



# MDIA5030

6fUbX'7i`hi fYg

HYfa`H\ fYY`##`&\$%-

7 ci fgY`Cj Yfj ]Yk

`GHUZZ7 cbhUWhi8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWU]cb	D\cbY
B ]Wxc`Ug F ]WUfXgcb	b]Wxc`Ug"f]WUfXgcb4 i bgk "YXi " Ui	6mUddc]bha Ybh	K YVghYf`F a &' %9	- ' , ) '* ' ) )

GWcc`7 cbhUWhi`bZcfa Uh]cb

Fcca "` %&Z`Yj Y`` `F cVYfhK YVghYf`6i ]X]b[

D\cbY.`f\$&L`- ' , ) `( , ) \*

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

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

H\Y`GWcc`cZhY`5fng`UbX`A YX]U`k ci `X`\_]Y`hc`F YgdYWz`m5W\_bck`YX[ Y`hY`HfUX]h]cbU`7 i g]cX]Ubgz`hY`6YXY[ U`fP`Ybg]b[ hcb`WUa di gLz; UX][ U`f7 ]mUbX`5fhi`8Yg][ b`7 Ua di gYgk`UbX`hY`B [ i bbUk U`dYcd`Y`f5i ghfU]Ub`8YZ`bWV: cfW`5WUXYa mi]b`7 UbVYffUk`cZhY`UbXg`k \YfY`YUW`WUa di g`cZI`BGK`]g`cWU]hYX"

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`%&`

Gi a a UfmicZ\hY'7ci fgY

5`VfUbX`jg`U`Zi`jX`Ybh]m=-`bYj`Yf`Ybh]fY`m]b`Ub`cf[`Ub]gU]cb`g`W`bfc`" `H\]g`jg`VYW]i`gY`W`ghca`Yfg`'ck`b`  
VfUbXg" `H\Y`VYghVfUbX`a`UbU[`Yfg`h\YfY`Zc`fY`gh`XmdYcd`Y" `H\Ym`W`bg]XYf`VfUbXg`j]b`W`'hi`fY`UbX`VfUbXg`  
Ug`W`'h`fYg" `B`ch]b[` \UddYbg`VmW`UbW" `H\]g`W`ci`fgY`c`ZY`fg`mci`h\Ycf]Yg`UbX`h`W`b]ei`Yg`Zc`f`gh`Xm]b[`  
VfUbX`W`'h`fYg" `H\YgY`h\Ycf]Yg`UbX`h`W`b]ei`Yg`k`j`i`'h]a`Uh`'ma`U`\_Y`mci`U`VY`h`f`VfUbX`a`UbU[`Yf"

H\Y`W`ci`fgY`dfcj`jYg`mci`k`]h`h\Y`cddcf]i`b]m]h`c`XYj`Y`cdz`\cbY`UbX`W`bgc`]XU]h`X]gW]d`]bUfmg\_]`g`UbX`  
\_bck`YX[`Y`[`U]bYX`j]b`h\Y`Z]Y`Xg`cZDF`UbX`UXj`Yfh]g]b[`z`gdYW]Z]W]`m]b`fY`U]cb`hc`h\Y`dfUW]W`cZVfUbX`  
a`UbU[`Ya`Ybh!`k`\]W`j]g`U`W`b]fU`UgdYW]cZV`b]h`a`dcfUfm]DF`UbX`UXj`Yfh]g]b[`"

H\]g`W`ci`fgY`jg`k`cfh`%&`i`b]hg`cZWYX]h`UbX`jg`U`DfUW]W`DU]h`k`Um`W`cfY`gi`VY`W]h`Zc`f`h\Y`A`Ugh`f`cZDF`UbX`  
5Xj`Yfh]g]b[`"

7ci fgY`@YUfb]b[`'Ci`hW`ca`Yg

%`8Ya`cbghfU]h`W`ca`dY]h`bW`k`]h`W`b]h`a`dcfUfmVfUbX`a`UbU[`Ya`YbhdfUW]W`g`UbX`ghfU]h[`]Yg`z`UbX`  
h\Y`UV`]m]h`Udd`m]h]g`\_bck`YX[`Y`[`U`f]Ub[`Y`cZdfcZ]gg]cbU`gY]h]b[`g"

