



**University of  
Zurich**<sup>UZH</sup>

**Epidemiology, Biostatistics and  
Prevention Institute**

**Medical Economics**

University of Zurich  
Hirschengraben 84  
CH-8001 Zurich  
[www.ebpi.uzh.ch](http://www.ebpi.uzh.ch)

18 January 2016

# Resources spent for Break the Chain (BTC) 2015

---

Patricia R. Blank, PhD MPH and PD Matthias Schwenkglenks, PhD MPH



## Contents

Contents.....	ii
List of figures .....	iii
List of tables .....	iv
1. Executive summary .....	1
2. Background and Aim.....	3
3. Methods .....	3
3.1. Data collection .....	3
3.2. Data analysis .....	6
4. Results.....	9
4.1. Description of the data .....	9
4.2. Total number of paid and voluntary working hours.....	10
4.3. Total number of contacts and conversations (encounters).....	11
4.4. Paid working hours .....	12
4.5. Costs for travel expenses.....	15
4.6. Costs of materials and services provided by third parties.....	16
4.7. Evaluation costs.....	17
4.8. Total direct costs of BTC 2015.....	17
4.9. Indirect costs of volunteer work of local partner organizations.....	19
4.10. Total direct and indirect costs .....	20
4.11. Cost per outcome of the campaign .....	20
5. Discussion and conclusion.....	22
6. References.....	24



## List of figures

Figure 1. Timesheet to collect working hours, expenses and activities.....	4
Figure 2. Number of paid and unpaid working hours invested by local partner organizations, by region (FR: French-speaking; DE German-speaking cantons) .....	11
Figure 3. Activities measured as number of contacts and conversations in the regions .....	12
Figure 4. Costs of regional organizations: distribution of costs by preparation, outreach activities and paid travel and other expenses (CHF, %).....	13
Figure 5. Costs (in CHF) for preparation, outreach activities and paid expenses by region (DE: German speaking cantons; FR: French-speaking cantons; LP: local partner organizations) ..	14
Figure 6. Costs (in CHF) for preparation, outreach activities and paid expenses of the five main local partner organizations and the other local partner organizations .....	15
Figure 7. Costs (in CHF) of paid and unpaid expenses by region (DE: German speaking; FR: French-speaking).....	16
Figure 8. Costs (in CHF) of FOPH/ Aidshilfe Schweiz, local partner organization (preparation, outreach activities and expenses), other expenses and evaluation costs .....	18
Figure 9. Distribution of total direct costs (in CHF; %) by preparation (inclusive of work by FOPH, AHS and local partner organizations), outreach activities (inclusive work of local partner organizations, travel and other expenses), costs of materials and services, HIV test price reduction and evaluation .....	19



## **List of tables**

Table 1. Hourly rates for outreach worker and acting managers of local partner organizations .....	5
Table 2. Total number of hours (FOPH, AHS and regional organizations).....	11
Table 3. Detailed costs (in CHF) of the five main local partner organizations.....	14
Table 4. Costs of materials and services provided by third parties for BTC 2015 .....	17
Table 5. Indirect costs of volunteer work.....	19
Table 6. Total direct and indirect costs (per cost item) .....	20
Table 7. Approximate costs per outcome of the campaign .....	22



## 1. Executive summary

### *Aim:*

As a basis for assessing the efficiency of the Break the Chain (BTC) 2015 campaign, it was essential to quantify the costs and human resources (manpower) spent. Furthermore, the costs of the evaluation campaign were determined.

### *Methods:*

All organizations which were involved in BTC 2015 were included in this analysis, i.e. the Federal Office of Public Health (FOPH), Aidshilfe Schweiz (AHS), local organizations (in BS, BE, FR, GE, GR, LU, NE, SG, TG, VS, VD, ZH), and academic institutions (Universities of Zurich and Lausanne). Information on the number of paid and unpaid working hours and on hourly rates was collected from all involved organizations. The resources spent were further analyzed according to region (German-speaking and French-speaking cantons). Costs for the preparation and outreach activities of BTC 2015 were distinguished. Also, costs for paid and unpaid travel and other expenses, and costs for materials and services provided by third parties (e.g. printed materials, advertisements, presence on the web) and costs for the reduction of HIV test costs were identified.

### *Results:*

The total number of paid working hours was 55 hours for the FOPH, 1'703 hours for AHS and 1'665 hours for the local organizations. In addition, the regional organizations provided 427 voluntary working hours. The costs of the FOPH and AHS were estimated at CHF 5'500 and CHF 170'300, respectively. Across all regional organizations, CHF 53'484 were spent for the preparation of BTC 2015 (administrative work, pre- and post-processing etc.) and CHF 49'036 were spent for the outreach activities. Hence, the total resources spent for salaries were CHF 278'320. Travel expenses amounted to CHF 2'814. Unpaid expenses were only noted in the French-speaking part of the country (4'391 CHF). Indirect costs, i.e. lost income due to voluntary work estimated via the human capital approach, amounted to CHF 12'763 and CHF



1'328 for the French- and the German-speaking local organizations, respectively. For advertisements, presence on the web, printed materials such as flyers and posters, and required translations, CHF 169'000 were spent. The reduction of the price for the HIV test within the VCT (Voluntary counselling and testing)/ BerDa centers during May amounted to CHF 36'400. The total direct cost of BTC 2015 (without indirect costs) amounted to CHF 486'534 and the total direct and indirect costs amounted to CHF 505'016, respectively. The scientific evaluation of the BTC 2015 campaign was budgeted with an additional CHF 98'880. During the activities of BTC 2015, a total of 4'513 conversations and 29'320 contacts occurred (i.e. 33'833 encounters or interactions). This implies approximate costs of CHF 16 to CHF 17 per encounter, when taking into account total direct costs or total direct and indirect costs, respectively.

***Conclusion:***

The collection of resource use and cost data provides important information on how the budget for BTC 2015 was spent. The total direct cost of BTC 2015 amounted to CHF 585'414 and total direct and indirect cost amounted to CHF 603'896. The data may help to address the cost-effectiveness of the BTC campaign 2015 in a future step.



## 2. Background and Aim

The main aim of behavior change interventions in the field of HIV is the reduction of the risk of HIV infection by changing sexual behaviors [1]. Prevention may lead to a reduction in disease burden but often evidence of the costs and cost-effectiveness of prevention interventions or programs is insufficient [2]. Information on health economics can help decision makers to allocate scarce resources and define priorities among various preventive interventions in a given health care system.

In health economics, direct, indirect and intangible costs and benefits can be assessed [3]. Direct costs (and benefits) are those actually spent, e.g. for a prevention intervention. Indirect costs (and benefits) arise due to changes in productivity linked to a preventive intervention. Intangible costs and benefits refer to suffering or utility changes associated with a prevention intervention, but these costs are rarely assessed.

