

-RVH *LOGR GH 0RXUD 0RQMCHILUD -G-12RULYFRWHD8DSULDDQGHZLGH)UHLUH &O#EBC#DQB 3OLYHLYDHEIFD6DQ
0DQJDEHLUD &RKULCHURD *DGHOKD %DWL7WDLG8V) 6BQWRW ,GHDQO\$7HROD7H[HLDQOHIWTLRLWHDHVVWLQR 6REUDO
&RURQDU\ &DUH 8QLW RI 352&\$3(3HUQDPEXFR &DUGLDF (PHUJHQF\ +RVSLWDD]L3QLYHUVLW\ RI 3HUQDP
/DERUDWRU\ RI &OLQLFDO \$QDO\HVH DWU7KH3QLYHUVLW\ RI 3HUQDPEXFR
,QVWLWXWH RI %LRORJLFDO 6FLHQFHV 8QLYHUVLW\ RI 3HUQDPEXFR %UD]LO
\$FDGHPLF DW 7KH 0HGLFDO 6FKRRO 8QLYHUVLW\ RI 3HUQDPEXFR %UD]LO
3RVW *UDGXDWLRQ LQ +HPDWRORJ%8D]LCHUVLW\ RI 3HUQDPEXFR
0HGLFDO 6FKRRO 8QLYHUVLW]L3QLYHUVLW\ RI 3HUQDPEXFR
&RUUHVSRRQLQRD7WKEGR GH 0RXUD 0RQWHLUR --QLRU 3URQWR 6RFRUUR &DUGLROyJLFR GH 3HUQDP

6WXGLHV VKRZ WKDW WKURPERF\WRSHQLD LV DVVRFLDWHG ZLWK GHFUHDVHG
VXUYLYDO LQ SDWLHQWV LQ ,&8 > @ DQG WKH GHFOLQH LQ SODWHOHW FRXQW 3
GXULQJ KRVSLEWDLJDLRQ LQ WKH ,&8 SURYLGHV SURJQRVWLF LQIRUPDLRQ > @

3ODWHOHW SDUDPHWHUV FDQ EH PRQLWRUHG WKURXJK VHPL LQYDVLYH
SURFHGXUHV IRUHQKOSHLQGLRGLDJQRVLY HDUO\ VWDJH RI
GLVHVVH PRQLWRULQJ WKH SURJUHVVLRQ DQG GHWHUPLQLQJ WKHUDSHXWLF
UHVXOWSDUDPHWHUV LQFOXGH 3/7 PHDQ SODWHOHW YROXPH 039
SODWHOHW GLVWULEXWLRQ ZLGWK 3': DQG SODWHOHW ODUJH FHOOV UDLR 3 /
> @ \$PRQJ SODWHOHW LQGLFHV 039 LV D SRWHQWLDOL\ XVHIXO PDUNHU RI
SODWHOHW DFWLYLWY LPSRUWDQFH RI GHWHUPLQLQJ WKH 039 LV
UHODWHG WR WKH SUHVHQFH RI DQFUDVHG SODWHOHW DJJUHJDWLRQ
EHHQ OLQNHG WR SDWLHQWV ZLWK FRURQDU\ DUWHU\ GLVHVVH DQG VHYHULW\
FRURQDU\ DWKHURVFOHURVLY > @

3ULRU VWXGLHV KDYH DOVR GHPRQVWUDWHG WKDW SODWHOHW SDUDPHWHUV D
SURJQRVWLF LQGLFDWRU LQ JHQHUDO ,&8 IHZ GDWD RQ SDWLHQW DGPLWWHG L
WKH ,&8 DFXWH FDUGLRYDWHFRVWU DGLRFDVWKH[LW
SUHVHQW VWXG\ ZDV WR LQYHVWLJDWH WKH HYDOXDWLRQ RI SODWHOHW SDUDPH
D SUHGLFWRU RI DOO FDXVH PRUWDOLW\ LQ ,&8 RI WKH FDUGLDF HPHUJHQF\ XQL
WR SURYLGH LQIRUPDLRQ WKDW ZLOO DOORZ DQWLFLESDWLRQ RI SRVVLEOH DGY
RXWFRPHV

