



# MDIA5100

ⓂXi ghfm ⓂhY fbg\jd

HYfa `C bY`#`&\$%



GWcc`cZH Y`5 frg`UbX`A YXJU`#`I BGK`..5 frg`UbX`GcWJU`GWYbWg

7 ci fgY'Cj Yfj JYk

'GHUZZ'7 cbhUW'i8YHUJ`g`

'7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj'UVj]m	@cWUjcb	D\cbY
9a a U'>UbY	Ya a U"AbY4 i bgk "YXi "Ui	6mUddc]bha Ybh	%%) ž'@Yj Y`%ž F cVYfh K YVghYf	

GWXcc`7 cbhUW'i bZcfa Uhjcb

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

D\cbY. f\$&Ł-' , ) '( , ) \*

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

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

H\Y'GWXcc`cZhY'5fmg'UbX'A YX]U'k ci 'X`\_Y'hc'F YgdYWw'`m5W\_bck 'YX[ Y'hY'HfUX]hcbU`7 i ghcX]Ubgž  
hY'6YXY[ U'fP Ybg]b[ hcb'WJa di gŁž; UX][ U'f7 ]mUbX'5fhi' '8Yg][ b'7 Ua di gYgŁ'UbX'hY'B [ i bbUk U`  
dYcd'Y'fBi gfu]Ub'8YZ'bvW': cfW'5WUXYa m]b'7 UbVYffUŁ'cZhY'UbXg'k \YfY YUW'WJa di g'cZI B GK 'jg  
'cWUHYX"

7ci fgY'8YHJ`g

7fYX]hDc]bhtg`\*`

Gi a a UfmicZH\Y'7ci fgY

H\]g`Wci fgY`dfcj ]XYg`mci `k ]h`Ub`cddcfh b]hmi`rc`i bXYftU\_Y`k`cf\_! ]bhY [ fUH`X`YUfb]b [ `UbX` [ U]b` ]bXi` gffm`  
YI`dYf]YbW`k ]h`U`cgchcf [ Ub]gU]cb`WcgY`mfY`UH`X`hc`mci` f`A` UgH`fg`dfc [ fUa` "

5hH`Y`YbX`cZH`Y` ]bhYfbg\`d`mci` `k ]`dfcj ]XY`U`gi` a` a` Uhj`Y`fYdcfhcZ`mci` f`YI`dYf]YbW`g`UbX`k`cf\_`YI`Ua`d`Yg`  
Wc`a`d`YH`X`Xi`f]b [ `h`Y` ]bhYfbg\`d`"

H\Y` ]bhYfbg\`d`fYei` ]fYg`U`hc`U`Wc`a`a` ]h`a`YbhcZ`%\$!%)`\$` \`ci`fg`cZ`k`cf\_`k ]h`U`cgchcf [ Ub]gU]cb`UbX`a`Um`  
bcfa`U`m`VY`hU`\_Yb` ]b`Z`fghcf`gY`Wc`bX`gYa`Ygh`f`" `bhYfbg\`d`cddcfh`b]h]Yg`UfY`UXj`Yfh]gYX`j` ]U`h`Y`G`W`cc`c`Z`  
h`Y`5`f`hg`UbX`A`YX]U` `bhYfbg\`d`B`Y`k`g`Y`H`f`"5`h`fb`Uhj`Y`m`mci` `a`Um`Uddfc`UW`U`f`Y`Yj`Ubhc`f [ Ub]gU]cb`hc`  
Udd`m`Zc`f`Ub` ]bhYfbg\`d`"D`f]c`f`hc`g`Y`Y`\_ ]b [ `Ub` ]bhYfbg\`d`z`mci` `g`l`ci` `X`U`H`bX`Ub` ]bhYfbg\`d` ]b`Zc`fa`U`h]cb`  
g`Y`gg]cb`fi`b`V`m`h`Y`G`W`cc`c`Z`h`Y`5`f`hg`UbX`A`YX]U`"

