



MUSC1707

DYfZcfa UbWV '@JVcfUhc fm5

HYfa 'H\ fYY' ##' &\$&\$

7ci fgY`Cj Yfj JYk

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg`(`

Gi a a UfmicZh\Y'7 ci fgY

h`h]g`dfUW]W]`Wci fgY`mci `k]`XYj Y`cd`mci f`UXj UbW`X`]bgrfi a YbhU`zj cW]`cf`Wca dcg]hcb`g_]`g`k]h`cbY!
h`!cbY`gi ddcfhZ`ca `U`gdYW]U]ghh` hcfz`UbX`[U]b`YI dYf]YbW`]b`Udd`m]b[`h`cgy`g_]`g`h`fci [`dUfh]W]dU]hcb
]b`k cf_g`l`cdg`za UghY`fWUggYg`UbX`YbgYa V`Yg`H`YgY`Wca dcbYbHg`k]`Wca V]bY`h`gi ddcfhmci f`gdYW]U]gh
ghfYb[h`g`UbX`]b`h`fYghg`z`UbX`h`V`fc`UXYb`UbX`W`b`h`I`h`U`]gY`mci f`dYfgcbU`gh`X]Yg`A`]Yg`hcbYg`Z`cf`h`Y
Wci fgY`UfY`h`Y`W`b]W]`Zci bXU]hcbg`z`Z`cf`V`ch`dYfZ`ca Yfg`UbX`Wca dcgYfg`z`UbX`Y`U`h`mdfUW]W]`z`Ug`h`Y`V`Ug]g
cZcd]ja U`dYfZ`ca UbW`UbX`gi ghU]bUV`Y`a i g]W`a U_]b[""

BchY. `H`l]g]g`U`%&`l` C`7`Wci fgY`Mci `k]`Ybfc`]b`(` `l` C`7`]b`YUW`cZ`h`fY`gi W`W`gg]Y`h`Y`fa`g`k`]h`U`fY`gi`h`
fYdcfhY`X`VmU]g]b[`Y`[fUXY`Uh`h`Y`YbX`cZ`h`Y`h`]fX`(` `l` C`7`Wci fgY`"

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

%` 6i]`X`UbX`Udd`m]Zci bXU]hcbU`h`Y`W`b]W]`g_]`g`]b`h`Y`XYj Y`cda YbhicZUfh]gh]WYI dYfgg]cb
&` 5dd`mi`h`Y`df]bW]d`Yg`cZ`Y`U`h`mdfcZ]gg]cbU`dfUW]W]`h`c`j`cW]`UbX`]bgrfi a YbhU`h`Y`W`b]jei Y`UbX
dYfZ`ca UbW`
'` " `XYbh]ZmfY`U]hcbg`l`dg]Ua`cb[]ggi`Yg`]bZ`ca`]b[`dYfZ`ca UbW`dfUW]W]
(` 5dd`mdf]bW]d`Yg`cZ`h`Y`Ua`k`cf`_`h`ca`i`g]WYbgYa`V`Y`

