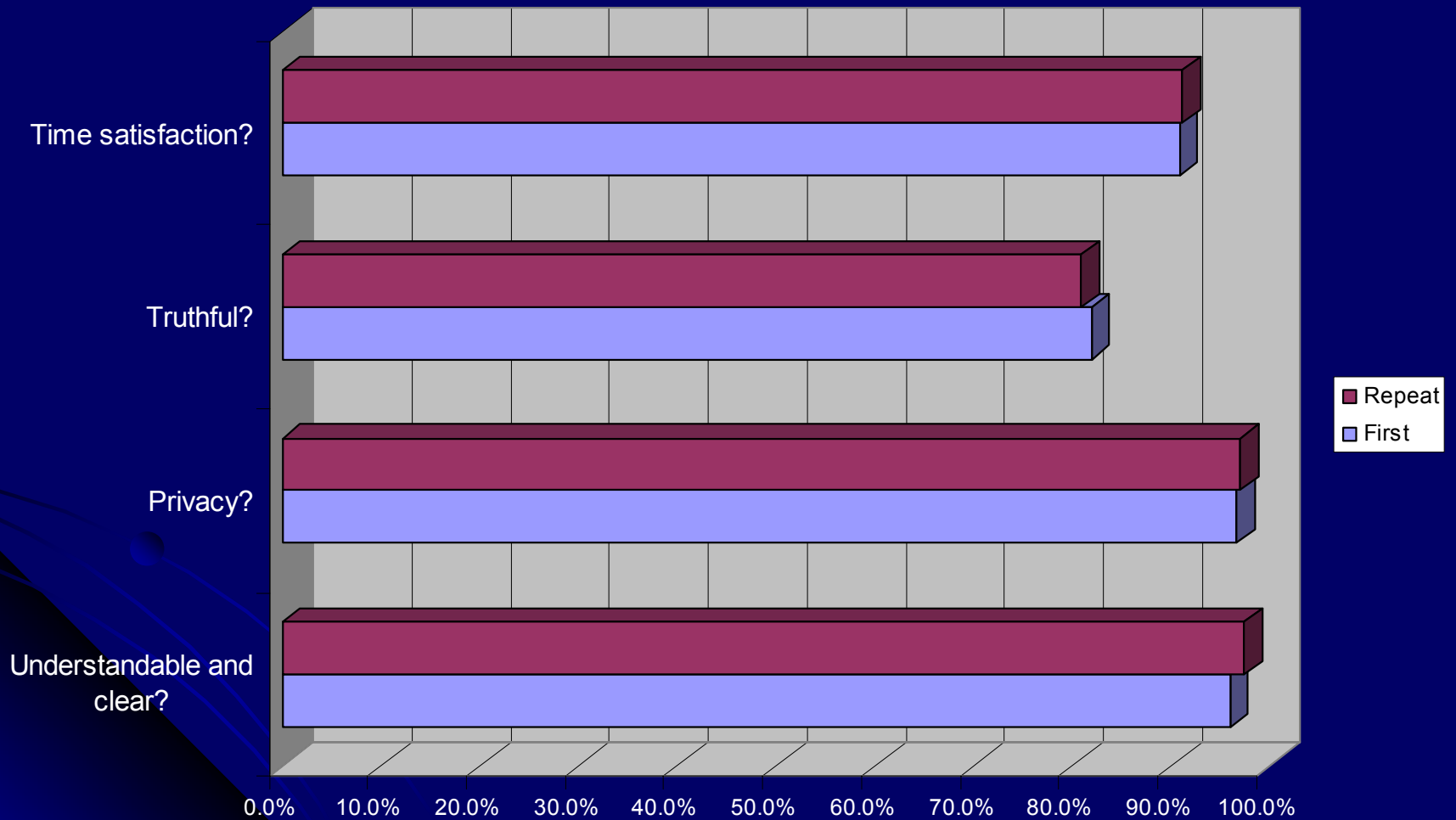
March-May 2004 (N=2,188)