9bfc`a`Ybh]g`V`m`Uddfcj`U`c`ZH`Y`G`W`cc`z`Wc`bX]h]cbU`cb`Uddfcj`U`c`Z`Ub` ]bhYfbg\`d`d`UW`a`Ybh`UbX`a`Y`Y`h]b [   
h`Y`Y` ] [ ]` ]h`m`f`Yei` ]f`Ya`Y`b`h`g`U`V`c`j`Y`"

7ci fgY`@YUfb]b [ `Ci`hWc`a`Yg

%` \`Uj`Y` [ U]bYX`YI`dYf]YbW`c`Z]bXi`gffmdfc`W`ggYg`UbX`dfUW`W`g`  
&` Udd`m`h`Y`c`f`Y`h]W`W`Wc`b`W`d`hg`UbX`dfUW`W`g`\_ ]g` [ U]bYX` ]b`h`Y`dfc [ fUa` `hc`f`Y`U`!`k`cf`X`Wc`b`h`Y`h`g`  
'`" ` \`Uj`Y`Yb`Ub`W`X`h`Y`f`W`d`U`W` ]m`Zc`f` ]b`X`Y`d`Y`b`X`Y`b`h`Y`b [ U [ Ya`Y`b`h`k` ]h` ]b`Xi`gffmdfcj` ]XYfg`

HYUW` ]b [ `G`h`f`U`h` [ ]`Y`g`

H\]g`Wci fgY` \Ug`bc`Zc`fa`U`h`UW` ]b [ `Wc`a`dcb`Y`b`h`"

# 5ggYgga Ybh

H\]g'gi VYWh]g'i b[ fUXYX'gc'U'dUgg'jg'XYdYbXYbhcb'GUhgZUWc'fmiFGM'cf'I bgUHjgZUWc'fmi f] @]b'a YYh]b[ hY'Wci fgY'fYei ]fYa Ybhtg"5b'GM[ fUXY'k ]"bchUZYWimci f'k Y][ \hYX'Uj YfU[ Y'a Uf\_'fK 5A ŁVi hU': @[ fUXY k ]"

7ci fgY'fYei ]fYa Ybhtg'j]bWl XY.

- 7ca d'Yh]cb'cZU'a ]b]a i a 'cZ%\$\$\ci fg'cZd'UW'a Ybh
- Gi Va ]gg]cbg'cZUggYgga YbhHUg\_g'/%' &'XYa cbghfUH]b[ 'U'gYf]ci g'UhtYa dhlc'Ubgk Yf'hY'fUg\_ fYei ]fYa Ybhtg
- Gi Va ]gg]cb'cZVch' hY'\cghUbX'ghi XYbhZYXVUW\_žcfa g

## 5ggYgga YbhHUg\_g'

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UH'	Gh XYbh@YUfb]b[ Ci hW'a Yg'5ggYggYX
7f]h]WU'F YZYW]cb'	) \$i	5bmi]a Y'VYžcfY') da 'cb'hY : f]XUmcZK YY_'%\$	%ž&
K cf_'9j ]XYbW'	) \$i	5bmi]a Y'VYžcfY') da 'cb'hY : f]XUmcZK YY_'%\$	%ž

## 5ggYgga Ybh8YhU]`g

5ggYgga Ybh% '7f]h]WU'F YZYW]cb

GHUfhXUH'.

