



# MUSC1702

DYfZcfa UbVW '@JVc fUhc fm%'f5 Xj UbVWXt

GYa YghYf'C bY''##'&\$%

GWcc``cZHAY'5ftg'UbXA YXJU''##'1 BGK ``5ftg'UbX'GcWJU``GWYbWg





GWYbWg: \hdg.## k k "Ufng"i bgk "YXi "Ui #W ffYbhghi XYbng#UWUXYa JW]bZcfa Uhcb#dfcfcWc`gl[i ]XY]bYg#

5 UWXYa JW]bZcfa Uhcb`

: cfYggYbhU`ghi XYbh]bZcfa Uhcb`fY`Uh]b[ `hc. `fYei Yghg`Zcf`YI hYbg]cb/fYj ]Yk `cZa Uf\_g/cVW dUhcbU` \YU`h  
UbX`gUZym/YI Ua ]bUhcb`dfcW`Xi fYg/gdYW]U`Wc]bg]XYfUhcb`]b`hY`Yj YbhcZ]`bYgg`cf`a ]gUXj Ybhi fY/  
ghi XYbhYei ]hmUbX`X]gUV]`]hm`UbX`ch`Yf`YggYbh]U`UWXYa JW]bZcfa Uhcbz  
gYY: \hdg.## k k "Ufng"i bgk "YXi "Ui #W ffYbhghi XYbng#UWUXYa JW]bZcfa Uhcb#dfcfcWc`gl[i ]XY]bYg#

7 ci fgY'8YHJ]`g

7 fYX]hDc]bng '\*`

Gi a a UfmicZ\h\Y'7 ci fgY

Gi V\YWh5fYU.'? ge[U

DYfZcfa UbW'@UVcfUhcfm%f5Xj UbW'XL'XYj Y'cdg'g\_]`g]b'gc`c'UbX'YbgYa V'Y'dYfZcfa UbW'cf'Wta dcg]hcb  
h'fci [\`dUfh]W]dUhc]b']b'YbgYa V'Yfg'z'WcbW'fng'za Ugh'fWUggYg'UbX'k cf\_g\cdg"'\Y'Wci fgY']bWi XYg  
]bX]j ]Xi U'']bgfi W]cb']b'U'j cW'cf']bgfi a YbU'gdYW]U'gUhc]b'cf'Wta dcg]hcb'Ug'k Y''Ug'dUfh]W]dUhc]b']b  
gY'ZgY'YW'X'j cW'UbX'#f']bgfi a YbU'YbgYa V'Yg"5hYbXUbW'UbX'dUfh]W]dUhc]b']b'DYfZcfa UbW  
K cf\_g\cd'UbX'DYfZcfa UbW'GYa ]bUf'Z'U'Zcfi a 'h'Uhd'fcj ]XYg'U'd'Uh'Zcfa 'Zcf'cdYb'dYfZcfa UbW'g'UbX'dYYf  
W]h]W]ga ž'Ufy'U'gc'Wci fgY'fYei ]fYa Ybng"

5h\h\Y'WcbWi g]cb'cZ'h]g'Wci fgY'h\Y'ghi XYbhk ]``VY'UV'Y'hc

%"

## 5ggYgga Ybh

Mci 'a i ghVY'fY[ ]ghYfYX'jb'U'I BGK 'YbgYa V'Y'"5'gcZ'mci 'a i ghfY[ ]ghYf'mci f'Uddfcj YX'gdYWU'gh  
 ]bghf a YbhU'cf'j cWU'hi hcf'k ]h'h'Y'G5A 'cZ]W'fK YVghYf'@Yj Y'" ŁVmk YY\_'%'F Y[ ]ghYf'mci f'dfUW]WU'  
 YI Ua ]bU]cb'dfc[ fUa 'cb'h'Y'DYfZcfa UbW'@UV'DcftU'VmK YY\_)"

