Medical Technologies & Diagnostics

2Q18 HME Oxygen and Sleep Survey

REPORT HIGHLIGHTS: We worked with HME News to survey 74 home medical equipment companies (HMEs) about the oxygen and sleep markets. Respondents continue to increase POC adoption and their responses imply ~30% growth in the POC market. INGN and its private label partner’s POCs received the highest ratings. Respondents expect faster sleep patient volume growth compared to our prior survey. Among the low-cost Asian CPAP manufacturers, 3B Medical appears to be gaining momentum in the US while Apex Medical does not. After having similar flow generator ratings in recent surveys, Respironics pulled ahead of RMD. RMD looks likely to lose flow generator and mask share primarily to Respironics. And CPAP pricing improved from our prior survey. We think that the survey is positive for INGN and mixed for RMD.

- **POC use should continue to see double-digit growth.** POCs are expected to increase from 28.0% of the ambulatory oxygen market to 36.0% over the next 12 months, which implies ~30% growth. Applied Home Healthcare's OxyGo Fit and OxyGo (the private label versions of INGN’s G4 and G3, respectively) were the highest rated POCs at 5.9 and 5.8 out of 7.0, respectively, followed by INGN’s G4 and G3 both at 5.7, and Respironics’ SimplyGo Mini at 5.1. The biggest two factors limiting the use of more POCs are the initial investment required and concerns about profitability. And respondents indicated that they believe that an average of 42% of their ambulatory oxygen patients are appropriate candidates for POCs but we suspect this will increase as HMEs gain experience with POCs.

- **3B Medical is gaining some traction in the US CPAP market.** We added some questions on the low-cost Asian CPAP manufacturers, 3B Medical and Apex Medical. The results indicate that 3B Medical is gaining share in the US while Apex Medical is not. Both companies’ product ratings were lower than the major manufacturers in all categories. But despite this, respondents expect 3B Medical’s share of flow generator purchases to increase by 0.6% from 1.7% to 2.2% and its share of mask purchases to increase by 1.4% from 1.6% to 3.0%. In contrast, Apex Medical’s share of both flow generator and mask purchases is expected to remain at 0%.

- **RMD looks likely to lose market share.** Over the NTM, respondents expect RMD's share of their flow generator purchases to decrease by 2.1% and its share of their mask purchases to decrease by 5.8%. Respondents expect Respironics' share of their flow generator purchases to increase by 1.3% and its share of their mask purchases to increase by 3.5%. And respondents expect other smaller companies’ (excluding 3B and Apex) share of their flow generator purchases to increase by 0.7% and their share of mask purchases to increase by 1.1%.

- **Continued on page 2.**

Companies Mentioned in Report:

- Inogen, Inc. (INGN: $185.94, PT: $215.00)
- ResMed Inc. (RMD: $104.08, PT: NA)

Sector Chart

S&P 500 Healthcare Index (S5HLTH) 06/29/18

Relevant disclosures begin on page 12 of this report.
- Respondents expect faster sleep patient volume growth compared to our prior survey. Respondents saw their sleep patient volume increase by 5.7% in the last 12 months (LTM) and expect their sleep patient volume to grow by 7.0% in the next 12 months (NTM). Both of these growth rates are above our prior survey results of (0.7%) and 3.0%, respectively.

- Flow generator and mask price declines were smaller than in our prior survey. Respondents indicated that flow generator prices declined by 0.9% over the LTM (vs. a 3.0% decline in our prior survey), while mask prices declined by 2.3% over the LTM (vs. a 3.0% decline in prior survey).

Survey Introduction

Needham & Company and HME News worked together to survey U.S. home medical equipment providers (HMEs) about the sleep and oxygen equipment markets. We received 74 responses to our survey and we note that response rates varied from question to question since none of the questions were mandatory (the response rates for each question is shown on the charts). The survey replies were received between 5/25/18 and 6/12/18.

Survey Results

Respondents expect faster sleep patient volume growth compared to our prior survey

In our earlier surveys, we asked HMEs about their sleep revenue growth. However, we switched to asking about patient volume growth instead, starting with our 4Q13 survey, since revenue growth is affected by reimbursement changes and since we think that patient volume growth is more important for ResMed. As a result of this change, the responses to this question are not directly comparable to our prior surveys, although we have added these results to our time series chart in Figure 3.

On average, respondents reported 5.7% sleep patient volume growth in the last 12 months, which is an improvement from the (0.7%) growth reported in our 4Q17 survey. And respondents expect 7.0% growth in the next 12 months, which is an improvement from the 3.0% growth expected in our 4Q17 survey. Of the respondents, 21% saw a decline in their sleep patient volume in the last 12 months and 16% expect a decline in the next 12 months.

Figure 1  Sleep patient volume growth (LTM)

![Figure 1](image1)

Figure 2  Sleep patient volume growth (NTM)

![Figure 2](image2)

Source: Needham & Company 2Q18 HME Survey
Flow generator price declines were smaller than in our prior survey

Respondents indicated that flow generator prices declined by 0.9% in the last 12 months versus a 3.0% decline in our 4Q17 survey. This represents a reversal from modest price deterioration seen in 4Q17 and is the continuation of a longer-term trend in pricing after the large Medicare reimbursement cuts.