&`8Ya`cbghfU]h`U`gci`bX`i`bXYfg]h]b]b[`cZV`b]h`a`dcfUfmVfUbX`a`UbU[`Ya`YbhW`bW`d]hg`UbX`  
d\]cgcd\]Yg`z`UbX`h\Y`W]dUW]m]h`c`Ya`d`cm]h]g`\_bck`YX[`Y`dfcXi`W]j`Y`m]b`dfcZ]gg]cbU`dfUW]W`"

'`8Ya`cbghfU]h`U`W]dUW]m]h`Zc`f]bXYdYbXYbh]UbX`W`c`UVcfU]h]`Y`]bei`]fn`z`UbX`h\Y`UV`]m]h`Y`Z]W]j`Y`m`  
W`ca`a`i`b]W]h]`j]X]YUg`hc`U`f]Ub[`Y`cZUi`X]YbW]g`z`i`g]b[`k`f]h]b`z`cfU`UbX`Ui`X]c]j`jgi`U`'ma`YX]U]h]X`  
W`ca`a`i`b]W]h]cb"

("`8Ya`cbghfU]h`Ub`UV`]m]h`Zc`f`W]YU]h]`Y`h]b\_]b[`UbX`W]h]W]`fY`ZY`W]cb"

)`8Ya`cbghfU]h`U`gci`bX`i`bXYfg]h]b]b[`cZV`ch`c`W]`UbX`[`cVU`]b]Xi`ghfm`W`b]h]i`hg]b`h\Y`Z]Y`Xg`cZDF`z`  
UXj`Yfh]g]b[`UbX`W`ca`a`i`b]W]h]cb"

HYUWX]b[`G]h]fU]h[`]Yg`

G]h`XYbh]g`k`j`VY`dfcj`jYX`k`]h`h\Y`g`W`dY`hc`XYj`Y`cdz`\cbY`UbX`\cbY`UbX`W`bgc`]XU]h`X]gW]d`]bUfmg\_]`g`  
UbX`\_bck`YX[`Y`[`U]bYX`j]b`h\Y`Z]Y`Xg`cZDF`UbX`UXj`Yfh]g]b[`z`gdYW]Z]W]`m]b`fY`U]cb`hc`h\Y`dfUW]W`cZVfUbX`  
a`UbU[`Ya`Ybh"

H\]g`X]gW]d`]bUfm`\_bck`YX[`Y`k`j`VY`dcg]h]cbYX`U[`U]bgh`h\Y`W`b]h]i`hcZXYj`Y`cda`Ybh]g]b`h\Y`W`b]h`a`dcfUfm`  
[`cVU`UbX`c`W]`a`YX]U`UbXgW]dY"

H\Y`W`ci`fgY`k`j`VY`h]i`[`\hj]U`Y`W]h`fYg`UbX`gYa`]bUfg"

5g`h]g]g`U`%&`I`b]hcZ7`fYX]h]W`ci`fgY`z`fYe]i`]fYX`W`ci`fgY`k`cf`\_`k`j`fY`ZY`W]h]g]U`W`W`fX]b[`m]"`

5ggYgga Ybh

5ggYgga YbhHUg\_g`

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UHr	Gh XYbh@YUfb]b[ Ci hWta Yg'5ggYggYX
K YY_`mW]b]WdfYgYbhU]cbg`	' )	Bch5dd`]WUV`Y	%z&Z ž( ž)
9ggUmi	( \$	Bch5dd`]WUV`Y	%z&Z ž( ž)
6fUbX`Ui X]h	& )	Bch5dd`]WUV`Y	%z&Z ž( ž)

5ggYgga Ybh8YHU]`g

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

D`YUgY`gYY`XYHJ]YX`XYgW]dh]cb`UbX`Xi Y`XUH`g]b`h\Y`UggYgga YbhgYW]cb`cb`A ccX`Y"