D'YUgY'bc'h'U'U'U'U'gYgga YbhUg\_g'k ]'VY'X]gW'ggYX'jb'h'Y'Z]fgh'Y'W'fY'"': cf'U'U'g]ba YbhgZ'h'Y  
 <Ufj UfX'cf'5D5'fYZ'fYbW]b[ 'gmghYa 'g'łci 'X'VY'i gYX'"D'YUgY'fYZ'f'hc'I BGK 'fYZ'fYbW]b[ '[ i ]XY'cb']bY'Zcf  
 XYH]g'"

## 5ggYgga YbhUg\_g'

5ggYgga YbhUg_g'	K Y][ \h	8i Y'8UH'	Gh XYbh@YUfb]b[ Ci hW'a Yg'5ggYggYX
DfUW]WU'YI Ua ]bU]cb'	) \$i	Bch5dd']WUVY	%&
DYfZcfa UbW'W']h'ei Yg'	%) i	Bch5dd']WUVY	(
DYfZcfa UbW'k cf_g'łcd XYa cbghfU]cb'	%) i	Bch5dd']WUVY	%ž(
9bgYa V'Y'W'cbf]Vi h]cbž dYfZcfa UbW'gž'dUfh'W'Y'W]b[ h'Y'gh	&\$i	Bch5dd']WUVY	&ž

## 5ggYgga Ybh8YH]g'

5ggYgga Ybh%'DfUW]WU'YI Ua ]bU]cb

GhUfhXUH'.

@Yb[ h. 'bi ''

8YH]g'. 'H\]g'hUg\_]g'h'Y'W'a ]bU]cb'cZk cf\_]b'h]g'W'ei fgY'UbX'f'Y'ei ]fYg'h'Y'dYfZcfa UbW'cZU'gc'c  
 dfUW]WU'YI Ua ]bU]cb'cZ&\$'a ]bi h'Y'g'Xi fU]cb'"H\]g\_]g'h'Y'Z]bU'U'gYgga YbhUg\_'K f]h'Y'b'fYdcf'hc'b'dfUW]WU'  
 YI Ua "

5XX]h]cbU'XYH]g'.

DfUW]WU'YI Ua ]bU]cb'g'k ]'VY'\Y'X'Xi f]b[ 'K YY\_'%) 'fH67Ł'"H\Y'YI Ua ]bU]cb'dfc[ fUa a Y'g'łci 'X'VY  
 VY'hk YYb'%) 'UbX'&\$'a ]bi h'Y'g'Xi fU]cb'">Unn'gh XYbh'g'łci 'X'Z'ck 'h'Y'Unn'gm'UVi g'"5'"'ch'Y'f'gh XYbhg  
 g'łci 'X']bW'XY'h'W'X'b]WU'k cf\_'cZWU') 'a ]bi h'Y'g'! Z'ca ]bghf a YbhU'gh'U'gh Xnž'UbX'Z'ca 'g]b[ Yfg'U  
 j cWU]gY'"5b'YI dfYgg]Y'UbX'h'W'X'b]WU'fUb[ Y'g'łci 'X'VY'Yj ]XYbh]b'h'Y'dfc[ fUa a Y'c'h'Y'fk ]gY'h'Y'fY'UfY'bc  
 a UbXU'cf'mid]YW'g'"H\Y'dfc[ fUa a Y'a i ghVY'X]gW'ggYX'k ]h'mci f'h'U'W'Y'f'UbX'g'gi V'Y'W'hc'h'Y'Uddfcj U'  
 cZ'h'Y'W'ei fgY'W'cbj Ybcf'"Mci 'g'łci 'X'fY[ ]ghYf'mci f'dfc'c'gYX'dfc[ fUa a Y'Zcf'Uddfcj U'ž'h'fci [ \ 'h'Y  
 DYfZcfa UbW'@UV'cb']bY']bh'fZ]W'ž'VmK YY\_)" "H\Y'YI Ua ]bU]cb'k ]'U'gc']bW'XY'U'g'łc'f'ig][ \ 'h'Y'UX]b[  
 h'Y'gh'

K cf\_g'h'U'h'U]j Y'VYYb'dYfZcfa YX'Ug'dUfh'cZ'h'Y']b]WUgg'XYa cbghfU]cb'g#dfYgYbhU]cb'g'a UmVY'dfYgYbh'Y'X