In order to measure the efficiency of “Break the Chain” (BTC) 2015, it was important to monitor the resources spent for the campaign. Therefore, the present study aimed to quantify the investment in terms of money, manpower and voluntary work (where applicable). In addition, the costs of the evaluation of the campaign were determined. The data may help to address the cost-effectiveness of the BTC campaign 2015 in a future step.

## 3. Methods

### 3.1. Data collection

#### *Timesheets / activities*

Timesheets from all involved persons were collected via Aidshilfe Schweiz (AHS) as a basis for determining the costs of manpower the amount of voluntary work as well as travel and other expenses. Timesheets were developed by AHS to collect information about the following items (Figure 1):

- date of activity



- description of the activity
- number of persons involved
- number of paid working hours
- number of voluntary hours
- travel and other expenses
- number of contacts during the activity
- number of conversations during the activity.

Figure 1. Timesheet to collect working hours, expenses and activities

The timesheets were filled in by the Federal Office of Public Health (FOPH), the AHS, and the local partners of AHS in the cantons of Basel (BS), Berne (BE), Fribourg (FR), Geneva (GE), Grisons (GR), Lucerne (LU), Neuchâtel (NE), St.Gallen (SG), Thurgau (TG), Valais (VS), Vaud (VD), and Zurich (ZH). All timesheets were checked for correctness and completeness together with AHS. The data were inserted in a summary spreadsheet.

In addition, information on the number of users and page views or page impressions (“Seitenaufufe”) of the BTC 2015 website was collected by AHS. A page view is a request to load a single website.





*Unit costs of working hours*

Information on hourly rates (unit costs) was provided by the AHS. The hourly rate for the acting managers (coordinators) of the local partner organizations was assumed to be CHF 85 (inclusive of overhead). Hourly rates for the outreach workers differed by regional (Table 1). For the AHS and the FOPH, a hourly rate of CHF 100 was assumed.

**Table 1. Hourly rates for outreach worker and acting managers of local partner organizations**

Canton	Outreach worker (CHF/hour)	Acting managers (CHF/hour)
Basel	39,40	85
Bern	20	85
Fribourg	40	85
Thurgau	50	85
St. Gallen	50	85
Luzern	35	85
Graubünden	45	85
Genf	42,50	85
Neuchâtel	50	85
Wallis	-*	85
Vaud	60	85
Zürich (until March)	57	85
Zurich (April-May)	52	85
<b>Mean</b>	<b>44.2</b>	<b>85</b>
<b>Median</b>	<b>43.8</b>	<b>85</b>

\*no paid hours recorded

*Costs of materials and services provided by third parties*

Information on BTC 2015-related materials and services provided by third parties was derived from AHS. The information covered costs for materials (e.g. printed materials such as flyers and posters) and services provided by third parties (e.g. external consultancy, advertisements, translations, presence on the web and website).



### *HIV test cost reduction*

Interested individuals received a voucher to be tested for HIV for a reduced price of CHF 10 in a VCT (Voluntary counselling and testing) center using BerDa (Beratungsleitfaden und Datenverwaltungssystem für VCT-Stellen) in May 2015. The VCT centers are offering voluntary counselling and testing including in depth assessment of the risk, and counselling before doing the test, the use of a rapid HIV test and counselling after the test. BerDa is an internet tool, which allows to establish a risk profile of a person requesting an HIV test. BerDa can be also used to propose a series of recommendations to the staff of the VCT centers, relevant to the behavior of their client.

The budget for the reduction of the HIV test costs was determined and analyzed separately.

## **3.2. Data analysis**

### *Number of working hours*

The number of working hours was assessed for all involved organizations (local partner organizations, AHS, FOPH). In the case of the local partner organizations, each data entry was categorized into preparation work (administrative work at the office/ coordination) or outreach activities work (i.e. mainly activities of the outreach workers). Furthermore, the data were analyzed by region (French-speaking or German-speaking part of the country). Partners from the cantons FR, NE, VD, VS and GE were categorized as French-speaking; partners from the cantons BE, BS, GR, LU, SG, TG and ZH were categorized as German-speaking. The number of working hours of the five main local partners (BS, BE, GE, VD and ZH) was evaluated separately. The working hours of the AHS and FOPH were all categorized as preparation work.

The total number of hours invested in BTC 2015 was determined regardless of the number of persons involved.



### *Activities*

The above described timesheets (Figure 1) contained information on outreach activities work measured as activities 'on the street'. These activities were recorded as number of contacts and number of conversations. A conversation was defined as a longer discussion or conversation with a person. A contact was defined as short interaction such as handing out a flyer.

The activities were assessed for all involved local partner organizations and categorized into two time-periods:

- 1) before and during the first period of the BTC 2015 (March to April)
- 2) during the second period of the BTC 2015 (May)

In addition, the number of page views and users of the BTC 2015 website was determined for the period between February and May 2015. The users of the website were interpreted as contacts. Contacts and conversations were summarized as "encounters".

### *Paid working hours*

Working hours were multiplied with the hourly rates of the relevant local organizations (for acting managers or outreach workers, as applicable) and the FOPH/ AHS, respectively.

Paralleling the analysis of working hours, costs of the paid working hours of the local partners were analyzed as preparation work (acting managers) or outreach activities work (outreach workers). In addition, the costs were analyzed by region (German and French-speaking cantons, as described above). Furthermore, the five main local partner organizations (BS, BE, GE, VD and ZH) were evaluated separately.

### *Travel and other expenses*

Costs for travel and other expenses related to the outreach activities work (e.g. food or refreshments) were evaluated by region. Paid and unpaid expenses were assessed via the timesheets (Figure 1). In the final analysis of costs, only paid expenses were taken into account.



### *Costs of materials and services provided by third parties*

The costs of materials and services provided by third parties covered costs for external consultancy, advertisements, translations, presence on the web and website, printed materials such as flyers and posters.

The expenses were categorized into two categories:

1. *Advertisements/ materials: including advertisements, translations, printed materials*
2. *Consultancy/ internet: including external consultancy, presence on the web and website*

### *Costs of HIV test price reduction*

The costs for the reduction of the price of the HIV tests in BerDa centers was analyzed separately.

### *Cost of the scientific evaluation of the BTC 2015 campaign*

Although the cost of the evaluation of the BTC 2015 campaign is not directly related to the costs of the campaign, we included it in this report for the sake of completeness. The information on the budget for the evaluation was provided directly by the responsible academic institutions (Department of Political Science (IPZ), University of Zurich; Institut universitaire de médecine sociale et préventive (IUMSP), University of Lausanne).

### *Volunteer work (unpaid working hours)*

The costs of volunteer work can e.g. be measured as productivity losses on the labor market, via the human capital approach [4, 5]. This approach assumes that during the volunteer time spent for the BTC 2015 campaign, the respective persons were not available for paid work but would have worked otherwise. The assumed hourly rate corresponded to the opportunity costs of a lost working hour. This method can be easily applied for volunteer work.

