

# Volume the key to dispensary shelving strategy

PRESCRIPTION VOLUMES AND THE WEEKLY ORDER CYCLE CAN DETERMINE YOUR DISPENSARY SHELVING STRATEGY WRITES **PETER FEROS.\***

## KEY POINTS

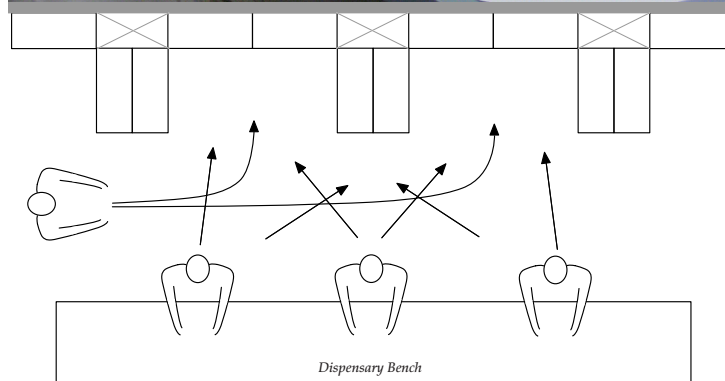
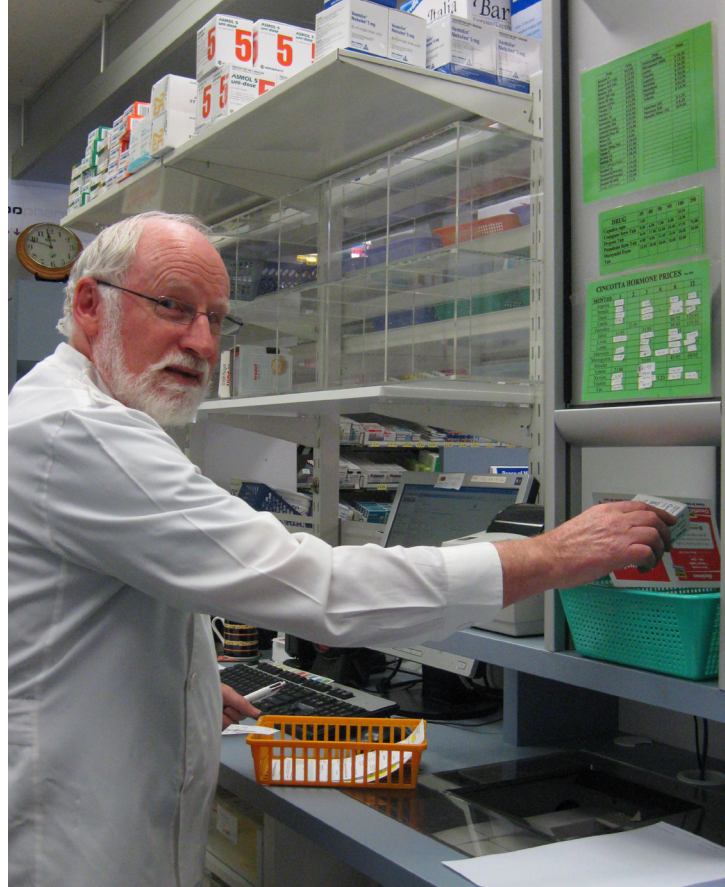
- Traditional 'one-size-fits-all' E-bay shelving is no longer appropriate for most pharmacies.
- Efficiencies delivered by specialised sloping shelves tailored to prescription volumes offers a return on investment

**T**he 'one size fits all' benchmark was used by shop fitters for many years to determine dispensary shelving requirements.

E-bay shelving once proliferated across pharmacy. The shelving was in 600mm modules with 250mm deep flat shelves. This depth was inadequate for pharmacies dispensing high volumes of prescriptions and any dispensary bulk buys (the diagram to the right illustrates the inefficiency of E-bay shelving). The stock that didn't fit this standard shelving was stocked on the top shelf or out the back, which required a ladder and/or extra walking which reduced efficiencies.

At Efficient Pharmacy Designs we request that client pharmacies provide an annual dispensary product usage report.