HYUW]b[`GhFUH[]Yg`

Gh`XYbHg]f`dYfgcbU`g_]`g`]b`dYfZ`ca UbW`cf`Wca dcg]hcb`k]`VY`XYj Y`cdY`X`h`fci [`cbY`cb
cbY`W`bgi`h`U]hcbg`k]h`gdYW]U]ghh`h`c`fg`Q`l`%`l`ci`f`YUW`h`f]a`YghYfQ`h`k`cf_g`l`cdg`Q`l`%)`l`ci`fg`YUW
h`f]a`YghYfQ`]bgrfi a YbhU`UbX`j`cW]`gh`XYbHg`k]`[U]b`dYfZ`ca UbW`YI dYf]YbW`z`k`Y`Wca dcg]hcb`gh`XYbHg
k]`VY`Wca`Y`Z`Ja`]Uf`k`]h`]ggi`Yg`UZY`W]b[`dYfZ`ca UbW`UbX`dYfZ`ca UbW`dYf`dUfU]hcb`K`cf_g`l`cd`gY`h]b[g
k]`U`gc`gi`ddcfhYb[U[Ya`Ybhk`]h`]ggi`Yg`W`b`W`fb]b[`a`i`g]W]Ubgf`h`Y`U`h`UbX`k`Y`VY]b[`z`h`Y`XYj`Y`cda`Ybh
cZg]hU[Y`W`bXi`W`z`UbX`Ub`Y`Ya`YbhicZ`dY`Yf`cV`gY`fj`U]hcb`Z`cf`gdYW]U]ghdYfZ`ca UbW`UbX`Wca dcg]hcb
[fci`dg`Gh`XYbHg`k]`U`h`Y`b`X`a`UghY`fWUggYg`Y`X`Vm]`g]h]b[`YI`dYf`rg`]b`U`f`Ub[Y`c`Za`i`g]W]`bgrfi a Ybhg`z
j`c]W]g`UbX`ghmYg`z`YbWci`fU[]b[`gh`XYbHg`h`X`f`Uk`_]`b`g`UbX`Wca`dUf]gcbg`k]h`h`Y]f`dYfgcbU`gh`X]Yg
Q`W`ccg]b[(` `l`&`l`ci`fg`Z`ca`b]bY`a`UghY`fWUggYg`U`W`c`gg`h`Y`m`Y`Uf`Q`5`gh`XYbHg`k]`dUf]W]dU]h`]b`X]fY`W`Y`X
YbgYa`V`Yg`z`W`ccg]b[`Z`ca`U`k`]X`Y`f`Ub[Y`c`Za`i`g]W]`ghmYg`UbX`W`h`fYg`UbX`dUf]W]dU]h]b[]b`U`Z]bU`
dYfZ`ca UbW`]b`YUW`h`f]a`YghYf`Q`l`&`l`ci`fg`fY`Y`UfgU`g`]b`YUW`h`f]a`YghYf`Q`

5ggYgga Ybh

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
9bgYa V`Y`Wcbf]Vi h]cbž dYfZcfa UbWgždUfhWXYW_]b[hYgh	&\$i	Bch5dd`]WUVY	(
A UghfWUgg`W]h]ei Yg`	%i	\$*#%#&\$&\$`\$).\$\$`DA	'
DYfZcfa UbW`dfYgYbh]cb`	')i	Bch5dd`]WUVY	%&
DfUW]WU`YI Ua]bU]cb`	' \$i	Bch5dd`]WUVY	%&

5ggYgga Ybh8YHJ]`g

5ggYgga Ybh%`9bgYa V`Y`Wcbf]Vi h]cbždYfZcfa UbWgždUfhWXYW_]b[`hYgh

GHUfhXUH. Bch5dd`]WUVY

8YHJ]`g.

8]fYWhZYXVUW`Xi f]b[`fY`YUfgU`g`UbX`k`cf_g`cdg`UbX`U`Zcfa U`fYdcfhUhi`h`Y`W`b`W`i`g]cb`c`Z`h`Y`g`Y`g`g]cb`
Gh XYbhgfWcbf]Vi h]cb`h`c`YbgYa V`Y`dYfZcfa UbWg`UbX`k`cf_g`cdg`k`j`VY`UggYggYX`h`fci [\ `U`dUfh
WXYW_]b[`YI Ua]bU]cb`"

7`eW`T`WbSdZJWU] [`Y`k`j`VY`i`bXYfhU`_Yb`]b`H`%`H`&`UbX`H`" ` `X]j`]Xi U`mcf`]b`ga U`[`fci dgžgh XYbhg`k`j`
dYfZcfa `k`cf_g`cf`YI Wfdhg`cZk`cf_gžgh`X]YX`UbX`dYfZcfa`YX`Xi`f]b[`h`Y`h`f]a`Yghf`f`K` \YfY`Uddfcdf]UHž
YI Wfdhg`k`j`VY`gY`Y`W`Y`X`V`m`h`Y`d`U`f`h`W`X`Y`W_]b[`YI Ua]bYf`"

5ggYgga Ybh&. A UghfWUgg`W]h]ei Yg`

GHUfhXUH. Bch5dd`]WUVY

@Yb[h.) \$\$\$

8YHJ]`g.

