

How AI techniques can support improved outcomes for clients of a Yorkshire foodbank

Impact Aloud 2018

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DataKind is a
global network



What we do (most of which is **FREE!** for non profits)



Data Therapy

'Office hours'- light touch analytical support to non profits-
come with any data question! bit.ly/DKUKofficehrs

Support to data scientists working in non profit organisations



DataDives

Working with non profits to provide insights into social problems:
Two months of data scientists volunteering on data cleaning and
defining questions, followed by two day analysis event



DataCorps projects

Six- nine month in depth projects embedded within
a non profit organisation to develop data products

Ideal data for good projects have ...



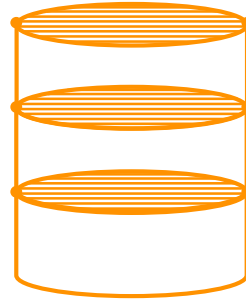
Well-framed
Problem

+



Simple (enough)
Solution

+



Relevant
Data

+



Social actor
Partner

The Welcome Centre

- We are a food bank located in Huddersfield, West Yorkshire, serving the South Kirklees area
- We offer practical support to local people in crisis by giving packs of basic essentials, and provide advice, support and guidance to clients with more complex issues



Headline Figures



LAST YEAR, WE GAVE OUT ENOUGH FOOD

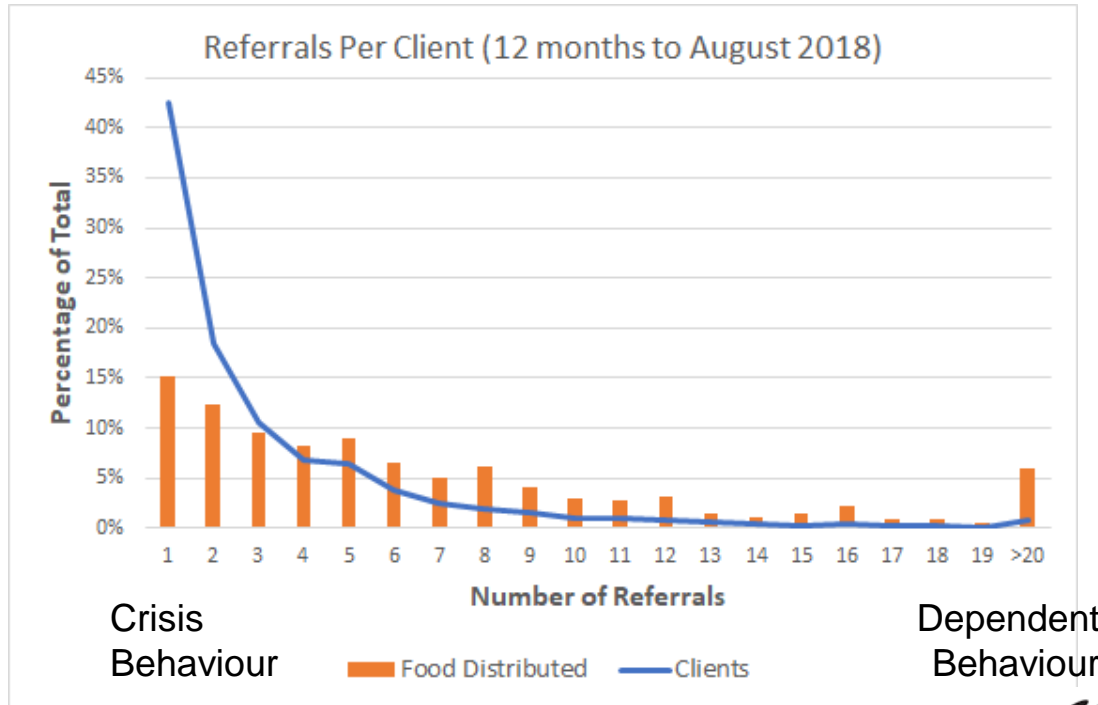


TO PROVIDE **199,548** MEALS



**The
Welcome Centre**
food bank and more...

The Shape of our Demand



- Most clients visit relatively few times
- But the few clients who visit regularly consume a high proportion of resources and are at risk of becoming dependent
- Hence need for support



Our Data Journey

Esmée Fairbairn
funded DataKind
DataCorps
project

No
(informal)
systems

Index card
system
clients and
referrals

Database
System
goes live

DataKind +
M&S
DataDive

Client
Classification
Model

Prediction
Engine
goes live

TWC
Founded

External
performance
reports

Internal
KPI's

1997

2011

2014

2015

2016

2017

2018

October

Demand
packs/year

500

4,500

8,200

12,300

Developing a Predictive Model of Likely Future Demand

- Developed a measure of dependency (score based)
- Used existing client data:
 - 7,300 client records, 29,500 referral records
- Tested various statistical models, settling on random forest
- Trained model on past data to see how accurately it predicts historic cases
- Currently in pilot phase
- Not an automated process, humans decide who is and isn't treated