This data is then sorted in descending frequency of use, from the most dispensed, to the



ABOVE TOP: **Russell McQueen picking a product in one second delivered by RoboPharma at Cincotta Discount Chemist Blacktown.**

ABOVE: **E-bay shelving requires much more walking and congestion in the dispensary.**

infrequently dispensed, to not dispensed at all. This analysis invariably shows that Pareto's Law applies to dispensing frequency: 20% of products cover 80% of the prescriptions and vice versa.

Now 250mm deep shelves are adequate to store the 80% of low-volume products with stock levels only requiring one-to-three product items. But the same shelves are inadequate for high-volume products where 10–30 items may be required. These products need to be stocked on 400mm, or even 500mm deep shelves. In an automated storage system the channels can be 1200mm deep.

These shelves for the high-volume products should be placed as close

**TABLE ONE: Numbers of products and items stocked at different dispensing volumes**

Daily prescription volume	High volume			Low volume		Total products	Total items
	Single facings	Double facings	Items	Products	Items		
100	175	25	1,400	800	1,600	1,000	3,000
200	350	50	2,800	1,000	2,000	1,400	4,800
200–300	380	50	2,400	1,000	2,000	1,430	4,400
300–400	600	100	5,200	1,200	2,400	1,900	7,600
450 plus	400	200	3,900	1,200	2,400	1,800	6,300

as possible to the prescription assembly point in order to minimise the walking time on 80% of the items dispensed. (For more information on 80:20 dispensing see ‘80:20 dispensing creates time and space for counselling’ *AJP* Vol 90 January/February 2009 p56.)

THE WEEKLY ORDER CYCLE

The number of products and items required is a function of the prescription volume.

For a pharmacy dispensary with a weekly ordering cycle that keeps one week’s stock as a buffer, the numbers of products and items to be stocked are detailed in Table One.

With a daily dispensing volume of 200, 400 high-volume products are stored (50 of them in double facings and 350 in single facings). This amounts to 2,800 items. One thousand low-volume products are stored in a drawer system.

Having the data on the numbers of product items needed to cover a weekly order cycle, the next task is to match the appropriate stock storage system to these numbers. Details of the sloping shelving

TABLE THREE: Time savings at different dispensing volumes						
Daily prescription volume	High Volume		Low Volume		Annual time savings (hours)	Annual \$ savings at \$25ph
	Item selection savings (sec's)	Item restocking savings (sec's)	Item selection savings (sec's)	Item restocking savings (sec's)		
100	10	4.6	10	4.6	148.0	\$3,700
200	9	4.6	10	4.6	279.8	\$6,995
200–300	10	3.6	10	4.6	349.8	\$8,745
300–400	10	4.6	10	4.6	518.1	\$12,953
450 plus	12	7.0	10	4.6	826.7	\$20,668

required are provided in Table Two.

For 100 prescriptions a day, two bays of sloping shelves for high-volume products are required. It would be cost effective for pharmacies of this size to just install the two bays of sloping shelves. Positioned right behind the prescription assembly point, they would facilitate product selection as a simple ‘turn and take’. Product selection time would be under three seconds. Product selection time with E-bay shelving averages 13 seconds.

For 200 prescriptions a day, four bays of sloping shelves are required. This configuration requires one or two steps to select a product. Product selection times could increase to four-to-five seconds.

As prescription volumes increase, more bays of sloping shelves are required involving more walking. This extra walking can be eliminated by storing products in a carousel. The carousel eliminates walking by bringing the product to the prescription assembly point with a simple rotation of the carousel shelf. Product selection time is reduced to less than four seconds. The different-sized carousels, suitable for different prescription volumes, are detailed in Table Two.

The most efficient stock storage is through automation. With conveyors delivering the product to the prescription assembly bench, product selection is reduced to one second. Without the conveyor

to the prescription bench, a major advantage of automation is negated. Having to take one or two steps to select products from an automated system takes three-to-four seconds.

In selecting a conveyor system it is important to ensure the conveyor leaves sufficient space for products and paper work to be moved along the dispensing bench.

TIME SAVINGS

The time and resultant dollar savings available at the different dispensing volumes are provided in Table Three.

Dispensing 200 prescriptions per day and using 80:20 dispensing and sloping backfilling shelves could save 279.8 hours and \$6,995 per year.