8YhU]`g. Gh XYbhtg'k ]"gi Va ]hU'W]h]WU'fYZYW]cb'k \]W'f]L'Vf]YZmXYgW]VYg'hY'hdY'cZa YX]U'cf[ Ub]nUH]cb hYmk YfY'd'UW'X' ]b'f]b' [ YbYfU' hYfa g'cb'nžk ]h'ci hbUa ]b[ L'UbX'hY]f'fc'Y'k ]h]b' ]h'f]L' ]XYbh]ZYg'U fY'Yj Ubhfc'Y' ]b'hY'cf[ Ub]nUH]cb'Uhc'f'WcgY'hc'Ybhf'm'Yj Y'UbX'hY'g\_]`g'UbX'UH]f]Vi hYg'bYXYX'hc'W'a d'Yh' gi W'U'fc'Y/f]]L'UXXfYggYg'\ck' hY'hdY'cZk cf\_'hY'm\Uj Y'i bXYfU\_Yb#dfcXi W'X'Xi f]b[ 'hY]f'd'UW'a Ybh W'cb]f]Vi hYg'hc'hY]f'\cghcf[ Ub]nUH]cb'UbX'f'fY'j Ubha YX]U' ]bXi g'f'm' #h' ]g'UghW'a dcbYbhghi XYbhtg g'lc'i 'X'Yi d' ]W]h'mfYZYW]cb'gi W'ZUW'c'fg'Ug'hY'\cgh' #bXi g'f'm]U[ YbXUž'W'U'Yb[ Yg'UbX' ]bcbj U]h]cbg'žcf'hY '\cgh' #bXi g'f'mž'ei Ygh]cbg'cZYh'W]g'k \]W'a Um]f]gY' ]b'fY'U]h]cb'hc'h' ]g'k cf\_ž'ei Ygh]cbg'cZ] ]bXi g'f'm ghUbXUfXgž' ]bXi g'f'mdfc'W'ggYg'cf'a YX]U'žcfa g'"5WUXYa ]WfYZYfYbW'g'lc'i 'X'VY'a UXYž'i g]b[ 'hY'<Uf] UfX gm]hYa ž'UbX'U'a ]b]a i a 'cZž] Y'gYdUfUH'UWUXYa ]Wgci fW'g'i gYXž'hc'gi ddcf'h' ]d'U]b#XYž]bY'hY'fY'Yj Ubh W'cbW'dhtg" hY'fYZYW]j Y'UbU'm]g]Ug'U'k \c'Y'g'lc'i 'X'VY'U'a ]b]a i a 'cZ) \$\$'k cfXg'Vi hia Umia U\_Y'i d'a cfY cZ'hY'W'a V]bYX'hc'U'cZ%) \$\$!&) \$\$'k cfX' ]a ]h]ž'f'Vch'UggYgga YbhW'a dcbYbhtg"; fUX]b[ 'k ]"VY GUhgZUWc'fmi# bgUHjgZUWc'fmicb'mUbX'bc'ž' f'hYf'ZYXVUW\_'k ]"VY'dfcj ]XYX"

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

Gi Va ]gg]cb'bchYg.HUg\_g'%UbX'&UFY'hc'VY'gi Va ]hYX' ]b'U'g]b[ 'Y'XcW'a Ybh'hc'A ccX'Y"

5ggYgga Ybh&. K cf\_'9j ]XYbW'

GhUfhXUHY.´

8YhUJ`g.´Gh XYbfg`k ]``dfYgYbhU`gUa d`Y`cZ`fYdcfng`cbž`cf``]b\_g`hc`icf][ ]bU`k cf\_`i bXYftU\_Yb#dfcXi WYX