*Preliminary data

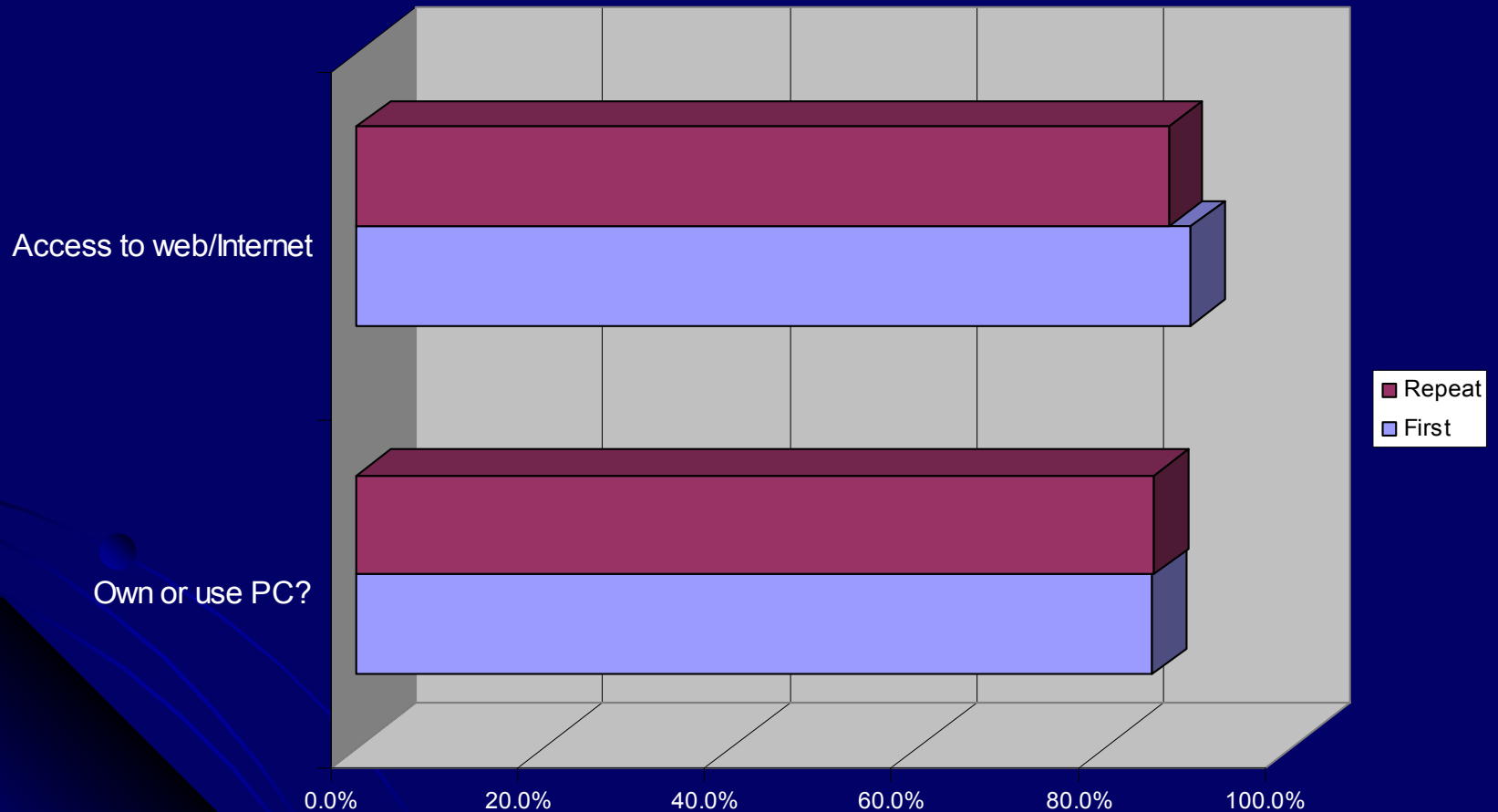
First Time vs. Repeat Donor QDS Satisfaction

Three Blood Centers (March-May 2004)*



*Preliminary data

First Time vs. Repeat Access to Internet and PC Own/Use Three Blood Centers (March-May 2004)*