ODWHULDOV DQG OHWKRGV

6WXG\ 3RSXODWLRQ DQG 3URWRFRO

\$Q REVHUYDLRQDO FRKRUW SURVSHFWLYH DQG DQDO\WLFDO VWXG\ LQYROYL
SDWLHQWV DGPLWWHG WR WKH FDUGLDF ,&8 ZLWK EHG RI WKH &DUGLRORJL
(PHUJHQF\ 8QLW 352&\$3(D VSHFLDOLJHG WHUWLDU\ FDUH
FDUGLRYDVFXODU WHDFKLQH KRSUWDLQWIDOK EHG

:KLWH				
-------	--	--	--	--

%ODFN

%URZQ

2ULJLQ

(PHUJHQF\

,QILUPDU\

7658

7LPH RI VWD\ LQ WKH ,&8 GD\V " " " " "

0HGLDQ WLPH RI VWD\ LQ WKH ,&8 GD\V

7LPH RI VWD\ LQ WKH KRVSLOWDO" GD\V " " " " "

0HGLDQ WLPH RI VWD\ LQ WKH ,&8 GD\V

0RUWDOLW\

,&8

+RVSLWDO

\$3\$&+(,, " " " " "

0HGLDQ \$3\$&+(,,

\$3\$&+(,, VFRUH

SRLQWV

• SRLQWV

62)\$ " " " " "

0HGLDQ 62)\$

62)\$ VFRUH

SRLQWV

• SRLQWV

930 " " " " "

0HGLDQ 930

6HSVLV

<HV

1R

&RURQDU\ SDWLHQW

<HV

1R

6HSVLV &RURQDU\

:LWK VHSVLV DQG FRURQDU\

:LWK VHSVLV DQG QRQ FRURQDU\

:LWKRXW VHSVLV DQG FRURQDU\

:LWKRXW VHSV LV DQG QRQ FRURQDU\

\$EEUHYLDWLRQV 3ODWHOHW FRXQRFDDWJRWLFPL037 ; / ; PRGHUDWH / DQG VHYHUH/ ;

\$EEUHYLDWLRQV ,&8 ,QWHQVLYH &DUH 8QLW 7658 7KRUDFLF 6XUJHU\ 5HFYHU\ 8QLW \$\$\$+(, , \$F>
2UJDQ)DLOXUH \$VVHVVPHQW 930 PHDQ SODWHOHW YROXPH 5HVXOWV H[SUHVVHG DV QXPEHU PHDQ
H[DFW WHVW ZKHQ QHFHVVDU\ IRU FDWHJRULFDO YDULDEOHV DQG 6WXGHQW W WHVW IRU TXDQWLWDWL

9DULDEOHV	+RVSLWDO HYROXWLRQ 7RWDO
	'LVFKDUJH 'HDWK
	Q Q Q

(YDOXDWLRQ RI 3/7

,QFUHDVH

'HFUHDVH

(YDOXDWLRQ RI 039

,QFUHDVH

1HXWUDO

'HFUHDVH

\$EEUHYLDWLRQV 3/7 3ODWHOHW &RXQW 039 0HDQ 3ODWHOHW 9ROXPH 1HXWUDO
 &RQVWDQW YDOXH WKURXJK SHULRG RI KRVSLWDO VWD\

5HIHUFHV

:LOOLDPVRQ '5 \$OEHW 0 +HHOV \$QVGHOO ' \$UQROG '0 /DX]LHU) HW DO
URPERF\WRSEQLFDLWLFDOO\ ,,, SDWLHQWV UHFHLYLQJ
WKURPERSURSK\OD[LV IUHTXHQF\ ULVN IDWRUV DQG RXWFRPHV &KHVW

:DQJ +/ \$JXLOHUD & .QRSI .% &KHQ 70% ODVORYH '0 HW DO
URPERF\WRSEQLFDLWLFDOO\ LQWHQVLYH FDUH XQLW - RI ,QWHQVLYH &DUH 8QLW

:LWWHOV (* 6LHJHO 5' URPERF\WRSEQLFDLWLFDOO\