# CLUB VITA

# The 1-2-3s of mastering your longevity risk

- 46m+ ZIP+4 codes in the US

- 10 year variation of life expectancy amongst retirees

- 495 different longevity curves

- 100+ diverse pension plans used to test the performance of the VitaCurve model

- 1/3 of 5 digit ZIP codes have full spectrum of our ZIP+4 based longevity groupings

- 2m retirees: data threshold for our socio-economic trend research

# Introducing Club Vita

Club Vita is a club for pension plans to share data on how long people live. As with many things, the whole is greater than the sum of its parts and each member of the Club gets far more out than they put in.

By pooling a 'big data' set from contributing members, Club Vita's statistical longevity models are far more accurate and predictive than analysis for individual pension plans alone. By collecting full, rich data including ZIP+4 code, occupation and measures of affluence, our models capture differences in longevity for individuals with diverse underlying characteristics.

The size of the data set reduces the statistical noise and the richness of the data set helps capture the true diversity of each pension plan.

## Club Vita needs you!

The insights become more powerful with larger data volumes: our Club is much more powerful for all involved when individual plans collaborate to share data. The more plans involved, the more data we collect. The more data we collect, the greater the insights for everyone.

We're inviting all large pension plans (whether single employer, multiemployer or public sector) to try us out for free, becoming founding supporters of Club Vita US. Help us build up our data set, improve our existing models and enable further research and market development. Then receive all the benefits of being part of the Club.

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# 1 Solid data foundations

Good quality data underpins all effective pension plan management decisions. Club Vita will help you increase your data quality and improve the management of your plan.

Included in your membership:
- VitaCleansing data quality assessment—identify any areas that need work and understand the impact of deceased participants with benefits still in payment

# 2 The power of clubbing together

Working together is better than working alone. Clubbing together with all the other pension plans who have joined Club Vita gives everyone a greater understanding of their own pension plan participants.

Included in your membership:
- Insights and analytics built on Club Vita's unique big data set
- Frequent new research brought to you from Club Vita's statistical experts

# 3 Insightful longevity analytics for better decisions

People are different. Club Vita's unique longevity analytics help you understand these differences and how they piece together in your plan.

Included in your membership:
- Longevity / mortality assumptions fully tailored to the characteristics of your plan
- Full reporting on the characteristics of your plan's participants and longevity risk metrics

For founding members, all this is free for the first year, then $20k per year for ongoing membership
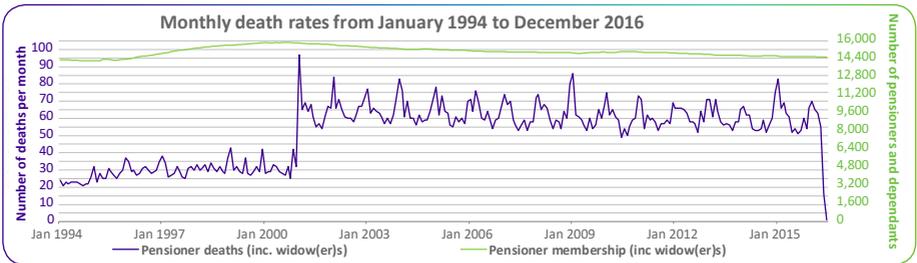
# 1 Solid Data Foundations

Data is at the heart of good decisions for a pension plan. It determines what benefits you pay, to whom, and how much money is put aside to pay those benefits. It underpins any risk management that your plan undergoes, and clean data is essential to get a good price in pension risk transfer deals.
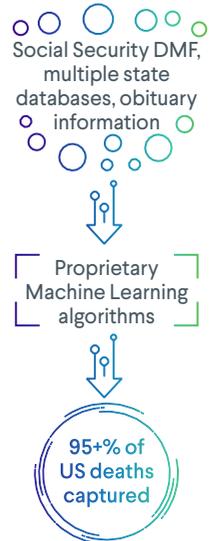
## How can we help?

*VitaCleansing data quality assessment*

- You receive an annual assessment on the data quality in your plan, presented in an easy to read graphical format so you can see your data quality at a glance.

- Perfect for identifying areas of concern and monitoring progress with data clean-up projects.