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



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

GYY`A ccXY

F YWca a YbXYX`F Ygci fWg

GYY`A ccXY

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

⊖`UXX]hcb`hc`hY`ei Ubh]hUj] Y`A m9I df]YbW`gi fj Ymž`Wci fgY`ZYXVUW`k ]`VY`Wc`YWYX`h`fci [ \`U`g`c`fh]b  
WUgg`ei U`]hUj] Y`gi fj Ym`DUghiFYWca a YbXU]cbg`\Uj Y`Wc`bf]Vi hYX`hc`WXUb[ Yg`hc`WUgg`UbX`UggYgga Ybh  
a UhYf]U`g`"

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Hi fb]hb`Gi Va ]gg]cb

Ʒmci`YbWci`bhYf`U`dfcV`Ya`k`Yb`U`H`Ya`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]hb`z`d`YUgY`  
H`Y`d`l`cb`Y`9I`H`f`b`U`G`i`d`d`c`f`h`c`b`-`,`),`"`,`'`,`%`c`f`Y`a`U`]`h`Y`a`i`c`b`Y`I`H`f`b`U`H`Y`h`gi`d`d`c`f`h`4`i`b`g`k`"Y`X`i`"U`i`"Gi`d`d`c`f`h`  
`l`c`i`f`g`U`f`Y`,`.\$`\$`U`a`-`-%`\$`.\$`\$`d`a`i`c`b`k`Y`Y`\_`X`U`m`g`U`b`X`-`.\$`\$`U`a`-`i`).`\$`\$`d`a`i`c`b`k`Y`Y`\_`Y`b`X`g`f`l`\*)`X`U`m`g`U`m`Y`U`f`l`"Ʒmci`  
U`f`Y`i`b`U`V`Y`h`c`gi`Va`]hmc`i`f`Ugg][`ba`Y`b`h`X`i`Y`h`c`U`Z`U`i`h`k`]h`Hi`fb]hb`mci`i`a`U`m`i`U`d`d`m`i`Z`c`f`U`b`Y`I`H`f`b`g]c`b`z`V`i`h`mc`i`  
a`i`g`h`f`Y`h`U]b`mci`f`h`W`Y`h`b`i`a`V`Y`f`Z`c`a`i`9I`H`f`b`U`G`i`d`d`c`f`h`f`U`c`b[`k`]h`U`b`m`c`h`Y`f`f`Y`Y`j`U`b`h`X`c`W`a`Y`b`h`g`l`h`c`  
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`h`c`gi`d`d`c`f`h`mci`f`Y`I`H`f`b`g]c`b`U`d`d`]W`h`c`b`"Ʒmci`Y`a`U`]`9I`H`f`b`U`G`i`d`d`c`f`h`mci`k`]`  
U`i`h`c`a`U`h`W`U`m`i`f`Y`W`]j`Y`U`h`W`Y`h`b`i`a`V`Y`f`z`V`i`h`]Z`mci`H`Y`d`l`c`b`Y`mci`k`]`b`Y`Y`X`h`c`g`d`Y`W`Z`W`U`m`i`U`g`\_`Z`c`f`c`b`Y`"  
Hi`fb]hb`U`g`c`d`f`c`j`]X`Y`g`i`d`X`U`H`Y`g`i`c`b`h`Y`j`f`g`m`g`h`Y`a`i`g`h`U`h`g`c`b`H`k`]h`Y`f`"

;`Y`b`Y`f`U`m`z`U`g`g`Y`g`g`a`Y`b`h`U`g`\_`g`a`i`g`h`V`Y`g`i`Va`]h`Y`X`Y`Y`W`f`c`b]W`U`m`j`]U`Y`]h`Y`f`Hi`fb]hb`c`f`U`A`c`c`X`Y`  
U`g`g][`ba`Y`b`h`i`b`]b`g`h`U`b`W`g`k`Y`f`Y`h`l`g`]g`b`c`h`i`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`H`Y`c`b`mci`f`W`c`i`f`g`Y`g`A`c`c`X`Y`g`]h`k`]h`  
U`h`f`b`U`h`j`]Y`g`i`Va`]gg]c`b`X`Y`h`]g`"