In Switzerland, a yearly average income of CHF 67'400 (full-time employee) was assumed. Therefore, an average rate of CHF 281 per day was anticipated, resulting in a hourly rate of CHF 33 (by assuming a 8.4 hour working day) [6].



In order to quantify the indirect costs, the number of lost working hours was multiplied with the hourly rate of CHF 33.

#### *Costs per encounter (interaction)*

Based on the total direct and indirect costs of the BTC 2015 and the number of encounters (described above), the cost to achieve one encounter was estimated. The evaluation costs and the costs for the HIV test reduction were not taken into account in this analysis.

#### *Statistics*

The analysis was primarily descriptive. Besides totals, in some instances, means and medians were calculated. Given that the present data-collection is a comprehensive survey (i.e. without sampling of a sub-population), no statistical uncertainties were existing and no confidence intervals were calculated.

The data was collected and processed in Excel and IBM SPSS Statistics version 22.

## **4. Results**

### **4.1. Description of the data**

Timesheets were completed during the entire period of the BTC 2015 campaign. In total, regional organizations from 12 cantons were included, of which seven were from the German-speaking part and five from the French-speaking part of the country, respectively.

Timesheets from the following organizations were analyzed:

- 1. FOPH**
- 2. AHS Regional organizations**

*French-speaking Switzerland:*

- Centre Empreinte Fribourg
- Antenne Side Valais
- Checkpoint Vaud



- Dialogai Checkpoint Geneve
- Antenne Side Neuchâtel

*German-speaking Switzerland:*

- Aidshilfe beider Basel
- Aids Hilfe Bern
- Aidshilfe Graubünden
- Aidshilfe Luzern
- Fachstelle für Aids- und Sexualfragen St.Gallen
- Perspektive Thurgau
- Zürcher Aids-Hilfe / Checkpoint Zürich

#### **4.2. Total number of paid and voluntary working hours**

The total number of paid working hours was 55 hours for the FOPH and 1'703 hours for AHS, respectively (Table 2). The high working hours of the AHS can be explained by their active role before, during and after the campaign was running. AHS was the coordinator of the local partners and the manager of the entire campaign. The personnel of the FOPH was acting in a supervisory and consultant role, which explains their lower contribution.

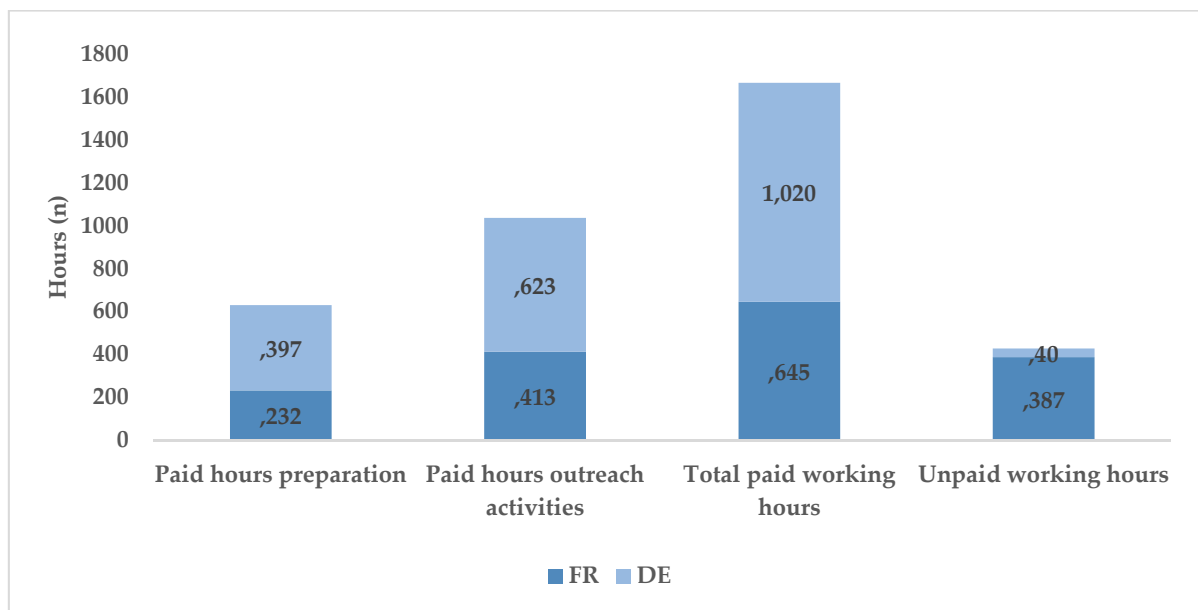
The total number of working hours (paid and unpaid) summed to 2'092 hours for the local partner organizations. The main local partners in BE, BS, GE, VD and ZH contributed the majority of the working hours (1'708 hours). The total number of working hours of the local partner organizations varied across regions (Figure 2). Interestingly, much higher numbers of unpaid working hours were noted in the French-speaking compared to the German-speaking partner organizations (387 hours versus 40 hours, respectively).

**Table 2. Total number of hours (FOPH, AHS and regional organizations)**

	Preparation	Outreach activities	Voluntary work, unpaid*	Total
<b>FOPH</b> (Number of hours)	55	0	0	55
<b>AHS</b> (Number of hours)	1'703	0	0	1'703
<b>Local partner organizations</b> (Number of hours)	629	1'036	427	2'092

FOPH: Federal Office of Public Health; AHS: Aids Hilfe Schweiz; \*Attributed to outreach activities or preparation

**Figure 2. Number of paid and unpaid working hours invested by local partner organizations, by region (FR: French-speaking; DE German-speaking cantons)**