U[ U]b`]b`dYfZcfa UbW`YI Ua ]bUhcgbgZ`Vi hk cf\_g`dYfYbH`X`]b`h`]g`gYa YghYf`dYfUW`W`YI Ua ]bUhcgbg`a Um bchVY`]bW`i`XYX`]b`Z`h`i`fY`YI Ua ]bUhcgbg"

5h`h`Y`h`a`Y`c`Z`m`i`f`d`f`U`W`W`YI Ua ]bUhcgbz`m`i`a`i`ghd`f`c`j`]X`Y`h`Y`YI Ua ]bYf`k`]h`g`W`c`f`Y`g`c`Z`h`Y`a`i`g`]W`m`i`U`f`Y`d`f`Y`g`Y`b`h`b`["`>`U`n`n`d`U`m`Y`f`g`g`l`c`i`X`d`f`c`j`]X`Y`W`l`c`f`X`W`l`U`f`h`g`U`g`U`d`d`f`c`d`f`]U`h`Y`"

Gi Va ]gg]cb`bchYg.bi ``

5ggYgga Ybh&. `DYfZcfa UbW`W`h]ei Yg

GhUfhXUHY.`

@Yb[ h.`bi ``

8YHJ`g.`Dcgh`h`f`Y`Y`W`h]ei Yg`c`b`]b`Y`V`m`h`Y`X`U`m`g`d`Y`W`Z`Y`X`Z`c`k`]b`[`h`Y`d`Y`f`Z`c`f`a`U`b`W`h`c`k`l`W`l`]h`f`Y`U`h`Y`g`" `)`\$!(`\$\$`k`c`f`X`g`d`Y`f`W`h]ei Y`"H`Y`U`W`Y`f`f`Y`g`d`c`b`X`g`h`f`c`i`[`l`U`V`c`[`c`b`h`f`Y`Y`c`W`W`U`g]c`b`g`"

5XX]h]cbU`XYHJ]g.

M`c`i`k`]`W`c`b`h`f`]V`i`h`Y`h`f`Y`Y`W`h]ei Yg`c`Z`d`Y`f`Z`c`f`a`U`b`W`g`U`b`X`#`f`W`c`a`a`Y`b`h`g`c`b`d`Y`f`Z`c`f`a`U`b`W`!`f`Y`U`h`Y`X`]g`g`i`Y`g`j`]U`U`b`c`b`]b`Y`Z`c`f`i`a`"M`c`i`k`]`W`l`c`c`g`Y`h`f`Y`Y`c`i`h`c`Z`Z`j`Y`W`l`c`]W`g`Z`c`f`d`c`g`h`g`":`i`"X`Y`H`J`]g`c`Z`h`Y`f`Y`e`i`]f`Y`a`Y`b`h`g`Z`c`f`Y`U`W`d`c`g`h`k`]`V`Y`U`j`U`]U`V`Y`c`b`A`c`c`X`Y`c`b`Y`W`h`f`Y`#`U`g`h`Y`f`W`U`g`g`X`U`m`g`"D`c`g`h`m`c`i`f`W`c`a`a`Y`b`h`g`]b`h`Y`k`Y`Y`\_`Z`c`k`]b`[`Y`U`W`Y`W`h`f`Y`#`U`g`h`Y`f`W`U`g`g`"

Gi Va ]gg]cb`bchYg.bi ``

Hi fb]h]b`g`Y`h]b[.`h`h`]g`]g`b`c`h`U`H`i`f`b]h]b`U`g`g][`b`a`Y`b`h`

Gi Va ]gg]cb`bchYg.H\Y`]g`Ub`]b!WUgg`dfYgYbHh]cb`k ]h`Ub`UXX]h]cbU`Z`Y`hc`VY`i`d`cUXYX`hc`A`ccX`Y`

