



MUSC1604

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HYfa `Hk c`#`&\$&\$

7ci fgY`Cj Yfj]Yk

GHJZ 7cbHJW`8YHJ`g

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B Ua Y	9a U]	5j U]UV]]m	@cWJhcb	D\cbY
9a YfmGWXi VYfh	Y"gwXi VYfh4 i bgk "YXi "Ui	: f]XUm&! (da	F cca '%\$%ž F cVYfh K YVghYf 6i]X]b[- ' ,) '* , \$,

GWcc`7cbHJW`bZcfa Uhjcb

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F cca " '%&ž@Y] Y"" žF cVYfhK YVghYf`6i]X]b[`f] %Ł

D\cbY. fB&Ł- ' ,) '(,) *

9a U]: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [k k k "Ufng"i bgk "YXi "Ui #gUa](#)

H\Y`GWcc`cZhY`5fng`UbX`A YX]U`k ci `X`_Y`h`F YgdYWZ`m5W_bck`YX[Y`hY`HfUX]hcbU`7i ghcX]Ubgž
hY`6YXY[U`fP`Ybg]b[hcb`WJa di gŁž; UX][U`f7]mUbX`5fh/`8Yg][b`7 Ua di gYgŁ`UbX`hY`B [i bbUk U`
dYcd`Y`f5i gfhU]Ub`8YZYbWV : cfW`5WUXYa m]b`7 UbVYffUŁ`cZhY`UbXg`k \YfY`YUW`WJa di g`cZI`BGK`]g
`cWJhYX"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bqg`*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU. ? ge[U

H\]g`Wci fgY`dfcj]XYg`Ub`cj Yfj]Yk`cZ\hY`\]gfcfmž [YbfYgžUbX`_YmUfh]gh]WUbX`]bhY`YWhi U`hYa Yg`]b
K YghYfb`WUgg]WU`a i g]WZca`hY`F YbU]ggUbW`h\fc i [\`hc`hY`dfYgYbhXUm`H\fc i [\`X]gW`gg]cb`cZ
g][b]Z]WUbhWca`dcg]h]cbg`Zca`X]ZYfYbh`\]gfcf]WU`dYf]cXgžmci`k`]`XYj Y`cd`Ub`cj Yfj]Yk`cZ\hY
XYj Y`cda Ybhca`Za i g]WU`ghmYg`UbX`[YbfYg`"H\YgY`XYj Y`cda Ybqg`k`]`VY`fY`UH`X`hc`_Ym]XYc`c[]Yg`UbX
d`UW`X`]b`\]gfcf]WU`UbX`gcW]U`WcbhY]hg`"6mihY`YbX`cZ\hY]g`Wci fgYžmci`k`]`VY`Yei]ddYX`hc`i bXYfhU`_Y
XYHJ]YX`gh`Xm]b`gdYW]Z]WUfYUg`cZ]W]h]WU`Ybei]fm`

7 ci fgY`@YUfb]b[`Ci hWca Yg

%` ⇒Ybh]ZmUbX`XYgW]VY`hY`\]gfcf]WU`žUfh]gh]WUbX`gcW]U`WcbhY]hg`cZ`_Ymik`cf`_g`cZK`YghYfb`WUgg]WU`
a i g]W`
&"`9i`d`U]b`UbX`X]gW`gg`hY`]bhY`fY`UH]cbg`\]d`cZa i g]WUbX`_Ym]hYa Yg`]b`9i`fcdYUb`h\ci [\`h`
'`" `F YgYUfWžW]h]ei Y`UbX`X]gW`gg`K`YghYfb`WUgg]WU`a i g]WU`WU`fUH`mi`g]b[`X]gW]d`]bY`gdYW]Z]W
`Ub[i U[Y`"

