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Fun with Clinical Trial Budgeting and Accruals

By Chris Chan

The only thing certain about a clinical trial budget is that the numbers will change. The Finance Department is responsible for tracking the changes and informing the Clinical Development Department (ClinDev) how it is performing against budget. Senior management may be curious as well. Finance is also responsible for projecting monthly, quarterly and annual financial results.

Forecasting clinical trial expenditures would be simple if every trial ran to completion on schedule and on budget, with costs spread evenly over the course of the trial. Of course, such assumptions are laughable, so Finance has developed various methods to forecast expenditure based on an uncertain future. These methods employ financial models based on past experience. Similarly, tracking expenses and liabilities during the course of a clinical trial would be simple if every CRO, investigator, central lab, and consultant sent invoices at 11:59 p.m. on the last day of each month for all work complete up to that minute. That's not likely to happen, so Finance estimates ("accrues") expenses and liabilities using a financial model of the trial. These models allocate planned expenditures in trial contracts based on parameters such as site enrollment, subject enrollment, site monitoring schedules, and so forth. Both the forecasts and the accruals will be more accurate if Finance and ClinDev work closely together to develop the initial models and share updates as the trial progresses.

Let me confirm that we in Finance do indeed have one-track minds: we want data, and we want it timely, accurate, and final. To make us happy, just give us a list of every clinical trial you plan to conduct over the next decade, the precise timelines, including the month in which each subject will enroll, and the exact cost of every study activity. Oh, and don't forget to include the exact date and dollar amount of every future contract change order. By the way, we are painfully aware that you do not understand what we do all day.

In contrast, you in ClinDev know that there is no such thing as a firm date or number, nothing is really under your control, and you might actually get some work done if it wasn't for our incessant requests for data that will probably change by tomorrow anyway. By the way, you are painfully aware that we do not understand what you do all day.

It's not a marriage made in heaven, but it is a marriage. By recognizing our fundamental differences and some of the reasons behind them, we may be able to make it work with some simple methods. To aid in this effort, we can look at the Top Five Common Statements Made by ClinDev that Rapidly Accelerate a Finance Guy's Aging Process:

1. **Projected costs for the upcoming trial? $15 million, but maybe as high as $25 million, or possibly $40 million; hard to say.**

Any change among a myriad of variables can affect the numbers: CRO off to a slow start? Subjects not enrolling? Need to add a procedure? Test article not available? A few unexpected adverse events?

So how can the inherently uncertain nature of clinical trials be reconciled with Finance's need for accurate budgets? A couple of methods may help. (This discussion assumes that

ClinDev can prepare study budgets for review by Finance. Alternatively, ClinDev gives Finance the key study assumptions and Finance prepares the budgets.)

The first method is to provide "upside/downside" estimates along with your "expected" budgets. For example, if the probable trial cost is $15M, your offering to Finance will be, "The budget for the trial is $15M, but may go as high as $25M if 'x-y-z' occurs, or as low as $12M if everything goes exceedingly well." As for the possible but unlikely "$40M" scenario, it is very difficult to plan for catastrophes, but management would probably like to know what red flags to watch for. Every budget should include interim milestones that signal the emergence of good news/bad news scenarios so adjustments can be made.

Finance can then compile all of the possible upsides and downsides across all trial activities, and tell Management and the Board something along the lines of: "Our total clinical trial budget for the year is $50M, but depending on circumstances could go as high as $65-70M or as low as $42-45M." The range of numbers provides a measure of risk and could prove quite useful for planning the company's potential funding needs, etc.

The second method is to make "probability adjustments" across the entire clinical development portfolio. These adjustments are especially useful if your company conducts a large number of trials. The premise behind this method is that some trials will go over budget, some under, some will be delayed, and some will be cancelled. You can predict the most-likely overall budget by assigning probabilities to each possible outcome for each trial and adding up the numbers.