Hi fb]h]b`gYH]b[ .`H\]g`]g`bchU`Hi fb]h]b`Ugg][`ba`Ybh`

5ggYgga`Ybh(`.`9bgYa`V`Y`W`bhf]Vi`h]cb`z`d`YfZcfa`Ub`W`g`z`d`Ufh`W`Y`W\_]b[`h`Y`gh`

GHUfhXUHY.`

8YHJ]`g.`8]fY`W`h`Z`Y`X`V`U`W`\_`X`i`f]b[`f`Y`\`Y`U`f`g`U`g`U`b`X`k`c`f`\_`g`\`c`d`g`U`b`X`U`Z`c`f`a`U`f`Y`d`c`f`h`U`h`h`Y`W`b`W`i`g]c`b`c`Z`h`Y`g`Y`g`g]c`b`"G`h`X`Y`b`h`g`f`W`b`h`f]Vi`h]cb`hc`Y`bgYa`V`Y`d`Y`f`Z`c`f`a`Ub`W`g`U`b`X`k`c`f`\_`g`\`c`d`g`k`]"`V`Y`U`g`g`Y`g`g`Y`X`h`f`c`i`[`\`U`d`U`f`h`W`Y`W\_]b[`Y`i`U`a`]b`U`h]cb`"

5XX]h]cbU`XYHJ]`g.`

9bgYa`V`Y`k`c`f`\_`k`]"`V`Y`U`g`g`Y`g`g`Y`X`h`f`c`i`[`\`U`"d`U`f`h`W`Y`W\_]b[`"Y`i`Y`f`W]g`Y`z`b`c`f`a`U`m]b`k`Y`Y`\_%`"

Gi Va ]gg]cb'cZ5ggYgga YbhHUg\_g

Gh XYbng'UfY'YI dYwX'hc'di h'ly]f'bUa Yg'UbX'gh XYbhbi a VYfg'cb'Yj YfmdU[ Y'cZ'ly]f'Ugg][ ba Ybng"

Hi fb]h]b'Gi Va ]gg]cb

zmcI 'YbWci bHYf'U'dfcV'Ya 'k \Yb'U'HYa dh]b[ 'hc'gi Va ]hmcI f'Ugg][ ba Ybh'k'fci [ \ 'Hi fb]h]b'z'd'YUgY  
HY'Yd\cbY'9I HYfbU'Gi ddcfh'cb'-' , ) ' ' ' %cf'Ya U] 'k'Ya 'cb' [YI HYfbU'HY'ngi ddcfh' i bgk "YXi "Ui."](#) Gi ddcfh  
\ci fg'UfY' , . \$\$Ua '-' %\$. \$\$da 'cb'k YY\_XUmg'UbX'-. \$\$Ua '-') . \$\$da 'cb'k YY\_YbXg'f1 \*) 'XUmg'U'mYUfL' zmcI  
UfY'i bUV'Y'hc'gi Va ]hmcI f'Ugg][ ba YbhXi Y'hc'U'ZU' 'hk ]k'Hi fb]h]b'mcI 'a UmiUdd'm'Zcf'Ub'YI HYbg]cb'z'Vi hmcI  
a i ghfY'U]b'mcI f'h]W\_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfh'fU'cb[ 'k ]k'Ubmc'h'Yf'fY'Yj UbhXcW a Yb'ng'k'hc  
]bW' XY'Ug'Yj ]XYbW'hc'gi ddcfh'mcI f'YI HYbg]cb'Udd' ]W]h]cb" zmcI 'Ya U]'9I HYfbU'Gi ddcfh'mcI 'k ]`  
Ui 'ca U]W]m'fYW]j Y'U'h]W\_Yhbi a VYf'z'Vi h]zmcI 'HY'Yd\cbY'mcI 'k ]`b'YX'hc'gdYW]W]m'Ug\_'Zcf'cbY"



f`G][ b]Z]W]b]h]m]U]Z]Y]W]h]m]c]i] f]d]Y]f]Z]c]f]a] U]b]W]Y] ]b]U]g]g]Y]g]g]U]V]`Y]`k] c]f]\_]Z]V]Y]`]h]U]`Z]c]f]a] U]`Y]b]X]!]c]Z]g]Y]a] Y]g]h]Y]f]`Y]I] U]a] ]b]U]h]c]b]Z]U] W]U]g]g]`h]Y]g]h]Z]U]`U]V]c]f]U]h]c]f]m]h]Y]g]h]Z]U]`g]Y]a] ]b]U]f]d]f]Y]g]Y]b]h]U]h]c]b]`c]f]U]b]m]c]h]Y]f]`Z]c]f]a] `c]Z]U]g]g]Y]g]g]a] Y]b]h]