HYUW\]b[`GhfUH[]Yg`

H\Y`Wci fgY`k`]`VY`hUj [\`h]b`YWhi fYg`hUhi`gY`U`k`]XY`fUb[Y`cZUi`X]c`UbX`j`]gi`U`fYgci`fW]g`hc`Yi`Ua`]bY
\]gfcf]WU`žUfh]gh]WUbX`gcW]U`WcbhY]hg`cZ`_Ymik`cf`_g`cZK`YghYfb`WUgg]WU`a i g]W`8]gW`fg]j`Y`gYgg]cbg`k`]`
Z`fH`Y`f`XYj Y`cd`gh`XYbhi`bXYfg]h]UbX]b[`cZ\hY`]bhY`fY`UH]cbg`\]d`cZa i g]WUbX`_Ym]hYa Yg`]b`9i`fcdYUb
h\ci [\`h`Hi`hc]U`g`ZcW`ggYX`cb`]ghY]b]b[`UbX`gWc`fY`fYUX]b[`k`]`fY]Z]bY`gh`XYbhUV]]hm]c`W]h]WU`mX]gW`gg
a i g]Wi`g]b[`X]gW]d`]bY`gdYW]Z]W]h]fa`]bc`c[m`H\Y`XYj Y`cda Ybhca`Z]bhYfUW]j`Y`dfc`YW]g`XfUk`]b[`hYgY`

5ggYgga Ybh

D`YUgY`gYY`A ccX`Y`Zc`f`XYHJ`YX`]bZcfa Uh]cb`UVci hi\]g`Wci fgY"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K`Y][` \h	8i`Y`8UH`Y	Gh`XYbh`@YUfb]b[Ci`hWta`Yg`5ggYggYX
DfYgYbhUH]cb`UbX` dUfh]W]dUH]cb`	` \$i	Bch5dd`]WUV`Y	&Z
HYgh	`)i	Bch5dd`]WUV`Y	&Z
@]ghYb]b[`HYgh	`)i	Bch5dd`]WUV`Y	%z&

5ggYgga Ybh8YHJ]`g

5ggYgga Ybh%`DfYgYbhUH]cb`UbX`dUfh]W]dUH]cb

GhUfhXUH`Y. Bch5dd`]WUV`Y

8YHJ]`g.

%)`\$\$`k`cfXg"``

Gh`XYbhg`fYW]j`Y`k`f]hYb`ZYXVUW_`UbX`U`bi`a`Yf]W]`a`Uf_`"

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

Hi`hcf]U`UggYgga`YbhHUg_g`k`]`VY`dYfZcfa`YX`h\fc]`[\`ci`hi`hcf]U`WUggYg"``5XX]h]cbU`]bZcfa`Uh]cb`k`]`VY`dfcj`]XYX`cb`A`ccX`Y`UbX`]b`WUgg"

5ggYgga Ybh&.`HYgh

GhUfhXUH`Y. Bch5dd`]WUV`Y

8YHJ]`g.

*`\$`E`i`Ygh]cbg

Gh`XYbhg`fYW]j`Y`U`bi`a`Yf]W]`a`Uf_`UbX`U`d`fYdUfUhc`fm]hYgh`"

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

@]ghYb]b[`HYgh`k`]`VY`Y`X`Xi`f]b[``YW]h`fYg`cf`hi`hcf]U`g`cf`gdYW]U`mUffUb[`YX`h]a`Yg`Ug`]bX]WU]hYX`]b`h`Y`Wci`fgY`gW]YXi`Y`h]a`YHUV`Y"

5ggYgga Ybh'`. @]ghYb]b[`HYgh

GhUfhXUH. 'Bch5dd`]WV`Y

8YhU]`g.

GY`YW]cb`Zca `Uddfcl "" \$]hYa g"

Gh XYb]g`fYVW]j Y`U`bi a Yf]W]`a Uf_`UbX`Z ``gc`i h]cbg`UbX`U`dfYdUfUhc`fmhY`gh`

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

@]ghYb]b[`HYghg`k]`VY`Y`X`Xi f]b[``YWh`fYg`cf`h`hc]U`g`cf`gdYVW]U``mUffUb[YX`h]a Yg`Ug`]bX]WU]hX`]b`h.Y
Wci fgY`gWXYXi `Y`h]a YhUV`Y"