### 4.3. Total number of contacts and conversations (encounters)

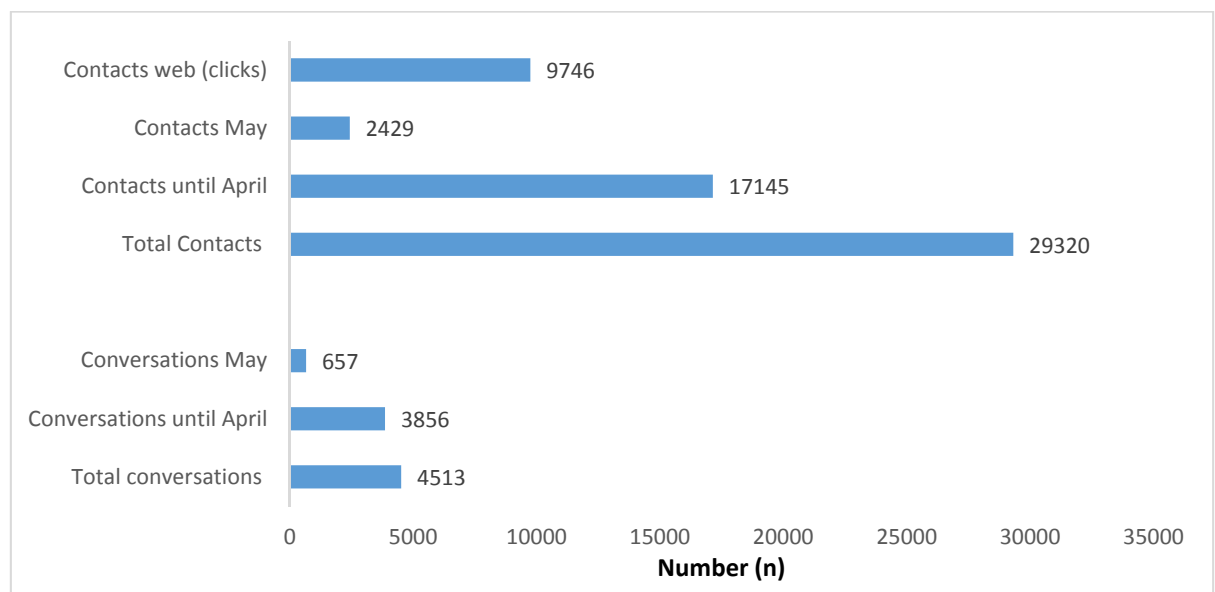
The approximate number of contacts and conversations (activities of local partner organization) is shown in

Figure 3. The total number of conversations over the entire time period of the campaign was 4'513, of which 3'374 occurred in the German speaking cantons and 1'139 in the French-speaking cantons. Most of the conversations were held in the period before May 2015 (n=3'856).

Contacts during the activities “on the street” were 19’574. About 75% of these contacts were stated in the German-speaking and the remainder in the French-speaking cantons. During the period between February and May 2016, 9’746 users (“contacts”) were visiting the BTC 2015 website. In total, 15’209 page views were recorded. This implies that users were visiting the website for several times. Interestingly, most of the sessions were recorded in Germany (22%), followed by the Swiss-German part of Switzerland (13%) and French users (12%).

The total number of encounters (contacts and conversations) was 33’833 for the entire period of the campaign. Due to underreporting, the number of contacts and conversations might be underestimated. On the other hand, it was not possible to determine if the web users were belonging to the target group of the campaign (men having sex with men, MSM) or not; hence the figure of contacts (web users) via the web clicks might overestimate the real number.

Figure 3. Activities measured as number of contacts and conversations in the regions



#### 4.4. Paid working hours

The total salaries paid (excluding travel expenses) amounted to CHF 278’320. The greater part of the workload was related to preparation work (82%). In the following section, the details of the salaries are given by involved organization and by region (where applicable).



### *Costs of FOPH and AHS*

The total working load of the FOPH and AHS was classified as preparation costs only. In total, the paid working hours amounted to CHF 5'500 for the FOPH and to CHF 170'300 for the AHS. No costs for travel expenses were noted.

### *Costs of local partner organizations*

The total costs of the local partner organizations were categorized into preparation costs, outreach activities costs and paid expenses. Unpaid working hours and unpaid expenses were not taken into account here, in order to show the actual resources spent on BTC 2015. In total, local organizations spent CHF 53'484 for the preparation, CHF 49'036 for the outreach activities and CHF 2'814 for travel and other expenses before and during BTC 2015 (details see section 4.5). Figure 4 shows the distribution of the costs by preparation, outreach activities and paid expenses. Across the local partners, the preparation and outreach activities costs were approximately divided by half. The German speaking parts of the country accounted for the majority of the costs (Figure 5).

Figure 4. Costs of regional organizations: distribution of costs by preparation, outreach activities and paid travel and other expenses (CHF, %)

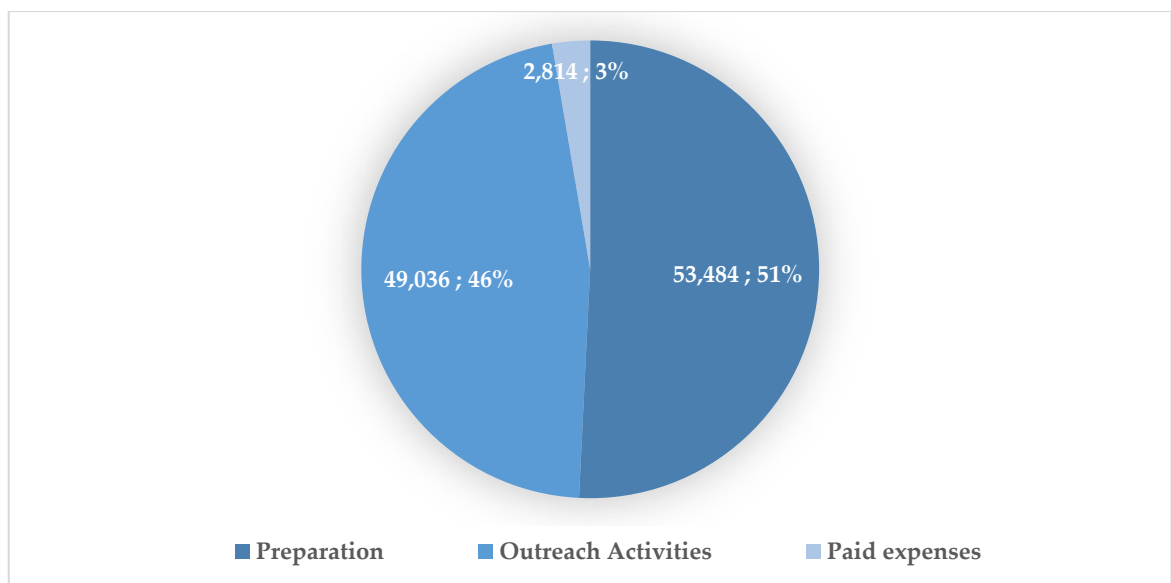
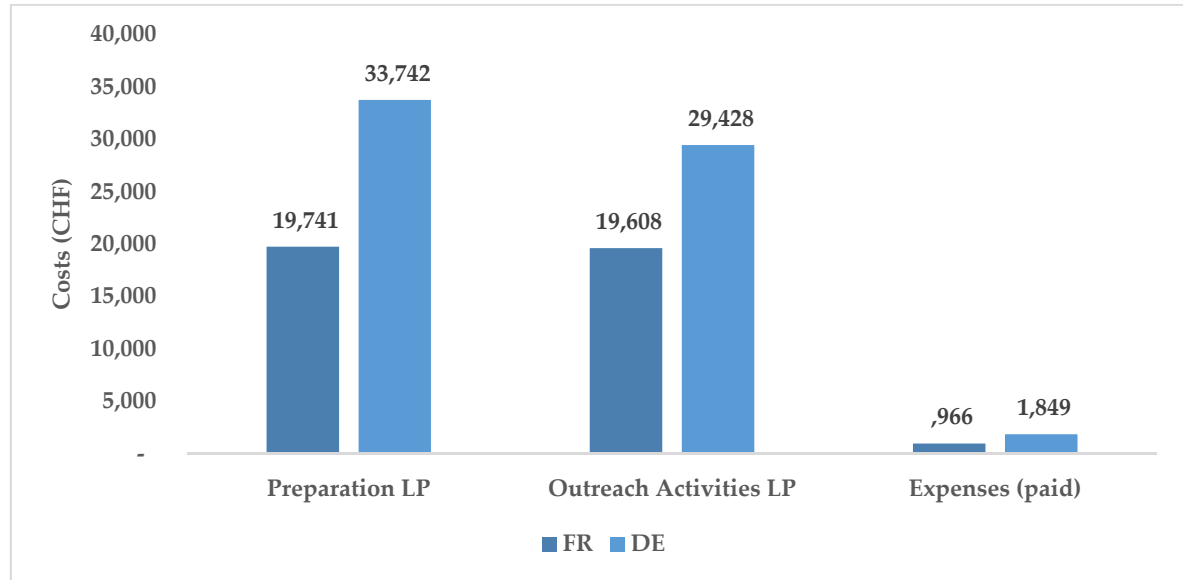