F Ygci fWg

DfYgW]VYX`F Ygci fWg`

BchiUj U]UV`Y

F YWca a YbXYX`F Ygci fWg

H\Yfy`Ufy`bc`dfYgW]VYX`fYgci fWg`Zcf`h]g`Wci fgY``

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

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Hi fb]hb`Gi Va ]gg]cb

zmc i`YbWci bhYf`U`dfcV`Ya`k` \Yb`U`H`Ya` dh]b[ `hc`gi Va ]hmc i`f`Ugg][ ba YbhHfci [ \`Hi fb]hbzd`YUgY  
H`Y`d`l`cb`Y`9I`H`f`b`U`Gi` ddcfhcb`-`'` ,` )` " ` ' ` ' ` %cf`Ya` U]`H`Ya` `cb`YI`H`f`b`U`H`f`gi` ddcfh4` i` b`gk` "YXi` "Ui` "Gi` ddcfh  
`l`ci` fg`UfY` ,` .`\$\$Ua` -`-%\$.`\$\$da` `cb`k` YY`\_`XUmg`U`b`X`-` .`\$Ua` -`-` )` .`\$da` `cb`k` YY`\_`YbXg`f`l` \*)` `XUmg`U`m`Y`U`f`l`" zmc i  
UfY`i` bUV`Y`hc`gi Va ]hmc i`f`Ugg][ ba YbhXi`Y`hc`U`ZU`i`h`k`]H`Hi`fb]hb`mc i`a`Um`U`dd`m`Z`f`U`b`YI`H`f`b`g]cb`z`Vi`h`mc i  
a`i`gh`f`Y`H]b`mc i`f`h]W`Y`h`bi`a`VY`f`Z`ca`9I`H`f`b`U`Gi` ddcfhfU`cb[ `k`]H`U`b`m`c`H`Y`f`f`Y`j`U`b`h`X`c`W`a`Y`b`h`g`l`hc  
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`hc`gi` ddcfhmc i`f`YI`H`f`b`g]cb`U`dd`]W`h]cb" zmc i`Ya`U]`9I`H`f`b`U`Gi` ddcfhmc i`k`]`  
Ui`hc`a`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`h`bi`a`VY`f`z`Vi`h]Z`mc i`H`Y`d`l`cb`Y`mc i`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`U`g`\_`Z`f`cb`Y`"  
Hi`fb]hb`U`gc`d`fc`j`]X`Y`g`i`d`X`U`H`Y`g`i`cb`H`Y`j`f`g`m`g`h`Ya`i`g`h`U`h`g`i`cb`H`k`]H`Y`f`"

; YbYfU`mz`UggYgga YbhHUg\_g`a`i`gh`V`Y`gi`Va`]H`Y`X`Y`Y`W`f`cb]W`U`mj`]U`Y`]H`Y`f`Hi`fb]hb`cf`U`A`cc`X`Y`  
Ugg][ ba Ybh`H`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`X`i`cb`mc i`f`W`ci`fg`Y`g`A`cc`X`Y`g`]H`Y`k`]H`  
U`H`f`b`U`h]j`Y`gi`Va`]gg]cb`X`Y`H]g"

: cf`]b`Z`c`fa`U`h]cb`cb` \c`k`hc`gi Va ]hUgg][ ba Ybh`g`cb`]b`Y`j`]U`A`cc`X`Y` .` \`h`d`g` .`#`g`h`X`Y`b`h`i` b`gk` "YXi` "Ui` #ack`!  
gi Va ]hUgg][ ba Ybh`a`cc`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`WXYU]b[ 'hc`UW]XYbhU`mWcdm]b[ Zca`U`gci fW`k ]h'ci hUW\_bck`YX[ Ya`Ybh'

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

7cdm]b[.`i g]b[ 'hY`gUa`Y`cf`j`Yfmg]a`]Uf`k`cfXg`hc`hY`cf][ ]bU`hY`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`]a`U[ Ygž`Ufh`UbX`XYg][`b`dfc`YWgž`Ug`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`U`b[ ]b[`U`Zk`k`cfXg`UbX`d`fUgYg`k`\]Y`a`cghm`fYU]b]b[ 'hY`cf][ ]bU`gfi`W`fY`UbX`#`f`dfc[`fYgg]cb`cZ]XYUg`cZ`hY`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]YW]b[ 'hc[ Y`hY`f`ei`chYg`UbX`d`UfUd`fUgYg`]bhc`U`bYk`k`c`Y`z`k`]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`d`Yfgcb`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`z`cf`Zc`f`hY`di`fdcgY`cZ`hY`a`d`U[ ]Uf]g]b[`Uh`Ubm]h`a`Y`z`dUm]b[`UbchYf`dYfgcb`hc`dYfZcfa`Ub`UWUXYa`]W]Ug`ž`gh`U`]b[`cf`UW`ei`]f]b[`UbchYf`dYfgcb`g`UWUXYa`]Wk`cf\_]`UbX`Wcdm]b[`]ž`cZ]f]b[`hc`Wca`d`Y`h`UbchYf`dYfgcb`g`k`cf\_]`cf`gYY\_]b[`dUma`YbhZc`f`Wca`d`Y]b[`UWUXYa`]Wk`cf\_]`

