NPD Cost Calculation Worksheet*

WORKSHEET			SAMPLE DATA
PROTECTIVE SYSTEM			**Protective blood collection tube holder**
NPD (supplier/trade name)			XYZ Medical Pro Hold
A. Price per device	A=	$	A= $4.00
B. Uses per year	B=		B= 130,000
C. Uses per device	C=		C= 300
D. Quantity used per year (B ÷ C)	D=		D= 433
E. NPD cost per year (A × D)	E=	$	E= $ 1,732
Additional component			XYZ Medical ProHold Companion 1 Qt Sharps Container
F. Price per device	F=	$	F= $3.50
G. Uses per year	G=		G= Dispose of 130,000 needles
H. Uses per device	H=		H= NA (see next entry)
I. Quantity used per year (G ÷ H)	I=		I= 32**
J. Additional component cost per year (F × I)	J=	$	J= $112
K. Annual protective system cost (E ÷ J)	K=	$	K= $1,844
CONVENTIONAL SYSTEM			**Blood collection tube holder**
Conventional device			XYZ Medical Tube Holder
L.. Price per device	L=	$	L= $0.15
M. Uses per year	M=		M= 130,000
N. Uses per device	N=		N= 300
O. Quantity used per year (M ÷ N)	O=		O= 433
P. Conventional device cost per year (L × O)	P=	$	P= $65
Additional component			**Conventional 1qt sharps container**
Q. Price per device	Q=	$	Q= $2.13
R. Uses per year	R=		R= Dispose of 130,000 needles
S. Uses per device	S=		S= NA (see next entry)
T. Quantity used per year (® ÷ S)	T=		T= 32**
U. Additional component cost per year (Q × T)	U=	$	U= $68.16
V. Annual conventional system cost (P + U)	V=	$	V= $133.16
RELATED DISPOSAL COSTS			
Additional sharps containers			
W. Disposal volume of each NPD	W=		W= 14 cm³ (tube holder only)
X. Disposal volume of each conventional device	X=		X= 12 cm³ (tube holder only)
Y. Sharps container volume	Y=		Y= 1 qt (˜943cm³)
Z. Number of additional sharps containers per year ([{W ×			Z= 1 (assumes 100% packing efficiency)
AA. Price per sharps container	AA=	$	AA= $3.50
AB. Annual additional sharps containers cost (Z ×AA)	AB=	$	AB= $3.50
AC. Other additional disposal costs	AC=	$	AC= None
AD. Total annual increase in disposal costs (AB + AC)	AD=	$	AD= $3.50
NSI COST			
AE. Number of NSIs per year with conventional device	AE=		AE= 6
AF. Projected NSIs per year with NPD (50% × AE)	AF=		AF= 3
AG. Cost of each NSI	AG=	$	AG= $540
AH. Annual NSI cost savings (AG × [AE - AF])	AH=	$	AH= $1,620
AI. MISCELLANEOUS COSTS	AI=	$	AI= None
AJ. NET PROTECTIVE SYSTEM COSTS (K+AD+AI -AH)	AJ=	$	AJ= $227.50
AK. ANNUAL INCREASE IN EXPENDITURES (AJ - V)	AK=	$	**Annual increase in expenditures:** $94.34

*The figures obtained by completing this worksheet should be used for comparison purposes only. These figures will not reflect the actual costs and cost savings- associated with implementing the alternative under consideration, and they cannot reflect the true value of using an NPD in terms of staff safety and the economic impact on NSIs that result in seroconversion.

**Calculated by multiplying the estimated volume of one needle (0.23 cm³) by the number of needles per year (130,000) and then dividing by the volume of one sharps container (1 qt = 943 cm³). Note that this analysis assume 100% packing efficiency.