5d[f]cgWek`j`VY`gi`Va`]h`Y`X`U`W`f`c`g`g`H`%`H`&`UbX`H`" ` `H`Y`g`Y`k`j`VY`f`Y`U`h`X`h`c`a`U`g`h`f`W`U`g`g`Y`g`d`f`Y`g`Y`b`h`Y`X`V`m`
j`]g]h]b[`YI`dYf]g`]b`U`f`Ub[`Y`c`Za`i`g]WU`g`h`m`Y`g`UbX`U`W`j`]h]Yg`"7`f]h]ei`Y`ei`Y`g`h]cbg`k`j`VY`g`W`U`Z`c`X`Y`X`h`c`

k cf_`cZHY`dfUW]cbYf`dfYgYbh]b[`hY`a UghYfWUgg`UbX`mci f`ck b`k cf_ž`UbX`XfUk `cb`gW`c`Ufmi`]hYfUhi fY
UbX`YI hYfbU`gci fW`g`h`gi ddcfhiUbX`UbW`cf`mci f`X]gW`gg]cb"

Gi Va]gg]cb`bchYg.H\]g`Ugg][ba Ybh]g`gi Va]hYX`j]U`A ccX`Y

5ggYgga Ybh' .`DYfZ`fa UbW`#dfYgYbhU]cb

GhUfhXUH. `Bch5dd`]WV`Y

8YhU]`g.

BW`d_`S` UWbdW`fSf[a`e k]`VY`W`bXi WYX`Xi f]b[`k cf_g`cd`gYgg]cbg`]b`H%`UbX`H&""`bghfi a YbhU`]ghg
UbX`j`cW`]ghg`k]`dYfZ`fa `cbY`W`a`d`YH`]hY`]b`YUW`hYfa ž`k`\\MX`a UmVY`U`a`cj`Ya`YbhicZU`Uf[`Yf`k`cf`/
W`a`dcgYfgž`g]a]`Uf`mž`k]`dfYgYbh`hY`dYfZ`fa UbW`cZcbY`]hY`a`cf`a`cj`Ya`Ybh"

DYHfgcb"

K YY_-.!-!Bcj Ya VYf! % Bcj Ya VYf	5ggYgga Ybh	7 `Ugg`dfYgYbhUjcbg`Zcf`A G7%+\$, `ghi XYbtg Wcbjbi Y/A G7%+\$+`ghi XYbtg`k j``\Uj Y`Ub cddcfh b]lmhc`dfYgYbhH\Y]f`fYdYfrc`jFY`]b`dfYdUfUjcb Zcf`H\Y]f`dfUWYI Ua "
K YY_%.%* Bcj Ya VYf! &\$ Bcj Ya VYf	5ggYgga Ybh	7 `Ugg`dfYgYbhUjcbg`Zcf`A G7%+\$, `ghi XYbtg Wca d`YHX/A G7%+\$+`ghi XYbtg`k j``\Uj Y`Ub cddcfh b]lmhc`dfYgYbhH\Y]f`fYdYfrc`jFY`]b`dfYdUfUjcb Zcf`H\Y]f`dfUWYI Ua ""7`Ugg`XYVf]YZ

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

%`9j Yfmh]b[`]g`7 cbbYWX. `H\Y`Dck Yf`cZA i g]Wm8 Ub]Y`6UfYbVc]a

&``A ch]cbz`9a ch]cbz`UbX`@cj Y. `H\Y`B Uhi fy`cZ5fh]gh]WDYfZcfa UbW`Vm[H\ca Ug`7Ufgcb`A Uf`](#)

` ``@YhYfg`hc`U`Mci b[`DcYhVmF U]bYf`F]_Y

F YWca a YbXYX`F Ygci fWg

BchUj U]UVY

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

Gh XYbhZYXVUW_k]``VY`Wc`YWX`Vch`Xi f]b[`WUgg`X]gW`gg]cbg`UbX`h\fc i [\ `A m9I dYf]YbW`gi fj Ymg"
H\Y`ZYXVUW_dfcj]XYX`Vmigh XYbh`k]``VY`UbU`mgYX`UbX`dfUW]W]`ghYdg`k]``VY`hU`Yb`hc`]bW`fdcfUh`h\Y
ZYXVUW_]bhc U, U, YX b* b