: c]f]`Z] f]h]Y]f]`X]Y]h]U]`g]`]b]`f]Y]`U]h]c]b]`h]c]`G]d]Y]W]U]`7]c]b]g]X]Y]f]U]h]c]b]`]b]W]i] X]b] [ ``K] \]Y]b]`h]c]`5]d]d]`m]Z]``<]c]k]`h]c]`5]d]d]`m]`U]b]X] ``G]i] d]d]c]f]h]b] [ `]8]c]W] a] Y]b]h]U]h]c]b]``d]`Y]U]g]Y]`f]Y]Z]f]`h]c]`h]Y]`G]d]Y]W]U]`7]c]b]g]X]Y]f]U]h]c]b]`k] Y]V]g]h]Y]`.`

[\\]h\]d\]g.\]#\]g\]h\] X\]Y\]b\]h\]i\] b\]g\]k\] "Y\]X\]i\] "U\]i\] #\]g\]d\]Y\]W\]U\]!\]W\]c\]b\]g\]X\]Y\]f\]U\]h\]c\]b\]](#)

## 5 WUXYa ]W<c bYghmiUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i g]b[ `h`Y`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[ `h`Ya `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm  
Zcfa gž Zca `XY`]VYfUHy`WXYUh]b[ `h`UWV]XYbU`mW`dm]b[ `Zca `U`gci fW`k ]h`ci hUW\_bck`YX[ Ya Ybh`

I BGK `[ fci dg`d`U[ ]Uf]ga `]b`h`Y`Zc`ck ]b[ `WUHy[ cf]Yg.

7cdm]b[ .`i`g]b[ `h`Y`gUa Y`cf`j Yfmg]a ]Uf`k cfXg`h`h`Y`cf][ ]bU`hYI hcf]XYU`k ]h`ci hUW\_bck`YX[ ]b[ `h`Y  
gci fW`cf`i`g]b[ `ei`chU]cb`a Uf\_g`H\]g`U`gc`Udd`Yg`h`ja U[ YgžUfhUbX`XYg][ b`dfc`YWgžUg`k Y`Ug  
dfYgYbU]h]cbg`k \Yfy`gca YcbY`dfYgYbh]g`UbchYf`g:]XYUg`cf`k cfXg`k ]h`ci hWYX]h[ cf]Yg.

- VYhYf'a UbU[ Y'mci f'h]a Y
  - i bXYfgHUbX'mci f'f][ \hg'UbX'fYgdcbg]V']hYg'Ug'U'gh XYbhUhl BGK
  - VY'Uk UfY'cZd'U[ ]Uf]ga ž'Vc'dmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'l gY'cZ  
I BGK '⇒H'F Ygci fWg'Dc`]Wñ
-



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

DfYgWf]VYX`F Ygci fWg

F ]b\_ž>"žYX""&\$\$&"? ge[US^bWad\_ S` UW`S Yg[VWfa g` VWdS` V[ Yž 7 Ua Vf]X[ Y. 7 Ua Vf]X[ Y`I b]j Yfg]hm DfYgg"

F YWca a YbXYX`F Ygci fWg

D`YUgY`bch`h`Y`I` BGK` @]VfUfmk YVg]fY. [\hd.#bz"\]VfUfmi bgk "YXi "Ui # YV#gYfj \]Wg#gYfj \]Wg"\ha`](#)

6cc\_g

7cc\_YžA "/`8"<cfb"&\$\$' "'FZW5S\_ TdVYWUa\_ bS` [a` fa` \SI I ž` 7 Ua Vf]X[ Y. 7 Ua Vf]X[ Y`I b]j Yfg]hm DfYgg"