#Uddfcdf]UHY`W]hU]cb.`7`h]b[`gci`fW`g`k`\]Wk`\Uj`Y`bchVYYb`fYUXž`k`]h'ci hUW\_bck`YX[ ]b[ 'hY`"gYWcbXUfm`gci`fW`Zca`k`\]Wk`\_bck`YX[ Y`cZ`hY`a`U`g`VYYb`cV]U]bYX"

8i`d`]WU]cb`f`fY`Z`d`U[ ]Uf]ga`"L`gi`Va`]h]b[`mci`f`ck`b`k`cf\_]`b`k`c`Y`cf`]b`d`Uf`ž`k`\YfY`]h`Ug`d`fY`]ci`g`m`VYYb`dfY`dUfYX`cf`gi`Va`]hYX`Zc`f`UbchYf`UggYgga`Ybhcf`Wci`fgY`Uhl`BGK`cf`UbchYf`i`b]j`Yfg]m'

7c`fY`W`fYZYfYbW]b[`d`fUW]W]g.

- DUfUd`fUg]b[`žgi`a`a`Uf]g]b[`žYggUm`k`f]h]b[`UbX`h`a`Y`a`UbU[`Ya`Ybh`
- 5ddfcdf]UHY`i`gY`cZ`UbX`Uhf]Vi`h]cb`Zc`f`U`fU]b[`Y`cZ`a`U`hY`f]U`g`]bWi`X]b[`hY`i`ž`]a`U[`Ygž`Zcfa`i`UY`UbX`WcbW]drg"

#X]j`]Xi`U`Ugg]gh`UbW`]g`Uj`U]UV`Y`cb`fYei`YghZca`h\Y`@YUf]b[`7`YbhY`f`h`hd.`##`k`k`"Wi`bgk`"YXi`"Ui`#`G`h`XYbhg`UfY`U`gc`fYa`]bXYX`h`Uh`WfYZ`h`a`Y`a`UbU[`Ya`Ybh]g`Ub`]a`dcfU]bh`dUf`hc`Z`gh`Xm`UbX`cbY`cZ`hY`]XYbh]Z]YX`W]i`gYg`cZ`d`U[ ]Uf]ga`]g`d`cc`f`h`a`Y`a`UbU[`Ya`Ybh`G`h`XYbhg`g`l`ci`X`U`ck`gi`Z]W]Ybh]h`a`Y`Zc`f`YgYUfWk`ž`XfU]h]b[`UbX`dfcdYf`fYZYfYbW]b[`cZ`gci`fW`g`]b`dfY`dUf]b[`U`UggYgga`Ybh]h`a`g"

I BGK`@]VfUfm`U`gc`U`g`hY`9@G9`hc`Uj`U]UV`Y`hc`Ugg]gh`mci`k`]h`mci`f`gh`XmUhl`BGK`"9@G9`]g`XYg][`bYX`hc`]b`f`c`Xi`W`bYk`gh`XYbhg`hc`gh`Xn]b[`Uhl`BGK`Vi`h]h`WUb`U`gc`VY`U`[`fYUhfY`Z]Yg`Yf`Xi`f]b[`mci`f`gh`Xn'

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

- UbU`mgY`hc`d]Wgž`d`Ub`fYgdc`bgYg`UbX`cf[`Ub]gY`fYgYUfWk`Zc`f`UWUXYa`]Wk`f]h]b[`UbX`chYf`UggYgga`Ybh]Ug\_g`