Figure 5. Costs (in CHF) for preparation, outreach activities and paid expenses by region (DE: German speaking cantons; FR: French-speaking cantons; LP: local partner organizations)



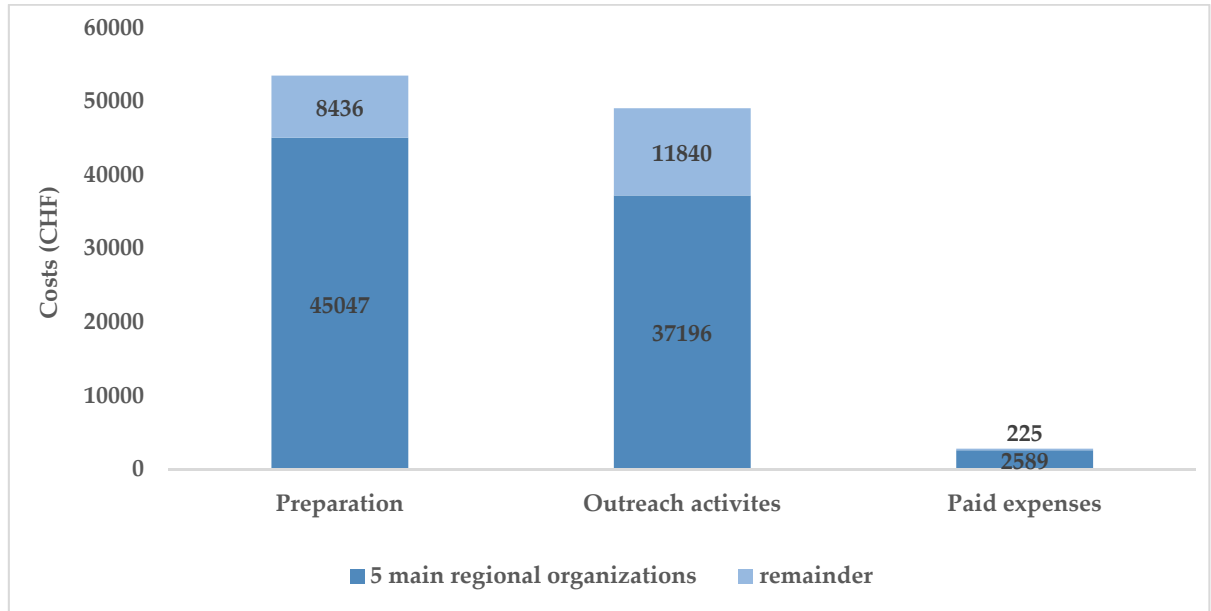
### Detailed costs of the five main local partner organizations

Details of the resources spent by the local organizations of BS, BE, GE, VD and ZH are shown in Table 3. Unsurprisingly, the main local partners were spending the greater part of the resources (Figure 6).

Table 3. Detailed costs (in CHF) of the five main local partner organizations

	Bern	Basel	Geneva	Vaude	Zurich		Sum	Mean
Preparation costs (CHF)	6'116	11'795	12'283	6'800	8'054		45'047	9'009
Outreach activities costs (CHF)	430	6'343	12'038	7'080	11'305		37'196	7'439
Paid expenses (CHF)	0	256	941	0	1'393		2'589	518
Total direct costs (CHF)	6'546	18'395	25'261	13'880	20'751		84'833	16'967
Unpaid working hours (CHF)	866	0	6'105	5'825	0		12'796	2'559
Unpaid expenses (CHF)	0	0	3'921	0	0		3'921	784
Total indirect costs (CHF)	866	0	10'026	5'825	0		16'717	3'343
Total direct and indirect (CHF)	7'412	18'395	35'287	19'705	20'751		101'550	20'310

Figure 6. Costs (in CHF) for preparation, outreach activities and paid expenses of the five main local partner organizations and the other local partner organizations



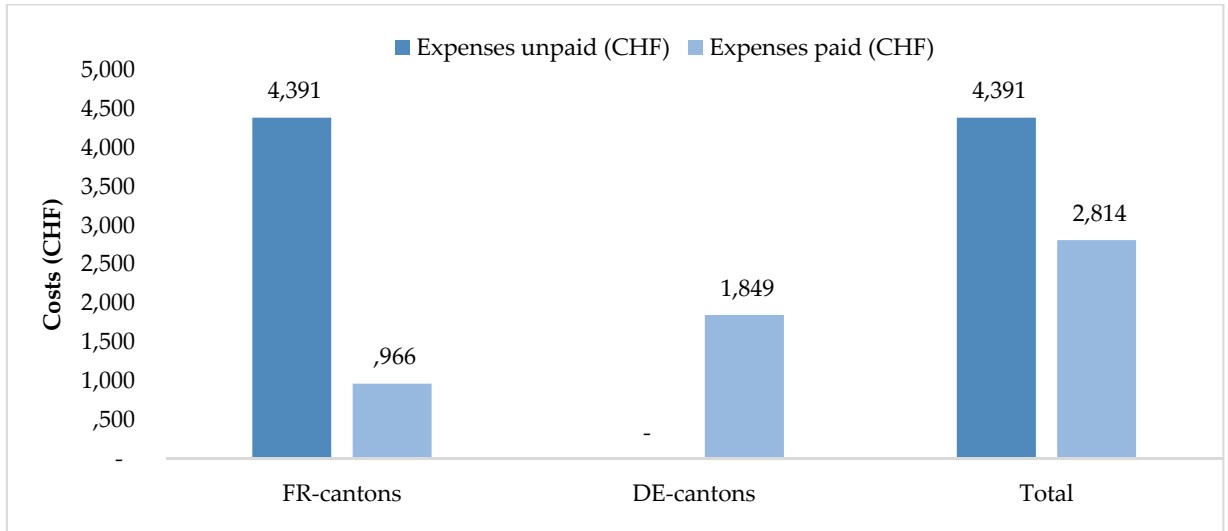
5 main local partner organizations: BE, BS, GE, VD, ZH; other local partner organizations: GR, LU, SG, TG FR, NE, VS

#### 4.5. Costs for travel expenses

Travel and other expenses are shown in Figure 7. In total, CHF 2'814 was spent for travel during the campaign. The majority of the expenses were for train tickets to reach an event location, hence the expenses were mainly accrued during the outreach activities phase.