;`mbžA UW8cbU`X""%` - , "FZWUa\_ bWV[gefSfW Yg[VWfa 3`Wj S` VWdWUZ` [cgVžG\UZfYgVi fr` 8cfgYh 9`Ya Ybh`

;`fYybž6"/`H"; U`k Ym`%` , \*"'FZW[` WdYS\_ WaX\_ ge[UžBYk` Mcf\_` 8ci VYXUm

<YfVYfž`H"/`>`K U`UW""%` - +"'FZW5S\_ TdVYWUa\_ bS` [a` fa` TdSee [` efg\_` W fež 7 Ua Vf]X[ YžBYk` Mcf\_` 7 Ua Vf]X[ Y`I b]j Yfg]hmDfYgg"

@Uk gcbž7"/`F`"Ghck Y""&\$\$&"FZW5S\_ TdVYWZ[efack aX\_ ge[US^bWad\_ S` UW` 7 Ua Vf]X[ Y. 7 Ua Vf]X[ Y`I b]j Yfg]hmDfYgg"

DchYfž>"&\$\$\$"FZW5S\_ TdVYWUa\_ bS` [a` fa` e[ Y[ Yž 7 Ua Vf]X[ Y. 7 Ua Vf]X[ Y`I b]j Yfg]hmDfYgg"

K YgfbYnžK ""&\$\$' "'FZWbWdWUfi da` Y` afWž

↳ Zcfa Uh]cb'UVci hd\mg]WU'UbX'Yf[ cbca ]WUgdYWg'cZdYfZcfa UbW' di V'g\YX'VmH'Y'G]VY'ji g'5WXYa nř  
: ]b'UbX

[\hrd.##k k k &"g\]VU"Z#Uf'c\]hY'i #bXYI "d\d3\]X1& `U1Yb](#)

↳ gHfi W]cbU'j ]XYcg'UVci hH'Y'HUi Va Ub'UddfcUW'hc'd]Ubc'hY'Wb]ei Y'Uh

[\hrdg.##k k k "mci hi VY"Vca # gYf#HUi Va Ub: c'UbXg\\_m](#)

.....6f]hg\`5ggcW]Uh]cb'cZDYfZcfa ]b[ `5frg'A YX]W]bY'g]H'žYgdYW]U`m]bZcfa Uh]cb'Zc'f'g]b[ Yfgž  
[ i ]Uf]gH'gž`[\hrd.##k k k "VUdUa "cf\["i](#)

.....6Uffm; fYYbžA UghYfmcZA i g]W]W]dg`[\hrdg.##k k k "mci hi VY"Vca # UH\]3j.1\\*K\\_bm : \[ B b5](#)

7ci fgY'9j U'i Uh]cb'UbX'8Yj Y`cda Ybh

Gh XYbhZYXVUW`]g'fYei YghYX'gc'hUhVXUb[ Yg'W]b'VY'Vc'bg]XYfYX']b'cfXYf'hc'Yb\UbW'h'Y'gh XYbh  
YUfb]b[ `YI dYf]YbW`"a m9I dYf]YbW`Yj U'i Uh]cbg'k ]`VY'Vc`YW]X'UhH'Y'YbX'cZGYa YghYf'Vi high XYbtg'UFY  
YbVci fU[ YX'hc'X]gW gg'Ubma UH]Yf'fY'UH'X'hc'h]g'Vci fgY'UbX'dfcj ]XY'ZYXVUW'h'fci [ \ci hH'Y'gYa YghYf  
k ]h'h'Y'Vci fgY'Vc'bj Ybcf`5`ZYXVUW`k ]`VY'X]gW ggYX'VmH'Y'a i g]WghUZZ'

↳ a U[ Y'7 fYX]h

6cX]Yg/`↳H'fZUW]g'&\$%\*

7F ⇒ CG

7F ⇒ CG'Dfcj ]XYf'7cXY.'\$\$\$- , ;