Deployment of model (1)

Client Details
✕

Client Id.	Name	Gender	Date of Birth	Age	Country of Origin	Ethnicity	Residency Status
C001872	A Tomlinson (test Data)	Male	01/01/1980	38		White - British	South Kirklees Resident
Dependants, Details			Current Address		Address Type		Last Modified: 23/09/2018 by Andrew
			Oakes		Permanent		Dietary Requirements
			Vegetarian		Client Issues		Alcohol, Drugs, Gambling, Mental Health, Ex-Offender
Dependants, Number			Previous Addresses		Client Alerts		Aggression
0							

Client Notes (Referrals) 03/08/2018 [Cath] : This is a	<input checked="" type="radio"/> Referral Data <input type="radio"/> Support Data	Client Referral History Status: New Client Score: 5.8 Total Referrals: 3 in 1 episodes Known for: 39 days Active: 100.0%, Inactive: 0.0%, Dormant: 0.0%
Referrals 04/11/2018 : Benefits - Sanction Job Search - 1PFP [Waiting Preparation] 14/10/2018 611 : Benefits - Sanction Job Search, Benefits - Sanction Missed Appointment, Benefits - Sanction Other/Unknown - 1PFP [Waiting Preparation] 14/10/2018 Age UK : Benefits - Sanction Job Search, Benefits - Sanction Missed Appointment, Benefits - Change of Benefit/Circumstance - 1PFP [Waiting Pre 30/09/2018 611 : Benefits - Sanction Job Search - 1PFP [Waiting Preparation] 30/09/2018 Action for children : Benefits - Sanction Job Search - 1PFP [Waiting Preparation] 05/09/2018 1 Ark Project : Benefits - Sanction Job Search - 1PFP [Voided] 03/02/2017 TWC : Benefits - Sanction Job Search - 1PFP [Voided] 26/08/2014 LWP : Substance Misuse, Relationship Breakdown - 1PFP [Voided]	Client Support Status Status: DataKind Referral Future Score: 3.5 Since: 08/11/2018 By: Andrew	Referrals Via Partner

Last 3 Months: 6 referrals, Total: 8 referrals (Eligibility Check Required)

Edit Client Details ...	Make New Referral ...	View Referral Details ...	View Partner Referral Details	Add Client Note...	View Client Note...	Update Support Status	Client Details Sheet	View In Word	Print	Done
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GDPR compliance, Fairness, Accountability and Transparency

- TWC is committed to GDPR compliance in collecting, storing, and processing data
- Client data is received from third party referral agencies, with informed client consent
- <http://thewelcomecentre.org/wp/wp-content/uploads/2018/05/18-Privacy-Notice.pdf>

Deployment of model (2)

Client/Referral Overview

	Today	Last 7 Days	Overall
New Clients	0	1	1
Burst (Low Use)	0	0	0
Burst (High Use)	0	0	0
Intense Use	0	0	0
Total Active	0	1	1
Inactive	0	0	1348
Total	0	1	1349
<u>Support Status</u>			
No Support Required	0	0	256
DataKind Referral	0	1	2
Review Support	0	0	26
In Support	0	0	80
Support Complete	0	0	3
Unknown/Ignored	0	0	982

Clients In Group DataKind Referral/Last 7 Days on 08 November 2018

5.8: Mr Tomlinson (test Data), A, Male, DOB=01/01/1980, Oakes

Client Referral/Usage History

08/11/2018 [40 days]: New Client, Episode: 1, Referrals: 3

Client Referral History

Status: New Client
 Total Referrals: 3 in 1 episodes
 Known for: 39 days
 Active: 100.0%, Inactive: 0.0%,
 Dormant: 0.0%

Client Support Status

Status: DataKind Referral
 Since: 08/11/2018
 By: Andrew

Current Score: 5.8

Future Score: 3.5

Selected Date: << < 08 11 2018 > >>

WHAT THIS MEANS FOR TWC

As in any organisation good data is important and can improve business processes and support operational and strategic decision making

Our work with DataKind UK has encouraged us to think more critically on how we can best use data we have available

A small charity can use cutting edge AI techniques to enhance the service offered

Support worker involvement remains key to our process, the predictive model just allows client support interventions to occur earlier rather than later

WE DATA

Get in touch and get involved!

tracey@datakind.org.uk

www.datakind.org/chapters/datakind-uk



Get in Contact



<http://thewelcomecentre.org/>

We are always looking for projects to further develop our service



**The
Welcome Centre**
food bank and more...