		DfYgYbHhcbg`Zcf`@ghYb]b[`@gh]hYa g`Wcbhbi YX"
K YY_%. " `5i [i gh!`+ 5i [i gh	@YWhi fY Hi hcf]U`	Hk Ybh]Yh\`Wbri fm A UHhYfg`Uf]g]b[`Zca `YWhi fY`UbX`fYj`]g]cb" :]bU`dfYgYbHhcbg`UbX`ZYXVUW`" 7ci fgY`Yj U`i U]cb"
K YY_%%`%\$`5i [i gh!`%\$ 5i [i gh	5ggYgga Ybh	7cbhYbhif&) E`UbX`@ghYb]b[`f&) E`hYghg`&`cZ&"

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DfYgWf]VYX`F Ygci fWg`

6i f_\c`XYfz>"D"žK "; fci hžUbX`7"DU`]gWU`f&\$\$*`cf`UHfL`5`<]ghcfmicZK YghYfb`A i g]WfH`h`YX]hcb
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A j XadV`_ge[Ua`↑`WžCI ZcfX`I b]j Yfg]mDfYgg"Žcf`fYZYfbWQ

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YVcc_`fcb`]bYŁ`"CI ZcfX.`CI ZcfX`I b]j Yfg]mDfYgg

F YWca a YbXYX`F Ygci fWg

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

Gh XYbhtg`UFY`YbWci fU[YX`hc`dfcj]XY`ZYXVUW`hc`]a dfcj Y`hY`Wci fgY`cf`VYHf`a YYhi`hY]f`YI dYWU]hcbg
YUfm]b`hY`hYfa žgc`h`Uhi`hYfY`]g`h]a Y`hc`]a d`Ya YbhW`Ub[Yg`k`YfY`dcgg]V`Y"Ga U`W`Ub[Yg`]b`hY
Wci fgY`a UHf]U`Ug`VYYb`a UXY`]b`hY`dUghVUgYX`cb`fY`Yj Ubž`gdYW]U`]bhYfYgth`fYdcfYX`Vmighi XYbhtg"

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`hY`k cfXg`cf`]XYUg`cZc`hYfg`UbX`dfYgYbh]b[`hYa `Ug`mci f`ck b" `#WUb`hU`Y`a Ubm
Zcfa gZ`Zca `XY`]VYfU`h`V`X`Y`U`h]b[`hc`U`W`Y`X`Y`b`U`m`i`W`c`d`m]b[`Zca `U`gci f`W`k]h`ci h`U`W`b`c`k `Y`X[`Y`a `Y`b`h`

I B G K `[fci dg`d`U[]Uf]ga `]bhc`hY`Zc`ck]b[`W`h`h`[cf]Yg.

7 cdm]b[.`i`g]b[`hY`g`U`a `Y`cf`j`Y`fmg]a]Uf`k`cfXg`hc`hY`cf][]bU`h`l`h`cf`]X`Y`U`k]h`ci h`U`W`b`c`k `Y`X[]b[`hY`

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wc'dmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'WdhUV'Y'I gY'cZ I BGK '⇒H'F Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'U'g'U'X'U'f'X'g'c'Z'V'Y'\U'j]ci f'Y'I d'Y'W'X'c'Z'Y'j Y'f'm'c'b'Y'']b'U'Y'I BGK 'W'c'a a i b]m
- 'c'W'U'h'g'Y'f'j]W'g'U'bx'j'b'Z'c'f'a U'h'c'b'U'V'c'i h'l BGK 'U'bx'I BGK '@]V'f'U'f'm

Gca Y'cZ'U'g'Y'U'f'Y'U'g'k]''V'Y'Z'J'a]]U'f'U'c'm'c'i ž'c'h'Y'f'g'k]''V'Y'b'Y'k ''; U]b]b['U'g'c'X'i bXYfghUbx]b['cZU''U'Y'f'Y'U'h'X'U'gd'Y'W'g'c'Z'9@-G'9'k]''\Y'd'm'c'i 'a U_Y'U'Y'a c'g'h'c'Z'm'c'i f'g'h X]Y'g'U'hl BGK ''

[\h'c'.#\]j V'Y'W'f'i \]X'Y'g''j\]V'f'U'f'm'i b'g'k "Y'X'i "U'i #' \]g'Y'#\]V'c'i h' \]g'Y](#)

5 WUXYa]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Ygth`Zcf`Yl H`bg]cb/