*Preliminary data

Staff Satisfaction Percentages

Three Blood Centers 2004* - Preliminary Data

	Percentages			
	MVRBC	MTN	JTN	Aggregated
Is QDS faster for staff?	63.5%	70.0%	59.4%	65.0%
Is QDS faster for donors?	61.9%	46.7%	31.3%	51.1%
Are donors more honest with QDS?	58.3%	66.7%	68.8%	63.1%
Are donors more accurate with QDS?	42.4%	58.3%	53.1%	49.7%
Are donors more satisfied with confidentiality with QDS?	87.1%	76.3%	81.3%	82.4%
Are there fewer FDA errors with QDS?	57.1%	79.7%	65.6%	66.3%
Are total RBC costs less with QDS?	46.9%	46.4%	40.0%	45.5%
Are staff more satisfied with QDS?	70.2%	81.7%	83.9%	76.6%
Are you personally more satisfied with QDS?	62.4%	78.3%	84.4%	71.8%
Number of surveys completed	85	60	32	177

* Percentage of staff who prefer or strongly prefer QDS. (1+2)

•Percentages are of donors who prefer or strongly prefer the given choice (1+2). Surveys conducted March-May 2004. Preliminary data.

Staff Satisfaction Preference Ratios

Three Blood Centers 2004* - Preliminary Data

	Preference Ratios			
	<u>MVRBC</u>	<u>MTN</u>	<u>JTN</u>	<u>Aggregated</u>
Is QDS faster for staff?	2.5	3.0	1.6	2.4
Is QDS faster for donors?	1.9	1.2	0.8	1.4
Are donors more honest with QDS?	4.5	8.0	4.4	5.3
Are donors more accurate with QDS?	1.4	3.9	2.8	2.2
Are donors more satisfied with confidentiality with QDS?	24.7	15.0	26.0	20.7
Are there fewer FDA errors with QDS?	3.0	15.7	10.5	5.5
Are total RBC costs less with QDS?	1.5	1.4	1.1	1.4
Are staff more satisfied with QDS?	3.9	5.4	8.7	5.0
Are you personally more satisfied with QDS?	3.1	4.7	9.0	4.2
Number of surveys completed	85	60	32	177

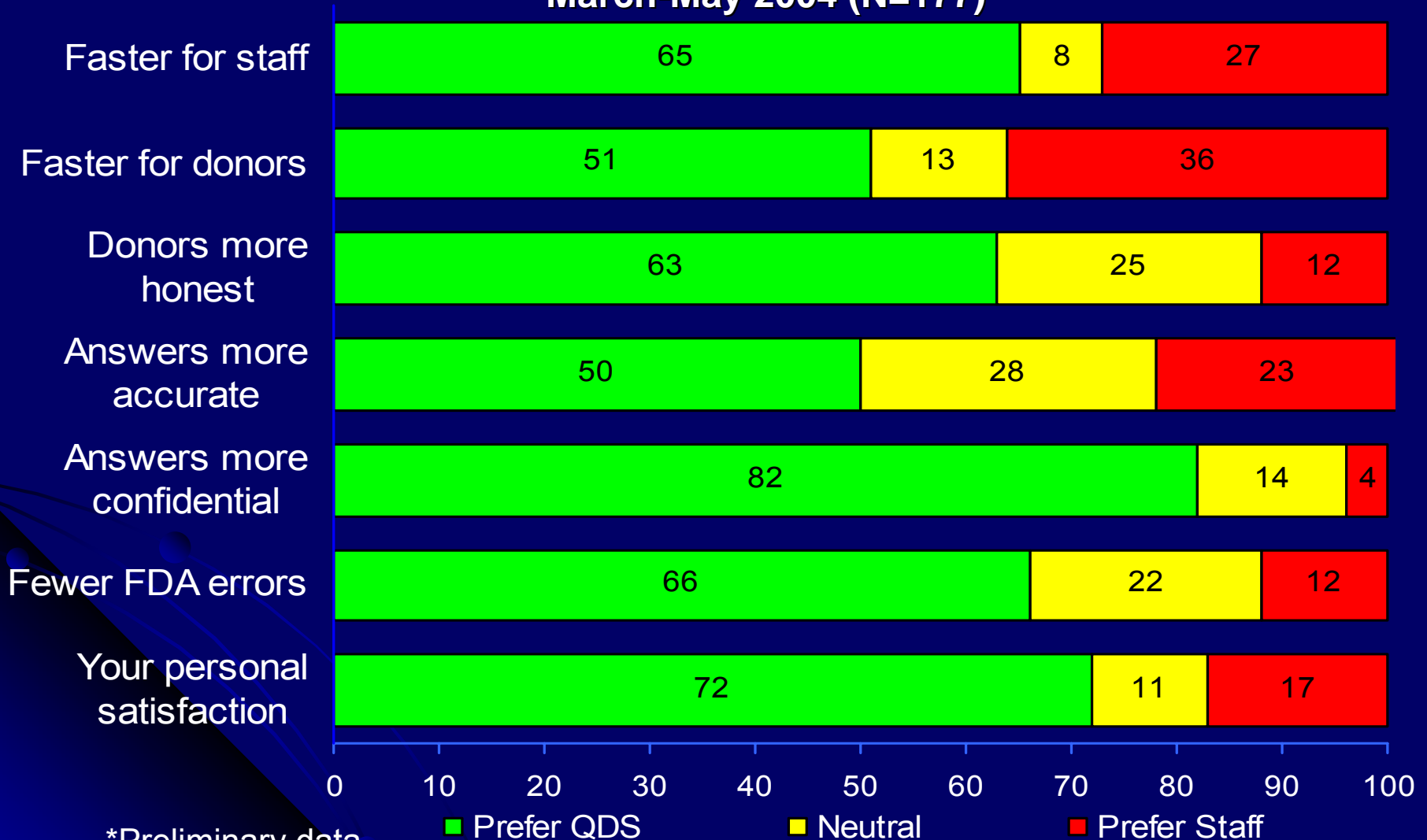
* Percentage of staff who prefer or strongly prefer QDS. (1+2)