To see how this method works in very simple terms, suppose you've just successfully completed a Phase I trial for a promising oncology compound. For the upcoming year, you are planning four Phase II trials for four separate cancer indications, each costing approximately $10M. Based on final data analysis, Management will decide which of the trials will proceed. If they proceed at all, they will start in parallel on January 1st. One trial is highly likely at 90%, one is moderately likely at 70%, one is possible at 40%, and one is unlikely at 10%. The probability adjusted cost is thus $9M + $7M + $4M + $1M = $21M. If management approves a budget of $21M, you will probably have adequate resources to conduct the likely research program. A budget of $25M will increase the probability. It is very unlikely (2.5%) that the entire $40M will be required.

The accuracy of the adjustments is of utmost importance; if the unlikely (10%) trial happens, there will be a $9M budget shortfall. Accuracy of the probability estimates should improve over time, provided you track what happens and learn from experience. However, there may be reasons to adjust the adjustments: Has a competitor's trial succeeded or failed? Has a recent hiring spree provided the personnel necessary to run four parallel trials? Has your favorite CRO fulfilled your wildest hopes?

2. Your report is screwed up. This $1M expense number is way off; I know for a fact that the CRO has only billed us for $500K.

ClinDev folks often think of costs in terms of invoices that have crossed their desk. Finance people think of costs in terms of accrued expenses that include costs incurred but not yet paid or even invoiced (accrued liabilities). The challenge is to estimate the amount of accrued expenses to record at the end of every monthly, quarterly and annual reporting period for multiple clinical trials, each with multiple sites in multiple countries, managed by multiple CROs. Most likely, your finance department uses complex and cumbersome spreadsheet models to estimate clinical trial accruals. If it's doing its job, it regularly requests data from you to feed these models. (Number of subjects enrolled is a common model input.) In addition to providing input data, contract changes, and other tidbits to Finance, ClinDev can help Finance stay in touch with reality by helping with the creation,

review and updating of these accrual models. Very common changes to a clinical trial, such as timeline extensions and increased research site numbers, render these models obsolete. The resulting defective financial numbers may generate CFO and CEO anguish, external auditor adjustment demands, Board of Directors reprimands, and shareholder kibitzing, none of which is good for anyone's career.

The advent of Sarbanes-Oxley (also grumpily referred to by accountants as "SOX") has significantly increased scrutiny of financial accruals. Congress passed the Sarbanes-Oxley Act in 2002 in response to a series of corporate scandals (Enron, WorldCom, et al), and imposed a series of headache-inducing demands on public companies, especially your good friends in Finance. Among the measures imposed by SOX is "Section 404," which tasks public companies to establish, maintain and continually assess effectiveness of internal control standards and procedures. Put another way, a company can no longer simply generate an accurate number (for accrued expenses, for instance!), but must document and verify the process by which the number was generated. ClinDev shares in the fun when Finance asks not just for data, but also, "Where did those numbers come from?" and "How did you verify they're correct?"

To demonstrate the relevance of processes to "accurate" accrual numbers, allow me to share a personal story. Early in my career, while working for a pharma during the lovely "pre-SOX" days, I was responsible for providing monthly accrued expense numbers for a large number of multi-centered, multi-national clinical trials. One of the items I estimated was investigator site "pass-through" expenses (consisting mostly of subject stipends, travel and meals). In any given month, a given site's pass-through expense ranged from $0 to $5,000. To be conservative and as a result of my lack of experience at the time, I assumed $5,000 in accrued pass-through expenses for every one of several hundred sites. Given that these pass-through expenses were only a small percentage of total cost of trials, nobody noticed the inflated accruals each month. Eventually, however, the accrued liability accumulated to such a large number that the CFO of the entire pharma noticed that something was out of wack. We "agreed" that perhaps a tad less conservatism was in order, and magically "saved" $1 million that month based on nothing more than a changed assumption. Remarkably, there was no bonus in my paycheck. In this case, the error was innocent, but it is easy to see how such assumptions can be utilized to manipulate a company's books. In the SOX era, changing significant assumptions require a documented process and close scrutiny.