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

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

≠mci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UHYa` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiHfci`[`\`Hi`fb]h]b`z`d`YUgY`
HY`Yd\cbY`9I`HYfbU`Gi`ddcfhcb`-`,`)`"``"``%cf`Ya`Uj`h`Ya`icb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`""Gi`ddcfh`
\ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`icb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`icb`k`YY`YbXg`f1`*)`XUmg`U`mY`Uf2`≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiXi`Y`hc`U`ZU`ihk`]h`Hi`fb]h]b`mci`ia`UmUdd`mZc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`
a`i`ghfYhU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Ybhtg`L`hc`
]bWi`XY`Ug`Yj`]XYbVW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb`≠mci`Ya`Uj`9I`HYfbU`Gi`ddcfhmc`i`k`]`
Ui`hca`U]WU`mifYW]j`Y`U`h]W`Yhbi`a`VYf`z`Vi`h]Zmci`HY`Yd\cbY`mci`k`]`bYYX`hc`gdYW]Z]WU`mUg`Zc`f`cbY`
Hi`fb]h]b`U`gc`dfcj`]XYg`i`dXUH`g`cb`h`Y]f`gmghYa`ig`hU`h`g`cb`Hk`]hYf`"

;`YbYfU`mz`UggYgga`YbhiUg_g`a`i`ghVY`gi`Va`]hYX`Y`YWfcb]WU`mj`]U`Y]h`Yf`Hi`fb]h]b`cf`U`A`ccX`Y`
Ugg][`ba`Ybhi`h`]bghU`bVW`g`k` \YfY`h`lg`]g`bchidcgg]V`Yz`]hk`]`VY`ghU`h`X`cb`mci`f`Wci`fgY`g`A`ccX`Y`g]h`k`]h`
U`HYfbU]h]`Y`gi`Va`]gg]cb`XYhU]g`"

:`cf`]bZcfa`U]cb`cb`\ck`hc`gi`Va`]hUgg][`ba`Ybhtg`cb`]bY`j`]U`A`ccX`Y`.\`hhdg`#gh`XYbhi`bgk`"YXi`"Ui`#ck`!
gi`Va`]hUgg][`ba`Ybhta`ccX`Y`"

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`UW`Y`X`Y`b`U`m`W`c`d`m]b[`Zca `U`gci f`W`k]h`ci hUW`bck `YX[Ya Yb`h`

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

7 cdm]b[.`i`g]b[`hY`gUa Y`cf`j Yfmg]a]Uf`k cfXg`hc`hY`cf][]bU`hY`hcf]X`Y`U`k]h`ci hUW`bck `YX[]b[`hY`

• i bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V']hYg'Ug'U'gh XYbhUhl BGK

5 WUXYa]WbZcfa Uh]cb

: cfYggYbh]U`gh XYbh]bZcfa Uh]cb fY`Uh]b[`rc.

- fYei Yghg`Zcf`YI H`bg]cb/
- `UhY`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I BGK `<YU`h`UbX`GUZYmidc`]WYg/
- YI Ua]bUh]cb`dfcWYXi fYg/
- gdYW]U`W`bg]XYfUh]cb`]b`hY`Yj YbhcZ]`bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]mUbX`X]gUV`]m/
- UbX`c`hYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY

[\ftdg.#k k k "Uftg"i bgk "YXi "Ui #W ffYbh\]gh XYbh\]UWUXYa \]W\]bZcfa Uh\]cb#dfchW`g!\[i \]XY`\]bYg#](#)

⇒ U[Y`7fYX]h

D\chc`Vm? UVcca d]Wg`"W`a `Zca `DYI Y`g

7F ⇒ CG

7F ⇒ CG`Dfcj]XYf`7cXY.`\$\$\$- ;

5W_bck `YX[Ya YbhcZ7ci bhfm

K Y`UW_bck `YX[Y`hY`6YXY[U`dYcd`Y`k \c`UfY`hY`fUX]h]cbU`W`ghcX]Ubg`cZ`hY`UbXg`cb`k \]W`I BGK
? Ybg]b[`rcb`W`a di g`]g`cW]hYX"