:`c`f`]b`Z`c`f`a`U`h]c`b`c`b`l`c`k`h`c`gi`Va`]h`U`g`g][`ba`Y`b`h`g`c`b`]b`Y`j`]U`A`c`c`X`Y`.\`h`h`d`g`#`g`h`X`Y`b`h`i`b`g`k`"Y`X`i`"U`i`#`a`c`k`!  
gi`Va`]h`U`g`g][`ba`Y`b`h`a`c`c`X`Y`"



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

D`U[ ]Uf]ga ]g'i g]b[ 'hY'k cfXg'cf]XYUg'cZchYfg'UbX'dfYgYbh]b[ 'hYa 'Ug'mci f'ck b" #WUb'hU\_Y'a Ubm Zcfa gž Zca 'XY]VYfUHY'WXUhf]b[ 'hc'UWV]XYbhU`mWčdm]b[ Zca 'U'gci fW'k ]h'ci hUW\_bck 'YX[ Ya Ybh'

I BGK '[ fci dg'd`U[ ]Uf]ga ]bhc'hY'Z`ck ]b[ 'WUHY[ cf]Yg.

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

#Uddfcdf]UHY'dUfUd\fUg]b[ .7\Ub[ ]b[ 'U'Zk'k cfXg'UbX'd\UgYg'k \]Y'a cghm'fYU]b]b[ 'hY'cf][ ]bU'ghfi W'fY'UbX#f'dfc[ fYgg]cb'cZ]XYUg'cZhY'cf][ ]bU'Z'UbX' ]bZcfa U]cb'k ]h'ci hUW\_bck 'YX[ Ya Ybh' 'H\]g'U'gc'Udd'Yg' ]b'dfYgYbhU]cbg'k \YfY'gca YcbY'dUfUd\fUgYg'UbchYf'g'XYUg'cf'k cfXg'k ]h'ci hWYX]h'UbX'hc d]Y]W]b[ 'hc[ Y'hYf'ei chYg'UbX'dUfUd\fUgYg']bhc'U'bYk'k \c'Yžk ]h'ci hUddfcdf]UHY'fYZYfYbW]b[ "

7c`i g]cb.'k cf\_]b[ 'k ]h'chYfg'Vi hdUgg]b[ 'cZ'hY'k cf\_'Ug'U'dYfgcb'g' ]bX]j ]Xi U'k cf\_"7c`i g]cb'U'gc ]bWi XYg'dfcj ]X]b[ 'mci f'k cf\_'hc'UbchYf'gh'XYbhVYZc'fY'hY'Xi Y'XUHY'žcf'Zc'f'hY'di fdcgY'cZ'hYa d'U[ ]Uf]g]b[ 'UhUbmi]ja Yž'dUm]b[ 'UbchYf'dYfgcb'hc'dYfZc'fa 'Ub'UWUXYa ]W]Ug\_žghU' ]b[ 'cf'UW'ei ]f]b[ UbchYf'dYfgcb'g'UWUXYa ]Wk cf\_'UbX'Wčdm]b[ ]ž'cZ]f]b[ 'hc'Wč'a d'YH'UbchYf'dYfgcb'g'k cf\_'cf'gYY\_]b[ dUma YbhZc'f'Wč'a d'Y]b[ 'UWUXYa ]Wk cf\_"

#Uddfcdf]UHY'W]hU]cb.'7]h]b[ 'gci fW'g'k \]W\Uj Y'bchVYYb'fYUXžk ]h'ci hUW\_bck 'YX[ ]b[ 'hY'"gYWčbXUfm' gci fW'Zca 'k \]W\_ bck 'YX[ Y'cZ'hYa '\Ug'VYYb'cVhU]bYX"

8i d']WU]cb'f'fY'Z'd`U[ ]Uf]ga "L'gi Va ]h]b[ 'mci f'ck b'k cf\_ž]b'k \c'Y'cf']b'dUf'žk \YfY']h\Ug'dfYj ]ci g'm VYYb'dfYdUfYX'cf'gi Va ]h]YX'Zc'f'UbchYf'UggYgga Ybhcf'Wč'i fgY'Uhl BGK 'cf'UbchYf'i b]j Yfg]m'

7cffYW'fYZYfYbW]b[ 'dfUW]W'g.