•Percentages are of donors who prefer or strongly prefer the given choice (1+2). Surveys conducted March-May 2004. Preliminary data.

Staff Satisfaction Percentages

Three Blood Centers*

March-May 2004 (N=177)



*Preliminary data

10/24/2004

© 2004 Talisman

18

Replicate Error Reduction Study

Preliminary Data 10/22/04

Staff error reduction studies have been completed at all four fixed and mobile collection operations of JTN (30,000 units/year).

- In the year prior to QDS installation 170 whole blood units were either withheld from distribution, quarantined or discarded as a result of staff errors in donor processing
- Following QDS implementation only 58 units were so treated
- This is a 66% reduction in the error rate, 5% percentage points and 8% better than achieved at MVRBC.

See also abstract AP22, Implementation of an Audio Visual Touch Screen Computer Assisted Self Interview System, J D Leibold, N Watlington, M Mullikin, West Tennessee Regional Blood Center, Jackson, TN

Post Donation Information Reports

Preliminary Data 10/22/04

- Interestingly at JTN, annual total Post Donation Information (PDI) reports to the FDA actually increased following QDS implementation from 11 pre-QDS to 38 post-QDS, a 245% increase due largely to donors recalling post donation such past actions as travel in vCJD areas, travel that should have been reported during pre-QDS interviews.
- Staff attribute the increase to improved donor memory recall occasioned by the visual images used (only) in QDS interviews.

INSERT

TIME STUDY

Summary – QDS Preliminary 2004

- Donor Satisfaction increases with time & repeat usage
- Donor & staff satisfaction varies across three RBCs but is generally very strong
- First time & repeat donor satisfaction is near equally strong
- Donors have ready access to PCs & the Internet
- Error reduction at the 2nd RBS was \geq 1st (61%)
- PDI reports may increase with QDS implementation due to enhanced memory recall of prior donations
- 3 RBC time studies show donor time is stable but comparative review time varies by pre-QDS method

Conclusion

- While none of the recent studies definitively demonstrate the superiority of QDS, they add weight to the contention that audio-video computer assisted donor self interviewing, as embodied in the QDS system, is an effective means of improving blood safety and blood center management efficiency.

- - - - -
Published QDS studies:

Zuck TF, Cumming PD, Wallace EL, “Computer-assisted audiovisual self-interviewing, Results of the pilot study of the Hoxworth Quality Donor System,” Transfusion 2001;41:1469-1474.

Katz LM, Cumming PD, Wallace EL, Abrams PS. Audio-visual touch-screen computer assisted self-interviewing for donor health histories: Results from two years experience with the system. (Accepted for publication in Transfusion, January 2005.)

For Additional Information
Call
Paul D. Cumming, PhD @
703-283-3992 – Cell
703-938-0300 - Office
Or Email to
pc@talmed.com
Or Visit the Talisman TXPO
Booth # 751

INSERT

Donor Satisfaction Survey Form

INSERT

Staff Satisfaction Survey Form