ResMed looks likely to lose flow generator market share in the next 12 months

ResMed's flow generator market share may decrease by 2.1% over the next 12 months. Respondents indicated that ResMed's flow generators currently make up 49.9% of their purchases and expect this to decrease to 47.8% in the next 12 months. Respironics’ and 3B Medical's flow generator market share may increase by 1.3% and
0.6%, respectively, over the next 12 months. Fisher & Paykel’s flow generator market share may decrease by 0.4% and Apex Medical’s market share may remain flat over the next 12 months. The other smaller manufacturers’ market share may increase by 0.7% over the next 12 months.

**Figure 6  Flow generator market share**

![Flow generator market share chart]

Source: Needham & Company 2Q18 HME Survey

**Figure 7  Change in flow generator market share**

![Change in flow generator market share chart]

Source: Needham & Company 2Q18 HME Survey

**ResMed’s flow generators are no longer the highest rated**

ResMed’s AirSense 10 flow generator platform was rated 5.7 out of 7.0, slightly below Respironics’ DreamStation flow generator platform, which was rated 5.9 and well above Fisher & Paykel’s Icon+ flow generator platform at 4.4, 3B Medical’s Luna flow generator platform at 4.1, and Apex Medical’s iCH flow generator platform at 4.0. This survey marks a reversal from our 4Q17 survey where ResMed’s flow generator platform was rated the highest after being rated close to Respironics’ flow generators in our last three surveys.

**Figure 8  Flow generator platform ratings**

![Flow generator platform ratings chart]

Source: Needham & Company 2Q18 HME Survey

**Figure 9  Flow generator platform ratings (time series)**

![Flow generator platform ratings time series chart]

Source: Needham & Company 2Q18 HME Survey and prior surveys

**Sales of travel CPAPs are expected to see modest growth**

Travel CPAPs were purchased by 5% of patients in the last 12 months and this looks likely to increase to 7% of patients in the next 12 months. Both ResMed and Respironics have recently launched their first travel CPAPs and we think that this is helping to expand this segment of the market.
Respironics’ DreamStation Go was the highest rated travel CPAP

Respironics’ DreamStation Go CPAP flow generator platform was rated 5.5 out of 7.0. This is above ResMed’s AirMini’s 5.1 rating, Human Design Medical’s Z1’s 4.9 rating, and Somnetics’ Transcend’s 4.6 rating. We are surprised that the DreamStation Go has been consistently rated higher than the AirMini since it is substantially larger and heavier (5.9” x 5.9” x 2.3” and 1.88 lbs for the DreamStation Go vs. 5.4” x 3.3” x 2.1” and 0.66 lbs for the AirMini).

Mask price declines were smaller than in our prior survey

Respondents indicated that mask prices declined by 2.3% in the last 12 months versus a 3.0% decline in our 4Q17 survey. This represents the third consecutive improvement in mask price declines.
ResMed looks likely to lose mask market share in the next 12 months

ResMed's mask market share may decline by 5.8% over the next 12 months. Respondents indicated that ResMed's masks currently make up 43.0% of their purchases and expect this to decline slightly to 37.2% in the next 12 months. Respironics’ and 3B Medical’s mask market share may increase by 3.5% and 1.4%, respectively over the next 12 months. Fisher & Paykel's mask market share may decrease by 0.2% and Apex Medical’s mask market share may remain flat over the next 12 months. The other smaller manufacturers’ market share may increase by 1.1% over the next 12 months.

ResMed's nasal masks are no longer the highest rated though its nasal pillow and full-face masks remain the highest rated

Respironics’ nasal masks are now the highest rated, according to our survey’s respondents, followed by ResMed in second and Fisher & Paykel in third. In standard nasal masks, Respironics’ DreamWear Nasal was rated 6.0 out of 7.0, followed by ResMed's AirFit N20 at 5.5, Respironics’ Wisp at 5.4, ResMed’s Mirage FX at 5.3, Fisher & Paykel’s Eson 2 and Zest Q at 5.2 and 4.8, respectively, 3B Medical’s Viva at 4.3, and Apex Medical’s Wizard 210 at 3.5. We note that there were a minimal amount...
of respondents who have had experience with 3B Medical’s and Apex Medical’s nasal masks.

**Figure 18  Nasal mask ratings**

![Nasal mask ratings chart](chart1.png)

*Source: Needham & Company 2Q18 HME Survey

In nasal pillow masks, ResMed’s AirFit P10 was rated the highest at 6.0 out of 7.0, while ResMed’s Swift FX was rated 5.8, Respironics’ DreamWear Gel and Nuance were rated 5.7 and 5.4, respectively, and Fisher & Paykel’s Brevida and Pilairo Q were rated 5.1 and 5.0, respectively, 3B Medical’s Rio was rated 4.5, and Apex Medical’s Wizard 230 was rated 3.5. We note that there were a minimal amount of respondents who have had experience with 3B Medical’s and Apex Medical’s nasal pillow masks.