- DUfUd\fUg]b[ žgi a a Uf]g]b[ žYggUmk f]h]b[ 'UbX'hja Y'a UbU[ Ya Ybh
- 5ddfcdf]UHY'i gY'cZUbX'Uhf]Vi h]cb'Zc'f'U'fUb[ Y'cZa UHYf]U'g' ]bWi X]b[ 'hYI hž]a U[ YgžZc'fa i 'UY'UbX WčbW'drg"

#X]j ]Xi U'Ugg]ghUbW' ]g'Uj U]UV'Y'cb'fYei YghZca 'H\Y'@Yf]b[ '7YbhY'f'f'hd.##k k k "Wi bgk "YXi "Ui #"  
Gh XYbhg'UfY'U'gc'fYa ]bXYX'h.UhWfYZ 'hja Y'a UbU[ Ya Ybh]g'Ub ]a dcfUbhidUfhicZgh'XmUbX'cbY'cZ'hY ]XYbh]ZYX'Wli gYg'cZd'U[ ]Uf]ga ]g'dccf'hja Y'a UbU[ Ya Ybh'Gh'XYbhg'g'lc'i 'X'U'ck'gi Z]W]Ybh]ja Y'Zc'fYgYUfW'ž'XfU]h]b[ 'UbX'dfcdYf'fYZYfYbW]b[ 'cZgci fW'g' ]b'dfYdUf]b[ 'U'UggYgga Ybh]h'a g"

I BGK '@]VfUfm'U'gc'\Ug'hY'9@G9'hc'Uj U]UV'Y'hc'Ugg]ghmci 'k ]h'mci f'gh'XmUhl BGK "'9@G9' ]g XYg][ bYX'hc' ]b]fcXi W'bYk'gh'XYbhg'hc'gh'Xn]b[ 'Uhl BGK 'Vi h]h'WUb'U'gc'VY'U' [ fYUhfYZYg\Yf'Xi f]b[ 'mci f'gh'Xn'

7ca d'Y]b[ 'hY'9@G9'h'hc'f]U'UbX'ei ]n'k ]`YbUVY'mci 'hc.

- UbU'mgY'hc'd]Wgž'd'Ub'fYgdcbgYg'UbX'cf[ Ub]gY'fYgYUfW'Zc'f'UWUXYa ]Wk f]h]b[ 'UbX'chYf'UggYgga Ybh]Ug\_g

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

## 5 WUXYa ]WbZcfa Uhcb`

: cfYggYbhU`ghi XYbh]bZcfa Uhcb`fY`Uh]b[ `hc.

- fYei Yghg`ZcfYI hYbg]cb/
- `UhY`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua ]bUh]cb`dfcVWXi fYg/
- gdYWU`Vc]bg]XYfUh]cb`]b`hY`Yj YbhcZ]`bYgg`cf`a ]gUXj Ybhi fY/
- ghi XYbhYei ]hmUbX`X]gUV`]`hm/
- UbX`chYfYggYbh]U`UWUXYa ]W]bZcfa Uh]cbz`gYY

[\hfdg.#k k k "Ufmg"i bgk "YXi "Ui #W ffYb\]hghi XYbh\]bZcfa Uhcb`dfc\]Vc`g!\[ i \]XY`\]bYg#](#)

⇒ U[ Y`7 fYX]h

Gc`c`DYfZcfa UbW`A U\_]b[ `&\$%-

7F ⇒ CG

7F ⇒ CG`Dfcj ]XYf`7cXY.`\$\$\$- ;