In the German speaking cantons, there were only paid expenses recorded, whereas in the French speaking cantons CHF 4'391 were spent for expenses without reimbursement.

Figure 7. Costs (in CHF) of paid and unpaid expenses by region (DE: German speaking; FR: French-speaking)



#### 4.6. Costs of materials and services provided by third parties

AHS spent CHF 205'400 on materials and services provided by third parties. This included costs of external consultancy, advertisements, translations, presence on the web and website, printed materials such as flyers and websites, and the reduction of the HIV test price offered in VCT/ BerDa Centers during May (Table 4).

The resources spent for consultancy and presence on the internet/ website CHF 67'600, advertisements and other materials (e.g. printed materials) were CHF 101'400. The risk-check tool was included in the budget of the internet/ website with approximately CHF 2'000.

In addition, a budget of CHF 54'600 was distributed among the regions. This budget was partially used to pay the outreach activities of BTC 2015 in the regions, i.e. the salary of outreach workers. In order to avoid double-counting, this amount was not included in the final calculation of total costs.

About CHF 36'400 was paid for the reduced price of the HIV test. In total, 885 HIV tests have been conducted in the VCT/ BerDa centers in May 2015.

Table 4. Costs of materials and services provided by third parties for BTC 2015

Item	Costs
Consultancy	CHF 46 800
Internet/ web sites	CHF 20 800
Advertisement	CHF 44 200
Translation	CHF 10 400
Printing and texts (flyers, posters)	CHF 46 800
Price-reduction of HIV tests	CHF 36 400
<b>Total</b>	<b>CHF 205 400</b>

#### 4.7. Evaluation costs

The IPZ was the leading institution for the evaluation of the BTC 2015 campaign. The budget for the evaluation of BTC 2015 was CHF 60'000 for both the analysis on "Outreach activities of BTC 2015" (IPZ) and the present analysis on "Resources spent for BTC 2015" (EBPI). For the analysis on „Effects gay community and individual level" (IUMSP), CHF 38'880 were budgeted. Hence, the research on the effectiveness of HIV prevention through the BTC campaign 2015 cost CHF 98'880 in total.

#### 4.8. Total direct costs of BTC 2015

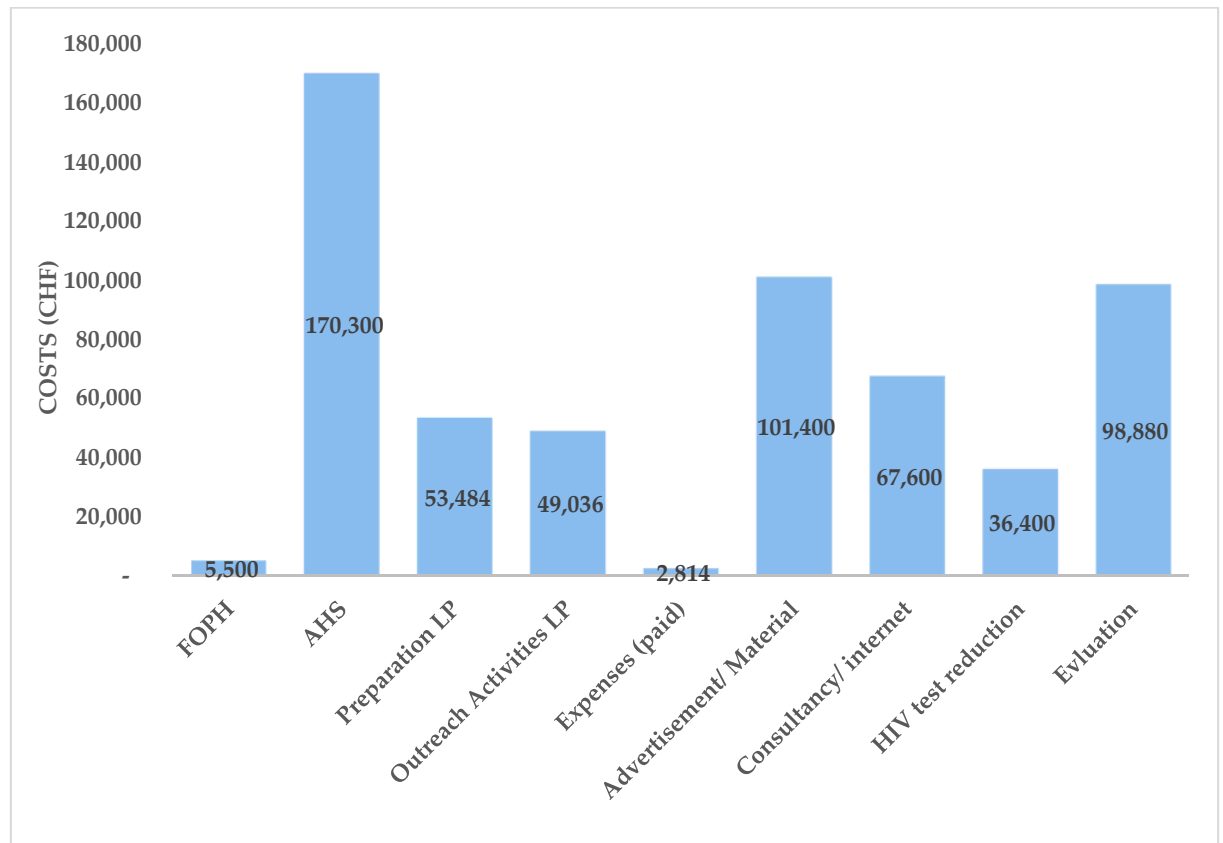
The total direct costs of the BTC 2015 campaign were CHF 278'320 for salaries and CHF 2'814 for travel expenses. The total cost of materials and services provided by third parties was CHF 169'000 of which CHF 101'400 was paid for advertisements (including translations, printed materials such as flyers and posters), and CHF 67'600 for consultancy and presence on the web. The HIV test price reduction cost CHF 36'400 and CHF 98'880 were spent for the evaluation of the campaign (Figure 8).