**Monthly death rates from January 1994 to December 2016**

Number of deaths per month (left axis): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
Number of pensioners and dependants (right axis): 0, 1,600, 3,200, 4,800, 6,400, 8,000, 9,600, 11,200, 12,800, 14,400, 16,000
X-axis: Jan 1994, Jan 1997, Jan 2000, Jan 2003, Jan 2006, Jan 2009, Jan 2012, Jan 2015

— Pensioner deaths (inc. widow(er)s)    — Pensioner membership (inc widow(er)s)

*Life existence checking*

- Understand the impact of deceased participants with benefits still in payment, with the option to engage PBI to identify specific records.

- Underpinned by PBI's market-leading service, which searches multiple databases and obituary information.



Social Security DMF, multiple state databases, obituary information

Proprietary Machine Learning algorithms

95+% of US deaths captured

**Number of pension recipients identified as dead**
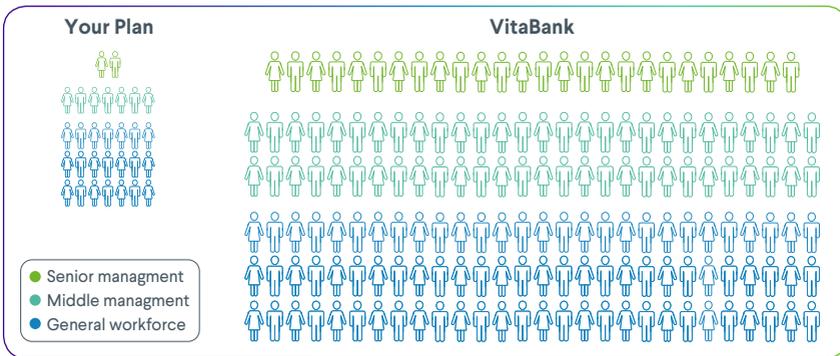
**Potentially recoverable payments**

$271k

# 2 The power of clubbing together

Working together is better than working alone, especially in the age of big data. The more data available, the better all Club members can see the signal through the noise when measuring the longevity of your plan's participants.

## How can we help?

*Big data*

- Club Vita will pool the data from many of the largest pension plans in the US, so everyone can better understand their longevity risk

- More data gives you more confidence in your baseline longevity assumptions; even the assumptions of the largest plans' will become materially more predictive.

- Once we are tracking a dataset of at least 2m retirees, our annual updates will give you insights into emerging trends split by socio-economic groups.



**Your Plan**   **VitaBank**

- Senior managment
- Middle managment
- General workforce

*Rich data*

- Club Vita's data set includes a rich collection of data fields including pension amount, salary, blue/white collar and ZIP+4 code.

- We use Generalized Linear Models to measure the effect of each data field on longevity and create assumptions specific to each individual in your plan.

**Affluence**
*Pension / salary*

**Lifestyle**
*ZIP+4 code*

**Health**
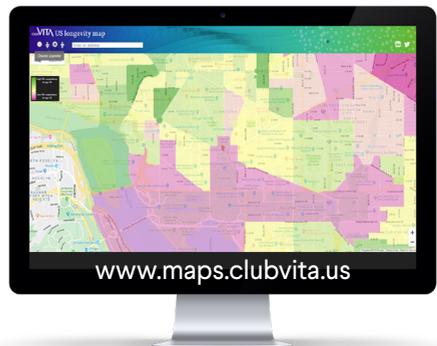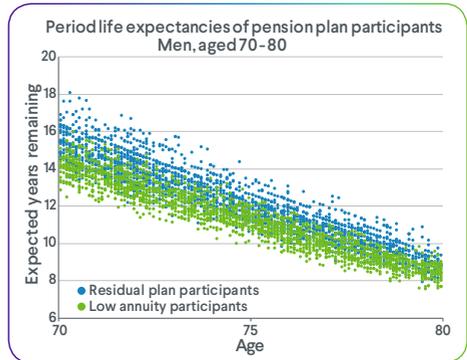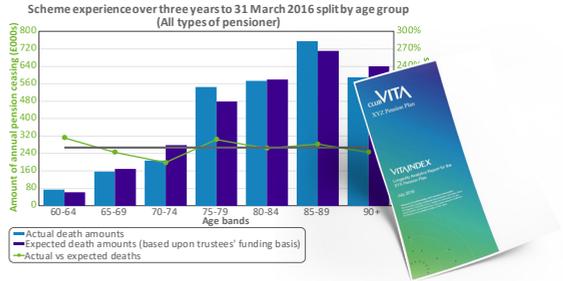*Disability?*