3. That's my number? Do you remember how I came up with it?

On one occasion, about 24 hours after I was given a FINAL compound development plan, I was informed that there were two major changes, including the name of the compound. I cannot overstress the utility of maintaining a very detailed assumptions summary for every study. Although somewhat time-consuming to put together, the benefit definitely justifies the cost. At a minimum, you should summarize each clinical trial's assumptions for: (1) timeline (estimated start & end date, planned subject enrollment period), (2) number of subjects, (3) number of planned research sites, (4) estimated site budget per subject, and (5) estimated CRO costs. Not only will these assumptions be helpful in bridging current and future budgets/forecasts, they will also prove invaluable for performing "actual vs. budget" variance analyses. Informing the CFO that "the quarter spend for our trial was $1M over budget" will provoke less ranting if you can instead explain that the overspend resulted because the trial commenced a month earlier than projected and subjects are staying on study longer than previously assumed."

4. **We understand that it's month six of a 12-month trial, and we haven't enrolled any subjects yet, but let's hold off on changing the budget until we know more.**

A detailed assumptions list will help surface any unreasonable assumptions underlying proposed study scenarios. Quite often, when timelines are tight, ClinDev may provide plans based on less-than-realistic assumptions and Finance, cranking through a massive volume of numbers to meet a deadline, may accept them without adequately "kicking the tires." Excruciatingly unrealistic assumptions would more likely catch the attention of even the most frazzled Finance person if said assumptions were summarized in a concise and detailed manner.

5. **We can shut the trial down today, but understand that it will blow out our budget.**

Every so often, drug development realities can throw the simple Finance mind for a loop. As a case in point, the idea that shutting down a clinical trial (due to unfavorable interim results, for instance) may cost more in the current year than if the trial progresses as planned strikes Finance folks like a violation of several laws of physics. When such events occur, it will be up to the savvy ClinDev professional to patiently explain to helplessly confused Finance minds that site close-out and data management costs that were spread out over the next couple of years will now be incurred all at once. CROs and other contractors, soon to share your pain, will scramble to find any costs even remotely out-of-scope and submit change orders that were lingering in the wings. In the columns-and-rows world of the Finance mind, the phrase "shut down" means exactly what it sounds like: the activity stops dead in its tracks today so we can close the books on that puppy tomorrow. Again, an indulgent ClinDev person will have to explain that, in the world of drug development, when a clinical trial is "shut down," contractors' incurred costs need to be paid and cost-inducing activities may linger on like a drugstore aftershave: trial data, even if unfavorable, needs to be gathered and analyzed; enrolled subjects may need follow-up and medical care; study drug and equipment needs to be collected from the sites; and so forth.

Of course, under certain circumstances, even savvy ClinDev guidance will not prevent politically expedient "misdiagnoses" of shut-down expenses. For example, when one company I previously worked for received unfavorable trial data, Management made the decision to immediately shut down the entire program. I was asked to meet with ClinDev and project the associated shut-down expenses. As you may have guessed, over the remainder of the year the resulting projection was even higher than the previous "ongoing trial" budget, which was not to the liking of the management team at all. Management, for some crazy reason, had told the Board of Directors that shutting down the program would put a stop to the financial bleeding. Rather than bite the bullet, Management submitted a forecast based on arbitrary and unlikely spending cuts. The head of ClinDev disavowed all association with this forecast, which even eliminated contracted "sunk" costs. When the piper came to play at the end of the next quarter, the Board of Directors meeting featured a sound thrashing of Finance, which had agreed to take the bullet for Management. The Board promised to inflict major changes, both systematic and personnel-related, on Finance to avoid such outrages in the future. As the savvy corporate veteran might expect, the entire Finance department remained intact, with promotions for several members. Yet despite such occasional politically-influenced and unavoidable pressures, ClinDev should almost always seek to help Finance explain to Management the more esoteric quirks of clinical trials finances.

Conclusion

Although fundamental differences in mindset often lead to a challenging relationship between the finance and drug development departments of many pharmaceutical companies, the situation definitely not untenable. Like any marriage, a successful and rewarding relationship can be attained with just a bit of understanding, cooperation, and patience on the part of both sides. Hopefully the discussion presented here will assist in this endeavor, particularly in the often complicated areas of clinical trials budgeting and accruals. Should Finance and Clinical Development achieve a good working chemistry, the company's journey towards the ultimate goal of bringing forth innovative and effective treatments becomes much more enjoyable.

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