The total direct cost without the HIV test cost reduction and the evaluation costs amounted to CHF 450'134. The direct costs of BTC 2015 including the HIV test cost reduction amounted to CHF 486'534 without taking into account the evaluation costs. The direct costs including the evaluations and HIV test reduction costs were CHF 585'414. The preparation costs

accounted for the greater part of the resources spent. The costs of the materials and services are shown separately (Figure 9).

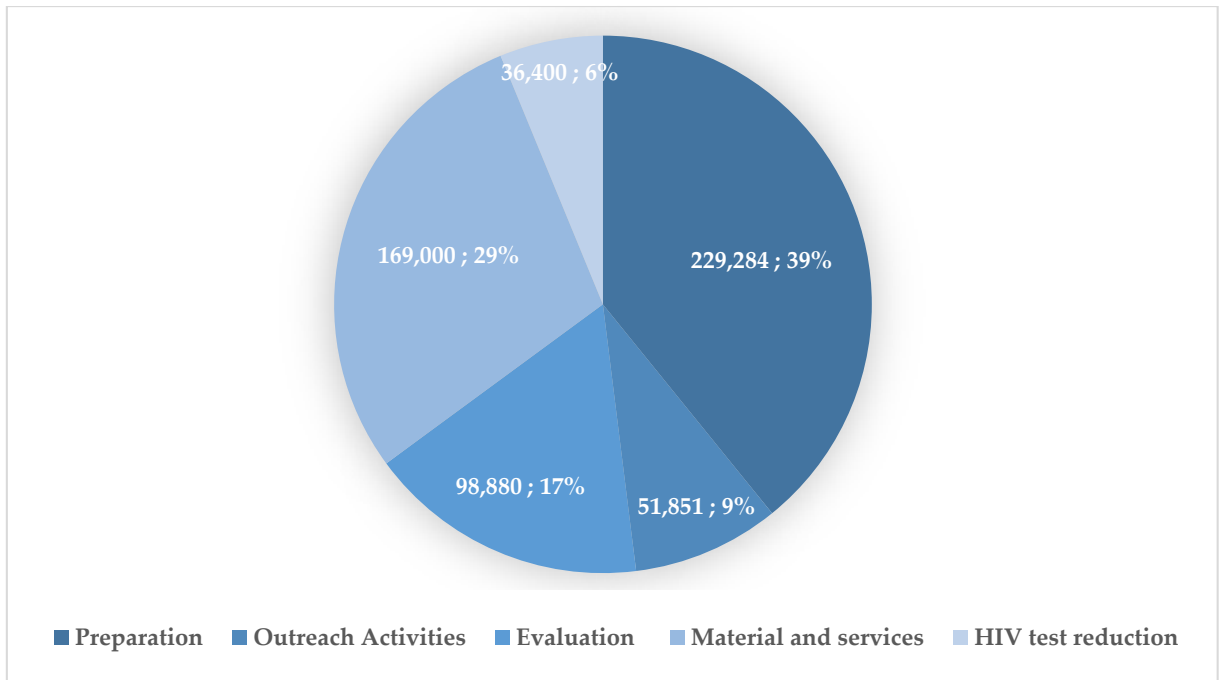
The total costs of the campaign 2015 were paid by the FOPH and the AHS. The budget covered by the FOPH was CHF 350'000 (excluding budget for evaluation). The AHS covered the remainder. The evaluation costs were fully paid by the FOPH.

Figure 8. Costs (in CHF) of FOPH/ Aidshilfe Schweiz, local partner organization (preparation, outreach activities and expenses), other expenses and evaluation costs



LP: Local partner organizations; FOPH: Federal Office of Public Health; AHS: Aids Hilfe Schweiz

Figure 9. Distribution of total direct costs (in CHF; %) by preparation (inclusive of work by FOPH, AHS and local partner organizations), outreach activities (inclusive work of local partner organizations, travel and other expenses), costs of materials and services, HIV test price reduction and evaluation



#### 4.9. Indirect costs of volunteer work of local partner organizations

In order to quantify the indirect costs, the number of lost working hours was multiplied with the hourly rate of CHF 33 per hour [6]. Table 5 presents indirect costs in total and by region (French-speaking cantons and German-speaking cantons).

Table 5. Indirect costs of volunteer work

	Total (CHF)
French-speaking cantons	12'762,75
German-speaking cantons	1'328,25
<b>Total</b>	<b>14'091</b>

#### 4.10. Total direct and indirect costs

In Table 6, direct and indirect costs are shown as totals and percentages of the total costs of the campaign.

**Table 6. Total direct and indirect costs (per cost item)**

Cost item	CHF	Percent of the total
Salary: National organizations FOPH and AHS	175'800	29,1%
Salary: Local partner organizations: preparation / campaign management	53'484	8,9%
Salary: Local partner organizations: outreach activities	49'036	8,1%
Paid out-of-pocket expense (e.g. travel expenses)	2'814	0,5%
Material and third party services (e.g. consultancy, website, advertisements, translations, printing posters and flyers)	169'000	28,0%
Price reduction of HIV tests in May 2015	36'400	6,0%
Costs for the evaluation	98'880	16,4%
<b>Total direct costs</b>	<b>585'414</b>	<b>96,9%</b>
Volunteer work of the local partner organizations	14'091	2,3%
Unpaid out-of-pocket expenses	4'391	0,7%
<b>Total indirect costs</b>	<b>18'482</b>	<b>3,1%</b>
<i>Total direct and indirect costs</i>	<i>603'896</i>	<i>100%</i>

FOPH: Federal Office of Public Health; AHS: Aids Hilfe Schweiz

#### 4.11. Cost per outcome of the campaign

Table 7 presents approximated efficiency indicators, i.e. cost per various outcomes of the campaign.

Based on the total direct costs of BTC 2015 (except the costs for the HIV test reduction) and the number of encounters (Figure 3), it can be assumed that each encounter cost





approximately CHF 16. If indirect costs are included in addition, the cost per encounter was CHF 17.

By the help of the Gaysurvey 2014 and Post-BTC-survey of the IUMSP, it could be determined how many MSM are among the target group of BTC 2015 (BTC+), how many MSM have heard about BTC 2015 and how many participated in BTC 2015. The target group of BTC 2015 (BTC+) includes e.g. MSM who had unprotected anal intercourses (UAI) with casual partners over the last 12 months, MSM who do not know their HIV status and had unprotected sex intercourses, MSM who had UAI with a partner of unknown or different HIV status (steady and casual partners), or HIV-positive MSM having declared a detectable viral load. BTC- would be defined as MSM who avoided any risk of HIV.