**Occupation**
*Collar*

# 3  Insightful longevity analytics

How long people live is central to pension plans and underpins every funding and investment decision. A better understanding of your plan participants will help you manage this risk, set an appropriate investment strategy and may give you an information advantage in any PRT deals.

## How can we help?

*Cutting edge longevity analytics*

- You receive an annual report with our full suite of longevity analytics, including experience analysis, plan profiling and liability impact.

- You also receive our unique VitaCurves individual baseline longevity assumptions that:

  - capture the differences in life expectancy for the individuals in your plan, based on where they live, affluence, occupation and more;

  - are easily applied to smaller sections of the plan, ideal for cost sharing, sectionalization, mergers or PRT assessment;

  - are better fitted to your plan's participants, giving a better fit than standard tables and smaller adjustments (if any) needed after credibility analysis;

  - allow for the changing demographics of your plan.



Scheme experience over three years to 31 March 2016 split by age group (All types of pensioner)

- Actual death amounts
- Expected death amounts (based upon trustees' funding basis)
- Actual vs expected deaths



Period life expectancies of pension plan participants
Men, aged 70–80

- Residual plan participants
- Low annuity participants
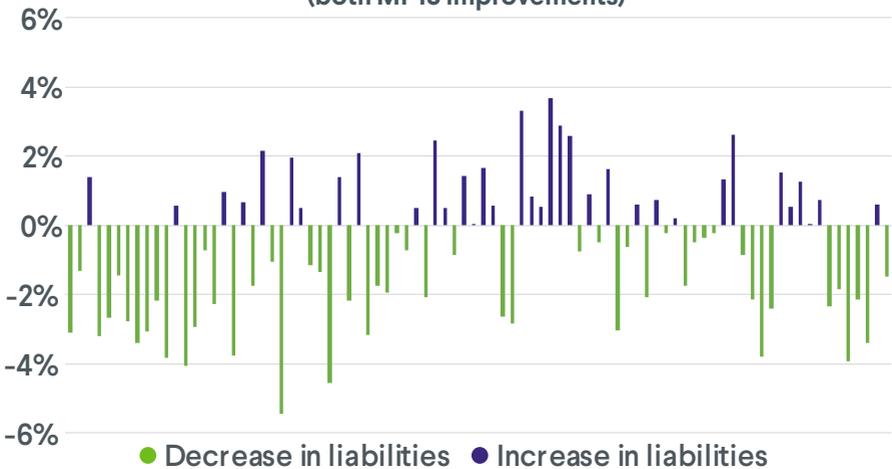


www.maps.clubvita.us

# Liabilities more likely to go down than up

Our assumptions allow you to more accurately capture the longevity characteristics of your plan, potentially releasing prudence margins introduced due to uncertainty.

We have not set out to reduce anyone's liabilities, but of the first set of plans we tested, the majority saw a reduction in liabilities.

**Impact of moving from Pri2012 to ZIP+4 US VitaCurves (both MP18 improvements)**



● Decrease in liabilities  ● Increase in liabilities

## Join Club Vita today

For founding members, all this is free for the first year, then $20k per year for ongoing membership

# Longevity or Mortality?

**Longevity and mortality are two sides of the same coin**

**Longevity:**
measure of how long people live

Longevity risk: risk that people live longer than expected

A key risk for pension plans: if participants live longer than expected, then more money will be needed to pay their benefits

**Mortality:**
the measure of how when people die

Mortality risk: risk that people live shorter than expected

A key risk for insurers who offer life insurance policies: the earlier someone dies, the sooner the insurer must make a pay out.

**At Club Vita, we prefer to think about living rather than dying, so we tend to use the term longevity more often**

Further information on the technical terms of longevity can be found in our online Lexicon of Longevity. https://www.clubvita.net/glossary