The cost savings in the table do not include the savings from reduced congestion in the dispensary. From our experience with RoboPharma at Cincotta Discount Chemist Blacktown there would be a further 25% cost saving with automation.

SPACE SAVINGS

The space and resulting dollar savings available at the different dispensing volumes are provided in Table Four.

The annual sales per square metre have been derived from Table 19 of the *Guild Digest*. This table ranks pharmacies by prescription volume.

The extra profit available from the extra space would be assessed at 20% of sales as rent and even wages would not increase. The annual extra profit from the extra space ranges from \$6,464 to \$19,262.

Table Two: Sloping shelf requirements at different dispensing volumes\*

Daily prescription volume	High-volume storage			Low-volume storage	
	Description	Linear metres	Square metres**	Drawer system	Linear metres
100	2 x sloping shelves 400mm deep 10 shelves high	16.0m	6.4m <sup>2</sup>	4 315mm deep 14 shelves high	56
200	4 x sloping shelves 400mm deep 10 shelves high	32.0m	12.8m <sup>2</sup>	5 315mm deep 14 shelves high	70
200–300	Carousel 110 500mm deep*** 10 shelves high	34.5m	9.4m <sup>2</sup>	5 315mm deep 14 shelves high	70
300–400	Carousel 180 500mm deep 10 shelves high	56.5m	20.4m <sup>2</sup>	6 315mm deep 14 shelves high	84
450 plus	Automation 1200mm deep 14 channels high	13.7m	16.5m <sup>2</sup>	6 315mm deep 14 shelves high	84

\* All dispensary shelving should be sloping because sloping shelving brings the oldest product to the front where it is easier to see and select. Sloping shelves create space at the back of the shelf to store new stock thus facilitating automatic date rotation of stock.  
\*\* The area of shelf space is important with high-volume product storage because of the high number of items to be stocked. With low-volume products only one or two items of each product are stored and the shelf can be 275mm or 300mm deep.  
\*\*\* The deeper the shelf the greater the storage capacity.

**ROI FOR SPECIALISED SHELVES**

The return on investment (ROI) for the different types of specialised shelving is provided in Table Five. The specialised shelving ROI ranges from 26.7–69.8% and the ROI from automation is 35.7%.

**CONCLUSION**

The above analysis shows that:

- **'One-size-fits-all' flat shelving is not the most efficient way to store dispensary products. The most efficient in terms of both time**

**TABLE FIVE: Space and time savings at different dispensing volumes**

Daily prescription volume	Annual \$ time savings (Table Three)	Annual \$ space earnings (Table Four)	Annual \$ space and time benefits	Dollar investment	ROI, % pa
100	\$3,700	\$12,517	\$16,217	\$26,400	61.4%
200	\$6,995	\$19,262	\$26,257	\$37,600	69.8%
200–300	\$8,745	\$14,616	\$23,361	\$45,700	51.1%
300–400	\$12,953	\$6,464	\$19,417	\$72,600	26.7%
450 plus	\$20,668	\$15,034	\$35,702	100,000	35.7%

and space is to use specialised sloping shelves suited to the prescription volume;

- the use of specialised sloping shelves at all levels of dispensing volume provides significant

returns on investment; and

- while the up-front investment in specialised sloping shelves is higher than standard flat shelves, specialised shelving lasts 20 or more years and so the long term cost is lower because of the many years of time and space saving. ■

*\* Peter Feros is a director of Cincotta Chemists and principal of Efficient Dispensary Designs.*

**TABLE FOUR: Extra profit from space savings at different dispensing volumes**

Daily prescription volume	Space savings (msq)	Annual \$ sales per msq	Annual \$ sales from extra space	Annual \$ profit from extra space
100	10.7	\$5,849	\$62,584	\$12,517
200	10.7	\$9,001	\$96,311	\$19,262
200–300	9.3	\$7,858	\$73,079	\$14,616
300–400	4.0	\$8,080	\$32,320	\$6,464
450 plus	8.2	\$9,167	\$75,169	\$15,034

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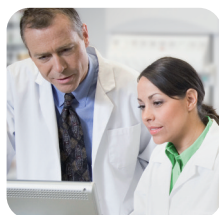
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