In total, 58.4% had heard about BTC 2015 (402 out of 688 of all post-BTC survey participants). Among those who had heard about the BTC campaign, 251 MSM (95 BTC+ and 156 BTC-) used a risk reduction strategy (RRS) in April 2015. Among the 95 BTC+ who had heard about BTC 2015 and adopted a RRS, 19 participated in BTC 2015, hence may be assumed to have adopted a RRS due to BTC 2015. Given this, 21 MSM (19 out of 402) needed to hear about BTC to have one BTC+ MSM participate in BTC and adopt a RRS in April 2015 as a result of the BTC campaign.

It is assumed that the population of MSM in Switzerland comprises between 65'000 and 95'000 individuals [7]. Hence, across all MSM in Switzerland, the total costs would amount to CHF 10 to CHF 15 per MSM who heard about BTC 2015 (58.4%). The estimated total direct and indirect cost per at-risk MSM who used a risk reduction strategy in April as promoted by BTC (BTC+, 2.8% of the post-survey sample) was CHF 213 (for 95'000 MSM) and CHF 312 (for 65'000 MSM), respectively (Table 7).

In Switzerland, the costs of the therapy of HIV-patients amount to approximately CHF 25'000 per person and year and CHF 1 Mio over a patient's life-time [8]. Hence, the BTC 2015 would be a cost-saving preventive intervention if at least one HIV infection could be averted. The FOPH reported 500 new HIV diagnoses for the year 2015, which is similar to numbers of the year 2014 (n=516) [9]. Nevertheless, in our analyses we are not able to draw a direct link

between costs and averted HIV cases, although this would be the outcome of major interest from a perspective of patients, clinicians and public health officials.

**Table 7. Approximate costs per outcome of the campaign**

Costs of BTC 2015*	Outcome	Cost per outcome
<b>Total direct costs</b>	Encounter	CHF 16 / encounter
<b>Total direct and indirect costs</b>	Encounter	CHF 17 / encounter
<b>Total direct and indirect costs</b>	MSM who heard about BTC 2015	CHF 10 to CHF 15 / MSM who heard about BTC 2015**
<b>Total direct and indirect costs</b>	BTC+ participation	CHF 213 to CHF 312 / BTC+ participation**
<b>Total direct and indirect costs</b>	Averted case	Cost-saving

\*costs for HIV test cost reduction is not included; \*\*range of estimated number of MSM in Switzerland (65'000-95'000).

## 5. Discussion and conclusion

The collection of economic data provided important information on the allocation of resources for and within the BTC 2015 campaign. The total direct costs of BTC 2015 amounted to CHF 486'534 and the total direct and indirect costs amounted to CHF 505'016, respectively. Additional CHF 98'880 were budgeted for the evaluation of the campaign. Hence, the total direct and indirect costs amounted to CHF 603'896. The evaluation was based on a collection of real life data during the campaign.

In 2012, a similar study addressed the resources spent for the BTC campaign in Zurich. This study estimated costs for the realization of BTC 2012 in Zurich of CHF 574'098 [10]. This number covers the outreach activities in one city (Zurich) only. In our study, we found a similar number, which however covers the cost of all outreach and coordination activities all over Switzerland. Hence, we can assume that the outreach activities of BTC 2015 were less expensive or the activities were condensed and spread to more cities.



The cost estimation of 2012 included a considerable amount of voluntary resources (30% of total costs), whereas the voluntary contribution was much smaller in our analysis (3% of total costs). The main reason for this deviation is the fact that BTC 2012 focussed on the involvement of the gay community, in particular gay friendly bars and clubs but also shops, coiffeurs etc. Such an involvement was not part of the campaign in 2015. In 2012, the main part of the voluntary work was provided by the gay friendly community (85.1% of the total indirect costs), whereas the voluntary contribution of the Zürcher Aids-Hilfe was minor. Given this, the data fits very well with the findings in our study, where 3% of the total costs were related to voluntary work of the involved organizations (CHF 18'482).

It needs to be noted, that our analysis was based on information reported on timesheets distributed to the co-workers of the campaign, which may have introduced an information bias (over- or under-estimation of working hours).

Furthermore, the present analysis assessed the number of contacts and conversations with the target population of the campaign as reported the timesheets. It should be noted that the distinction between contacts and conversations could be interpreted differently by co-workers. Hence, the numbers provided by the outreach workers and the acting managers can only be taken as an approximation. In addition, flyers, posters and other advertisements could reach the target population (i.e. BTC+ MSM), but it was not possible to measure such contacts. The presence on the web of BTC 2015 was only measured in part by the number of clicks on a banner located on a frequently used gay-website (Gay-Romeo). Hence, the total number of contacts may have been much higher than estimated here.

In order to determine the cost-effectiveness of an HIV prevention campaign such as BTC 2015, quality-adjusted life years (QALYs) or number of prevented infections would be required. This information was however not available in our case. The present economic analysis was a first step to obtain detailed information on the direct and indirect costs of campaign-based HIV prevention in Switzerland.



## 6. References

1. Coates, T. J., L. Richter, and C. Caceres, *Behavioural strategies to reduce HIV transmission: how to make them work better*. Lancet, 2008. **372**(9639): p. 669-84.
2. Bertozzi SM, Padian NS, Wegbreit J, DeMaria LM, Feldman B, Gayle H, Gold J, Grant R, Isbell MT., *HIV/AIDS Prevention and Treatment. In Disease control priorities in developing countries*. Vol. Volume 2. 2006, New York; Washington: Oxford University Press; World Bank.
3. Drummond MF, Sculpher MJ, Torrance GW, O'Brien BJ, Stoddart GL, *Methods for the economic evaluation of health care programmes*. 2005, Oxford University Press: Oxford. p. 131-5.
4. Breyer, F., P. Zweifel und F. Kifmann *Gesundheitsökonomie*. Vol. 5. 2005, Berlin: Springer Verlag.
5. Zhang, W. and A. H. Anis, *The economic burden of rheumatoid arthritis: beyond health care costs*. Clin Rheumatol, 2011. **30 Suppl 1**: p. S25-32.
6. BFS, Bundesamt für Statistik. *Häufigkeitsverteilung der Erwerbstätigen nach Bruttoerwerbseinkommen pro Jahr in Klassen*. Available from: <http://www.bfs.admin.ch/bfs/portal/de/index/themen/03/04/blank/data/03.html>.
7. Schmidt AJ, Gebhardt M, Richard J-L, Altpeter E *The denominator problem: Estimating the size of local MSM populations in Switzerland. Implications for the calculation of MSM-specific burden of bacterial STIs and HIV in Unpublished manuscript*,. 2016, FOPH, Bern.
8. BAG, *HIV und andere sexuell übertragbare Infektionen (NPHS) 2011-2017*. 2010.
9. BAG, *HIV im Jahr 2015: Trends bis Ende September 2015*.
10. Kathrin Frey, Christopher Goodman, Thomas Widmer and Daniel Kübler, *Feasibility study for an economic evaluation of the prevention measures in the field of HIV and other sexually transmitted diseases (STI)*. 2013.