**Figure 20  Nasal pillow mask ratings**

![Nasal pillow mask ratings chart](chart2.png)

*Source: Needham & Company 2Q18 HME Survey

And in full face masks, ResMed’s AirFit F20 was rated the highest at 6.0 out of 7.0, while Respironics’ DreamWear Full and Fisher & Paykel’s Simplus were both rated 5.9, ResMed’s AirTouch F20 was rated 5.8, Respironics’ Amara View was rated 5.6, Fisher & Paykel’s Forma was rated 5.0, 3B Medical’s Numa was rated 4.9, and Apex Medical’s Wizard 220 was rated 4.5. We note that there were a minimal amount of respondents who have had experience with 3B Medical’s and Apex Medical’s full face masks.

**Figure 21  Nasal pillow mask ratings (time series)**

![Nasal pillow mask ratings time series chart](chart3.png)

*Source: Needham & Company 2Q18 HME Survey and prior surveys

Note: Uses highest rated mask if more than one was rated

**Figure 19  Nasal mask ratings (time series)**

![Nasal mask ratings time series chart](chart4.png)

*Source: Needham & Company 2Q18 HME Survey and prior surveys

Note: Uses highest rated mask if more than one was rated

*Source: Needham & Company 2Q18 HME Survey and prior surveys*
Switching resupply patients to new masks is somewhat difficult and respondents only expect to attempt this with a minority of their patients

Almost half (47%) of respondents indicated that it is neither difficult nor easy to switch a resupply patient to a new mask while 42% indicated that it is somewhat difficult. This is at odds with what we heard during our call with an HME expert who indicated it is relatively easy to switch resupply patients to new masks. And respondents indicated that they would attempt to switch an average of 20% of resupply patients to other masks in the next 12 months.

Survey results indicate that HMEs continue to transition from oxygen tanks to portable oxygen concentrators (POCs)

While delivered tanks currently represent 54.8% of the ambulatory oxygen market, HMEs expect these to see the biggest decline, by 8.7% to 46.0% of the market over the next 12 months. Delivered tanks are mostly expected to be replaced by POCs, which are expected to increase by 8.0% from 28.0% of the market to 36.0% over the next 12 months. If this proves accurate, it implies that POC sales to HMEs would increase by ~30% over the next 12 months. And respondents indicated that they would attempt to switch an average of 20% of resupply patients to other masks in the next 12 months.
believe that an average of 42% of their ambulatory oxygen patients are candidates for POCs.

**Figure 26** What portion of your firm’s ambulatory oxygen patients uses the following techniques?

![Figure 26](image1)

Source: Needham & Company 2Q18 HME Survey

**Figure 27** Change in ambulatory oxygen market techniques

![Figure 27](image2)

Source: Needham & Company 2Q18 HME Survey

**Figure 28** Implied POC sales growth over the next 12 months

![Figure 28](image3)

Source: Needham & Company 2Q18 HME Survey

**Figure 29** Portion of ambulatory oxygen patients who are candidates for POCs

![Figure 29](image4)

Source: Needham & Company 2Q18 HME Survey

**Applied Home Healthcare’s OxyGo POCs (which are private label versions of Inogen’s G3 and G4) received the highest ratings**

Applied Home Healthcare’s OxyGo Fit and OxyGo (the private label versions of INGN’s G4 and G3, respectively) were the highest rated POCs at 5.9 and 5.8 out of 7.0, respectively, followed by INGN’s G4 and G3 at 5.7 and 5.7, respectively. Respiration’s SimplyGo Mini was the next best rated POC at 5.1. We continue to believe that INGN’s POCs are superior to competitors’ POCs.
Most HMEs offer POCs to at least some patients but concerns about the initial investment required and profitability are limiting POC use

Most HMEs (91%) offer POCs to patients willing to pay for them out of their own pocket. Similarly, 57% offer POCs on a rental basis to patients that are traveling. A smaller but still substantial portion of HMEs indicated that they offer POCs to patients with private insurance (55%), Medicare (52%), and Medicaid (34%). Respondents cited the initial investment (58%), concern about profitability (17%), reliability concerns (14%), business model transition (3%), and higher patient copays (3%) as the primary factors that prevent them from increasing use of POCs.

Reliability remains most important POC characteristic

When selecting a POC, respondents rated POC reliability as the most important factor (2.0 [on a scale from 1-5 with 1 being the most important and 5 being the least important]), followed by price (2.7), size and weight (3.4), battery life (4.1), ease of servicing (4.1), and connectivity (4.7).
Figure 33  POC characteristics (ranked in terms of importance from 1 to 5)

Figure 34  POC characteristics (ranked in terms of importance from 1 to 5)

Source: Needham & Company 2Q18 HME Survey

Source: Needham & Company 2Q18 HME Survey
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